TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT):
Arizona Department of Transportation

INSTRUCTIONS:
Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

Transportation Pooled Fund Program Project # *TPF-5(166)*	**Transportation Pooled Fund Program - Report Period:** ☑ Quarter 1 (January 1 – March 31) ☐ Quarter 2 (April 1 – June 30) ☐ Quarter 3 (July 1 – September 30) ☐ Quarter 4 (October 1 – December 31)

Project Title:
Application of three Dimensional Laser Scanning for the Identification, Evaluation, and Management of Unstable Highways and Slopes

Name of Project Manager(s): **Christ G Dimitroplos**	**Phone Number:** **(602) 712-7850**	**E-Mail** cdimitroplos@azdot.gov
Lead Agency Project ID:	**Other Project ID (i.e., contract #):** **JPA-08-019M**	**Project Start Date:** 12/12/08
Original Project End Date: **12/12/10**	**Current Project End Date:** **12/12/14**	**Number of Extensions:** 2

Project schedule status:

☐ On schedule ☐ On revised schedule ☐ Ahead of schedule ☑ Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
$210,000	$190,000	90%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
0	0	95

Project Description:

The identification, evaluation, and categorization of high risk slopes (to include geological conditions and slope stability ha has always been a labor intensive task. LIght Deflection and Ranging (LIDAR) is a technology that is able to scan a 3D se and put them into data points. This results in rock mass and rockfall characterization. This project will take scans of severa and characterize several slope formations. Together with the software, this technology has the capability to perform the abo tasks in a much improved yet simplified way.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

The technical editing process has begun with a determination that pooled funds may be used to edit the final report to facilitate publication. FHWA determined that no special writing guidelines were established for pooled fund projects. The project will go through the same editing cycle as all Arizona research projects.

Anticipated work next quarter:

The first round of technical edits should be complete. An acronym list and permission statement should be received from author.

Significant Results:

Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems).

No issues have been identified.

Potential Implementation:

LiDAR facilitates efficient remote three dimensional surveys of geometric surfaces in a safe and cost efficient, reliable and accurate manner, reducing exposure of personnel to hazardous working conditions, and creating a permanent record of on site conditions.

It has proven to be capable of streamlining geological and geotechnical rock mass characterization and is a significant aid in the analysis of rock cut slopes, tunnels, and retaining wall stabilities projects.

LiDAR scanners mounted on vehicles have the potential for efficient and labor reducing task of inventorying of rock fall hazards sites. By comparing data sets from one year to another discrete changes in cut slopes g geometries and loose rock can be detected that may not be obvious from manual observation. Similarly Terrestrial LiDAR may be used to efficiently determine excavation quantities of in place materials during and after construction, blasting techniques and thereby reducing the potential for claims and wandering construction limits.