

## TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT):   FHWA  

**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.*

<b>Transportation Pooled Fund Program Project #</b>  TPF-5(131)	<b>Transportation Pooled Fund Program - Report Period:</b> <input type="checkbox"/> Quarter 1 (January 1 – March 31) 2012 <input type="checkbox"/> Quarter 2 (April 1 – June 30) 2012 <input checked="" type="checkbox"/> Quarter 3 (July 1 – September 30) 2012 <input type="checkbox"/> Quarter 4 (October 1 – December 31) 2012	
<b>Project Title:</b> <i>Underwater Inspection of Bridge Substructures Using Underwater Imaging Technology</i>		
<b>Name of Project Manager(s):</b> Kornel Kerenyi	<b>Phone Number:</b> (202) 493-3142	<b>E-Mail</b> kornel.kerenyi@fhwa.dot.gov
<b>Lead Agency Project ID:</b>	<b>Other Project ID (i.e., contract #):</b>	<b>Project Start Date:</b>
<b>Original Project End Date:</b>	<b>Current Project End Date:</b>	<b>Number of Extensions:</b>

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

Quarterly Project Statistics:

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

**Project Description:**

The contractor works with funding states and federal personnel from the Hazard Mitigation team at the Turner Fairbank Highway Research Center (TFHRC) to research the application of acoustic imaging technology to satisfy the inspection requirements of Federal Highway Administration (FHWA) 23CFR650 and the Bridge Inspection Reference Manual (BIRM) for Level I Underwater Inspections. This project has the potential to improve methods to assess the underwater condition of existing transportation structures and increase the safety of the nation's bridges. In addition, the proposed technology has the potential to reduce exposure of staff to hazards encountered while performing underwater inspections.

The following underwater applications are recognized to have significant potential benefits to the current practice in bridge inspection of underwater components:

- Rapid condition assessment (i.e. post seismic events and boat impacts)
- Active and passive scour evaluation
- Construction inspection
- Security threat assessment
- Enhancing diver safety and efficiency
- Visual representation of the entire underwater structure

This research project will evaluate the feasibility of using underwater acoustic imaging technology to produce underwater inspection results that are equal or better than current practice for Level I underwater inspection requirements. The project will conduct an objective comparative evaluation of the inspection quality, cost, time and employee safety aspects of conducting the underwater inspection using in water divers versus acoustic imaging technology.

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

In this reporting period the Support Services contractor for the FHWA Hydraulics Laboratory worked with the sub-contractors to conduct the Phase 1 field test and data collection. Four teams were assembled to cover a reasonable range of various acoustic imaging technology and conventional diving. The tested sonar technology included sector scan, multi-beam scan, and realtime georeferenced multibeam system. Each team of sonar operators or divers conducted underwater inspections at four bridge sites and produced inspection reports for their findings. A neutral observer took independent records to verify the team reports. All results were collected and prepared for reporting and briefing to the TAC.

**Anticipated work next quarter:**

The primary tasks in the next quarter include:

- Webinar for dissemination of the field test results to TAC.
- Data processing and analysis
- Draft report on preliminary findings

**Significant Results:**

Field test results that will be reported to TAC.

**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:**  
Details will be documented in the draft report.