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.

Transportation Pooled Fund Program Project # *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)* TPF-05(317)	**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-05(317) The Evaluation of Low Cost Safety Improvements Pooled Fund Study (ELCSI-PFS)

Lead Agency Contact: Woon Kim, FHWA	**Lead Agency Phone Number:** (202) 493-3383	**Lead Agency E-Mail** Woon.Kim@dot.gov
Lead Agency Project ID: TPF-05(317)	**Other Project ID (i.e., contract #):** N/A	**Project Start Date:** 08/2022
Original Project Start Date: 05/2005	**Original Project End Date:** 05/2010	**If Extension has been requested, updated project End Date:** N/A continuing effort

Project schedule status:

☐ On schedule ☐ On revised schedule ☐ Ahead of schedule ☐ Behind schedule

Overall Project Statistics:

Total Project Budget	Total Funds Expended This Quarter	Percentage of Work Completed to Date
Ongoing project (N/A)	Ongoing project (N/A)	Ongoing project (N/A)

Project Description:

The primary goal of the Evaluation of Low-Cost Safety Improvement Pool Fund Study (ELCSI-PFS) was to save lives and reduce traffic crash injuries by identifying effective safety strategies for national implementation. The ELCSI-PFS conducted research to quantify the safety effectiveness of selected strategies — so-called crash modification factors (CMFs) — that may address priority safety concerns but had not been proven. This study also provided benefit-cost (B/C) ratios to estimate the resulting relationship between the relative monetary value of benefits and costs of a selected strategy. Transportation agencies utilized estimated CMFs and B/C ratios to select, plan, fund, and install a specific safety strategy on a targeted site to improve its outstanding safety issue. The secondary goal of this study is to improve and advance the statistical tools to conduct more reliable, rigorous research. For this effort, this study collaborated with the American Statistical Association (ASA) and identified new statistical methodologies to advance the current practices

used in the development of CMFs. This study initiated in 2005 but continued adding years for additional studies. Currently this study is running Phase XIII (so-called 5 CMFs) to evaluate the safety effectiveness of the following countermeasures:

- Rectangular Rapid Flashing Beacons (RRFBs)
- Left-Turn Lanes Improvements (LTL)
- Curve Enhanced Delineation (CED)
- Alternative Rumble Strips (ARS)
- Fixed Object Delineation (FOD)

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

ELCSI-PFS PHASE XIII: 5 CMFS

RRFB

- Completed gathering geometric and traffic control device data for the identified treated sites in five states: California, North Carolina, Oregon, Pennsylvania, and Texas
- Continued the process to obtain crash data for those states
- Continued the process of matching crash data to sites along with other relevant databases such as Highway Performance Monitoring System (HPMS) for California
- Explored the possibility of including variables from CDC/ATSDR Social Vulnerability Index
- Continued the process of identifying and obtaining vehicle and pedestrian volume for each site
- Created and submitted deliverables including technical memos for feasibility study and data collection plan with required period

LTL

- Continued reviewing candidate dual LTL study sites for treatment and comparison in California and Texas
- Contacted cities in California and Texas to inquire about the availability of turning count data
- Developed data collection protocols for documenting site characteristics at study sites and comparison sites
- Began collecting site characteristics at study sites and comparison sites
- Obtained crash data for treated sites and comparison sites in TX.
- Developed and submitted deliverables including technical memos for feasibility study, gap analysis and needs, and data collection plan with required period

CED

- Continued collecting data to describe identified installation sites (signing and curve radius)
- Downloaded and reviewed Pennsylvania DOT and Texas DOT curve geometry data file to identify control sites
- Collected data to describe treated and control sites (signing and curve radius)

ARS

- Created a working dataset for treated segments using data obtained from Arkansas DOT
- Conducted Propensity Score analysis to choose comparison segments that were more similar/comparable to the treated sites
- Reviewed data from Maine and Michigan DOTs for accuracy and feasibility
- Conducted further analysis on data from South Dakota to be able to finalize the crashes

FOD

- Continued searching for non-Pennsylvania study sites. After visual scanning evaluations, locations in Irvine, California were excluded because they were atypical with high-speed conditions in urbanized environment
- Assessed the potential for including data from Kentucky and Washington. Some Kentucky data looked promising. The data for the Washington roads did not look as feasible

TECHNICAL ADVISORY COMMITTEE (TAC) MEETING

- Held the first day of the TAC meeting on July 31 and the second day on August 7

- Administered a Qualtrics web-based survey to obtain attendee feedback on the event as well as their thoughts and input on future evaluation and study needs for the ELCSI-PFS to consider
- Added the PDFs of the meeting presentations to the event website and shared the updated information on the presentations and final agenda with meeting attendees

PUBLICATIONS

Technical Report for Developing Crash Modification Factors for Mini-Roundabouts was published.
TechBrief for Development of Crash Modification Factors for Wrong-Way Driving Treatments was published.

Additional publications for Phase XI are in progress regarding the following topics:

- Bike lane configuration at intersections
- Wrong way driving low cost safety improvements

Anticipated work next quarter:

- Finish the process of matching crash data to sites for RRFB
- Continue collecting site characteristics data and complete the final quality control on the collected data for LTL
- Continue data collection to describe installation sites and assess obtained data for CED
- Continue working on the data from Maine and Michigan for ARS
- Continue drafting Technical Memo using the recently acquired data for FOD (identifying FOD installation types & roadside safety issues prior to installations)
- Continue working on publications from Phase XI

Significant Results:

- Made progress on obtaining and reviewing data for all five studies
- Published some documents relevant to Phase XI

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).

RRFB: The lack of pedestrian volume data is proving to be a larger challenge than initially anticipated. The research team is considering how best to manage this situation.

ARS: The previous challenges persist

- Maine: the inconsistencies in the Maine data for sinusoidal shoulder rumble strips should be addressed.
- Michigan: the Michigan data are not in the shapefile format.

FOD: The proposed data source information continues to be a challenge. At this point, the team intends to use Pennsylvania data and is currently finalizing the potential for using Kentucky data as a second candidate location.

Potential Implementation:

N/A