

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Date: 17 October 2011

Lead Agency (FHWA or State DOT): WYOMING DOT

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 # WY DOT TFP-5(002) "Update to A Guide to Standardized Highway Lighting Pole Hardware"	Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input type="checkbox"/> 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: "Update to A Guide to Standardized Highway Lighting Pole Hardware"		
Name of Project Manager(s): Malcolm H. Ray, P.E., Ph.D.	Phone Number: 207-514-5474	E-Mail: Mac@roadsafellc.com
Lead Agency Project ID:	Other Project ID (i.e., contract #):	Project Start Date: 21 September 2007
Original Project End Date: 30 April 2010	Current Project End Date: 30 June 2012	Number of Extensions: 1

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
\$295,000	\$191,210	75%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$191,210 75%	\$15,008.41	88%

Project Description:

AASHTO-ARTBA-AGC Task Force 13 (TF13) has been a strong force in the roadside safety industry for over 30 years. TF13 has accomplished its mission primarily by developing and publishing Guides that essentially serve as catalogs for all types of roadside hardware including guardrails, guardrail terminals, crash cushions, small sign supports, luminaire supports, bridge railings and transitions. The popular Guide to Standardized Barrier Rail Hardware, the first of the TF13 Guides, was published in 1971 and then quickly updated in 1973 and 1979. TF13 has also developed Guides for small sign supports, work zone hardware and drainage products and luminaire supports.

TF13 first published its A Guide to Standardized Highway Lighting Pole Hardware in 1980. A great deal of work was done on luminaire and sign supports in the 1980's: AASHTO published its "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals" in 1985, several NCHRP projects have been performed to up-date the AASHTO Guide and there have been extensive crash testing programs performed by the FHWA and several States. In the information in the 1980 TF13 Lighting Pole Guide is, therefore long out of date. There is information in the 1980 Guide that needs to be removed because it is obsolete and a great deal of material needs to be added or modified to conform to the latest research. In addition, most Guides are being presented in dual units whereas the 1980 Lighting Pole Guide is exclusively in USCU.

TF13's recent experiences in putting the Hardware, Bridge and Transition and Sign Guides on-line also demonstrate that a new updated Lighting Pole Hardware Guide should take advantage of the advances in technology. The new Guide should use the same format, procedures and features that the latest TF13 documents are using. Such an on-line searchable fully-electronic Guide will make the information far easier to distribute to those who need it and also make it much easier to update and maintain.

The objective of this project will be to develop an updated, fully-electronic, searchable, on-line Standardized Guide to Lighting Pole Hardware. The following section lists each of the tasks that will be accomplished in this project along with a short description of how the task will be accomplished.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):**Task 1: Determination of Standardized Lighting Poles and Hardware**

This task is complete.

Task 2: Prototype Guide Development

This task is complete. The prototype Luminaire Support Guide is on-line at:

<http://guides.roadsafellc.com/luminaireGuide/index.php>.

Task 3: Final Guide DevelopmentWebinar

At the TF13 2011 Spring meeting in Cleveland, Ohio it was decided that an informal webinar should be conducted to demonstrate the functionality of the on-line Guide to a few select participants (e.g., alpha test the Guide using lighting engineers). The webinar was conducted on August 24. There were five attendees - all from the pooled fund states: Stan Johnson from Caltrans, Tim Crouch and Kenneth Dunker from Iowa DOT, Mark Seppelt from Illinois DOT and Greg Fredrick from Wyoming DOT. The objectives of the webinar were to identify problems and general concerns with the Guide and to finalize the Guide's content.

Of particular importance was whether or not to include the maximum fixture EPA values for each luminaire pole configuration. This has been a primary concern for luminaire manufactures, since calculating the EPA values require significant effort and these values would have to be provided by the manufacturers. Further, several variables and parameters involved in the calculations for EPA would require standardization to ensure consistency. Including:

- Recurrence Interval, which will affect
 - Wind Importance Factor, I_r
 - Velocity Conversion Factor, C_v
- Fixture weight
- Fixture attachment point and c.g.

Another issue related to EPA calculations that was raised by one of the participants was how to account for the local

topography of a region using the Guide, noting that the EPA values in the Guide are calculated assuming flat, level ground.

A poll was taken among the participants on whether or not to keep the EPA values in the Guide. It was agreed that EPA values would be helpful in getting the user closer to a final design; however, based on the fact that the largest group of users (e.g., city or county lighting designers) are not likely to be familiar with EPA, a decision was made to exclude EPA from the Guide (see poll results below). This decision was consistent with the consensus of the manufacturers polled at the Spring TF13 meeting.

Poll Question: Keep EPA calculations

[Edit Poll](#)

Answers:	Votes:
yes: They are required	1
no:	3
yes -- they aren't required but they are helpful	0

There was overall general agreement with the remainder of the Guide's functionality and format.

Meetings

The TF13 Fall meeting was held in Rapid City, South Dakota on September 12th and 13th in conjunction with the TCRS annual meeting. Dr. Ray attended the meeting and made a presentation to the Sign and Luminaire Subcommittee regarding progress on the project. Dr. Ray summarized the comments from the users obtained during the webinar and also re-initiated a discussion of how to handle EPA in the guide. The group agreed with the webinar group that the EPA values should not appear on the guide although the team is going to leave them in the database (i.e., not visible to users) in case the subcommittee is able to standardize some of the issues discussed above. Dr. Ray also talked about efforts at wrapping up the project including getting any more content from the manufacturers, finishing up a few programming tasks and possibly having another webinar sometime in the near future.

Task 4: Final Report

This task has not been initiated as yet.

Anticipated work next quarter:

Data Solicitation

The research team will continue to communicate with luminaire pole manufacturers and State DOTs to gather data for the on-line guide. A revised data template is being developed and will be forwarded to our list of manufacturers early next quarter.

User Guide/Tutorial

The research team will continue development of a draft User's Guide. The User's Guide will include information on:

- How to use the On-Line Guide
- How to submit data for inclusion into the Guide, and
- How to report errors and comments to the research team.

The tutorial may be developed in one or more formats including html, pdf, Microsoft Word, or Microsoft PowerPoint. The objective will be to have the tutorial be a stand-alone self-guided that will eventually be posted on the Guide site.

Meetings

No meetings are scheduled in the upcoming quarter.

Guide Updates/Revisions

Several updates to the Guide were planned for last quarter. The implementation of these the revisions has been delayed slightly due to health issues of our Web-Programmer, but we anticipate that these will be completed in the upcoming quarter.

Significant Results:

The draft guide is on-line and is fully functional at <http://guides.roadsafellc.com>. During the past quarter a webinar was held to train some pooled-fund state users in the user of the guide and to obtain feed-back from them concerning finalizing web-based guide. The research team also attended the Task Force 13 Meeting in September and demonstrated the draft to the Attendees and solicited feedback on the user and utility of the guide.

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).

The total expenditure for the work performed during this reporting period was \$15,008.41. The total expenditure to-date for project is \$191,210.35. We plan to try to finish up the project to coincide with the 2012 spring Task Force 13 meeting so we are working hard to wrap up all the loose ends and get the guide ready to hand-off to the Task Force.

Potential Implementation:

The guide is being implemented incrementally with new information from the manufacturers being added continuously through the project. The team is attempting to get all the remaining information from the manufacturers in the coming quarter such that the content of the guide is essentially complete. The programming on the guide is essentially complete such that it has the required structure and capabilities.