



U.S. Department of Transportation  
Federal Transit Administration



# Report to Congress on Innovative Safety and Security Technology Solutions for Alternative Transportation Facilities

## Background

Section 3025 of the Fixing America's Surface Transportation (FAST) Act, Pub. L. 114-94, requires that the Federal Transit Administration (FTA) research safety incidents at transportation facilities that encourage the use of alternative transportation (i.e., modes other than private motor vehicle). These facilities include 1) local, state, and regional rail and bus stations/stops/terminals; 2) parking lots associated with public transportation, lots at colleges/universities, and carpool lots; 3) rest stops; 4) bike paths and walking trails; and 5) sidewalks, streets, and bike lanes used for alternative transportation.

## Objectives

The purpose of the research was to collect information on the frequency and impact of safety and security incidents at selected facilities and identify priority incidents at each facility. Additional research focused on identifying innovative technologies that could address these issues.

## Findings and Conclusions

*Effective security measures and innovative technologies can reduce the number of criminal acts at facilities and make system users feel safer, and facility-based technologies can reduce vehicle collisions with pedestrians and bicyclists at intersections.*

A customized "all hazards" approach was used to determine hazards that could impact facilities. The types of hazards covered in this report include the following:

- Man-Made Hazards – Security: mass-casualty crime, violent crime (personal), non-violent crime (personal), property crime (including trespassing and nuisance issues); Safety: vehicular crashes, non-vehicular crashes, catastrophic crashes
- Natural Hazards – Safety: advance notice weather or geologic hazards, no advance notice weather or geologic hazards.

A comprehensive approach was used to identify high-priority safety and security incidents within the identified categories, including a traditional literature search; use of web search engines to identify sources of data and trends related to incident frequency and impact; anecdotes from articles, news stories, and reports; and interviews with FTA and Transportation Security Administration staff. Innovative technology solutions were researched using similar methods.

Security and safety priorities were identified, and effective security measures such as advanced surveillance systems, advanced access control systems, and advanced weapon-screening systems are discussed. Innovative technologies identified include advanced lighting systems and improved communications and emergency response solutions and safety measures including pedestrian signals with advance displays, pedestrian signal priority technology, technologies for alerting vehicles to pedestrians/bicyclists at crossings, facility-to-vehicle technologies, and connected vehicle technologies.

Safety recommendations were developed that focus primarily on solutions that can help prevent collisions between transit vehicles and pedestrians or bicyclists. Security recommendations present ideas on how smaller systems, larger systems, and open or remote facilities can approach security technologies if budgets and grant funding allow expansion of current systems.

## Benefits

Effective security measures reduce the number of criminal acts at facilities and make system users feel safer, and innovative technologies often impact both safety and security. Facility-based technologies can reduce vehicle collisions with pedestrians and bicyclists at intersections. FTA continues to working towards meeting USDOT's goal of reducing transportation-related deaths and injuries by advancing research.

## Project Information

### FTA Report No. 0108

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