INNOVATION / TECHNOLOGY DEPLOYMENT SUMMARY

Coordinating Multiple Smart Work Zones in a Corridor

CHALLENGE

On four-lane divided highways, such as US 59 and US 69 in the Lufkin District, roadway construction-related queuing can devolve into erratic driving behaviors, congestion, and crashes. Similar safety dynamics also occur in or near work zones (Figure 1), where communicating effectively with drivers can be challenging. Smart work zone (SWZ) tools offer a range of potential solutions, which will be explored as district SWZ expertise continues to be developed.

Figure 1. Traffic congestion in a work zone.

SOLUTION

This innovative concept develops a process for evaluating work zones for possible SWZ implementation, including criteria and decision-making (Figure 2). Secondary, longer-term goals include collaborating with other districts on cross-training or mentorships to share knowledge, implement the Lufkin District's first SWZ installation(s), and establish a lessons-learned program to measure the effectiveness of the SWZs.

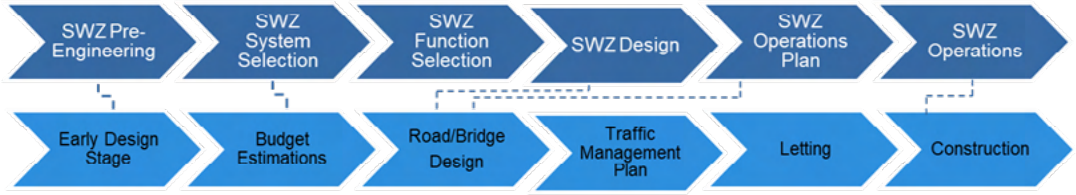

Figure 2. Evaluation process for use of SWZ tools.

TxDOT GOALS

- Deliver the right projects
- Focus on the customer
- Foster stewardship
- Optimize system performance
- Preserve our assets
- Promote safety
- Value our employees

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PROACTIVE APPROACH

Coordinating multiple smart work zones (intelligent transportation systems) in a corridor is a complex endeavor that must be carefully planned and tailored to local needs. Developing the required expertise and evaluating programmed projects for smart work zone deployment are proactive ways for the Lufkin District to mitigate the safety and mobility impacts of roadway construction.

BENEFITS

Benefits of this innovation include improved knowledge base of SWZs, development of staff SWZ expertise, and reduction in undesirable traffic behaviors around work zones, leading to reduced queuing, congestion, and crashes.

KEY TASKS

- Develop selection criteria and a process, and identify target routes.
- Conduct training for district staff.
- Identify and recruit expertise in other districts.
- Deploy initial implementation(s).

DATA SOURCES

Data sources include Texas A&M Transportation Institute (TTI) and TxDOT tools.

Resources

Lufkin District (txdot.gov)

Smart work zones (txdot.gov)

Transportation Systems Management and Operations: Lufkin District Program Plan (txdot.gov)

Work Zone Intelligent Transportation Systems: Technology Supplement (dot.gov)

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