

From Evaluation to Sole Source: Missouri Department of Transportation Selects FusionBLADE for Work Zone Safety

CASE STUDY: Omnisight's FusionBLADE Protecting Missouri's Work Zones

SUMMARY

Work zones are high-risk environments, where roadside workers face significant danger from inattentive or aggressive drivers.

CASE STUDY

In 2023, Missouri experienced its highest number of work zone fatalities in history, with 35 deaths reported. Distracted driving and speeding were identified as the primary causes of these tragedies. Omnisight, through its innovative FusionBlade, is modernizing work zone safety in partnership with the Missouri Department of Transportation (MoDOT). This project aims to improve alert accuracy, automate responses, and enhance post-incident analysis to save lives and protect roadside workers.

THE NEED FOR IMPROVEMENTS

- 35 fatalities in 2023, the highest on record.
- Distracted driving contributed to 588 crashes, including five fatalities.
- Speeding accounted for 10% of crashes in work zones.
- MoDOT vehicles were struck 63 times, a 27% increase from 2022.

PREVIOUS SITUATION

- Manual observation by attenuator truck operators is prone to delays and inaccuracies.
- Ineffective alert systems fail to consistently warn workers and drivers of impending danger.
- Lack of data collection limits opportunities for improving safety protocols.

Project at a Glance

WORK ZONE SAFETY

Retrofitting attenuator trucks with the FusionBlade to monitor approaching traffic and alert roadside workers of error, ensuring timely and precise alerts of possible impacts.

- ◆ Detects distracted or errant drivers approaching attenuator trucks.
- ◆ Triggers instant alerts upon collision risk detection.
- ◆ Activates warning lights, horns, and wearable-connected notifications.
- ◆ Provides critical response time to help reduce impact risk

TOP BENEFITS / RESULTS

- ✓ **Improved Accuracy:**
Automated detection reduces human monitor approaching traffic and alert roadside workers of error, ensuring timely and precise alerts possible impacts.
- ✓ **Enhanced Safety:**
Immediate alerts protect roadside workers
- ✓ **Operational Efficiency:**
Automating the process frees operators to focus on overall site management
- ✓ **Incident Analysis:**
Recorded data enables detailed post-crash reviews, informing better future safety protocols

THE SOLUTION:

The State of Missouri deployed the FusionBlade on attenuator trucks to monitor oncoming traffic, detect risks, and automate safety responses resulting in real-time threat detection: The FusionBlade observes driver behavior (e.g., speeding, swerving, or failing to decelerate) using radar and AI powered video.

WORK ZONE FEATURES

- ◆ Impending Collision
- ◆ Queue Detection
- ◆ Speed of Entry
- ◆ Traffic Data Collections
- ◆ Work Zone Intrusion
- ◆ Wrong Way Detection



WHY FUSIONBLADE

One device:

- ✓ Measures speed
- ✓ Captures video
- ✓ Detects intrusions
- ✓ Logs safety critical events eliminating extra hardware and system integration complexity

RESULTS

After a successful deployment, MoDOT has sole sourced Omnisight's FusionBLADE and will be retrofitting its attenuator truck fleet over the next 5–7 years.

Omnisight worked closely with MoDOT to fine-tune the system in real-world conditions. Reaction thresholds were calibrated to trigger alerts based on precise seconds-to-collision calculations, preventing unnecessary activations while still providing crews with meaningful warning time. Horn sound levels were also configured to specifically target an errant driver on a collision path, without creating unnecessary noise or distraction for surrounding traffic.

By tailoring the system to Missouri's work zone environments, MoDOT is equipping every attenuator truck with proactive protection that reduces crashes, strengthens worker safety, and helps save lives.

