



GRANTS PROGRAM



Extending the Wisconsin Work Zone Data Exchange to Local Roads Using Smart Work Zone ITS

Wisconsin Department of Transportation

PROJECT PARTNERS

Arcadis
University of Wisconsin - Madison
Columbia County Highway Department



PROJECT CHALLENGE

The Wisconsin WZDx data feed does not include work zones on the local road network. A limited number of local road closures that are associated with major improvement projects are currently entered manually into the Wisconsin 511 Construction Projects website. All other local lane and road closures are not tracked at all through the system. The project is using smart work zone ITS technology to incorporate real-time local road closure details into the Wisconsin WZDx and the Wisconsin 511 Traveler Information systems. The project will expand the existing Wisconsin WZDx data model to incorporate local road work zone characteristics and prototype the capability on a select set of rural and urban projects in Wisconsin using smart work zone devices which are purchased with the grant.

IMPACT

This project will evaluate local road smart work zone ITS data integration into the Wisconsin WZDx with respect to three projects. The selection criteria focused on two highway projects with surrounding area local lane and road closures, one urban and one rural, and one local road improvement project. One of the projects selected will also have impacts to vulnerable road users. The projects are still being selected at this time and will be finalized in April based on project start and end dates. Incorporating the local lane and road closures will impact the traveling public by providing them with real-time information about work zones.

CURRENT STATE OF THE ISSUE

In 2020, there were 857 work zone traffic fatalities, representing a 1.4% increase over 2019. The number of pedestrian and bicyclist fatalities in work zones increased by 21% over this same period, from 141 to 170. Improving overall work zone safety will require a comprehensive, safe system approach, improving access to work zone data that incorporates real-time, field-verified information using smart work zone technology represents a cornerstone of nearly all emerging strategies.

STAGE 1 OUTCOMES

1. Upgrade the data models, web services, and smart work zone ITS interfaces in the WisLCS, ATMS, and WZDx to support local road specific data elements such as the WZDx bike lane and sidewalk lane types. 2. Develop automated methods in the ATMS to integrate smart work zone ITS from the local road network. A device interface will be utilized for the local road work zone ITS prototype deployments. 3. Test and refine the process through prototype deployments of smart work zone ITS with respect to the three projects.

STAGE 2 VISION

The vision is to improve the safety on all local roadways in Wisconsin through increased user awareness of quality real-time work zone information. The project will be evaluating the appropriate balance between data entry and automated work zone ITS integration to support a scalable, statewide solution in Stage 2.