

With the Phase III coming to the end soon, we have outperformed our original goal of evaluating 20 strategies and have gained two new State members. We have perfected our skills, increased our knowledge of low-cost safety improvement evaluations, and gathered the technical resources to meet many more safety challenges.

Phase III

Phase III installation of this PFS are completed and volunteer states of FL, IA, KS, KY, MO, and PA have done a great job throughout. We had some issues with sample size for a few strategies. However, the addition of PA as a volunteer State has provided additional data and this has helped to solve sample size issues. The before study is in its final stages, and is expected to be completed soon.

Phase V

Phase V, the Build-to-Evaluate phase, started in late October of 2010. FL, IN, IL, KY, MO, PA, SC, and WI have volunteered for this phase. The strategies for this phase are:

1. Multi-Strategy Improvements for **Signalized Intersection**
2. Multi-Strategy Improvements for **Stop-Controlled Intersection**
3. Centerline Rumble Strips & Edge-line or Shoulder Rumble Strips with a 4' shoulder with emphasis on curves
4. Guardrail, median barrier (interstate guardrail and cable median barrier with/without rumble strips)

We had to replace the “Yield to Pedestrian Channelizing Devices” with the “Multi-Strategy Improvements for Stop-Controlled Intersection” after our feasibility study revealed sample size issues. With this modification we have tried to answer our TAC members need for intersection safety as their second top priorities.

2011 ELCSI-PFS Annual TAC Meeting

The above meeting was conducted successfully in Alexandria VA in April 20-21, 2011. This meeting was highly attended by FHWA Safety, Design, Resource Center, and Pavement partners as well as TRB, and NCHRP friends. The ELCSI-PFS TAC members’ safety accomplishments impressed other guest attendees.

FHWA Feasibility Studies for Phases VI and VII

We summarized and analyzed the 2010’s Technical Advisory Committee (TAC) members’ ballots & survey forms and have performed feasibility studies on its top ten priority safety improvement needs. To complement our survey analysis, we scoped safety improvements for future phases by e-mails, conference calls, and personal calls. Also, we collected and managed crash data and pavement files, and conducted statistical analysis on these data for pavement safety. The results of these feasibility studies were two intersection studies, and two pavement studies. Intersection studies were added to the current Phase V (Prospective.)

Pavement safety was selected to be one of the higher priorities for low cost safety improvement needs by the TAC members at the ELCSI-PFS TAC annual meeting of 2010. ELCSI-PFS has scheduled Phases VI and VII for Pavement Safety Performance (PSP) research for low cost safety applications. Flexible pavement and rigid pavement safety needs will be addressed separately and more comprehensively by phases VI and VII individually.

Two state volunteers contributed their crash and pavement files for statistical analysis by FHWA to perform a feasibility study for pavement research. The FHWA, TFHRC, Offices of Safety Management

Team (Safety R&D), and Pavement Design and Construction Team (Infrastructure R&D) have completed two in-house feasibility studies for PSP for flexible pavement using volunteer states pavement files and crash data with assistance from the Highway Safety Information System (HSIS.) Transportation Research Board's National Cooperative Highway Research Program *NCHRP Report 500 Guidance for Implementation of the AASHTO Strategic Highway Safety Plan: Volume 6: A Guide for Addressing Run-off-Road Collision*, and *Volume 7: A Guide for Reducing Collision on Horizontal Curves* was used as guidance for these two studies.

Two following papers were resulted from ELCSI-PFS, Phase VI feasibility study and they were submitted to the 3rd International Surface Friction Conference, May 2011.

- i. Influence of Seasonal Temperature on Pavement Reliability Performance: A Case Study
- ii. Case Study: ROR Crash Variation with Pavement Friction

The above two papers were accepted for publication and presentations by the 3rd International Surface Friction Conference. Also, the "Influence of Seasonal Temperature on Pavement Reliability Performance: A Case Study" was presented to FHWA, TFHRC researchers on April 28, 2011, and met their acceptance.

The ELCSI-PFS, one Phase VI feasibility study was presented to the Surface Properties - Vehicle Interaction (AFD90) and Pavement Management Systems (AFD10) TRB Committees at the 90th Annual TRB Meeting in January, 2011.

FHWA, Pavement Design and Construction Team have already started a feasibility study for Phase VII of ELCSI-PFS for "Effects of Concrete Mixture Designs on Skid Numbers and Crash Rates."

Public Roads Magazine Article and Other Publications

1. Public Roads Magazine has published a six page story on ELCSI-PFS for its Dec./Jan. issue.
2. ELCSI-PFS is going to be in the new FHWA publication, "Telling the R&T Story" for several of its studies.
3. American Traffic Safety Services Association (ATSSA) will publish an article about ELCSI-PFS.

ELCSI-PFS Website

The ELCSI-PFS web site was updated and posted on November 2010. However, I have found some issues with few links and pages. I will work with our publication office to fix those issues.

Low Cost Safety "Tool Improvements"

Kim Eccles attended the ATSSA meeting in Phoenix, AZ in February, 2011. In partnership, Dr. Kohinoor Kar and Kim hold a workshop for the ELCSI-PFS and at the same time collected information on new innovative devices that may hold promise for new low cost safety improvements.