**TRANSPORTATION POOLED FUND PROGRAM**

**QUARTERLY PROGRESS REPORT**

Lead Agency (FHWA or State DOT): \_\_\_\_Virginia 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.*

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| **Transportation Pooled Fund Program Project #**  *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)*  ***TPF(5)-226*** | | **Transportation Pooled Fund Program - Report Period:**  **☑Quarter 1 (January 1 – March 31) 2016**  □Quarter 2 (April 1 – June 30)  □Quarter 3 (July 1 – September 30)  □Quarter 4 (October 1 – December 31) | |
| **Project Title:** Instrumentation to Aid in Steel Bridge Fabrication | | | |
| **Name of Project Manager(s):**  Michael C. Brown | **Phone Number:**  (434) 293-1936 | | **E-Mail**  Michael.Brown@VDOT.Virginia.gov |
| **Lead Agency Project ID:**  97767 | **Other Project ID (i.e., contract #):**  100-CMW | | **Project Start Date:**  7/20/10 |
| **Original Project End Date:**  7/19/11 | **Current Project End Date:**  7/31/13 | | **Number of Extensions:**  1 |

Project schedule status:

□ On schedule □ On revised schedule □ Ahead of schedule ☑ Behind schedule

Overall Project Statistics:

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| **Total Project Budget** | **Total Cost to Date for Project** | **Percentage of Work**  **Completed to Date** |
| 250,000 | 250,000 | 100% |

***Quarterly*** Project Statistics:

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| --- | --- | --- |
| **Total Project Expenses**  **and Percentage This Quarter** | **Total Amount of Funds**  **Expended This Quarter** | **Total Percentage of**  **Time Used to Date** |
| 0% | 0% | 100% |

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| **Project Description**:  Transportation Pooled Fund Project TPF(5)‐226 “Instrumentation to Aid in Steel Bridge Fabrication” will deliver a laser  based bridge measurement system that will greatly improve the quality and reduce the cost of complex bridge  fabrication. This system will reduce or eliminate the need for shop fit‐up and assembly by providing a virtual assembly  capability using specialized solid modelling and analysis software specifically targeted at large‐scale complex structures.  This laser system will be specifically designed for steel bridge fabrication and will accurately and precisely measure all  aspects of a bridge component, including splice hole locations, camber, sweep, and end‐kick in a nearly full‐automated  manner. The completed system can be used as a quality control tool to document as‐built conditions of girders and as  a virtual fit‐up tool to eliminate shop assembly. |

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| **Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):**  All work tasks were completed in Spring 2013. The draft final report was distributed to participating states for review in October 2013. Having received comments only from the FHWA representative, the report was further distributed in May 2014 to a panel of reviewers internal to VDOT to get additional feedback. Collected feedback was forwarded to the authors for consideration and revisions. Additional comments were provided by the Associate Director after reviewing the revised report to ensure compliance with VTRC formatting and content criteria in January 2016. |
| **Anticipated work next quarter**:  Final revisions to the report are pending and publication of the final report is anticipated in the next quarter. |

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| **Significant Results:**  The researchers were able to effectively demonstrate and document the use of the laser-based fabrication system to make precise and extensive 3D measurements of fabricated girders and plates and to use that information to complete virtual fit-up of spliced girders. The use of the system to convey bolt-hole drill locations was also successfully demonstrated. |
| **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).**  Significant delays have been incurred in the review of the draft final report. Final revisions are being completed. |

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| **Potential Implementation:**  Virginia DOT and the investigators have discussed the possibility of a follow-up project, potentially on a VDOT project, to further demonstrate the efficacy of the system to precisely document girder fabrication and enable virtual fit-up to eliminate the time and cost associated with physical fit-up at the fabrication facility. |