Preventing Thefts That Affect Highway Operations

Image courtesy of Federal Highway Administration

Real-time monitoring can be an effective strategy to protect infrastructure.

SCAN FOCUS

Preventing the theft and vandalism of transportation agencies' electrical and communications infrastructure located in highway rights-of-way is critical. This infrastructure enables real-time highway operations and effective emergency management during natural disasters and traffic incidents for state departments of transportation (DOTs), law enforcement and other public agencies. Therefore, damage and theft of equipment like copper wire is expensive for taxpayers, decreases safety and hinders emergency response. Domestic Scan 24-03 investigated strategies and best practices to decrease theft and vandalism and maintain electrical and communications infrastructure for operations and national resiliency.

PERSON-TO-PERSON RESEARCH

The scan team invited six state DOTs, an 18-state coalition, one sheriff's office and two private technology companies to participate in an online workshop over multiple days in May 2025 to share their experiences. The scan team members then synthesized the themes and findings from the workshop to offer solutions for DOTs to address infrastructure theft and vandalism.

NEXT STEPS
Put It into Practice

EXPLORE NEW IDEAS

The strategies that have worked well for other public and private organizations may suit your agency's needs as well.

GET INVOLVED

Help problem-solve with AASHTO's Committee on Transportation System Security and Resilience at transportation.org/ctssr.

READ MORE

The full Scan 24-02 report is available at domesticscan.org/scans/24-03.

SUGGEST FUTURE SCANS

What topic do you have for an NCHRP Domestic Scan? See domesticscan.org/.

PRELIMINARY FINDINGS

Direct costs to repair and replace infrastructure that has been stolen or vandalized have been rising, and while additional indirect and ancillary costs have also increased, they are not as clear to determine. To better protect infrastructure and reduce costs and service interruptions, agencies must develop innovative countermeasures to stay ahead of criminal techniques and approaches. The team found that real-time detection and response was the most effective prevention strategy, and could include monitoring facilities with cameras, motion detectors or other emerging technologies.

Overall barriers to better prevention include a lack of understanding of the true impact and societal cost of wire theft and vandalism, non-uniform or insufficient legislation across the nation and regional jurisdictions, overburdened law enforcement agencies, and insufficient engagement and partnership among private and public stakeholders.

Image courtesy of Utah DOT

Preventing infrastructure theft is critical for transportation operations

PUTTING IT TO WORK

The scan team made five recommendations to help state DOTs protect their infrastructure:

- Build regional multidisciplinary taskforces to engage transportation agencies of all levels of government with the electrical and telecommunications private industry.
- Establish an information exchange between public and private sectors to enhance strategic countermeasures and legislative actions.
- Enact consistent statutes to address crimes of wire theft and vandalism.
- Determine all direct and indirect costs associated with wire theft and vandalism on infrastructure to raise public awareness and stakeholder commitment.
- Consider implementing the successful countermeasures identified during this scan.

SHARING THE RESULTS

Scan team members plan to present their findings in 2026 to numerous stakeholder groups, including the American Association of State Highway and Transportation Officials, public utility commissions, the American Association of State Troopers, the Institute of Transportation Engineers, the Amrican Planning Association, and energy-related industry groups.

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