

Department of Homeland Security

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HIGHLIGHTS

- The FY 2014 Department of Homeland Security (DHS) Science and Technology Directorate (S&T) request totals \$1.5 billion, an increase of 127 percent over the FY 2012 actual amount. It represents 3 percent of the total DHS budget.
- The laboratory facilities programs, projects, and activities (PPA) account receives the largest increase, rising from \$182 million to \$858 million. This is a 373 percent increase, more than quadruple the FY2012 amount. The majority of that increase in funding is for the National Bio- and Agro-Defense Facility (NBAF), which receives its full funding of \$714 million.
- The other increase in the S&T budget is provided in the RD&I account, which is increased by 76 percent over the FY2012, or a \$201 million increase.
- The remaining budget accounts would be cut, with the largest being from Acquisition and Operation support – a nearly 23 percent cut from its FY2012 amount. University programs drops by 15.2 percent.
- Notably, the FY14 request proposes to transfer the S&T Scholars and Fellows program to the National Science Foundation, resulting in a \$3 million savings for the directorate.
- A House Appropriations subcommittee bill, released May 15, 2013 includes \$1.2 billion for Science and Technology, \$302 million below the President’s request at the time of this writing. It also includes \$404 million in incremental construction funding for the National Bio- and Agro-Defense Facility (NBAF).

Table 1. S&T Directorate Research, Development, Acquisition and Operations Budget
(budget authority in millions of dollars)

	FY 2012	FY 2013	FY 2014	<u>Change FY 12-14</u>	
	Actual	Estimate*	Budget	Amount	Percent
Acquisitions and Ops Support	54	46	42	-12	-23.0%
University Programs	37	38	31	-6	-15.2%
Laboratory Facilities	182	157	858	676	372.6%
Research Development and Innovation	266	428	467	201	75.7%
<i>Border Security R&D</i>	16	--	32	16	100.7%
<i>Chem, Bio and Explosive Defense</i>	117	--	178	61	52.2%
<i>Cyber Security</i>	46	--	71	24	52.0%
<i>Disaster Resilience</i>	61	--	131	70	114.7%
<i>APEX</i>	14	--	15	1	7.2%

Source: DHS S&T FY 2013 estimates by program/project activity (PPA).

Figures rounded to the nearest million. Changes calculated from unrounded figures.

* - AAAS estimates of FY 2013 accounting for appropriations and sequestration.

HISTORICAL TRENDS, IMPACTS AND CONTEXT

The S&T Directorate enjoyed budget increases between FY 2007 and FY 2010. However, the FY2012 budget saw its lowest appropriated levels since Congress began appropriating funding for DHS.¹ Given the FY 2013 continuing resolution and looming sequestration cuts, the directorate has been playing catch-up ever since. While Congress acknowledges and supports the role of R&D in the DHS arena, the directorate has, in the Congressional view, fallen short of expectations. This has been reflected in the decline in appropriations.

The Administration request for S&T reflects a strong boost in Laboratory Facilities and Research, Development, and Innovation (RD&I). However, it is not clear that Congress is inclined to provide those increases given that its concerns have not yet been satisfied.

Two other issues may impact Congressional action on the DHS budget for FY2014: possible impacts of the sequester cuts on the DHS ability to do its work and increased concern over terrorist acts following the April Boston marathon attack.

1 “*The DHS S&T Directorate: Selected Issues for Congress*”, Dana A. Shea, May 3, 2013, Congressional Research Service, R43064, p.4

In an April 12th hearing of the House Committee on Homeland Security Subcommittee on Oversight and Management Efficiency, Chairman Jeff Duncan (R-SC) sought to assess whether or not the recent sequester cuts to the DHS budget were at risk of impacting homeland security. While he was dubious that the cuts would negatively impact the department's budget, Ranking Member Ron Barber (D-AZ) asserted that the cuts were irresponsible and jeopardized the ability of the DHS to implement its missions.

In a separate Senate hearing on the proposed FY14 budget request, Committee on Homeland Security and Governmental Affairs Chairman Tom Carper (D-DE) commended DHS Secretary Janet Napolitano on making difficult choices in light of current budget constraints. But, he expressed concern about fully funding construction of the NBAF facility while cutting such areas as frontline personnel at Immigration and Customs Enforcement (ICE). NBAF, he said, should be funded as a multiyear project so that the department did not have to cut back on research activities and other Department priorities. Other members of Congress have also expressed concern about NBAF costs squeezing out other priorities within the S&T budget. The conference report accompanying the final appropriations legislation, the Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6), addresses this concern directly by stating: "If additional funds are to be considered for NBAF in fiscal year 2014, or any fiscal year thereafter, such funds must be in addition to the Department's enacted budget, thereby not displacing resources for Departmental programs."

ADDRESSING ONGOING ISSUES

Despite a number of restructurings and strong congressional oversight – there are at least 82 committees and subcommittees with some jurisdiction over DHS generally – the S&T Directorate still has its work cut out for it in order to bolster Congressional confidence in its activities. Congress continues to question the directorate's ability to set priorities for its R&D programs, including strategic planning and targeting high-priority investments; the scope of the directorate's R&D activities, including balancing incremental efforts with efforts that offer high risk, but high reward, efforts to consolidate or disperse R&D activity in or away from the S&T Directorate; and the directorate's role in the DHS acquisition process, both in identifying operational requirements and assessing

operational effectiveness.

Congressional concern over the department's ability to deploy technologies in the near term also continues unabated. This concern dates back to the original establishment of DHS, and the department has not yet been able to quell the concern over the rate of technology transfer, the direction of R&D efforts, and the ability of the S&T Directorate to align its resources and mission. In a time of increasing fiscal constraint, some members have questioned prioritizing S&T Directorate R&D activities rather than other departmental needs.

Three additional areas of Congressional concern persist:

- The Directorate's ability to balance between long-term R&D investments and near-term operation needs;
- The need to maintain a federal research infrastructure and investments in R&D activities performed by industry or academic stakeholders; and
- The balance between performing R&D activities for DHS components and providing other types of S&T assistance, i.e. consulting on concepts of operation and developing future technology concepts.

S&T RESPONDS

In an effort to address the concerns expressed by Congress, in its FY2014 budget justification, DHS lays out a framework for prioritizing R&D projects. It consists of three strategic focus areas: pursuing technology options and process enhancements that are focused on DHS component operational priorities; seeking innovative, systems-based solutions to operationally complex problems; and fostering robust partnerships across international, federal, state, local and tribal governments, universities, and the private sector, in order to leverage expertise and solutions and share resources.

To ensure projects are meeting the priorities of its "customers" within the operational organizations, S&T uses a number of metrics to provide an annual review of basic and applied R&D and all proposed "new start" projects. Some of those metrics include transition likelihood, customer readiness, customer buy-in, timeline, foraging, and project clarity.

IN-DEPTH REVIEW

The FY 2014 S&T budget includes \$467 million for Research, Development and Innovation (RD&I). It is focused on five specific areas:

Preventing terrorism and enhancing security

In this area, S&T concentrates on the development of tools to detect intentional and “natural biologic events” such as significant disease outbreaks. Its focus is on rapid point-of-care diagnostic technologies, cost-effective indoor sensors, bioforensics, and chemical, biological, radiological, and nuclear risk assessments. Under this activity, S&T jointly developed a molecular foot-and-mouth disease (FMD) vaccine with the U.S. Department of Agriculture, the first successful FMD vaccine technology developed in more than 50 years that can be manufactured domestically. S&T will also work with the TSA to develop a next-generation explosives trace detection system that is more sensitive than existing systems.

Securing and managing our borders

S&T continues to work on technologies to improve surveillance and tracking in U.S. ports and along maritime and land borders. This includes investment in tunnel detection and activity monitoring technology, cargo supply chain security and border surveillance tools.

Safeguarding and securing cyberspace

Research in this area includes identity and data privacy technologies, end system security, law enforcement forensic capabilities, software assurance, and cybersecurity and education. Work will support the public and private sector and global Internet infrastructure.

Ensuring resilience to disasters

S&T continues to provide technical assistance to the First Responder community by identifying technologies, formulating standards, and developing knowledge products that enhance productivity, efficiency and safety of first responders. Priority investments include interoperable communications, data-sharing systems, and field-ready equipment.

Promoting academic excellence

S&T continues to support its Centers of Excellence network, which includes an extended consortium of colleges and universities that work with DHS to develop research solutions for DHS customers.

GAO EXAMINES R&D OVERSIGHT AND COORDINATION

In a September 2012 report, the Government Accountability Office (GAO) concluded that “The Department of Homeland Security (DHS) does not know the total amount its components invest in research and development (R&D) and does not have policies and guidance for defining R&D and overseeing R&D resources across the department.” Moreover, the report noted that “S&T has taken some steps to coordinate R&D efforts across DHS, but the department’s R&D efforts are fragmented and overlapping, which increases the risk of unnecessary duplication. R&D at DHS is inherently fragmented because S&T, the Coast Guard, and DNDO were each given R&D responsibilities in law, and other DHS components may pursue and conduct their own R&D efforts as long as those activities are coordinated through S&T.”²

The report continued, “Fragmentation among R&D efforts at DHS may be advantageous if the department determines that it could gain better or faster results by having multiple components engage in R&D activities toward a similar goal; however, it can be disadvantageous if those activities are uncoordinated or unintentionally overlapping or duplicative.”³

The report also found that DHS did not have tracking mechanisms or policies to help ensure that this overlap be avoided and better coordinated. S&T responded by saying that a process does not exist at DHS or within S&T to prevent overlap or unnecessary duplication but that relationships with components mitigate that risk.

Finally, GAO found that multiple entities across DHS conduct various types of R&D in pursuit of their respective missions, but DHS does

2 Government Accountability Office, *Department of Homeland Security: Oversight and Coordination of Research and Development Should be Strengthened*, GAO-12-837, September 2012, Introduction

3 *Ibid*, p. 22

not have a department-wide policy defining R&D or guidance directing components on how to report R&D activities and investments. As a result, DHS does not have the ability to maintain oversight of its total R&D investment across the department, which also limits its ability to oversee components' R&D efforts and align them with agency-wide R&D goals and priorities.

DHS concurred with GAO's recommendation that it "develop and implement policies and guidance for defining and overseeing R&D at the Department" and pledged to "evaluate the most effective path forward to guide uniform treatment of R&D across DHS in compliance with OMB rules." As such, DHS is considering a Management Directive, a "multicomponent steering committee," and/or new policy guidance.

CONCLUSION AND OUTLOOK

Continuing Resolutions

Despite the continued evolution and revision of how DHS conducts R&D activities, the greater influence on the outcome of the directorate's budget will be whether or not Congress acts on the Administration's FY2014 budget. If recent budgetary history is any indication, it is likely that Congress will not pass final appropriations bills, leaving open the option for another year-long continuing resolution. This means that the increases requested by the S&T Directorate are not likely to be enacted. However, it is possible that the department will receive modest increases, given the importance of its mission in protecting the United States. Backlash from the Boston marathon bombings could also result in a small uptick in the department's budget, including that of the S&T directorate.