



Speed Feedback Sign Loan Program

tech transfer summary

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RESEARCH PROJECT TITLE

Speed Feedback Sign Loan Program Workplan

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The Iowa Local Technical Assistance Program (LTAP) is dedicated to providing technical and management assistance to Iowa's local governments through a variety of programs and resources.

The mission of the Institute for Transportation (InTrans) at Iowa State University is to save lives and improve economic vitality through discovery, research innovation, outreach, and the implementation of bold ideas.

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This project determined the need for a speed feedback sign loan program for local agencies, and then successfully established the program through the purchase of the equipment, development of the program's structure, and implementation in the field with several sign deployments in Iowa.

Objectives

The primary objective of the project was to develop a speed feedback sign loan program in a manner that was used by and useful to local agencies, sustainable in operation, and made the speed feedback signs as effective as possible at reducing speeds along local roadways.

A secondary objective of the project was the comparison of vehicle speed data collection before and after the initiation of the speed feedback signs at the deployment locations.

Problem Statement

Few local agencies in Iowa, particularly smaller departments, have the resources to purchase speed feedback sign equipment. Even those that could purchase the equipment may prefer to first become familiar with its general operation, setup, and value before making the decision to invest in speed feedback signs.

Background

Speed feedback signs are intended to reduce driver speeds for safety improvement. They are used in a variety of situations and settings that include work zones, school zones, playground areas, residential and commercial areas, and speed transition zones (e.g., rural to urban transitions, curve approaches). These types of sign installations can be portable or permanent in application and either post- or trailer-mounted. Past evaluations by researchers have shown that these signs produce mean vehicle speed reductions ranging from almost nothing to 10 mph.

Project Description

- Determine the need for a speed feedback sign loan program through discussion with a technical advisory committee (TAC) and a survey of local agencies
- Develop the structure of the loan program and purchase speed feedback signs based on the results of the TAC discussion and survey
- Implement the program by assisting local agencies once they had made a request for the equipment, setting up the sign, and collecting before and after vehicle speed data to analyze the sign's effectiveness at reducing vehicle speeds

- Evaluate the loan program by number of requests and site deployments made and by speed reduction effectiveness at the deployment sites
- Complete a literature review in parallel with the previous tasks to document the past effectiveness of speed feedback signs in various settings

Key Findings/Results

- The project determined a need for a speed feedback sign loan program through a local agency interest assessment. Forty-five responses were received from Iowa agencies, with more than 70% of those responses supporting the program.
- The project team then successfully developed the program including a loan application, structure, and process. These details included, but were not limited to, software programming for the parameters at each deployment site, delivery and setup of the sign, sign retrieval, and data download and analysis. The program structure and characteristics developed as part of this project should be useful to the future implementation and operation of these types of efforts.
- At the time the report was written, the team had purchased two Traffic Logix SafePace 475 speed feedback signs, one of which was trailer-mounted and the other that provided the option of post-mounted installation.



Traffic Logix SafePace 475 signs

- The project team deployed trailer-mounted speed feedback signs at eight locations by request for four local agencies (the cities of Modale, Luzerne, and Alleman, as well as Lucas County). All of the agencies requested the trailer-mounted sign.
- Sign deployments were largely successful from the perspective of having an impact on driver behaviors. Mean speeds were reduced at six of the eight deployment sites, while 85th percentile speeds were reduced at all eight sites. Statistical evaluations found that all mean speed reductions were statistically significant. The percentages of drivers exceeding

the posted speed limit by more than 15 mph were reduced at seven of the eight sites. The extent of speed reductions at each site varied, and mean speed reductions were typically small (i.e., less than 1 mph), while 85th percentile reductions did not exceed 3 mph. Still, these results point toward the signs capturing driver attention over the short term.

- In some instances, the loans were made to serve the primary objective of this project rather than addressing a significant vehicle speed issue. Some deployments were done at locations where there may have been some speeding, but there were also objectives in addition to speed reduction, such as drawing attention to vehicle speed choices with school opening or a pedestrian presence.
- Overall, the trailer-mounted speed feedback sign purchased for this project was found to be user-friendly and intuitive to use. However, in the opinion of the project team, the wireless data link between a computer and the sign was cumbersome and balky at times.

Recommendations

- If possible, the speed feedback sign loan program in Iowa should continue as long there is interest in the equipment. If continued, a user manual for the speed feedback signs and their implementation should be created.
- The requirement to collect speed data in support of a speed feedback sign loan application in Iowa should be discontinued after this project. This requirement is believed to have reduced the number of requests for the equipment during this time period due to the limited resources of most local agencies in Iowa.
- The post-mounted speed feedback sign purchased as part of this project should be mounted on another trailer when funding is available. Trailer-based speed feedback signs offer more deployment flexibility and less local agency effort than post-mounted signs if the loans are going to be short term in nature. This recommendation is supported by the fact that only the trailer-mounted sign was requested during this project.
- Agencies considering the purchase of one or more speed feedback signs should investigate several characteristics about the sign and software equipment, including connection options, power sources, software capabilities, and data output format.
- A future research project on speed feedback signs should investigate the impacts of long-term deployments (e.g., two weeks or more). Of particular interest may be the trends in vehicle speeds from immediately after the sign activation to the end of the deployment.

Implementation Readiness and Benefits

The primary objective of this project was served through all of the speed feedback sign deployments, and the vehicle speed results support the idea that the signs captured driver attention while in the field. Furthermore, these deployments showed local agencies the value of speed feedback signs and aided in their decisions to purchase their own speed feedback sign equipment. One clear example of this is the purchase of speed feedback

signs in Lucas County for permanent installation after the loan program deployment.

In addition, the results and lessons learned by the project team in the development and implementation of the loan program should also be useful to other entities considering the creation of a similar program.