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) V 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:

V 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

- Continued gathering geometric and traffic control device data for the identified treated sites in five states: California, North Carolina, Oregon, Pennsylvania, and Texas
- Began the task reviewing the available historical street views to determine when (or if) treatments (including signals, RRFBs, etc.) were installed
- Continued the process to obtain crash data for those states
- Began reviewing obtained crash data
- Conducted the process of matching crash data to sites along with other relevant databases such as Highway Performance Monitoring System (HPMS) for California
- Began the process of identifying the pedestrian volume for each site

LTL

- Continued searching for candidate dual LTL study sites and comparison sites in Kansas, Minnesota, Oregon, North Carolina, Pennsylvania, South Dakota, Virginia, Texas, and California
- Reviewed candidate dual LTL study sites in California and Texas using Google Earth. Identified 1100 dual LTL study sites in California and 700 dual LTL study sites in Texas
- Developed a draft data collection protocol for documenting site characteristics at study sites

CED

- Continued collecting data to describe identified installation sites
- Corresponded with state DOT contacts to obtain information about crash and roadlog data sources
- Downloaded statewide roadlog file from Pennsylvania DOT
- Reviewed Pennsylvania DOT's "One Map" GIS web site for applicability to data collection efforts

ARS

- Worked on obtained data from South Dakota DOT to merge roadway inventory, traffic volume, and crash data for analysis purposes
- Obtained data from Arkansas and Maine and began reviewing those data for accuracy and usefulness
- Followed up with Michigan DOT to obtain shapefiles of the data

FOD

- Obtained data from Pennsylvania DOT and reviewed the data by comparing to Pennsylvania video data. Also, worked on developing a sample working database
- Discovered a location in Irvine CA that uses fixed object delineators at high-speed urban arterials. The research team is going to expand visual examination to this location to determine if it can be added to the study

ELCSI-PFS PHASE XII: SAFETY EVALUATIONS OF INNOVATIVE INTERSECTION DESIGNS FOR PEDESTRIAN AND BICYCLISTS

- Published the final report

PUBLICATIONS

Technical Report for Phase XII was published with this recommended citation: Federal Highway Administration, *Safety Evaluations of Innovative Intersection Designs for Pedestrians and Bicyclists* (Washington, DC: 2023) https://doi.org/10.21949/1521997

Publications for Phase XI are in progress regarding the following topics:

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

Anticipated work next quarter:

- Continue assessing obtained data and building working database of treated and control sites for RRFB
- Continue gathering information to identify control sites and exploring availability of turning movement counts for LTL
- Continue data collection to describe installation sites and assess obtained data for CED
- Resolve inconsistency issues with datasets received from Arkansas and Maine for ARS
- Develop the draft version of Technical Memo (identifying FOD installation types and roadside safety issues prior to installations) using the recently acquired data for FOD
- Finalize meeting details, including meeting registration and sharing the final meeting agenda.
- Continue working on publications from Phase XI

Significant Results:

- Made progress on obtaining and reviewing data for RRFB, CED, ARS and FOD
- Published Technical Report for Phase XII

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).

Identification of candidate data continues to be a challenge for FOD. To provide a timely submittal, the team will make one more attempt to identify agencies that have installed the fixed object delineators and then complete the preliminary database and begin evaluation of the preliminary database referenced above.

With regards to the ARS study, the team is experiencing challenges with inaccurate and inconsistent data received from Arkansas and Maine DOTs.

Potential Implementation:

N/A