



Evaluation and Preparation for Future Work Zone Safety Workshops

tech transfer summary

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RESEARCH PROJECT TITLE

Evaluation and Preparation for Future Work Zone Safety Workshops

SPONSOR

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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 summarized the work zone safety and flagger training offerings available in Iowa and suggested recommendations focused on how to provide these trainings more effectively in the short and long term to professionals who work in and around work zones in the state.

Problem Statement

The Iowa Department of Transportation (DOT) Work Zone Safety Workshop training series has been conducted by a team of seasoned instructors for many years and a number of them have already retired or will soon be retiring. These positions may or may not be filled and/or the tasks related to these positions may be redefined. These retirements and the potential redefinition of positions may create a void in the professionals available for work zone safety technical assistance and instruction.

Objectives and Goal

The objectives of the project were to determine the work zone safety training options available to Iowa work zone safety professionals, collect and assess information from those professionals about their training choices and preferences, and evaluate whether the current training offerings are meeting the needs of these professionals.

These objectives supported the overall goal of the project, which was to develop a series of conclusions and recommendations focused on how to effectively provide work zone safety and flagger training in the short and long term within Iowa.

Background

For more than 40 years, the Iowa DOT has sponsored, along with its training partners, an annual on-site Work Zone Safety Workshop training series throughout Iowa. These day-long workshops include guest speakers and a general session that focuses on various topics related to work zone crashes and fatalities. This general session is followed by five concurrent sessions that specifically address the work zone safety needs of the wide range of attendees at the workshop.



Iowa LTAP work zone and flagger training in Storm Lake

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Instructors from the work zone safety partner organizations each share materials during the five concurrent sessions that focus on the needs of city public works, county secondary roads, public and private utilities, Iowa DOT maintenance, and Iowa DOT construction and contractor employees. Overall, 650 to 850 professionals typically attend the 6 to 8 work zone safety workshops offered each year.

In addition to the Iowa DOT training series, several other providers offer work zone safety and flagger training in Iowa, and several different models are available for delivery of this type of training (e.g., online, on-site instructor-led, self-paced, or some combination).

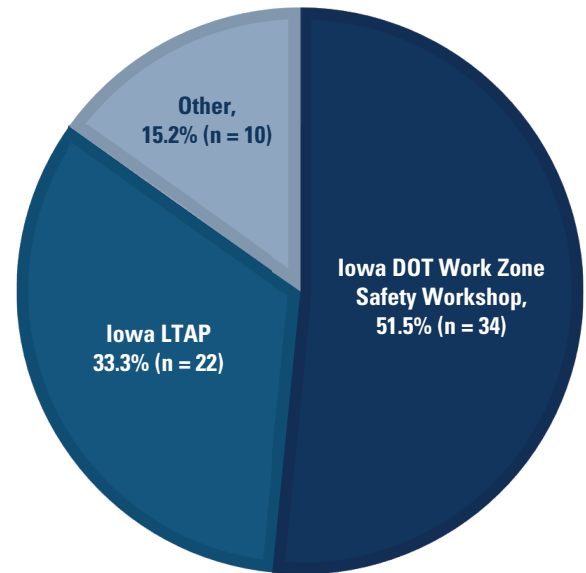
Project Description

The project team completed the following tasks as part of its evaluation of the state’s training offerings:

- Review the current Manual on Uniform Traffic Control and Devices for Streets and Highways (MUTCD) guidance and Iowa DOT Standard Specifications related to work zone safety and flagger training to determine the training requirements for the state’s work zone professionals
- Complete a literature review and online investigation to find the many on-site and online training options available for work zone safety and flagger professionals in Iowa
- Conduct an online needs assessment with seven questions to determine where Iowa professionals receive their training, their preferred format for the training, any suggested additional topics, and their internet access for potential online training options
- Summarize the evaluations from the 2017, 2018, and 2019 Iowa DOT Work Zone Safety Workshop training series to determine the overall value of the training and any additional topics of interest for potential inclusion in future training
- Gather additional input from work zone professionals through informal questioning of attendees during existing conference presentations and answers provided to a question that was part of the small city Iowa Work Zone Sign Package Program application

Key Findings

- Approximately 65% of the 68 respondents to the online work zone safety and flagger needs assessment were from counties and 25% were from cities.
- Just over 50% of the respondents received their work zone safety training from the Iowa DOT Work Zone Safety Workshop training series, and about 70% of the flagger training was from the Iowa Local Technical Assistance Program (LTAP).



Source of work zone safety training

- Approximately 75% and 80% of the respondents also preferred an on-site instructor-led approach for work zone safety training and flagger training, respectively. It should be noted, however, that the assessment was conducted before the COVID-19 pandemic—when many training options shifted online—and it is unclear if the survey answers may be different today and whether the training offered online during the pandemic will continue in that format as in-person restrictions are loosened or rescinded.
- The majority of needs assessment respondents also indicated that they have reliable internet service. Reliable internet service by the respondents, however, may or may not translate to access to these services by all those who may need work zone safety and/or flagger training (e.g., field workers).
- Several subjects, including low-volume road situations and dealing with uncooperative motorists, were also suggested by respondents in the needs assessment for inclusion within future work zone and/or flagger safety training.
- The 2017 through 2019 evaluations from the Iowa DOT Work Zone Safety Workshop training series showed an average 4.42 out of 5.00 score for “program met expectations.” The scores for the other characteristics of the workshop series ranged from 4.31 to 4.63. The workshop series appears to meet the needs of participants.
- The small city Iowa Work Zone Sign Package Program application responses showed that about 57% of the 72 small city applicants had not taken work zone safety training. This was identified as a gap in the work zone and flagger training provided in Iowa or in the advertising for the training available.

Conclusions

- Work zone safety and flagger training is essential to the safety of field workers and supervisors on the roadway, along with that of the traveling public. More professionals who work in and around work zones could also benefit from some type of related training.
 - A large number of professionals in Iowa are trained each year in work zone safety and/or flagger skills. The Iowa DOT Work Zone Safety Workshop training series, for example, is attended by 650 to 850 people during a typical year.
 - Professionals who need—but may not always receive—work zone safety and/or flagger training are employed by various organizations in Iowa, which include the Iowa DOT, cities, counties, contractors, and public or private utilities, among others.
 - Work zone safety and/or flagger trainings are offered in Iowa by a variety of organizations, which include the Iowa DOT, Iowa LTAP, the Iowa Association of Municipal Utilities (IAMU), and several private contractors, among others.
 - Iowa follows the MUTCD guidance about work zone safety training and Iowa DOT Standard Specifications related to work zone and flagger training. These guidance and specification documents, along with specific audience need, are believed to form the basis of the training in Iowa.
 - The work zone safety and flagger courses or sessions currently being used in Iowa do not generally appear to have documented and measurable learning outcomes or objectives that respond to the general competencies to be achieved for particular work zone jobs.
- Some type of training should be provided and/or required on a regular basis for those who design, plan, and implement work zone temporary traffic control (TTC); those who might find themselves within or around work zones; and those who design or apply transportation management plans (TMPs).
 - The development of a common flagger training course should be considered. In addition, a modular work zone safety basic and/or core course could also be developed. The development of these would encourage consistency in the training and could be supplemented by work zone safety and flagger train-the-trainer courses.
 - Iowa should continue to offer a time period (e.g., a week or a month) that highlights the statewide partnership focused on work zone safety and/or flagger training and education.
 - For the duration of the COVID-19 pandemic, each of the work zone safety and/or flagger training partners in Iowa should consider the best method and approach to adjust their Work Zone Safety Workshop training session and/or other workshop content into a virtual or online environment.
 - In the longer term, the methods used to accomplish the Iowa DOT Work Zone Safety training series or something similar should be considered more closely.
 - Some of the ideas suggested in this report could be considered by the Iowa DOT to determine whether there's a need to adjust its Standard Specifications content related to work zone safety and flagger training.

Recommendations

- A stakeholder group of Iowa partners interested in work zone safety and flagger training should be developed and meet on a regular basis to accomplish some or all of the suggested recommendations.
- The stakeholder group should also develop expected core competencies for a variety of work zone safety professional positions, which can then be used to adjust the learning outcomes/objectives and identify the content of any new workshops that might need to be developed.
- The training currently being offered in Iowa should be updated to incorporate some adult learning components, including specifically defining the audience for each of the training sessions; developing an agenda, a list of measurable learning outcomes or objectives, and defining a method to determine if the outcomes/objectives are being met for each of the training sessions; and adjusting the content of the sessions, as needed, after incorporating these components.

Implementation Readiness and Benefits

After a thorough evaluation of the work zone safety related training options available in Iowa, the project team offered several recommendations to incorporate into and expand the current offerings to provide more effective work zone safety and/or flagger trainings to professionals whose job duties are in or around work zones.