

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): **Indiana 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(258)	Transportation Pooled Fund Program - Report Period: Quarter 1 (January 1 – March 31) Quarter 2 (April 1 – June 30) <input checked="" type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)	
Project Title: Traffic Signal Systems Operations and Management		
Name of Project Manager(s): James R. Sturdevant	Phone Number: (317) 691-9091	E-Mail jsturdevant@indot.in.gov
Lead Agency Project ID: TPF 5(258)	Other Project ID (i.e., contract #):	Project Start Date: January 1, 2012
Original Project End Date: December 31, 2015	Current Project End Date: December 31, 2015	Number of Extensions: 0

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
\$550,000	\$40,600.39	10%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
	\$15,167.13	43%

Project Description:

Signalized arterials represent a substantial component of the highway transportation network in the United States. The National Transportation Operations Coalition (NTOC) in their 2007 Traffic Signal Report Card noted that nationally 5 to 10 percent of all traffic delay is caused by improper traffic signal timings along major roadways. In 2007, the National Report Card for overall traffic signal systems operations was a D. The situation is not expected to improve as travel demand is forecast to grow significantly faster than network capacity. The increase in national attention on sustainable and livable communities necessitate a concentrated effort be placed upon improved management and operation of our nations traffic signal system inventory.

The Transportation Management Center (TMC) Pooled fund study (SPR-2(207)) initiated in 2000, has been very successful at generating consensus on best management practices for traffic management centers oriented mainly towards freeway operations. It is desirable to develop a similar pooled fund study oriented toward traffic signal operations and management that would complement SPR-2(207) and engage a broad cross section of agencies on the leading edge of active traffic signal management.

Project Objectives

Develop a network of transportation agencies to i) develop consensus on operational standards of performance, ii) define a central management model that can leverage commercial wireless IP offerings that can be competitively outsourced, and iii) asset management principles for using a central system to identify when and where resources are most needed to maximize return on investment.

The level of participation and associated funding commitments will allow for additional opportunities over time or in parallel to explore additional traffic signal initiatives beyond those described herein. For example, the evaluation of adaptive control field deployments and associated systems engineering guidance documents under development by FHWA.

Progress Jan-Mar 2013 (includes meetings, work plan status, contract status, significant progress, etc.):

- A white paper was distributed with near final scope this past quarter. Some minor edits were received from Utah and California and were incorporated. The final scope is available at:
https://dl.dropboxusercontent.com/u/1007813/pfs/2013_03/Workplan_PFS_2012_04_30.docx
- Developed draft of Performance Measure Guidebook defined in Task 1.1. A draft of that document is at:
https://dl.dropboxusercontent.com/u/1007813/pfs/2013_03/signalmoie_2013_04_30.docx
- Interacted with Utah DOT (Task 1.2) to gain experience with other states deploying performance measures. They have aggressively implemented at several intersections and prepared a dedicated web site:
<http://udottraffic.utah.gov/signalperformancemetrics/>

Progress Apr-June 2013 (includes meetings, work plan status, contract status, significant progress, etc.):

- Continued collaboration with Utah DOT on integration of performance measures into their web site.
- Extended the split failure performance measures to incorporate ACS-Lite oriented "Green Occupancy Ratios" and "Red Occupancy Ratios". A link to a paper documenting that work is at:
https://dl.dropboxusercontent.com/u/1007813/pfs/2013_06/GOR_ROR_Concept.pdf
- Extended the PCD concept to accommodate multiple contributing phases serving the interior movement of a diamond interchange
https://dl.dropboxusercontent.com/u/1007813/pfs/2013_06/Diamond_PCD.pdf

Progress July-Sept 2013 (includes meetings, work plan status, contract status, significant progress, etc.):

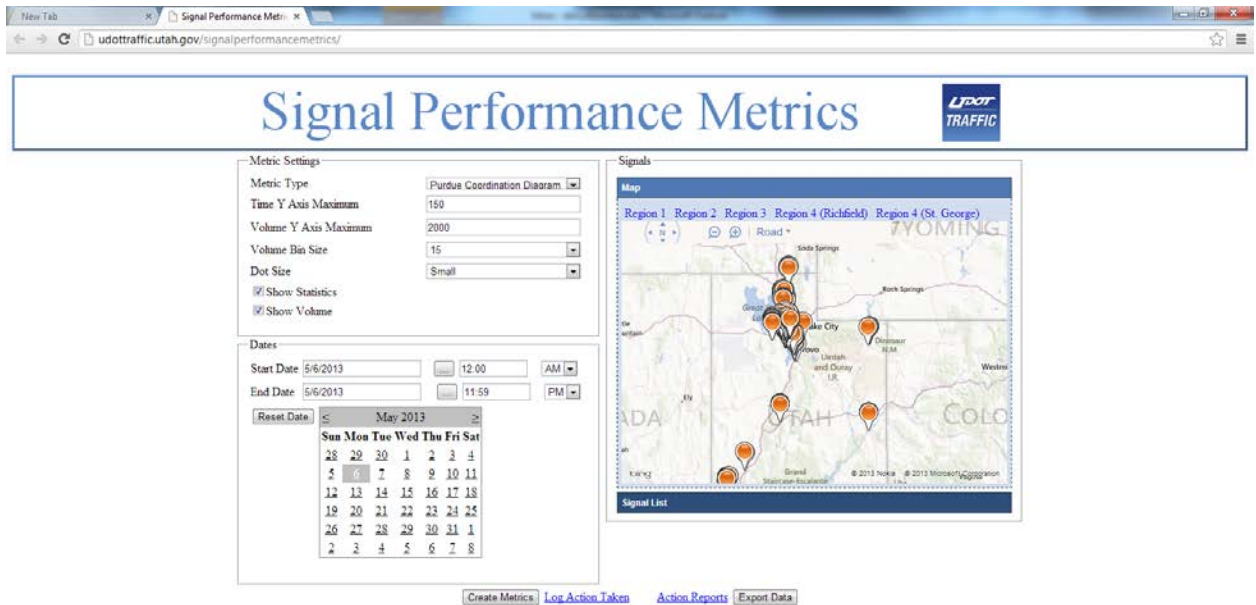
- Continued collaboration with Utah DOT on integration of performance measures into their web site.
- Developed methodology for integrating high resolution controller data from City of Richardson, Texas and Utah DOT into Indiana Performance Measure Web Page
- Integrated newly released Siemens high resolution controller data into performance measure web page (We now have Econolite, Peek, and Siemens)
- Initiated dialog with Intellilite and Naztec to integrate high resolution data from those controllers.

Anticipated work next quarter:

- Execute contract with University of Minnesota

Significant Results:

- Utah DOT has implemented data harvesting on several dozen Econolite ASC 3 controllers throughout their state system and implemented several performance measures (see below or access at following link <http://udottraffic.utah.gov/signalperformancemetrics/>)



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).

Potential Implementation:

There continues to be strong concurrent and coordinated efforts with both Utah and Minnesota DOT.

Since many of the project outcomes are aligned with MAP-21, we believe interest in implementing these results will continue to be of interest to many agencies.