Homeland Security Grant Return on Investment

Case Study Addendum

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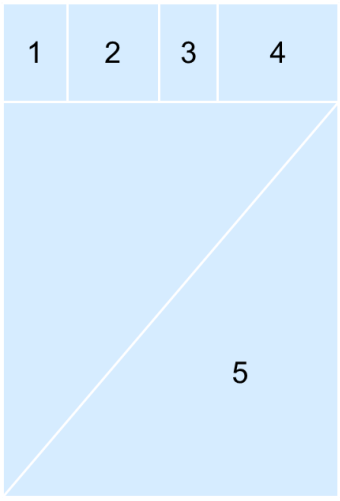

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RETURN ON INVESTMENT CASE STUDIES

In the aftermath of the September 11, 2001, attacks, federal grant programs such as the State Homeland Security Program (SHSP) and the Urban Area Security Initiative (UASI) arose to ensure that jurisdictions received the resources necessary to help defend our country against terrorist threats.

The National Homeland Security Consortium (NHSC), with the assistance of staff of the National Emergency Management Association, developed three case studies to: (1) provide a deeper look into how SHSP and UASI funds have helped build essential capabilities in state and local jurisdictions; (2) illustrate benefits generated from these federal investments; and (3) highlight concerns with sustaining these capabilities moving forward. Developed through interviews, site visits, and reviews of cost data, these case studies—covering specialized teams and capabilities from Illinois, Michigan, and North Carolina—complement the survey results provided in NHSC's August 2018 report, *Homeland Security Grant Return on Investment*, and help tell the story of national preparedness in the United States.

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ILLINOIS

Illinois Law Enforcement Alarm System (ILEAS): Weapons of Mass Destruction (WMD) Special Response Teams (SRTs)

Establishing ILEAS and WMD Response Capability

In the aftermath of the September 11, 2001, attacks, the availability of homeland security grants finally enabled Illinois to execute the vision and plan that it created through its Illinois Terrorism Task Force (ITTF) following the 1995 Oklahoma City bombing. Part of that vision was the creation of ILEAS. Formed in 2002, ILEAS was born from a desire to create a law enforcement version of Illinois's longstanding Mutual Aid Box Alarm System, which facilitates local mutual aid for fire departments and emergency medical services. These two mutual aid organizations, along with the Illinois Emergency Services Management Association, are cornerstones of the state's strategy to coordinate homeland security grant funds to local jurisdictions and ensure shareable capabilities statewide.

The WMD SRTs, which combine Special Weapons and Tactics (SWAT) capabilities with those needed to operate in environments requiring hazardous material protective gear and detection equipment, are one of several types of regional teams that ILEAS established and manages to provide advanced capabilities statewide. Prior to State Homeland Security Program (SHSP) and Urban Area Security Initiative (UASI) grants, no WMD response capability existed in Illinois, home to America's third largest city. Using federal homeland security grants, Illinois initially set-up its Statewide WMD Team in 2001 under the Illinois State Police (ISP); in subsequent years, it established SRTs under ILEAS.

The SRTs exemplify the deep-bench strategy that Illinois espouses; ILEAS successfully pulls from a wide base of local jurisdictions to create regional capabilities. The six SRTs draw 252 officers from 160 agencies. Limiting personnel requirements to one or two people per local agency during a deployment is critical to reducing the strain on individual jurisdictions and removes a key barrier to local participation. Moreover, this approach strengthened connections among local law enforcement agencies.[1] The SRTs provide a first responder capability to WMD incidents and can manage the scene until the Statewide WMD Team arrives. As each SRT receives the same training and equipment and is organized in the same fashion, personnel can operate interchangeably and readily scale capabilities.

[1] Of the more than 1,000 law enforcement agencies in Illinois, nearly 90 percent are members of ILEAS.

ISP State WMD Team: Going Beyond Response

Similar to SRTs, the State WMD Team can respond to a Chemical Biological Radiological Nuclear and Explosive (CBRNE) event. In recent years, the team's mission has grown to include prevention and detection capabilities for terrorist threats. Starting in 2013, the State WMD Team mobilized smaller, five-person Joint Hazard Assessment Teams (JHATs) to covertly detect, sample, monitor, interview and intervene in possible WMD threats. On July 4, 2018, under elevated threat conditions, the Chicago Police Department was working at Navy Pier when a woman happened to take photographs of three sniper positions. The JHAT sent team members—one equipped with backpack detection equipment and another with a vapor-wake dog—to casually walk up beside her. Because neither detected anything, the JHAT was able to de-escalate the level of concern rapidly (the entire situation was resolved in minutes), while avoiding a direct confrontation that could have led to the woman setting off a potential device. All of the capabilities and training that the JHAT deployed during this event were supported through homeland security grants.

SRT Use

Over a recent two-year period (from October 2016 to October 2018), SRTs engaged in 117 responses. None of these responses was a WMD incident, but in 80 percent of cases the response involved armed-subject or high-risk situations in which a significant life safety risk was present. Under these circumstances, the ability for SRTs to provide armored support, including armored vehicles, against gunfire proved invaluable. In many areas of the state, WMD SRTs also provide regional SWAT services. Moreover, SRTs offer a unique hybrid capability to conduct tactical operations in hazardous material environments. For example, in 2018, the federal Drug Enforcement Administration requested SRT assistance from ILEAS to address a large-scale fentanyl operation involving multiple sites. The SRTs had the combination of appropriate training, personal protective equipment, and resources to hit two locations simultaneously, resulting in the safe seizure of large quantities of hazardous and unlawful controlled substances.

ILEAS and Local Contributions

By consolidating contracting and procurement for regional teams such as the SRTs, ILEAS saves money through economies of scale and greater spending agility, thereby improving the return on investment on federal grants while reinforcing standardization. Meanwhile, the federal grants prompt local investments in terrorism preparedness. For example, local jurisdictions are responsible for the insurance and maintenance of capital equipment and absorb approximately 60 percent of costs associated with personnel training time.

Consequences of SHSP Funding Cuts

Illinois was unprepared for the sharp drop in SHSP funding from fiscal year 2010 to fiscal year 2012; over this period, SHSP funding dropped 63.5 percent (from approximately $32.6 million to $11.9 million). As a result of this decline, ILEAS reduced the number of SRTs from nine to six.

Similar cuts of homeland security grant program funds would likely eliminate the SRT program all together and lead to cascading effects statewide. A number of local police departments rely on SRTs for SWAT response capability. Elimination of SRTs would increase pressure on ISP and, in turn, on federal resources. Similarly, the SRTs provide a buffer capacity to address predictable surges in service requests

following tragic events; organizations and jurisdictions would otherwise direct these requests at state and federal agencies.

Since fiscal year 2012, ILEAS directed almost all federal funds toward sustaining existing capabilities. Over time, this may increase risk to SRT members. Ideally, federal grants—or other funding streams—would provide enough resource flexibility for SRTs and other ILEAS specialized teams to adapt to evolving adversary tactics (e.g., active shooters). For example, in June 2019, ILEAS supported a first-of-its-kind exercise between an SRT and a Mobile Field Force to increase awareness of each other's capabilities and to devise joint tactics. The idea for the exercise came from the July 2016 shooting of Dallas police officers performing crowd control. In addition, ILEAS assisted in researching and verifying new techniques, as well as customizing gear. Gear customization is especially critical for SRTs, given the need to streamline traditionally bulky, unwieldy hazardous materials response gear for tactical operations. Conversely, additional federal support would allow ILEAS to support innovations that would improve response operations and decrease law enforcement risk.

Unmet Homeland Security Needs in Illinois

One positive outcome from the significant SHSP grant reductions in fiscal years 2011 and 2012 was the subsequent maturation of processes for allocating grant funds. The reductions forced the ITTF to think about costs in a more deliberate and structured fashion, resulting in the creation of the 2018 report, *Unmet Homeland Security Needs in Illinois*. Updated yearly, this report captures and prioritizes funding needs. Meanwhile, the ITTF consolidated budget request processes across emergency management stakeholders, who jointly decide which needs to fulfill each year. Despite Illinois's overall economic struggles, the ITTF successfully obtained $2.5 million in the fiscal year 2019 state budget to address the top unmet needs, reflecting the maturity of these process improvements.

The Rocky Path Ahead

As recognized in the ITTF's *Unmet Homeland Security Needs in Illinois* report, "Without an infusion of some level of financial resources from a source other than federal grants, degradation of core state and local public safety capabilities will begin to occur in the near future." Similarly, without funds, ILEAS's participatory model may suffer.

Capital expenses are a particularly significant and growing concern. The SRTs' challenges indicate a broader issue that Illinois and other states face in terms of replacing capital equipment, much of which the SRTs acquired between 2002 and 2004. Some of these high-cost equipment items are nearing the ends of their usable life spans. A significant portion of existing capability is built around these items; many SRT tactics depend on the ballistic protection that BearCat armored vehicles provide. To date, Illinois has few options available to properly address this concern.

MICHIGAN

Michigan State Police (MSP) Bomb Squad Bomb Robots

A Before and After Picture of Capability

Prior to the attacks of September 11, 2001, the MSP Bomb Squad's outdated bomb suits, photographic-plate X-ray systems, and 1980s-era robot were the modus operandi. When established in 1970, the squad was part of the Forensic Sciences Division, and bomb response was more of an ancillary responsibility.

The influx of post-September 11 homeland security grant funds enhanced the abilities of the bomb squad with necessary training and equipment. In 2003, the bomb squad received its largest grant ever. The nearly $2 million in federal grants was a transformative investment; it meant going from wearing a bomb suit on every call to having advanced robot capability for all of the bomb squad's teams, thereby keeping personnel at a safe distance. Today, the MSP Bomb Squad consists of 15 full-time members distributed among seven teams (one in each of Michigan's seven law enforcement districts), resulting in one-hour response times statewide with members certified to bomb technician levels of training.

> *The 2003 grant is probably the most significant award we received to address our shortfalls. Of the seven locations, only three had robotic capability at the time, by which I mean a wheeled robot with a claw that couldn't even go over a curb or a 700-pound monster that was very difficult to operate and had a very limited range for remote control. We went from wearing the bomb suit on every call, to getting these amazing robots in.*
>
> — Lieutenant Joshua Collins, MSP Bomb Squad Coordinator

The Value of Robot Capability

A key part of each team's enhanced capability is its robots, which not only are versatile, but also increase human safety and strengthen investigative efforts. On average, the bomb squad receives 500 calls a year for service. Of these, roughly 125 are explosive related and 60 to 65 involve critical use of robots—i.e., a life safety issue involving military ordnance or a bomb. The teams' advanced robotic tools allow members to perform inspection, manipulation, and render-safe with less exposure of members to danger and without loss of valuable evidence. For example, before acquiring robotic cutting tools in 2008, teams dealt with multiple pipe-bomb incidents in which they destroyed the pipe bomb to render it safe; with these tools, teams can remotely cut open the pipe bombs and remove the explosive filler, allowing for a safe forensic examination.

ROUGHLY
1 IN 8 CALLS
INVOLVES CRITICAL USE OF ROBOTS

While investigating and dismantling explosive devices are their primary responsibility, robots provide other services, such as performing surveillance and investigating suspicious packages. Two recent examples follow:

- In July 2019, bomb squad robots provided tactical support to law enforcement officers involved in a standoff with an armed man barricaded in a St. Claire Shores residence. Until the man fired upon the robot, officers remained unaware that the gunman took an offensive position in the basement to ambush police.
- In May 2016, the bomb squad utilized a robot to manually turn off a key piece of power plant equipment that had stopped responding to remote commands. Because it involved pushing a circuit breaker that could potentially explode, this procedure precluded direct human attempts. The only alternative was to shut-down the entire power plant, requiring several days to restart and affecting consumers' access to power.

Both examples underscore the value of substituting a robot for a human in potentially life-threatening situations.

> *…it's better to have a robot in danger than a human.*
>
> —Captain Emmitt McGowan, Commander of the MSP Emergency Management and Homeland Security Division

Sustaining Current Capabilities

Each of the seven teams that constitute the MSP Bomb Squad currently possesses from two to four robots, ensuring that each team has year-round access to robot capability. The different robots also enable bomb teams to apply the most appropriate robot for each mission—smaller platform robots work more effectively in confined spaces (e.g., trains, buses), whereas larger robots are superior for vehicle-borne improvised explosive devices. Homeland security grants have been essential to establishing and maintaining robot capability because even a small-platform bomb robot can cost more than $100,000. On average, the bomb squad spent nearly $317,000 in homeland security grant funds each year (in 2019 dollars, using available data from fiscal years 2004 to 2016) on robots and robot accessories.

Grant Program Influence on an Industry

The effect of federal homeland security grants stretches beyond enabling bomb squads nationwide the ability to purchase robots and robot accessories. One of the biggest challenges with earlier robots was their design for military applications, requiring less small-scale maneuverability and limiting states' buying power. SHSP and UASI grant funds encouraged the industry to adapt to states' evolving demands. According to Lt. Collins,

> *Until the grant funding came along, the manufacturers weren't courting the state and local law enforcement agencies, and they weren't inclined to listen to our needs. After the grants, we had more buying power, and they started listening to what we needed and we were able to get equipment much faster. We had a voice. It was really a shift in the industry.*

For example, manufacturers started producing smaller, cheaper robots with improved mobility for use in buses and other transportation systems. With the decline in homeland security grant funds over time, however, this market influence is potentially in jeopardy.

Decreases in available homeland security grant funds threaten the bomb squad's ability to sustain existing capabilities. Maintaining a seven-year plan of cycling new robot purchases through the seven districts requires $250,000 per year.[2] Since the fiscal year 2011 and 2012 cuts to homeland security grant program funds, average annual federal grant amounts for robot-related equipment purchases have shrunk to just $92,000. As a result, the bomb squad has primarily spent these funds on upgrade kits and accessories, while only purchasing one new bomb platform in the last 10 years.

Sustainment of advanced regional capability to address improvised explosive devices (IEDs) is critical. Terrorists are as likely to build IEDs in Michigan's northern peninsula as in Detroit. In such cases, timely, effective responses require a more localized bomb team, rather than waiting for a bomb team to trek from Chicago or Detroit. Due to current funding challenges, the MSP Bomb Squad continues to operate largely with the original robot platforms that it purchased in 2003 and 2004. Despite a robust robot maintenance program, parts availability for these aging platforms is an issue; the bomb squad now must fabricate custom replacement parts at enormous markups with some parts no longer readily available on the market. Updates are no longer possible for half of the bomb squad's 18 robots; replacement with newer robot platforms is necessary. Competing funding needs include replacing the bomb squad's aging X-ray equipment and expiring bomb suits, among other requirements. Capital expenses will inevitably overwhelm current levels of funding, increasing teams' exposure to life threatening risks.

Robots reduce these risks to human life and represent a core component of bomb team capabilities. Without a resurgence in federal homeland security grants or other sources of funding, the MSP Bomb Squad will soon face a sharp decline in its existing bomb robot fleet, jeopardizing the advanced regional capability already built.

[2] In comparison, the bomb squad's annual operating budget—which must cover far more than just robot equipment—is currently $200,000.

NORTH CAROLINA

NC Search and Rescue (NCSAR) Program

The NCSAR program provides resources statewide for search and rescue missions in the five major environments found in the state: urban, swift-water, helicopter, wilderness, and mountain.

Regionalizing Search and Rescue Capabilities Statewide

Hurricane Floyd in 1999 served as the galvanizing event for North Carolina to establish regional capability for search and rescue. Funds from SHSP grants—first received in 2003—played a key role in helping build the NCSAR program. Channeling nationwide best practices, North Carolina's program sought to establish regional task forces where local agencies had the capacity to supply sufficient personnel (larger regional task forces, designed to operate round-the-clock, require 80 members to deploy with 200 to 250 members on an active roster). The state then used SHSP grant funds to augment task force capabilities, first focusing on building logistical capabilities (e.g., communications, shelters, prime movers) to allow task forces to deploy anywhere and be self-sufficient. Subsequently, the program strengthened specialized training in mission areas such as structural collapse operations.

SHSP grant funds also served as a catalyst for local buy-in. According to Brian Barnes, North Carolina's Emergency Services Branch Manager, if local agencies "see some skin in the game [from the state], they will frequently make up the rest." During Hurricane Floyd, search and rescue capabilities statewide varied considerably, making it difficult to know where to deploy which teams. Recognizing this as an inefficiency, North Carolina used SHSP grant funds to incentivize teams to standardize their equipment and training, as well as to shape capability development to meet its needs. Teams now work together seamlessly, allowing them to readily scale capability for disasters.

Benefits of State and Local Capability

Within North Carolina, the task forces provide statewide access to crucial search and rescue capabilities during and after disasters. During Hurricane Matthew in 2016, NCSAR personnel rescued 2,246 individuals by boat and 79 individuals by air. More recently, in April 2019, Task Force 8[3] responded to a gas-line explosion in downtown Durham that resulted in two fatalities, 25 injured, and 10 damaged buildings. In addition to searching buildings and assisting with victim removal, this task force provided engineering capabilities through private-sector structural engineers. These engineers—who joined the task force and received search and rescue response training that SHSP grants supported—advised firefighters about where they could work safely.

[3] Although the NCSAR program currently has only seven teams, task forces retained their number designations from when the program had 11 teams.

Other states also benefited from North Carolina's regional task forces; four of the seven teams have deployed under the Emergency Management Assistance Compact (EMAC). Through this process, for example, more than 100 personnel deployed to Texas for nine days to support search and rescue operations following Hurricane Harvey in 2018.

Decreasing Federal Support Has Led to Hard Decisions

Since 2003, North Carolina experienced a nearly tenfold decrease in federal homeland security grant funds for its NCSAR program. Due to severe funding limitations, critical urban search and rescue capabilities remain undeveloped. Task forces in the program, for example, lack structural collapse canines to search for live human scents, which could potentially increase NCSAR's ability to locate trapped individuals in time to save lives.

Drastic cuts in overall SHSP funds in fiscal years 2011 and 2012 also forced North Carolina to reduce the number of regional teams from 11 to seven. The state continues to confront challenges as it balances its needs for specialized training and equipment maintenance. "What do you sacrifice, because you can't maintain both?" asks Barnes.

Ensuring Effective Spending

As federal grants decreased, North Carolina worked to maximize the return from these dollars. A process to consolidate grant funding under NCSAR's control generated efficiencies through bulk purchasing and ensures that the program only invests in new capabilities after proving their value. For example, the NCSAR program piloted night vision goggles due to an increase in high-risk nighttime missions. During Hurricane Matthew, members located a woman in Lumberton trapped chest-deep in floodwaters using these night vision goggles. Had they not found her that night, she likely would have drowned. After that incident, North Carolina used SHSP grant funds to expand night vision capabilities to all seven regional task forces and several other agencies have since spent local funds to acquire the same capability.

Hurricane Florence

During Hurricane Florence in 2018, areas of North Carolina experienced 1,000-year rainfall events (i.e., a rainfall event with a 1/1,000 chance of occurring each year). The capabilities that NCSAR developed, supported by SHSP funds, empowered North Carolina to maintain ownership of search and rescue response activities. "We didn't have anything that didn't turn a wheel," said Barnes—task forces used every piece of major equipment they owned, underscoring the practicality of the program's investments. Preparedness investments enabled North Carolina to use Federal Emergency Management Agency and U.S. Coast Guard resources to augment its own capability, rather than rely on the federal government for the entire response. This in-state capability saved the federal government millions of dollars while accelerating rescue efforts. In total, coordinated search and rescue efforts resulted in the rescue and evacuation of more than 5,200 people.

Corresponding Investments from State and Local Jurisdictions

Recognizing the need for a more permanent solution to maintain regional capability in the state, North Carolina set out to determine the annual cost for sustaining the NCSAR program. A 2015 cost study—which addressed training, exercises, administration, equipment maintenance, and state programmatic expenses[4]—arrived at an estimate of more than $4.6 million per year; state and local sponsoring agencies

[4] This does not take into account the time-value of personnel contributions, which can be sizeable (as discussed in the August 2018 NHSC report, *Homeland Security Grant Return on Investment*).

agreed to share the costs fifty-fifty. In recent years, SHSP funds have supplied between $300,000 and $1 million of the state's share of responsibility.

On the Horizon

With less federal funding and more local investment, the NCSAR program is at risk of losing its leverage to ensure statewide standardization. Moreover, program leaders will continually face difficult decisions about whether to address training or equipment maintenance needs. So far, even though decision-makers favor support of training needs, some personnel wait from three to four years before they can attend specialized, position-based training due to insufficient funds. Also looming are a number of large-scale capital expenses, originally purchased with federal support when grant funding was substantially higher. Light towers, generators, shelters, and communications equipment are nearly a decade old and reaching end of life, in addition to prime movers and trucks that task forces purchased in the initial years of SHSP funding. The NCSAR program remains in an ongoing effort for the past five years to secure recurring funding from the state, asking for $2 million in the first year and $1 million every year after. Even if this funding bill passes, without greater access to SHSP funds, the program will likely confront more difficult decisions regarding what additional capabilities to cut in the future.

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