

Tunnel Activity Monitoring: Stopping Storm Drain Trafficking

Problem

Public infrastructure storm drains and sewers are being used as conduits to enter the U.S. Existing drainage tunnels provide good cover for illegal immigration and smuggling.



Background

Mazes of tunnels/storm drains exist in southern border cities and numerous urban exits provide ready access to areas with short melt-in times. The tunnel smuggling and illegal entry activities are an emerging threat that has increased on the southern border as fences were constructed. Law Enforcement agents are handicapped in the tunnels due to confined spaces and lack of communications. The tunnel networks are a challenging problem because of how extensive they are, the presence of water and urban noise, and the multiple types of drain infrastructure that can interfere with communications. Technologies are being adapted for a networked system of sensors for detection and tracking of people in the tunnels. The technology focus of the Department of Homeland Security Science and Technology Directorate (S&T) work is miniaturized, long-life sensors robust relayed communications, and command center displays that pinpoint detections on a city map. Detection of human activity in public infrastructure drainage tunnels will use different technologies than those used for detection of clandestine tunnels and tunnel digging activity.



Pictured from left to right: Storm drain smuggling activity and an illegal entry point



Goal and Status

The S&T Tunnel Activity Monitoring program goal is to design, fabricate, developmentally test, install, and operationally evaluate a system that will provide persistent surveillance and monitoring of drainage tunnel activity and cue law enforcement in real time as to the location and movement of the threat.

S&T has completed several risk reduction efforts that include multiple (and ongoing) trips to southern border cities for site visits and discussions with U.S. Custom and Border Protection (CBP) agents and city engineers; testing and evaluation of various sensors and communications capabilities to measure their performance and reliability, and the development of an East Coast Engineering testbed, which has been used to evaluate system components.

A southern border pilot installation was completed in May 2014 and is now in a one year operational assessment period, which will include upgrades based on CBP feedback.

