TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Oregon 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 # *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)* TPF 5(221)	**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: Accelerated Bridge Construction (ABC) Decision Making and Economic Modeling Tool		
Name of Project Manager(s): Benjamin Tang	**Phone Number:** 503-986-3324	**E-Mail** Benjamin.M.Tang@odot.state.or.us
Lead Agency Project ID: Contract Agreement No. 26413	**Other Project ID (i.e., contract #):**	**Project Start Date:** 12/23/2009
Original Project End Date: 12/31/2011 (Contract expiration date)	**Current Project End Date:** 12/31/2011 will extend	**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
$120,000.00	$91,601.53	100

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	100 (Contract time to be extended)

Project Description:

Accelerated Bridge Construction (ABC) is recognized as an important method to design and rehabilitate highway structures. ABC uses both new technology and innovative project management techniques to reduce the impact of bridge construction projects on the public and to reduce bridge construction costs. In particular, ABC can lead to substantially lower user delay costs and significantly lower traffic control costs. AASHTO and FHWA have encouraged the use of ABC technologies as a mechanism for reducing traffic congestion, increasing work zone safety, and for providing longer-lasting and more durable bridges. Various DOTs have supported the use of ABC when there has been a perceived agency benefit.

New technology and accelerated construction techniques can introduce risk and uncertainties into a project. Within this context, decision-makers need to assess whether elements of ABC are "achievable and effective for a specific bridge location". While the potential advantages of ABC are recognized, transportation personnel do not have an established protocol to quantify the risks and economic benefit of using ABC over traditional construction for specific bridge replacement or rehabilitation projects. This research effort will develop a project-level tool for engineers and decision-makers to quantitatively assess the utility of using ABC.

The development of decision-making tools to enable both economic evaluations and tradeoff analyses has been identified within the DOT strategic plan as a key area of need. Use of decision-making tools in early stages of planning is advocated as a mechanism for helping decision makers to assess alternatives with more confidence and for preventing investment in alternatives that are more costly. Data-driven decision making tools are also consistent with recommendations by the Government Accountability Office and the National Highway Research and Technology Partnership's report, Highway Research and Technology: the Need for Greater Investment. Effective investment decisions are a critical component in the management and funding of improvements to U.S. surface transportation. Decision-making tools, in particular, have been identified as drivers for cost reductions, improved public service, and increased public confidence in the nation's surface transportation.

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

Edits were made to the final report, and the report was submitted to Oregon DOT for publication. The software was submitted to FHWA for distribution through its Web site.

Anticipated work next quarter:

The technical advisory committee has decided to include the capability of recording user comments in the decision making tool. There are additional, unspent committed funds that could cover the cost of the software upgrade. Currently, Oregon DOT has temporary spending restrictions in place that do not allow immediate use of these funds. Consequently, the contract will be extended until March 31, 2012, by which time a decision can be made by ODOT whether to proceed with the additional work. The work would be completed by June 30 if it were to go forward.

Significant Results:

The Analytic Hierarchy Process Decision Making Tool has been validated and proven to be very useful as it provides a mechanism to calculate assessments of relative importance to a set of overall scores or weights in each of the pair-wise comparison between criteria. This tool enables project team or decision maker to capture the preferred alternative based on the controlling criteria and compute utility value for each criterion.

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).

Incorporating comment capability in software as explained under "Anticipated work next quarter."

FHWA requires the software to be 508 compliant if it is to be posted on it Web site. FHWA is looking into using its personnel to accomplish this effort.

Potential Implementation:

ODOT has developed a pilot study to test the tool for other project decision making such as project alternate selection, and contracting method selection. ODOT is already used the AHP Decision Tool for several projects and found this tool to be of great value. Other states are beginning to hear about this tool through the FHWA and FIU Webinars and other bridge conferences. Have been getting inquiries about the AHP Tool from consultants and other state DOTs like WI, MN, and CA.