**TRANSPORTATION POOLED FUND PROGRAM**

**QUARTERLY PROGRESS REPORT**

Lead Agency (FHWA or State DOT): \_\_\_\_\_\_FHWA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**INSTRUCTIONS:**

*Lead Agency contacts 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) | |
| **TPF Study Number and Title:**  TPF-5(447) Traffic Control Devices Pooled Fund Study | | | |
| **Lead Agency Contact:**  Laura Mero, FHWA | **Lead Agency Phone Number:**  (202) 493-3377 | | **Lead Agency E-Mail**  Laura.Mero@dot.gov |
| **Lead Agency Project ID:**  TPF-5(447) | **Other Project ID (i.e., contract #):** | | **Project Start Date:**  February 12, 2020 |
| **Original Project Start Date:**  October 1, 2002 | **Original Project End Date:**  N/A Continuing Effort | | **If Extension has been requested, updated project End Date:** |

Project schedule status:

🗷 On schedule □ On revised schedule □ Ahead of schedule □ Behind schedule

Overall Project Statistics:

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| **Total Project Budget** | **Total Funds Expended**  **This Quarter** | **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  2023 - $395,000 | 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  * Attended bi-weekly meetings with the TOCOR to discuss the status of the action items and activities under the task order (7/2/2024, 7/22/2024, 8/1/2024, 8/15/2023, 8/29/2024, and 9/26/2024). * Provided monthly progress reports to the TOCOR. * Submitted draft Q2 report to TOCOR, revised based on TOCOR comments, and uploaded to TPF website. * Updated the contact list as appropriate and requested changes to email list and Teams. Sent welcome emails to new representatives or members. Held discussions with the TOCOR pertaining to issues with the email distribution list (i.e., certain members not receiving emails) and Teams (i.e., access issues). Updated the contact list on the TCD PFS Teams page and posted on Teams to notify members. Updated the list of PFS Final Reports and Technical Briefs on the TCD PFS Teams site. * Revised the Q2 meeting minutes based on feedback received from the TOCOR and MUTCD Team. Sent the final Q2 meeting minutes to the PFS members and uploaded them to Teams. * Continued general planning for the Annual Meeting in coordination with the TOCOR including the TFHRC tour, transportation to/from the tour, and the welcome gathering. Completed booking airfare for meeting attendees and ensured that all attendees had a hotel reservation. Finalized the Audio/Visual requirements with the hotel and finalized the banquet event order. Coordinated with the TOCOR to finalize the TFHRC tour timeline and secured transportation for the PFS members to/from TFHRC. Finalized the location and time of the Welcome Gathering and made a reservation. Drafted email for PFS members including final Annual Meeting information (i.e., details about the TFHRC tour, the welcome gathering, project idea spreadsheet, and travel reimbursement). Discussed options for the next Annual Meeting with the TOCOR. Performed final preparations for the Annual Meeting including printing name tents and preparing slides. Facilitated the Annual Meeting in conjunction with the TOCOR, submitted draft meeting minutes to the TOCOR (9/26/2024), and began expense reimbursements for members. * Revised the Literature and State-of-Practice reviews based on comments received from the members and TOCOR and submitted revisions to the TOCOR. Received additional comments on the Literature and State-of-Practice reviews. * Emailed PFS members requesting input on the project idea spreadsheet in advance of the Annual Meeting and updated the spreadsheet accordingly. Discussed research project ideas at the Annual Meeting and conducted round 1 of voting on project ideas. Summarized the round 1 voting process, including results, in a spreadsheet and sent to the TOCOR. Updated the New Research Topic Idea List document on the TCD PFS Team to reflect the round 1 voting, decisions made, potential project champions, etc. Began literature reviews for the 3 new problem statements. * Posted the Advisory Speed Technical Brief (with Errata) to the PFS website. * Started identifying TCD PFS projects that contributed to changes in the current or past editions of the MUTCD. Held an internal meeting to discuss Outreach Plan next steps. Held discussions with Virginia DOT following the Annual Meeting and provided them with additional information on the PFS.   **Pedestrian Signing at Unsignalized Crossings**   * Finished reducing the 1-min counts associated with each staged pedestrian crossing for all sites and all periods. Began merging these data with the staged pedestrian crossing data. * Began the conversion of the per staged pedestrian crossing data to a per driver data, which is needed for the logistic analysis. * Began data analysis of the field data. * Participated in bi-weekly meetings with FHWA. * TTI submitted a modification request for changing the end date of the project and for several deliverables.   **Evaluation of Advisory Exit and Ramp Speed Signs**   * Attended bi-weekly meetings with the TOCOR to discuss project activities. * Emailed the final, published, Technical Brief to the TCD PFS members and uploaded it to the TCD PFS website. Received notification that there was a minor error in the technical brief. Coordinated with the TOCOR and publications team to correct the error and have an Errata issued. Emailed the final, published, Technical Brief, with errata, to the TCD PFS members and uploaded it to the TCD PFS website.   **Comprehension and Legibility of Selected Symbol Signs Phase V**   * Attended bi-weekly meetings with the TOCOR to discuss project activities. * Continued discussion about potential sign alternatives with TOCOR and TCD PFS members based on the draft   Work Plan and topics discussed at the NCUTCD mid-year meeting. Finalized the list of sign alternatives to include in the Work Plan.   * Addressed comments on the draft work plan and resubmitted the work plan on 8/2/2024. Received additional comments on the draft work plan on 8/16/2024, completed revisions to the Work Plan, and submitted the final Work Plan to the TOCOR on 9/3/2024. The Work Plan was approved by the TOCOR on 9/6/2024. * Began developing signs for testing. Sent draft sign alternatives for seven sign categories to the TOCOR for preliminary review on 9/18/2024. Continued drafting other sign alternatives. |
| **Anticipated work next quarter**: Traffic Control Devices Pooled Fund Study Technical Support  * Continue holding bi-weekly meetings to discuss the status of the task order and will prepare the list of Action   Items and Activities prior to each meeting.   * Continue providing monthly progress reports. * Submit the draft Q3 progress report and post the approved Q3 progress report to the website. Discuss timeline for the next Strategy Session and schedule the session. * Continue to maintain and/or upload documents (as appropriate) to the contact list, email group, and Microsoft   Teams private team.   * Poll members on their availability for the Q4 meeting, schedule and facilitate the Q4 meeting. Draft and finalize the Q4 meeting minutes. * Finalize the Annual Meeting minutes, share with the PFS members, and upload to Teams. Complete expense reimbursements for the Annual Meeting. Begin planning for the 2025 Annual Meeting including polling members on their availability. * Continue work on additional action items related to the project selection process. Finalize the Literature and State-of-Practice reviews. Draft the three new problem statements and submit draft problem statements to the TOCOR. * Begin developing a survey to capture information on the next steps from the Outreach Plan. Support FHWA with outreach or other tasks as needed and identified by the TOCOR.   **Pedestrian Signing at Unsignalized Crossings**   * Continue data analysis of field data. * Participate in meetings, for example, bi-weekly meetings with FHWA and as needed with other groups, such as City of Frisco and City of Federal Way. * Respond to questions as needed regarding the extension.   **Comprehension and Legibility of Selected Symbol Signs Phase V**   * Attend bi-weekly meetings with the TOCOR to discuss project activities. * Continue developing sign alternatives and begin identifying background images for the study. Submit draft   visualizations and/or stimuli for all parts of the laboratory study.   * Prepare and submit the IRB application. |

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| **Significant Results:**  The technical brief for the Evaluation of Advisory Exit and Ramp Speed Signs project was published, with an errata. The objective of this project was to evaluate and produce uniform recommendations for Advisory Exit and Ramp Speed signs (W13-2 and W13-3) and Combination Horizontal Alignment/Advisory Exit and Ramp Speed signs (W13-6 and W13-7), including basis for speed designation, use of “Exit” versus “Ramp,” effects of sign placement, and optimization of sign sequence. The literature and state-of-practice review suggested that most States are using standard practices that involve using a ball-bank indicator or accelerometer to determine advisory speeds. Regarding the wording used on signs, the findings suggested that drivers are not likely to respond differently to or notice the difference between signs based on the use of “Exit” versus “Ramp” wording on the signs. Regarding the effects of sign placement, the laboratory study findings suggested that, in most cases, the earlier the advisory speed sign was placed on the deceleration lane, the earlier participants tended to think they needed to slow down. In practice, based on the field results, drivers did not slow down significantly until approaching the curve itself. Regarding the optimization of sign sequence, the findings pertaining to driver comprehension and driver behavior suggest that standard practices that are consistent with the 2009 MUTCD seem to be effective. In addition to standard Exit and Ramp Speed signs, the laboratory test indicates that duplicate turn warning signs (one on each side of the ramp), double truck rollover warning signs, and Large Arrow  signs are more effective than using chevrons only. Some laboratory results suggested that double warning signs  may lead to lower reported speeds than the Large Arrow, though these results varied depending on the sequence  of signs. Although the results were mixed, the laboratory study showed that adding an additional sign near the gore  typically resulted in lower reported speeds regardless of what type of sign (Advisory Speed sign, Combination  Horizontal Alignment/Advisory Speed sign, or a Warning sign with an Advisory Speed plaque) was added. |
| **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).**  None at this time. |

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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. |