**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.*

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| **Transportation Pooled Fund Program Project #**  *TPF-5(447)* | | **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:**  **Traffic Control Devices Pooled Fund Study** | | | |
| **Name of Project Manager(s):**  Laura Mero, FHWA Jose Calvo | **Phone Number:**  (202) 493-3377 (202) 493-3380 | | **E-Mail**  [Laura.Mero@dot.gov](mailto:Laura.Mero@dot.gov) [Jose.Calvo.CTR@dot.gov](mailto:Jose.Calvo.CTR@dot.gov) |
| **Lead Agency Project ID:**  TPF-5(447) | **Other Project ID (i.e., contract #):** | | **Project Start Date:** October 1, 2002 |
| **Original Project End Date:**  N/A Continuing Effort | **Current Project End Date:** | | **Number of Extensions:** |

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** |
| Values indicate total commitments  2016 – $325,000  2017 – $375,000  2018 – $290,000  2019 – $335,000  2020 – $335,000  2021 – $405,000  2022 – $440,000 | Ongoing Project (N/A) | Ongoing Project (N/A) |

***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** |
| Ongoing Project (N/A) | Ongoing Project (N/A) | Ongoing Project (N/A) |

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| **Project Description**:  The purpose of the TCD PFS is to assemble a consortium composed of regional, State, local entities, appropriate organizations and the FHWA to 1) establish a systematic procedure to select, test, and evaluate approaches to novel TCD concepts as well as incorporation of results into the MUTCD; 2) select novel TCD approaches to test and evaluate; 3) determine methods of evaluation for novel TCD approaches; 4) initiate and monitor projects intended to address evaluation of the novel TCDs; 5) disseminate results; and 6) assist MUTCD incorporation and implementation of results. |

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| **Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):** Traffic Control Devices Pooled Fund Study Technical Support  * Finalized meeting conference room and audio equipment for Q3 meeting * Held Q3 (annual in person) meeting in San Diego, CA * Created and distributed Q3 meeting minutes * Reviewed charter document * Voted on new project development * Maintained, updated, and consolidated TCD PFS contact lists * Provided access to MS Teams Site for new members * Made improvements to the MS Teams Site including a “affiliations and presentations” page * Added locations for files to be placed on the TCD PFS MS Teams Site * Held bi-weekly meetings * Continued tracking contributions   **Pedestrian Signing at Unsignalized Crossings**   * Prepared for kickoff meeting. Conducted kickoff meeting on 9/19/22. Developed notes from the kickoff meeting   and provided to FHWA  **Evaluation of Advisory Exit and Ramp Speed Signs**   * The research conducted a kickoff meeting with FHWA and TCD PFS panel members. * The research team began development of the work plan.   **Sign Guidance for Zipper Merge**   * The research team completed all data collection and analyzed data.   **Enhancing Conspicuity for Standard Signs and Retroreflectivity Strips on Posts**   * Technical brief was published and project is complete.   **Evaluation of Additional Alternatives of and Arrow Sizes for Overhead Arrow-per-Lane Guide Signs**   * The research team has finished data analysis and presented findings to FHWA MUTCD team and TCD PFS panel members. * Draft of extended technical brief is being prepared. |
| **Anticipated work next quarter**: Traffic Control Devices Pooled Fund Study Technical Support  * Plan and Hold Q4 meeting * Distribute Q4 meeting minutes * Write problem statements for selected research ideas from Q3 meeting and present them to members * Continue management of document used to track new project ideas * Continue maintaining, updating, and consolidating TCD PFS master contact lists * Continue holding bi-weekly meetings * Continue tracking contributions * Finish updating past TCD PFS reports for 508 compliance and public affairs approval   **Pedestrian Signing at Unsignalized Crossings**   * Begin the IRB process for the computer study. * Develop the following:   + Draft list of sign options.   + Draft list of roadway characteristics and locations.   **Evaluation of Advisory Exit and Ramp Speed Signs**   * The research team will complete work plan development and begin developing stimuli for the laboratory study.   **Sign Guidance for Zipper Merge**   * The research team will complete data analysis * The research team will complete the draft extended tech brief.   **Evaluation of Additional Alternatives of and Arrow Sizes for Overhead Arrow-per-Lane Guide Signs**   * The research team will address the comments on the extended technical brief. * The research team will provide support to the FHWA publication team. |

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| **Significant Results:**  Past projects have led to significant results and changes that were incorporated into the 2009 MUTCD, particularly from the Symbol Sign, Arrow Per Lane Guide Signs, and Roundabout Signing studies. Recent studies are being considered by the MUTCD for incorporation into the next MUTCD.  The “Enhancing Conspicuity for Standard Signs and Retroreflective Strips on Posts” project was completed with several findings that are helpful for practitioners as well as to confirm the appropriateness of treatments provided in the manual. Data for the project were collected in New Hampshire, Iowa, and Virginia with treatments including adding red flags, beacons, retroreflective strips on posts, enlarging signs, duplicating signs on both sides of the roadway, and adding header panels. While the results related to changes in behavior were mixed across all treatment sites, eye-tracking data showed that drivers had an increase in glances where enhancements were made. For speed limit signs, drivers were more likely to glance at their speedometer. Therefore, the enhanced treatments do appear to be effective in increasing conspicuity.  The “Overhead Arrow Per Lane (OAPL)” project had several findings. Sign comprehension (measured in response times and lane choice accuracy) was found to have a slight difference among alternate signs. No sign was found to be performing significantly poorer than the other signs. Full-sized OAPL sign was found to perform better than the alternate signs. Careful attention should be given to the magnitude of differences among signs and how much impact that may have on the roadway of interest. |
| **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).**  There were delays in data collection for Sign Guidance for Zipper Merge due to the COVID-19 pandemic. |

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| **Potential Implementation:**  All results from the Traffic Control Devices Pooled Fund Study are considered by FHWA for inclusion in subsequent MUTCD versions and interim approvals. |