



INNOVATION / TECHNOLOGY DEPLOYMENT SUMMARY

Wrong-Way Driver Detection System – Non-fully Access-Controlled Facility

CHALLENGE

The Lubbock District has a history of wrong-way drivers in the southeast quadrant of the City of Lubbock, near the intersection of SS 331 and FM 3020. The location has complex geometry and the district has taken previous actions to correct the intersection layout to better direct drivers so they do not go the wrong way down the northbound ramp from US 84. This location is near the city limits where law enforcement responsibilities transition from city to county and state jurisdictions. There was an immediate need to reduce wrong-way driver crashes at this location.

SOLUTION

The system detects wrong-way drivers, redirects them with active warning devices, and can notify law enforcement within 30 seconds if the wrong-way driver fails to self-correct. Notifications to law enforcement can be sent via an automated phone call, text message, or email. Figure 1 shows the system layout for the intersection of SS 331 and FM 3020. Equipment was purchased for approximately \$70,000 and was installed by TxDOT staff. The devices are powered by solar panels/batteries and communicate via a cellular connection (Figure 2), so the system can also be deployed in remote locations.

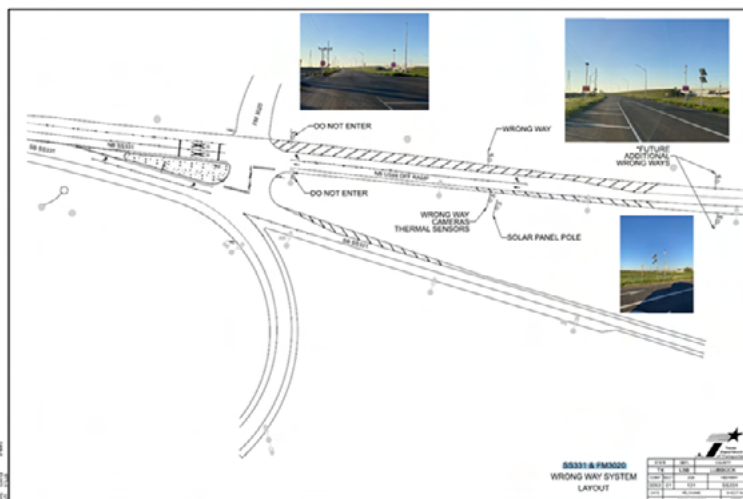


Figure 1. System layout.



Figure 2. Equipment in the field.

TxDOT GOALS



Deliver the right projects



Focus on the customer



Foster stewardship



Optimize system performance



Preserve our assets



Promote safety



Value our employees



Wrong-Way Driver Detection System – Non-fully Access-Controlled Facility

PROACTIVE APPROACH

The Lubbock District identified this wrong-way driving use case for locations where electricity and fiber connectivity are not readily available, requiring a solution equipped with an alternative power source and wireless connectivity. The proactive approach to using innovative technology to address a pressing safety issue helped the district demonstrate the applicability of this wrong-way driver detection system to locations outside of urban areas on non-fully access-controlled facilities.

BENEFITS

The innovation performed well as a stand-alone system on the edge of the urbanized area and helps solve the challenge of wrong-way driver detection by providing a way to notify them of their error. This reduces the potential for wrong-way crashes to occur by giving drivers an opportunity to self-correct. The solar power/cellular-based system also records a two-minute video of the incident for later evaluation.

KEY TASKS

- Assess conditions and coordinate with first responders.
- Assess viability of a wrong-way driver detection system to address challenges.
- Procure system and install with TxDOT personnel (with vendor guidance).
- Evaluate system performance.

DATA SOURCES

Data sources for this project include the wrong-way driver selection system and TxDOT's CRIS - Crash Records Information System data.

Resources

[Lubbock District \(txdot.gov\)](https://www.txdot.gov)

[Crash Data and Analysis: CRIS Query Tool \(txdot.gov\)](#)

[ITS Map: Lubbock District \(its.txdot.gov\)](https://its.txdot.gov)

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