# NAVAL POSTGRADUATE SCHOOL

## MONTEREY, CALIFORNIA

# THESIS

**CAPACITY BUILDING AND SUSTAINMENT: FOCUSING ON THE END-STATE FOR HOMELAND SECURITY**

by

James A. Burch

March 2007

| | |
|---|---|
| Thesis Advisor: | Robert Bach |
| Second Reader: | Christopher Bellavita |

**Approved for public release; distribution is unlimited**

THIS PAGE INTENTIONALLY LEFT BLANK

| REPORT DOCUMENTATION PAGE | | *Form Approved OMB No. 0704-0188* |
|---|---|---|
| Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503. | | |
| **1. AGENCY USE ONLY** *(Leave blank)* | **2. REPORT DATE** <br> March 2007 | **3. REPORT TYPE AND DATES COVERED** <br> Master's Thesis |
| **4. TITLE AND SUBTITLE** Capacity Building and Sustainment: Focusing on the End-State for Homeland Security | | **5. FUNDING NUMBERS** |
| **6. AUTHOR(S)** James A. Burch | | |
| **7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)** <br> Naval Postgraduate School <br> Monterey, CA 93943-5000 | | **8. PERFORMING ORGANIZATION REPORT NUMBER** |
| **9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES)** <br> NORAD NORTHCOM <br> 570 Suffolk Street, Colorado Springs, CO | | **10. SPONSORING/MONITORING AGENCY REPORT NUMBER** |
| **11. SUPPLEMENTARY NOTES** The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government. | | |
| **12a. DISTRIBUTION / AVAILABILITY STATEMENT** <br> Approved for public release; distribution is unlimited | **12b. DISTRIBUTION CODE** <br> A | |

**13. ABSTRACT (maximum 200 words)**

Since 9/11, the U.S. has developed policies to counter the terrorist threat. Integral to those policies is preparedness. *Homeland Security Presidential Directive 8* states that preparedness will include, "capacity building prevention activities such as information gathering, detection, deterrence, and collaboration related to terrorist attacks." Despite the criticality of *capacity building* in relation to preparedness, the term is not defined.

There has been no discussion on what capacity building means. The term is often equated to federal assistance or used interchangeably with capabilities and capability based planning. Capacity building strategies, however, are distinct and link into wider economic, political, and societal issues. Despite capacity building's criticality to preparedness and sustainment, various or ambiguous interpretations will translate to differences in strategic priorities. This thesis will examine the existing strategies to determine the linkage between capacity building, preparedness, sustainment, capability, capability based planning, and the envisioned end-state. It will also address sustainment issues and homeland security costs based on differing capacity building interpretations. The end product is a capacity building definition that captures the costs and variables with building and sustaining capabilities. This thesis will also demonstrate how capacity building measures serve as the foundational premise for a sound homeland security strategic plan.

| **14. SUBJECT TERMS** Homeland Security – Capacity Building – Capabilities – Capability Based Planning – Strategy – Sustainment – End-State | **15. NUMBER OF PAGES** 143 |
|---|---|
| | **16. PRICE CODE** |

| **17. SECURITY CLASSIFICATION OF REPORT** <br> Unclassified | **18. SECURITY CLASSIFICATION OF THIS PAGE** <br> Unclassified | **19. SECURITY CLASSIFICATION OF ABSTRACT** <br> Unclassified | **20. LIMITATION OF ABSTRACT** <br> UL |
|---|---|---|---|

THIS PAGE INTENTIONALLY LEFT BLANK

CAPACITY BUILDING AND SUSTAINMENT: FOCUSING ON THE END-STATE FOR HOMELAND SECURITY

James A. Burch
Lieutenant Commander, United States Navy
B.S., United States Merchant Marine Academy, 1989

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
March 2007**

Author:          James A. Burch

Approved by:     Dr. Robert Bach
                 Thesis Advisor

                 Dr. Christopher Bellavita
                 Second Reader

                 Dr. Douglas Porch
                 Chairman, Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

# ABSTRACT

Since 9/11, the U.S. has developed policies to counter the terrorist threat. Integral to those policies is preparedness. *Homeland Security Presidential Directive 8* states that preparedness will include, "capacity building prevention activities such as information gathering, detection, deterrence, and collaboration related to terrorist attacks." Despite the criticality of *capacity building* in relation to preparedness, the term is not defined.

There has been no discussion on what capacity building means. The term is often equated to federal assistance or used interchangeably with capabilities and capability based planning. Capacity building strategies, however, are distinct and link into wider economic, political, and societal issues. Despite capacity building's criticality to preparedness and sustainment, various or ambiguous interpretations will translate to differences in strategic priorities. This thesis will examine the existing strategies to determine the linkage between capacity building, preparedness, sustainment, capability, capability based planning, and the envisioned end-state. It will also address sustainment issues and homeland security costs based on differing capacity building interpretations. The end product is a capacity building definition that captures the costs and variables with building and sustaining capabilities. This thesis will also demonstrate how capacity building measures serve as the foundational premise for a sound homeland security strategic plan.

THIS PAGE INTENTIONALLY LEFT BLANK

# TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

# LIST OF FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK

# ACKNOWLEDGMENTS

I would like to thank God for giving me the guidance and perseverance to apply for and complete this program. It has been a truly enriching experience. I would also like to thank my thesis advisors, Bob Bach and Chris Bellavita, for all their invaluable assistance in helping me craft and articulate the central premise of this thesis into a workable argument. My deepest appreciation also goes to Lauren Wollman for all her invaluable insight in providing guidance and structure to my non-structured and non-linear approach to tackling a large issue.

I am extremely appreciative of the Center for Homeland Defense and Security faculty and administrative staffs. They are a great group of professionals who truly support their students and ensure they are best postured for success. I must also recognize the great women and men of my class. I have learned a great deal from them during the course of this program. My successful participation in this program would also have not been possible without the mentorship of John Bruder, the great support of my supervisor, Rich Allison, and the rest of my collection management cohorts. Little do they know the influence that our homeland security discussions have had to this thesis. Lastly, this program would not have been possible without the loving support of my wife Maria and our children James, Joshua, Ella and Maria. I thank you all for your love, patience and, encouragement.

THIS PAGE INTENTIONALLY LEFT BLANK

# I.    INTRODUCTION

## A.    PROBLEM STATEMENT

Since 9/11, the U.S. government has embarked on the development of homeland security strategies and policies to counter the terrorist threat — a threat projected to exist over the long-term. Integral to preparing the nation in meeting this threat, *Homeland Security Presidential Directive (HSPD) - 8 (National Preparedness)* states that assistance will include measures that support "capacity building prevention activities such as information gathering, detection, deterrence, and collaboration related to terrorist attacks."[1] The underlying principle is the concept that capacity building is the key component for mobilizing and expanding systems in terms of their scope, sustaining homeland security efforts over time, and building resiliency into mechanisms that support detection, deterrence, and other homeland security missions. Federal assistance activities are also aimed at developing self-sustainment efforts at state and local jurisdictions. Implicit to an effective national preparedness program is the need for an effective capacity building strategy. These efforts define strategic homeland security actions, outline the measures necessary to achieve preparedness, and define a way ahead to achieve these goals.

Despite the criticality of capacity building efforts in relation to national preparedness, the term *capacity building* is not defined. It is not defined in any homeland security related strategy, document, or plan. Additionally, despite extensive governmental reorganization, realignment of state and local priorities, increased funding for homeland security initiatives, and extensive congressional testimony, there has been very little discussion on what *capacity building* means and what, if any, relationship exists between capacity building and the current focus on developing capabilities through capabilities based planning. As a result, despite its criticality to long-term preparedness and sustainment, capacity building's various or ambiguous interpretations will translate to differences in budget priorities and key tasks. This will lead to an increasingly disjointed and unfocused homeland security approach — particularly over the long-term.

---

[1] Office of the President, *Homeland Security Presidential Decision Directive, HSPD-8: National Preparedness* (Washington, DC: GPO, December 17, 2003), 3; https://www.hsdl.org/homesec/docs/whitehouse/nps05-121803-02.pdf (accessed on October 15, 2005).

This thesis will examine the existing national strategy and presidential directives to determine the linkage, if any, between capacity building measures, national preparedness and sustainment. It will also distinguish capacity building concepts from the focus on capabilities and capability-based planning. Additionally, this thesis will explore the sustainment issues and associated costs of homeland security over the long-term based on differing capacity building interpretations. The end product is a capacity building definition that better captures the costs and variables with building and sustaining capabilities. This thesis will also demonstrate how capacity building measures serves as the foundational premise for a sound homeland security strategic plan.

## B.     RESEARCH QUESTION

This thesis will examine how capacity building measures address the challenges of sustaining homeland security and defense initiatives over the long-term. It will also examine what capacity building means in relation to the overall *National Strategy for Homeland Security* and how the term should be defined. Lastly, this research project will look at the relationship between capabilities, capacity building, sustainment, and preparedness.

## C.     SPECIFIC RESEARCH OBJECTIVE

The objective of this research is threefold; to determine the importance of capacity building concepts as they relate to homeland security, to distinguish capacity building concepts versus capability based planning, and to examine the differing costs associated with different capacity building terms. The answers to this research will highlight the differences in costs associated with differing capacity building terms and how they relate to sustaining homeland security over the long-term. Lastly, this research will highlight the importance of embedding and factoring capacity building concepts at the onset of any strategic homeland security planning initiative.

## D.     SIGNIFICANCE OF RESEARCH

The primary focus of this thesis will address how the lack of a capacity building definition translates to fundamental differences in interpretations. The underlying premise

is that differences in interpretation translate into differences in budget allocations, funding, and priorities. Over the long-term, these differences will result in a disjointed approach and an increasingly unfocused overarching strategy — directly affecting the ability to sustain the homeland security effort. The inability to effectively sustain homeland security, coupled with the continued threat posed by terrorism, the need to provide varying levels of domestic preparedness capabilities, flat budgetary constraints, and competing national interests will result in significant opportunity costs.

The research objectives are to derive some capacity building definitions by examining various homeland security issues to demonstrate how strategic planners can derive widely different interpretations on capacity building. The research will also demonstrate how each interpretation can lead to widely different budget priorities and tasks — especially when looking at these interpretations at the strategic level and over a long-term. The end result is to derive a capacity building definition and offer recommendations to homeland security strategic planners that identify and develop capacity building concepts to improve plans for sustaining homeland security strategies and operations over the long-term. These capacity building concepts will demonstrate the sustainment gaps and necessary changes to current homeland security strategies. In the end, this thesis will highlight the need for identifying capacity building at the onset to ensure the necessary means are considered for sustaining homeland security and achieving a desired end-state.

## E.    REVIEW OF RELEVANT LITERATURE

There have been numerous national strategy documents and presidential directives that address Homeland security and defense issues. Each of these documents recognizes the clear threat of terrorism to the United States. They also highlight several strategic objectives, critical mission areas, foundational factors, and key supporting elements. Despite the many common themes that exist in these documents, there is very little language on the capacity it takes and the capacity building measures that are necessary to sustain homeland security over a protracted time period. For example, the *National Security Strategy for Homeland Security* identifies six critical mission areas integral to the successful implementation of the strategy. They are Intelligence and

Warning, Border and Transportation Security, Domestic Counterterrorism, Protecting Critical Infrastructure, Defending against Catastrophic Threats, and Emergency Preparedness and Response.[2] In contrast, there is very little discussion on building the necessary capacity to sustain these efforts.

A review of first tier documentation — national strategies and directives — is necessary to determine if a lack of definition exists between the strategy and capacity building. An examination of the *National Security Strategy*, *National Strategy for Homeland Security*, *Homeland Security Presidential Directive (HSPD)-8 (National Preparedness),* and Department of Defense's (DoD) *Strategy for Homeland Defense and Civil Support* reveals that the term *capacity building* is not defined. The *National Security Strategy* recognizes the need to build capacity for developing nations as part of a wider diplomatic and democratic implementation effort.[3] The specific homeland security documents do address the need to develop *surge capacity* and how improvements in command and control will improve the government's *capacity* to respond to terrorist events, but there is no philosophical underpinning that discusses how generic capacities can be improved or developed within a larger political, economic, or societal context to sustain any of these initiatives over a long period of time.

A review of second and third tier documentation — the underlying business plans and goals that support a strategy — is another way to determine if capacity building measures fit under the overall homeland security approach. Second and third tier documents exist to underpin a national strategy to address in greater detail the "how we plan to get there" aspect of a strategy. These documents ideally serve to "obtain the most from our limited national resources (means), [to] determine where we want to go (objectives) and how we plan to get there (strategy)."[4] In effect, second and third tier documentation contained in strategic business plans, goals, and guidance should provide

---

[2] Office of Homeland Security, *National Strategy for Homeland Security* (Washington DC: GPO, 2002), viii-x; http://www.whitehouse.gov/homeland/book/nat_strat_hls.pdf (accessed on December 15, 2005).

[3] Office of the President, *The National Security Strategy of the United States* (Washington DC: GPO, March 2006), 33; https://www.hsdl.org/homesec/docs/whitehouse/nps08-031606-01.pdf (accessed on December 27, 2006).

[4] Richard M. Lloyd et al., eds., *Strategy and Force Planning*, 2d ed. (Newport, RI: Naval War College Press, 1997), 4.

greater detail into the underlying capacity building measures that are necessary — whether through expanding, mobilizing, or sustaining the mechanisms that support varied homeland security objectives — to ensure that the maximum benefit is gained through limited national resources. These documents should reconcile the envisioned strategy with the capacity building measures that are necessary to support the strategy.

A review of this documentation provides limited interpretation. The *National Preparedness Goal* states that, "the TCL [Target Capabilities List] provides guidance on the capabilities and risk-based target levels that civilian Federal, State, local, and tribal entities will need to achieve and sustain to realize the vision for the *National Preparedness Goal*."[5] The document also identifies a capability as:

> . . . the means to achieve a measurable outcome resulting from the performance of one or more critical tasks, under specified conditions and performance standards. A capability may be delivered with any combination of properly planned, organized, trained, and exercised personnel that achieves the intended outcome.[6]

Implicit in this definition is the need to resource and sustain a targeted capability and to support its performance for executing a critical task — a discretely focused activity or activities that are necessary "to achieving success in a homeland security mission for a major event to prevent occurrence, to minimize loss of life and serious injuries, or to mitigate significant property damage."[7] These capabilities and critical tasks are aligned to support specific objectives, such as the fulfillment of specific public health, emergency management, or law enforcement functions. These objectives are aligned to target specific mission areas to prevent occurrence, minimize loss of life, or mitigate damage. The scope and use of capabilities are more narrowly focused on the accomplishment of the mission.

---

[5] Department of Homeland Security, *National Preparedness Goal* (Washington, DC: GPO, December 2005), D-3; https://www.hsdl.org/ homesec/docs/dhs/nps03-010306-02.pdf (accessed on March 5, 2006).

[6] Ibid., A-1. See Appendix A: Terms and Definitions

[7] Ibid., A-1.

Capability based planning offers a methodology to produce and manage capabilities within the framework of the mission, risk, and uncertainty. The formal definition of capability based planning is:

> . . . planning, under uncertainty, to provide capabilities suitable for a wide range of challenges while working within an economic framework that necessitates prioritization and choice.[8]

Under this methodology, capabilities are produced under the framework of uncertainty to increase preparedness. For homeland security, these capabilities are aligned against the 15 planning scenarios contained in the *National Preparedness Goal*. Although priorities and choices are considered, they are considered only under the narrow confines of planning scenarios and discrete mission sets.

A capability, however, once expended needs to be replaced. It must also be replaced due to obsolescence. The foundational capacities that produce capabilities — whether in terms of trained personnel or equipment — are focused on ensuring that sufficient numbers of these items are resourced and postured to support and sustain these capabilities over the long-term. While the document acknowledges the need to sustain a targeted capability, it does not address the wider capacity issues and addresses the concept of capacity building only by restating the language contained in HSPD-8.[9]

The *Target Capabilities List* (TCL) — the complement to the *National Preparedness Goal* — seeks to identify the capabilities necessary to achieve the national goal. The TCL further states that "preparedness measures assess preparedness actions taken before an incident to build the capacity to achieve the capability outcome. These measures relate to the development of plans, procedures, protocols, authorities, training, specialized equipment and systems, and how often they are updated and exercised."[10] In essence, the TCL considers the need for a *capacity assessment* before building a capability outcome. It does not consider, however, the scope, focus, or methodology of

---

[8] Department of Homeland Security, *National Preparedness Goal*, D-1. See Appendix D of the *National Preparedness Goal* for an overview of capability based planning.

[9] Ibid., v.

[10] Department of Homeland Security, *Target Capabilities List (TCL): A Companion to the National Preparedness Goal* (Washington, DC: GPO, August 2006), 10; https://www.hsdl.org/homesec /docs/dhs/nps08-080706-01.pdf (accessed on April 12, 2006).

what a capacity assessment entails. Lastly, the *Department of Homeland Security (DHS) Strategic Plan* addresses capacity only in terms of surge and logistical capacities to strengthen response readiness.[11] It does not address capacity in terms of larger mobilization or sustainment. In short, there is no discussion on the necessary measures to improve, support, expand, or sustain these capacities.

By implication, an assessment of the *National Preparedness Goal*, its complementary TCL, and other plans does indicate a tenuous relationship between the term *capability* and the concept of *capacity building*. *Capability* and *capability-based planning* are terms that seemingly address the issues of preparedness, capacity, and sustainment. They are focused on developing and maintaining capabilities to support discrete mission objectives. These documents do not, however, describe the strategic actions necessary to assess, develop, or articulate the underlying issues that address a needed capacity. There is also no language on the capacity of a system, or systems, that are necessary or critical to sustaining homeland security capabilities over the long-term. In other words, a relationship exists between the achievement of a capability and the underlying capacity necessary to achieve that capability. The philosophies that tie the necessary capacity building measures or *capacity assessments* to achieve the stated capability objectives, however, do not exist. The two concepts, while related, are not interchangeable. Simply put, a capability is focused on the achievement of a measurable and specific mission task or tasks. A capacity is focused on the wider issues that resources, produces, and sustains a wide variety of interrelated capabilities. There is no underlying discussion on the relationship between the two concepts.

A concrete example can provide greater clarity. Other fields — particularly with assistance strategies used by Non-governmental Organizations and educational development efforts — utilize capacity building concepts to describe their actions at promoting and fostering sustainable growth. For example, the *Organisation for Economic Co-operation and Development* recognizes the term *capacity development* in its approach to developing strategies that assist impoverished nations. The term:

---

[11] Department of Homeland Security, *Securing the Homeland – U.S. Department of Homeland Security Strategic Plan* (Washington DC: GPO, 2004), 28; http://www.dhs.gov/xlibrary/assets/ DHS_StratPlan_FINAL_spread.pdf (accessed on March 5, 2006).

> . . . is understood as the process whereby people, organizations and society as a whole unleash, strengthen, create, adapt and maintain capacity over time. The phrase capacity development is used advisedly in preference to the traditional capacity *building*. The "building" metaphor suggests a process starting with a plain surface and involving the step-by-step erection of a new structure, based on a preconceived design.[12]

Whether *capacity development* or *capacity building*, the term is used with a broader application to describe the linkages between governance, organizations, and society to initiate sustainable growth over time. For homeland security, this would mean that building a capacity to support individual mission components should incorporate a wider and strategic approach to building sustainable and meaningful change. It would also indicate that the concept of *capacity building* has wider organizational and societal implications than the development of a discrete *capability* — activities that must be performed through a combination of resources to achieve a goal.[13] Capacity building focuses on wider strategic actions that incorporate various aspects of an environment — governance, economics, or societal factors to achieve sustainable growth. Capability based planning, which offers a methodology to focus on the means to counter a challenge through use of scenarios, cost analysis, and resource development is focused on important, but a more specific set of issues aimed at accomplishing a discrete mission set. Conversely, a capacity building strategy seeks to identify, expand, and sustain the foundational mechanisms that support and maintain capabilities over the long-term. A capacity building approach is more strategic in nature and is linked to the wider economic, political, and societal forces that relate to the strategy. For example, there might be an identified *capability* to have certain numbers of border patrol agents per sector to support the *Border and Transportation Security* mission contained in the *National Strategy for Homeland Security*. The wider *capacity building* issue centers on how many border patrol agents are required to support all the sector requirements and

---

[12] Organisation for Economic Development and Cooperation, "The Challenge of Capacity Development: Working Towards Good Practice," *DAC Network on Governance* (February 14, 2006), http://www.oecd.org/dataoecd/4/36/36326495.pdf (accessed on October 1, 2006), 9.

[13] Department of Homeland Security, *Target Capabilities List,* 10. To paraphrase the definition of *capability*.

whether the current entry training program for agents can support these macro-level tasks given agent rotation cycles, end-to-end career development initiatives, and attrition due to retirements.

Lastly, congressional testimony, public debate, recommendations from think-tanks and policy assessment institutes yield very little literature on the subject of capacity building, what the term means, and how it relates to the overall homeland security strategy. In essence, a gap exists between the envisioned end-state and the capabilities contained in the national strategic documents, directives, and plans and what these documents seek to accomplish versus the tangible and necessary capacity building measures that accomplish these goals within the wider aspects of mobilization and sustainment and how they relate to political, economic, or societal issues.
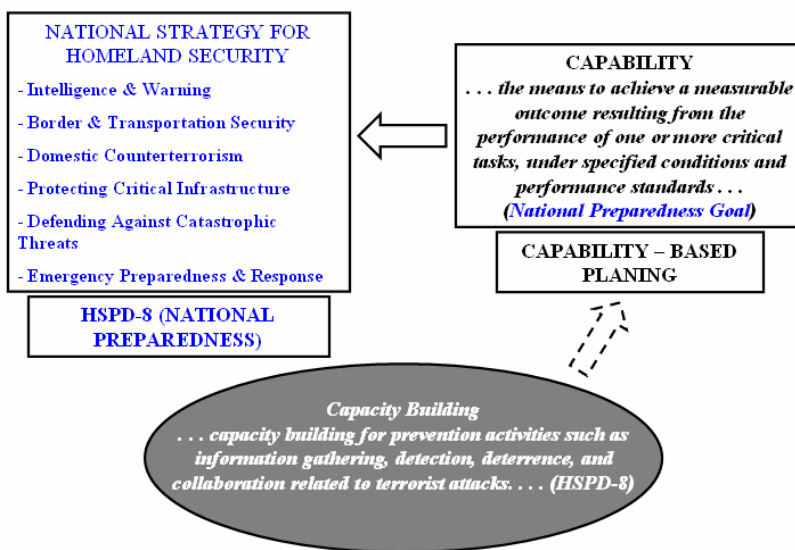


Figure 1.     Capacity Building and Capability Relationship

As illustrated in the above figure, the various strategic documents, directives, and plans clearly articulate the need for various capabilities to support the six mission sets contained in the *National Strategy for Homeland Security*. A clear linkage exists between the *National Preparedness Goal* and the complementary *Target Capabilities List* to support the overarching strategy and its mission areas in terms of capabilities and capability-based planning. The underlying *capacity building* philosophies and concepts that link into capability-based planning initiatives, however, do not exist.

9

Despite the lack of definition, public debate, or clear linkages between capacity building and national strategy, there have been instances in the past of decisions that mobilized the nation in terms of their scope and in the underlying capacities that were sustained through strategic efforts and national focus. More importantly, the need to develop and sustain capacities was recognized as a key element to understanding the trade-off decisions and the opportunity costs involved to achieving a well and clear idea of success. An understanding of the strategic assumptions and the mechanisms necessary to tie practical capacity building efforts to national strategy were also integral aspects to the success of these decisions. For example, during World War Two, initial manpower studies concluded that the United States would require 200 Army divisions to defeat the Axis powers. By 1943, the Army leadership was faced with the stark realities that were manifested by competing manpower and resource commitments. Facing the challenges of staffing, manning, resourcing, training, equipping, and planning for these forces coupled with the limitations of the nation's industrial base and the changing strategic assumptions concerning the threat, it was clear that the 200 division estimate was unsustainable. After examining the national strategy, competing requirements, and future estimates, General Marshall and his advisors concluded that the Army would require 90 divisions. Known as the "90 Division Gamble," General Marshall's assessment of various trade-offs, underlying capacities, and vision during the middle of World War II allowed the United States to meet competing commitments and decisively win the war.[14]

Another decision, one initiated during peacetime, occurred in the 1950s as a result of the competition between the Soviet Union and the United States. President Eisenhower recognized that the United States and the Soviet Union would engage in the "space race." He also recognized that the "space race" would require a significant commitment on the part of the nation to sustain a lengthy and focused effort. One aspect of his policy was to enact the *National Defense Education Act*, whose purpose was to improve the level of scientific and technical education in U.S. universities.[15] Establishing a strategic policy that addressed a foundational element of society improved the ability of the United States

---

[14] Maurice Matloff, "The 90 Division Gamble," in *Command Decisions*, ed. Kent Greenfield (Washington DC: Center for Military History, 1990), 365-383.

[15] U.S. Department of Education, *Federal Role in Education: Overview*, 1; http://www.ed.gov/about/overview/fed/role.html (accessed on October 12, 2005).

to develop a large technological base to sustain its efforts in space. These efforts were further sustained through the creation of various scientific and research related organizations to foster collaboration. As highlighted in the *National Defense Education and Innovation Initiative*, a report recommending a similar government investment to the nation's present education system, the Eisenhower initiative resulted in a four-fold increase in the number of U.S. Nobel prize science winners in the latter part of the twentieth century.[16]

These historical examples reveal several points. First, these decisions were indeed strategic in nature. They were initiated at the highest level of government as part of a larger and focused strategy, whether to defeat the global Axis threat or building the nation's educational foundation to overcome the Soviets in space. Second, these decisions were in direct response to a national-level threat and were quickly initiated to galvanize the nation's efforts and commit its resources on a strategic scale to meet the strategy's goal. Also of note, General Marshall's decision to overturn the Army's earlier manpower assessment early in the war represents a significant strategic decision point. Third, these decisions were focused on an identifiable end-state — defeating the Axis and overcoming the Soviets. Lastly, these decisions also recognized the importance to sustain and focus a wider set of capacity related actions to produce, in essence, the sufficient capabilities necessary to meet the strategy's objectives.

Despite today's lack of published literature or definition on capacity building measures related to homeland security whether in first, second, and third tier homeland security documents — and considering the past historical examples — there are some contemporary derivations for the term by examining three related homeland security issues. In the fall of 2001, the U.S. was faced with the reality of a bioterrorist attack. Several envelopes containing traces of anthrax were mailed to congressional officials and the media. This attack affected twenty-two people and caused five deaths.[17] Although far from perfect, it was acknowledged that the medical community's response to this incident

---

[16] Association of American Universities (AAU), *National Defense Education and Innovation Initiative: Meeting America's Economic and Security Challenges in the 21st Century* (New York: AAU, January 2006), 13; http://www.aau.edu/reports/NDEII.pdf (accessed on September 16, 2006), 13.

[17] United States General Accountability Office, *Bioterrorism: Public Health Response to Anthrax Incidents of 2001*, GAO 04-152 (Washington, DC: October 10, 2003), 14; http://www.gao.gov/new.items/d05251.pdf (accessed on October 29, 2005).

was generally effective in terms of communications and command and control. The glaring lesson from this incident was the extent that the medical workforce and the Laboratory Response Network were overwhelmed. In other words, "the response capacity was strained and would have been difficult to sustain."[18] More importantly, it highlighted how a relatively unsophisticated attack using a benign method of delivery could paralyze the nation's laboratory response and epidemiological capability. As a result of this attack and its psychological and economic impact, one clear focus area articulated in the *National Strategy for Homeland Security* is the necessity to plan for and build a capacity — in terms of physical investment — to respond to a weapon of mass destruction (WMD) attack.[19]

Another issue is the criticism from state and local officials on the DHS' Homeland Security Grant Program. A recent study stated that "many of the fundamental problems in managing federal grants were the direct result of the proliferation of federal assistance programs and the fragmentation of responsibility among different federal departments and agencies."[20] The multiplicity of programs and the diffusion of responsibilities have created innumerable inefficiencies to successfully implementing the homeland security grant process. In other words, the organizational capacity, or in this case — incapacity, of the DHS' grant program have led to inefficiencies that have a direct impact on the ability of state and local jurisdictions to build homeland security capacity. The implication is that program reforms — in terms of organizational capacity — are necessary to implement capacity building measures.

The last issue deals with a recent study from the National Academy of Public Administration. The study dealt with the top issues of advancing homeland security. Acknowledged in the study was the challenge before the DHS in "creating a true national

---

[18] United States General Accountability Office, *Bioterrorism: Public Health Response to Anthrax Incidents of 2001*, 18-20.

[19] Office of Homeland Security, *National Strategy for Homeland Security*, 37-40.

[20] United States General Accountability Office, *Homeland Security: Reforming Federal Grants to Better Meet Outstanding Needs*, GAO-03-1146T (Washington, DC: September 3, 2003), 4; http://www.gao.gov/new.items/d031146t.pdf (accessed on October 29, 2005).

approach to homeland security."[21] Among the top issues identified in the study were the lack of common understanding from public officials on homeland security related functions and the unpredictable nature of critical incidents. More importantly, the study identified the need to establish protocols in advance, the shortfalls in planning capabilities due to training shortfalls, and the lack of homeland security capacity in some states and municipalities due to lack of trained specialists. The consistent thread among these themes is the lack of training, education, awareness, and necessary skills to successfully implement homeland security initiatives. This study would imply that capacity building measures are necessary — in terms of manning and training — to improve human capital programs. Homeland security training should be a top priority and is crucial to the long-term success of any effort.[22]

The present problem when examining these issues is that the term *capacity building* can be interpreted in widely divergent ways. These differences in the understanding of the term can result in tangible differences in strategic priorities, key tasks, and budget allocations. For instance, homeland security capacity building efforts could be interpreted in the following manner:

- The U.S. government will engage in *capacity building* measures by increasing investments in specific areas to expand or recapitalize critical systems that support homeland security efforts – in this case, the Laboratory Response Network.

- The U.S. government will engage in *capacity building* measures to improve the organizational capacity of key program areas – the DHS's grant program – to increase efficiency and streamline critical processes that support homeland security.

- The U.S. government will engage in *capacity building* measures to improve and expand homeland security training and planning skills to understand, prevent, and respond to homeland security threats.

---

[21] National Academy of Public Administration, *Advancing the Management of Homeland Security: Managing Intergovernmental Relations for Homeland Security* (Washington, DC: National Academy of Public Administration, 2004), 3.

[22] James Jay Carafano, "An Appropriator's Guide to Homeland Security," *The Heritage Foundation*: *Backgrounder* 1767 (June 7, 2004): 6; http://www.heritage.org/Research/HomelandDefense/bg1767.cfm (accessed on October 15, 2005).

Although capacity building is used in each example, the term implies significant differences. The first definition implies the expansion of an area that is deemed critical in terms of its importance and continuity to fulfilling the homeland security mission. It implies building or expanding capital improvements to improve the capacity of a system. The second implies improving the efficiency of a key program or system to improve its capacity in meeting the nation's homeland security needs. The last definition is centered on a social context to expand and improve homeland security training venues and opportunities to equip people with the necessary skills to understand, prevent, and respond to a threat.

Absence of definition leads to differences in interpretation, particularly in an area as nascent as homeland security. In practical terms, these differences can lead to differences in strategic priorities, key tasks, and budget allocations. A cursory look at these differences reveals a possible cost categorization of front-loaded verses distributed costs. Physical improvements and investment to critical systems and training opportunities imply front-loaded costs versus reforming key programs, which may be more distributive in nature. It also highlights opportunity costs over the long-term. For example, in 2003, the public became aware that the United States relied on a fragile system to procure flu vaccines. A homeland security planner could identify this as a strategic and critical issue and recommend the expansion and improvement of the "vaccine" infrastructure to improve resiliency.[23] There are just as valid arguments for other capacity building interpretations, such as transforming intelligence to training first responders through education and training. The point is that each alternative comes with different types of costs. The expansion of the nation's Laboratory Response Network requires significant front loaded costs and investment in lab testing capacity, surveillance detection capabilities, and personnel. Additionally, if improvements to the network were identified as a strategic priority and significant investments were applied to improving this system, the realization of these improvements would still be many years into the future. Conversely, reforming existing programs such as the DHS grant program may

---

[23] United States General Accountability Office, *Flu Vaccine: Recent Supply Shortages Underscore Ongoing Challenges*, GAO-05-177T (Washington, DC: November 18, 2004), 4; www.gao.gov/new.items/ d05177t.pdf (accessed on February 4, 2006). Two production facilities, one in the United States and the other in the United Kingdom, produced 95% of all influenza vaccines. The abrupt loss of one of these production facilities resulted in a lack of flu vaccines for the 2004 influenza season.

address immediate improvements to organizational capacity, however, may not address future needs if the fundamental capacity gaps that are necessary to support targeted capabilities are not considered. These decisions represent opportunity costs. Committing to develop a strategic capacity with significant front-loaded costs also means that those resources cannot be committed to something else. Defining capacity building — particularly as it relates to programs, funding, and opportunity costs — would provide greater granularity and coherence to the overall strategy, identify critical decision points, and bring forth fundamental sustainment considerations.

## F.     HYPOTHESIS

Since 9/11 and the nation's emphasis on homeland security, the term *capacity building* has not been defined. As such, it is subject to differing interpretations, which have significant consequences to overall homeland security sustainment efforts. Despite its lack of definition, the language contained in HSPD-8 indicates that the concept of capacity building is a central premise to sustaining homeland security preparedness. The concept of capacity building also serves as an integral component to sustaining preparedness efforts over the long-term. By not defining capacity building, different interpretations will lead to increasing ambiguity in the use of the term, such as equating capacity building concepts with capabilities-based planning. These differences in interpretation will result in two consequences. First, leaders will fail to consider the impact and differences in costs, whether they are captured in terms of monetary or opportunity costs. The determination of these types of costs represents strategic decision points that directly affect the ability to sustain homeland security efforts over the long-term and hence, are critical to strategic planning. Second, strategic planners will fail to consider the wider implications of capacity building issues as they relate to the development of capabilities and sustainment. The focus on attaining target levels of capability centered on discrete mission tasks will overlook the competition from other homeland security requirements that are seeking to attain similar or related goals.

15

## G.    METHODOLOGY AND SOURCES

The methodology for this thesis centers on a policy options analysis based on events and studies that have a direct relevance to homeland security and that reveal differing interpretations of capacity building. These interpretations will be analyzed in terms of their scope and how they fit in terms of time and purpose relative to the overarching homeland security strategies. The intent is to demonstrate how strategic policy can drift, become increasingly unfocused over time, and result in significant opportunity costs. The initial intent of this research is to utilize documentation that addresses the 2001 Anthrax incident, the DHS Grant Program, and First Responder Training to derive different capacity building definitions and demonstrate the different decisions and costs associated with adopting those definitions.

## II.  STRATEGIC DECISIONS: THE U.S. ARMY'S 90 DIVISION GAMBLE & *THE NATIONAL DEFENSE EDUCATION ACT OF 1958*

### A.  BACKGROUND

The challenges posed to national defense issues, whether in the Second World War or the Cold War, are similar in many respects to 9/11. In all instances, these events prompted a fundamental redefinition of security. The threats posed by the Axis, the Soviets, or Islamic terrorism also led to global commitments and strategies as well as immediate implications for defending the homeland. There were also wider economic and societal aspects. Federal involvement in the U.S. economy to sustain global commitments increased as a result of the Second World War and the Cold War. Although 9/11 did not have a long lasting effect on the U.S. economy, federal involvement increased in specific economic sectors — particularly in securing vulnerable commercial transportation networks such as the airline industry.[24] These events also redefined the U.S. society's view of its standing in the world. Isolationism ceased to be a fundamental political and societal factor after Pearl Harbor. The Cold War crystallized the differences between the Communist eastern bloc and the "free" west. Although obscured by the present differences over U.S. policies in Iraq, 9/11 brought forth the transnational nature of Islamic terrorism and the necessity to combat and mitigate its effects.

The decisions made by General Marshall and President Eisenhower offer some insight on how their strategic implementation to counter a threat related to capacity building initiatives. In both of these instances, it was recognized that the United States faced considerable challenges and obstacles. For General Marshall, the Axis powers were at their height during World War II. By 1943, they had conquered most of Europe and the Pacific, were pressing into the Soviet Union, the Suez Canal, and threatening Australia. For President Eisenhower, it was not only the realization that the Soviet Union had beat the United States to outer space, but also that satellites could revolutionize vital areas such as intelligence gathering, communications, and weaponizing space.

---

[24] Congressional Research Service (CRS), *The Economic Effects of 9/11: A Retrospective Assessment*, RL31617 (Washington D.C: Library of Congress, September 27, 2002), 14; http://www.fas.org/ irp/crs/RL31617.pdf (accessed on December 7, 2006). The *Aviation and Transportation Act* (ATSA) increased federal involvement in several transportation sectors, most notably the airline industry.

The challenges in both these instances were daunting. In the case of General Marshall, it was the fielding of sufficient Army divisions — essentially capabilities — with requisite manpower and equipment to overcome the Axis powers. He also initiated a significant reduction from the previous manpower estimate; hence the 90 Division Gamble. At the time, this reassessment was also cause for significant political concern. There were also significant military requirements in other areas that were competing for limited national resources — the need to build sufficient naval capabilities to project forces from the homeland, the development of strategic air capabilities, and the expansion of nation's industrial base to support wartime needs.

President Eisenhower faced a different challenge — a national threat during a period of peace and relative normalcy. Although the launching of *Sputnik* was a blow to the national prestige, the real challenge was not necessarily the crisis of character. It was the realization that the nation was falling further behind in scientific research and development.[25] *Sputnik* represented a Soviet strategic move that would change the fundamental nature of the U.S.-Soviet Cold War confrontation and give the Soviets an enormous asymmetric advantage. The challenge in this case was to develop or build intellectual capacity at a strategic level to create advances and ensure continued U.S. viability in space. For both General Marshall and President Eisenhower, the threats posed to the nation were real and with significant strategic implications to the country.

**B.    THE 90 DIVISION GAMBLE**

**1.    Background**

The Second World War was truly global in nature. It contained multiple fronts and spanned across great land masses and stretches of water. In the beginning of 1941, the Western democracies, ill prepared prior to the war, faced dire circumstances. France was quickly overrun in 1940; Great Britain faced Germany alone in Europe; and the Roosevelt administration faced an isolationist mindset in the United States. In terms of actual preparedness, the U.S. Army possessed approximately 190,000 soldiers not

---

[25] Barbara Barksdale Clowse, *Brainpower for the Cold War: The Sputnik Crisis and National Defense Education Act of 1958* (London: Greenwood Press, 1981), 19.

organized in any meaningful division structure and practically no air force.[26] The Axis powers were extending into the Mediterranean Sea, taking advantage of Britain's dependence on the Atlantic sea-lanes by increasing its U-boat campaigns, and advancing into Southeast Asia to secure vital raw materials while advancing towards India and Australia.

After the Japanese attack on December 7, 1941, the United States and Great Britain moved quickly and decisively to establish overarching goals and a commensurate strategy to meet them. The Arcadia Conference — from December 22, 1941 to January 14, 1942 and consisting of the highest Anglo-American leadership — set the basic outline for the remainder of the war.[27] The Allies agreed to defeat Germany first, allocate raw materials and control shipping through joint planning, develop a Combined Chiefs of Staff committee system to develop strategy, and promote cooperation between military services.[28] Already recognized by the Allied leadership, "the role of America was from first to last to serve as the 'arsenal of Democracy' with a rapidly growing weight of material power that they [the Axis] could not hope to match."[29] The expansion and preservation of industrial capacity was in essence the foundation of the Allied advantage.

Behind the sweeping strategy that would have to support global requirements lay the practical and difficult challenges of how to mobilize, what to produce, and how to sequence production methods to support the strategy. The U.S. Army Chief of Staff, General George C. Marshall and his planners estimated in 1941 that the U.S. Army would require 213 divisions to defeat the Axis. Known as the *Victory Program*, these estimates assumed that Germany would defeat the Soviet Union and the Anglo-American powers would have to advance into the Continent to defeat Germany on their own.[30]

---

[26] Gerhard L. Weinberg, *A World At Arms: A Global History of World War II* (Cambridge: Cambridge University Press, 1994), 87.

[27] Maurice Matloff and Edwin M. Snell, *Strategic Planning for Coalition Warfare 1941-1942* (Washington DC: GPO, 1953), 98-111.

[28] Weinberg, *A World At Arms*, 306.

[29] Kent Greenfield, *American Strategy in World War Two* (Baltimore: Johns Hopkins Press, 1963), 74.

[30] Maurice Matloff, *Strategic Planning for Coalition Warfare 1943-1944* (Washington DC: GPO, 1959), 115.

There were several challenges with the *Victory Program*. First, the United States had to essentially create the division structure from scratch. Prior to the war, the U.S. Army was aligned in smaller regimental formations scattered throughout the country and its possessions. Division training would require a more complex staff structure and training system to integrate various combat and support capabilities — infantry, artillery, supply, engineering, and others — into an effective fighting force. Additionally, the time to train raw recruits and transform them into an integrated and capable division was one year.[31] Second, there was a total shortfall in equipment.[32] Competing requirements from other military services and Allies made realistic training with actual equipment unrealistic. Lastly, there was little existing officer experience in the U.S. military.[33] The U.S. Army had drawn down significantly after World War I and the military profession was not highly regarded in American society.

General Marshall recognized that the *Victory Program* was unrealistic and unsustainable. The issue centered on integrating the U.S. Army's manpower and resource requirements with all the other competing interests while maintaining a productive war economy — the critical component for the Allies. The Allies had recognized from the beginning "that the single greatest tangible asset the United States brought to the coalition in World War II was the productive capacity of its industry."[34] General Marshall ultimately established the U.S. Army's manpower ceiling at 90 divisions causing considerable concern and unrest in Congress.[35] Essentially, by 1943, the United States ceased to mobilize above a prescribed manpower ceiling — *two years* before the end of the war. This decision was the basis of the "90-Division Gamble."

### 2.    The Strategic Decision

General Marshall's decision to set the manpower ceiling at 90 Divisions was not made without basis. The challenges to manning, training, and equipping 90 Divisions

---

[31] Matloff, "The 90 Division Gamble," 369.

[32] Robert R. Palmer, Bell I. Wiley, and William R. Keast, *The Army Ground Forces: The Procurement and Training of Army Ground Combat Troops* (Washington DC: Center for Military History, 2003), 456.

[33] Ibid., 469.

[34] Matloff, "The 90 Division Gamble," 368.

[35] Ibid., 371.

involved numerous and complex issues. Raw recruits had to be inprocessed and trained with special skills to meet the complex nature of the battlefield.[36] Troops required sufficient basing and areas in which to train. Constructing sufficient basing and training areas would also result in allocating scarce materials that would be necessary to producing vital equipment. Lastly, the equipping of divisions to meet the sophisticated nature of combat required the incorporation of "scheduled production of munitions and equipment reaching back through the whole intricate complex of war industry and, in the case of specialized items, involving a time-lag of up to eighteen months."[37] Producing, equipping, and training Army units, while reconciling the disparate and competing industrial base requirements and maintaining a productive base would be vital to sustaining the mobilization effort and defeating the enemy.

There were also operational considerations. First, had the United States continued with its original estimate of 213 divisions, there would still have been the constraint of insufficient shipping to transport the divisions to Europe. In essence, "shipping would determine the amount of force that could be applied."[38] Additionally, the U-boat threat had to be resolved before U.S. forces could be projected across the Atlantic.[39] Second, it was recognized that projections of military power "must be very conservative until our [the Allied] strength developed."[40] Lastly, as the war progressed from 1941 to 1943, the original assumption on which the *Victory Program* was based was proving false. The Soviet Union was successful in holding the German advance.

Faced with these considerations, General Marshall and his planners were driven first by the necessity of balancing mobilization requirements while maintaining the war production effort. A close examination of division training, equipping, and war production with their associated time lags was considered. General Marshall also pressed

---

[36] Palmer and others, *The Army Ground Forces*, 170.

[37] Greenfield, *American Strategy in World War Two*, 74.

[38] Matloff, "The 90 Division Gamble," 370.

[39] Greenfield, *American Strategy in World War Two,* 74.

[40] Ibid., 75.

to reexamine the strategic environment — primarily the ability of the Soviets to resist the Germans and the increasing effectiveness of the Allied Strategic Air Bombing campaign and air superiority in Europe.[41]

The Joint Strategic Survey Committee — the body chartered to examine these strategic considerations — concluded that:

> . . . planners had gone astray in trying to match Allied forces, division for division, with the enemy. They held that proper consideration had been given neither to the relative efficiency of forces nor the prospective Allied air superiority and the effect of the bomber offensive on German morale and war effort.[42]

Based on these considerations, the U.S. Army reassessed its manpower requirements and concluded in 1943 that a 90 Division ceiling would be sufficient to defeat the Axis. The last division was activated in August 1943. The basis of General Marshall's 90 Division Gamble was based on, "air superiority, ground combat unit training, and Soviet numerical preponderance."[43]

### 3.    Decision Success

General Marshall's decision to reassess the U.S. Army's manpower requirements and establish a new 90 Division ceiling during a period of extreme crisis would not have been possible without a solid planning framework. The unique aspect of this framework was typified by a high degree to plan and link the nation's war production to operational capabilities, possessing an in-depth understanding and confidence in the U.S. Army's combat training program and its effectiveness despite the United States relatively untried combat capabilities, and a keen understanding how these factors related to the ongoing changes in the conflict with the Axis powers.

The United States significantly reduced the levels of its Armed Forces after World War I. Despite these reductions, there were three major factors that contributed to future

---

[41] Matloff, "The 90 Division Gamble," 373.

[42] Ibid., 370.

[43] Ibid., 379.

success in World War II. The first was the creation of a joint Army and Navy Munitions Board. This board was designed to examine the capacities of U.S. industry to support wartime requirements and the allocation of resources between major competitors — in this case the Army and Navy.[44] Through outlining requirements, identifying critical raw materials and industrial competencies, and developing joint strategy, the Army and Navy Munitions Board provided the foundational basis and venue to develop wartime contingency planning from a perspective of industrial capacity. Recognizing the value of this board and foreseeing the necessity to further link the nation's economy to support the oncoming conflict, President Roosevelt moved this board under the Executive Office of the President in 1939.[45]

The second factor and a new innovation was the founding of the Army Industrial College. The college was created as a direct result of the inability to link the U.S. industrial base to wartime mobilization in World War I.[46] This one-year program offered U.S. Army officers the basis for studying the intricacies of industrial mobilization, the associated time-lags between a peacetime and wartime economic footing, and partnering with industry. The growing number of students and faculty would later serve as the foundation for industrial mobilization planning.[47] The refinement of mobilization strategies during the interwar period by the Army and Navy Munitions Board and the growing numbers of military professionals graduating from the Army Industrial College provided two foundational elements for General Marshall's decision to redirect the U.S. Army's manpower ceiling in 1943.

The last factor supporting General Marshall's decision was the maintenance of the U.S. Army's training base. Despite the drawdown after the First World War, the U.S. Army continued to maintain, albeit at a reduced capacity, its systems of training officers and enlisted personnel. As a result, the U.S. Army had a good understanding of the requirements that were necessary to develop and improve course capacities to produce

---

[44] Center for Military History, *Mobilization: The U.S. Army in World War II* (Washington DC: Center for Military History, 2001), 5

[45] Greenfield, *American Strategy in World War Two*, 52.

[46] Francis W. A'Hearn, "The Industrial College of the Armed Forces: Contextual Analysis of an Evolving Mission, 1924-1994" (Ph.D. diss., Virginia Polytechnic Institute, 1997), 33.

[47] Center for Military History, *Mobilization*, 6.

trained personnel. Additionally, the U.S. Army understood the value of lessons learned in combat, the importance of realistic training, and the necessity for close inspections and oversight to monitor training progress.[48] These three factors would allow General Marshall and his planners to develop a realistic manpower ceiling, link the production of capabilities to the industrial base, and accurately assess the combat value of the U.S. Army divisions.

Although an argument can be made that the maintenance and development of these planning and training mechanisms were not part of a deliberate or concerted effort, the development, preservation and refinement of these mechanisms during a period of fiscal scarcity resulted in creating and honing the skills that were necessary to rapidly and effectively mobilize the nation. The key element to consider is that these factors were not developed on the eve of World War II, but had their genesis during the period after World War I — *over twenty years prior*. Simply stated, the ability to effectively plan, to understand the capacity of the U.S. industrial base, and to correlate training programs to operational capabilities were honed throughout the decades before the United States' entry into the war.

### 4. Decision Characteristics

Although General Marshall's decision could only be classified as a success after the benefit of hindsight, his decision can be viewed as a calculated risk rather than a gamble. General Marshall's decision to cap the U.S. Army at 90 Divisions was a decision grounded in a solid understanding of the strategic environment, the effective linking of wartime requirements to the industrial base, and accurately assessing the ability of the U.S. soldier. The underlying understanding of these intricacies was not, however, a product of spontaneous insight, but based on a well-informed and well understood system of mobilization.

The United States was relatively unprepared when it entered World War Two. Despite the level of unpreparedness, the United States "had never before in our history

---

[48] Palmer and others, *The Army Ground Forces*, 448-450.

entered a war with such a well-concerted program of strategy."[49] Perhaps more importantly, not only did the United States and its Allies have a clear idea for success, they also possessed the highly skilled ability to link industrial capacities to military capabilities. Once the U.S. economy was fully mobilized, the quality and amount of military capabilities surpassed the most conservative of estimates.[50]

The success of General Marshall's decision is directly attributable to the preservation and maintenance of the U.S. Army's underlying base. Learning from the mobilization lessons from World War I, the Army was able to preserve its joint strategy and planning mechanisms though the creation of the Army and Navy Munitions Board. The development of the Army Industrial College ensured a highly trained cadre of military professionals with ties to U.S. industry who understood the challenges and opportunities of the industrial base. The maintenance of the Army's training capacity, both in terms of physical areas for basing and training, as well as the system to track combat proficiency would ensure the United States could rapidly build-up its forces.

It was the development and maintenance of these boards, schools, and systems during the interwar period — a time of extreme scarcity for the U.S. military — that served as the mechanisms for the rapid mobilization and sustainment during World War II. These mechanisms were in essence, the capacity building tools that served to ramp up the wide array of combat capabilities that were necessary to win the war. The development, maintenance, and continual refinement of these underlying strategic mechanisms allowed the U.S. senior leadership to understand the linkage between the nation's manpower and its industrial base, the requirements that were necessary to mobilize these elements, and the sustainment requirements vital to galvanizing this process. They allowed the strategic leadership to understand the inherent trade-offs, constraints, limitations, and opportunity costs involved in weighing various alternatives. More importantly, these mechanisms and tools were also focused under a well articulated strategy aimed at a defined end-state — the unconditional defeat of the Axis powers.

---

[49] Greenfield, *American Strategy in World War Two*, 54.

[50] Ibid., 74.

General Marshall's 90 Division gamble also represents a strategic decision point. It altered U.S. mobilization estimates and reconsidered other factors — the abilities of the Soviet Union and the effectiveness of the Allied bombing campaign. His decision changed the U.S. Army's outlook from a symmetric force-on-force correlation that was characteristic of the First World War to a different approach that capitalized on Allied strengths. This decision also ensured that a proper balance was maintained between the nation's underlying industrial capacities versus the amount of military capability it could effectively maintain in combat.

The understanding of this balance ensured that issues relating to the preservation of capacity and sustainment were central to the development of strategy. The primary Allied consideration during the beginning stages of the war was to remain on the strategic defensive while taking advantage of limited objectives and preserving capacity. The Allies were mindful of the inherent dangers involved in *over-mobilization*. Over-mobilization would strain the underlying industrial base, mismatch capabilities for when they were not needed, and weaken the future sustainment of these capabilities because they had been produced in over abundance. In essence, strategy and procurement were strongly and effectively linked. As a testament to General Marshall's farsightedness, a total of 89 U.S. Army divisions were deployed to combat theaters by the end of the war.[51]

## C.  *THE NATIONAL DEFENSE EDUCATION ACT OF 1958*

### 1.  Background

During the early years of the United States, westward expansion typified by far flung settlements and a strong sense of self-reliance became the defining characteristic of state and local autonomy over education matters.[52] Although public school and collegiate systems were supported and developed, the establishment of a cohesive national education policy was never a priority until the early 1950s.[53] Initial attempts by President

---

[51] Matloff, "The 90 Division Gamble," 381.

[52] Arthur S. Flemming, "The Philosophy and Objectives of The National Defense Education Act," *Annals of the American Academy of Political and Social Science* 327 (January 1960): 133.

[53] George J. Michel, "Success in National Educational Policy from Eisenhower to Carter," *Peabody Journal of Education* 57, no.4 (July 1980), 223.

Eisenhower to enhance federal support for education initiatives were not supported by a conservative leaning Democratic Congress, which sought to limit the expansion of the federal government.[54]

The national focus on mathematical, scientific, and linguistic skills also diminished after World War Two. Despite the significant scientific gains made during the war, as manifested by the massive fielding and sustainment of military capabilities and the scientific collaboration to develop the atomic bomb, these fields saw a decline after the Allied victory in 1945. While Cold War tensions were on the rise, the nation as a whole focused on demobilization and returning to normalcy.

The lack of a comprehensive national education approach corresponded with a period of high focus on education in the Soviet Union — particularly on scientific and educational matters. The Soviet Union was able to quickly develop atomic weapons, invest and build in missile technology, achieve several Nobel prizes in scientific areas, and develop the satellite technology necessary to launch *Sputnik*.[55] More importantly, these achievements were conceived, developed, and quickly implemented within a ten-year period after World War II.

The ability of the Soviet Union to launch *Sputnik* was a severe blow to U.S. prestige.[56] Launched in October 1957, *Sputnik* represented a significant demonstration of Soviet focus, ambition, and achievement. It also represented a significant threat to U.S. interests.[57] Noted nuclear scientist, Edward Teller, stated the United States lost "a battle more important and greater than Pearl Harbor."[58] The Soviet's ability to launch a satellite into space represented a significant asymmetric advantage and highlighted a relative

---

[54] George J. Michel, "Success in National Educational Policy from Eisenhower to Carter," 224.

[55] Ethan Pollock, *Stalin and the Soviet Science Wars* (Princeton: Princeton University Press: 2006), 11.

[56] Shirley Ann Jackson, *Envisioning a 21ˢᵗ Century Science and Engineering Workforce for the United States: Task for University, Industry, and Government* (Washington DC: The National Academies Press, 2003), 13.

[57] Clowse, *Brainpower for the Cold War*, 7. *Sputnik* weighed eight times heavier than the planned U.S. satellite. Additionally, the ability of the Soviet to perfect the three-stage rocket to boost *Sputnik* into orbit also revealed the ability to launch an intercontinental nuclear warhead with precision.

[58] Robert A. Devine, *The Sputnik Challenge* (New York: Oxford University Press, 1993), xv-xvi.

change between the United States and the Soviet Union. Whereas before, the United States assumed technological superiority, the launching of *Sputnik* shattered that notion.

### 2. The Strategic Decision

The blow to U.S. prestige had a positive effect in that "[i]t awakened and spurred us [the United States] into rigorous self-examination of our total education system."[59] The realization of a Soviet advance into an unchartered area characterized by a significant potential for military applications such as intelligence gathering, communications, and weapons was too significant to overlook. In response to *Sputnik*, an overarching goal to develop a strong foundation in science, math, and linguistic capacity to sustain the nation's effort in meeting this threat was initiated. As a result, President Eisenhower along with strong bipartisan support was able to pass the *National Defense Education Act of 1958*. The passage of this Act represented a stark departure from previous U.S. educational policies and directly inserted the U.S. government into the nation's strategic education policy.

The primary consideration of the Act was twofold. First, the United States recognized the long nature of the Cold War and the increasingly sophisticated requirements from the nation's industrial base, the armed forces, and international diplomacy.[60] United States leadership in the free world would require increased numbers of highly qualified individuals to support the nation's security efforts. Second, the language contained in the Act recognized the need for a sustained and coordinated effort. With increased focus on getting high school students enrolled in university science, math, and linguistic programs, the Act predicted "that between 30 and 40,000 new full-time college teachers each year will be needed to train the wave of students seeking college education in the sixties."[61] Emphasis was given to professional development initiatives at the university level, the upgrade of facilities, and new teaching techniques to meet the increased demands on the nation's students. In essence, there was a recognized need to develop capacity on a large scale over a long period of time.

---

[59] Flemming, "The Philosophy and Objectives of The National Defense Education Act," 134.

[60] Ibid., 134.

[61] Oscar Riddle, "Must We Fail in Science Education? The National Defense Education Act of 1958," *The Physiologist* 2, no.2 (May 1959): 59.

There were also secondary considerations that were viewed as integral to the success of the plan. High school dropout rates were viewed as a serious limitation to getting students to seek university-level education.[62] The plan recognized that targeting university-level education was insufficient and that corresponding initiatives were necessary to improve the linkage between high school and college. As a result, significant increases and focus were given to student counseling and guidance needs to ensure that students achieved their potential and placement.[63] Education reform initiatives were not narrowly focused on university education, but widely focused on end-to-end and related issues.

### 3.    Decision Success

The *National Defense Education Act of 1958* represented a strategic decision in response to a perceived threat. Unlike the decision success of the 90-Division Gamble — which was solidly based on the centralized decision framework around President Roosevelt and the corporate mechanisms the U.S. Army had developed and honed during the interwar period — there was no history of U.S. government policy and planning for national education issues. Despite this lack, the success of the decision to pass the *National Defense Education Act* possessed similar elements. There were also two supporting decision elements that were critical to its success — a solid organizational framework and corporate mechanisms to support and sustain the effort.

Unlike the armed forces where policy mechanisms ultimately support the President's actions as the commander-in-chief, the critical organizational framework in the case of the *National Defense Education Act* was the importance of the federal government to effectively and efficiently handle the distribution of funds and grants to university, state, and local education systems. As George Michel pointed out:

> [C]entral policy decision makers encouraged gatekeepers, commissions, interest groups, and individuals to increase the flow of educational

---

[62] Flemming, "The Philosophy and Objectives of The National Defense Education Act," 135.

[63] Arthur S. Flemming, "Lecture on Education and National Security," *Industrial College of the Armed Forces* L61-77, November 16, 1960, 22; www.ndu.edu/library/ic4/L61-077.pdf (accessed on October 7, 2007).

demands at a national level. The blockage between large flow of demands and a small flow of educational policies had to be dissolved.[64]

In this case, the effectiveness of the education grant system to support larger, non-federal initiatives was viewed as a critical function to attain the envisioned end-state of the plan.

Envisioned under the *National Defense Education Act* was the preponderance of federal funding and commitment to support student loans for university, state, and local institutions. As a matter of principal, the federal government would provide 90 percent of the funding, with the remainder coming from other institutions.[65] The funding mechanism was quickly established. In fiscal year 1960, the federal government provided $61.5 million with other institutions bringing this total to $67.6 million.[66]

There was also a corresponding focus to develop the corporate mechanisms to support and sustain the plan's intent. These efforts echoed the development of the Joint Munitions Board, which served to effect strategic planning and the development of the Army Industrial College to serve as the institutional base to educate, train, and provide research fellowships with the nation's industrial base. The National Aeronautics and Space Administration (NASA) was created in direct response to *Sputnik* as well as the Advanced Research Project Agency within the DoD. These two agencies served to focus the nation's research and development efforts into space and national security matters. Federal funding between 1957 and 1961 for research and development doubled and funding for the National Science Foundation tripled.[67] It also developed within the National Science Foundation a Science Information Service — essentially a mechanism to facilitate scientific collaboration — and a Science Information Council to serve as a collaborative framework.[68]

---

[64] Michel, "Success in National Educational Policy from Eisenhower to Carter," 224.

[65] Riddle, "Must We Fail in Science Education? The National Defense Education Act of 1958," 58.

[66] Flemming, "The Philosophy and Objectives of The National Defense Education Act," 137.

[67] Pauline Maier, *Inventing America: A History of the United States*, vol. 2 (New York: W.W. Norton & Company, Inc., 2003), 917.

[68] Flemming, "The Philosophy and Objectives of The National Defense Education Act," 136.

### 4. Decision Characteristics

Strategic decisions are not made in a vacuum. The success of the *National Defense Education Act of 1958* can be attributed to several decision characteristics, which although would not in and of themselves ensure its success, they would ensure the best possible chance for an optimal outcome. The federal government's effort and the passage of the Act supported an envisioned and articulated end-state — to focus resources to address the scientific, mathematic, and linguistic shortfalls and close the increasing intellectual manpower shortages that were confronting the nation.[69] In other words, there was a clear idea of success. Measures were taken to support this end-state and organizations developed and strengthened to close this gap.

Despite *Sputnik's* blow to U.S. prestige, the primary course of action was not to embark on a short-term effort to quickly procure scientific talent to build specific capabilities — in this case space vehicles and technology — but rather to seek a long-term solution by improving and expanding the capacity of the underlying scientific base. There was increased collaboration between the U.S. and its allies on scientific matters, however, the passage of the Act aimed to change the underlying strategic environment of the situation. The focus on expanding the foundational base was also based on a strong stakeholder buy-in coupled with solid bipartisan support. President Eisenhower utilized a consultative and brainstorming style which, "figure significantly in predicting the success in education policy."[70] Despite earlier attempts to block his educational initiatives, the *National Defense Education Act* was passed by Congress in September 1958 with strong support.[71] Presidents Kennedy and Johnson continued with a strong national education policy and placed these initiatives high on their respective agendas — ensuring continued commitment and stability.[72]

The *National Defense Education Act of 1958* fundamentally changed the federal government's approach in educational matters. It can be viewed as a *strategic move*, which broke a long history of the federal *laissez faire* approach and redefined the role of

---

[69] Flemming, "Lecture on Education and National Security," 2.

[70] Michel, "Success in National Educational Policy from Eisenhower to Carter," 223.

[71] Flemming, "The Philosophy and Objectives of The National Defense Education Act," 134.

[72] Michel, "Success in National Educational Policy from Eisenhower to Carter," 226.

education as a strategic national asset.[73] Foremost in this decision was the recognition of the nation's critical intellectual manpower shortfalls. The launching of *Sputnik* served as the catalys for change.

The recognized need for the development of an intellectual base brought sustainment concerns to the forefront. Arthur Flemming, the Secretary of Health, Education, and Welfare under President Eisenhower, offered an insightful comment. He said, when speaking to the students at the Industrial College of the Armed Forces — the successor to the Army Industrial College: "But you know far better than I do that fear by itself never results in a sustained effort to achieve a constructive goal."[74] The response to *Sputnik* was focused on longer-term strategies aimed at capitalizing and expanding inherent U.S. strengths — a strong academic and scientific base. Strong stakeholder and bipartisan buy-in ensured the sustainment, focus, and continuity of the strategy.


D.    CONCLUSION

General Marshall's 90 Division Gamble and President Eisenhower's *National Defense Education Act* focused the nation on countering strategic threats. Their efforts were also forms of capacity building. They addressed the larger strategic problems of sustaining combat capabilities in the Second World War and the development of a scientific research and development base to guide and sustain U.S. efforts during the Cold War. These decisions addressed strategic capacity building efforts, the mechanisms that were necessary to sustain these initiatives, and the steps that were critical to making a better prepared nation. These initiatives were also directly linked to a well defined strategy centered on an identifiable end-state with a clear idea of success.

During the Second World War, it was necessary to link global strategy to industrial procurement, to preserve and expand industrial capacity to sustain Allied efforts, and build upon the mechanisms and expertise that were developed during the interwar period to ensure success. The *National Defense Education Act* represented a

---

[73]W. Chan Kim and Renée Mauborgne, *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant* (Boston: Harvard Business School Press, 2005), 10. The authors define *a strategic move* as a set of managerial actions and decisions involved in making a major market-creating business offering.

[74] Flemming, "Lecture on Education and National Security," 15-16.

stark departure to previous U.S. administrations' approach to education. It sought to link national security and education. It recognized the United States needed to expand its scientific and engineering base to sustain future research and development efforts. The Act also led to the development of collaborative venues for scientific research.

These decisions also had a temporal aspect. For General Marshall, the decision to maintain the U.S. Army at 90 Divisions was a product of the means and mechanisms that were implemented after World War I. General Marshall and his planning staff would have faced a seemingly unsurpassable obstacle in attempting to link strategy to mobilization had these mechanisms never been implemented. President Eisenhower's decision was almost the opposite. His decision point represented the impetus to link national security to education. The *National Defense Education Act* represented the point of departure in the nation's strategic plan to overcome the Soviets in science. This decision sought to improve and expand the underlying educational capacity that would be necessary to sustain U.S. efforts in science and engineering.

These decisions were also focused on a defined end-state — the necessary conditions for victory. For General Marshall, it was the unconditional defeat of the Axis while preserving U.S. strengths and capitalizing on industrial advantages. President Eisenhower, also an Army Industrial College graduate, recognized the need to develop and eventually surpass the Soviets in science. He understood the Cold War represented a new form of conflict and one that would last for decades. His view was on creating the necessary capacity and the initial impetus to sustain the United States.

The examination of these examples would indicate that capacity building has the following attributes. Capacity building:

- Focuses on the strategic and the long-term
- Requires a substantive or recognized commitment to expand or preserve
- Requires knowledge of the end-to-end capacity linkages that produce specific capabilities, infrastructure, training base, logistics, to understand opportunity costs and trade-off decisions
- Contains material and social aspects
- Is directly tied to sustainment

33

Capacity building measures indicate those things that should be invested or implemented in the present — even during times of scarcity similar to the U.S. Army during the interwar period — or preserved that will support a strategy over the long-term. It is also directly tied to the strategy's purpose — to win the Second World War or to beat the Soviets. Similarly, the implication for a homeland security capacity building concept centers on the actions and resources that should be invested or implemented in the present and that are tied to the envisioned purpose of the strategy.

# III. FOCUSING ON KEY HOMELAND SECURITY SYSTEMS: CHALLENGES TO THE LABORATORY RESPONSE NETWORK

## A. LABORATORY RESPONSE NETWORK

### 1. Mission and Scope

The United States can focus its homeland security effort to address shortfalls in critical systems that are essential to the country. These systems are critical in terms of how they relate in their scope and in the essential nature to the continuity of the missions they support. These systems can range from the National Highway Network for transportation or the nation's nuclear power generation for strategic energy needs. In this case, homeland security *capacity building* measures could be interpreted as supporting or expanding physical systems along with associated personnel which are foundational and critical to the continuity of the homeland security mission. The upgrade of these systems would require significant front-loaded costs for research and development, expansion and recapitalization, associated manning considerations, and investment. An example of such a system is the Laboratory Response Network.

Government officials recognized the serious threat of terrorism during the 1990s. The Clinton administration issued *Presidential Decision Directive (PDD) 39* (*U.S. Policy on Counterterrorism*) after recognizing the rise in terrorist activity that was manifested by the attacks at the World Trade Center in 1993 and overseas. Additionally, there were concerns about the terrorist's interest in nuclear, chemical, and biological materials for use as a Weapon of Mass Destruction (WMD) — as evidenced by the *Aum Shinrikyo* attacks in Tokyo in 1994 and 1995. PDD 39 stated: "The United States shall give the highest priority to developing effective capabilities to detect, prevent, defeat and manage the consequences of nuclear, biological or chemical (NBC) materials or weapons use by terrorists."[75] Additionally, the *Defense Against Weapons of Mass Destruction Act of 1996*, more commonly known as the *Nunn-Lugar-Domenici Act*, charged the DoD with

---

[75] Office of the President, *Presidential Decision Directive 39: U.S. Policy on Counterterrorism* (Washington DC: GPO, June 21, 1995), 9; https://www.hsdl.org/homesec/docs/whitehouse/nps03-062703-13.pdf (accessed on September 15, 2006).

providing training assistance to other federal, state, and local organizations.[76] Absent in these initiatives were the scope, investment, and capacity that were necessary to support and sustain the development of these capabilities.

The Laboratory Response Network was established in 1999 as a result of these growing WMD concerns. Consisting of a partnership between the Centers for Disease Control and Prevention (CDC), the Association of Public Health Laboratories (APHL), the Federal Bureau of Investigation (FBI), and the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), these networked laboratories were designed to "link state and local public health laboratories with other advanced-capacity clinical, military, veterinary, agricultural, water, and food-testing laboratories, including those at the federal level."[77] The mission of the Laboratory Response Network is to "maintain an integrated national and international network of laboratories that can respond quickly to acts of chemical or biological terrorism, emerging infectious diseases and other public health threats and emergencies."[78]

### 2. Laboratory Response Network: Organization

The Laboratory Response Network operates as an integral component of a larger public health framework. In the United States, public health consists of several governmental and non-governmental entities — such as the American Red Cross — that are primarily focused on the prevention of infectious diseases, other illnesses, and injuries throughout the population. Key public health functions include:

> . . . disease surveillance to detect outbreaks and to monitor trends; specialized laboratory testing to identify bioagents, both in individuals and in environments; epidemiologic methods to identify persons at risk and to

---

[76] U.S. Congress, Senate, *National Defense Authorization Act for Fiscal Year 1997: Defense Against Weapons of Mass Destruction Act of 1996*, Public Law 104-201 (Washington DC: GPO, September 23, 1996), 298; http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=104_cong_public_laws&docid =f:publ201.104.pdf (accessed on November 28, 2006). Section 1412(a) assigned these responsibilities to the Department of Defense.

[77] Stephen A. Morse and others, "Detecting Biothreat Agents: the Laboratory Response Network," *American Society for Microbiology (ASM) News* 69, no. 9 (2003): 433; http://www.asm.org/ASM/ files/CCLIBRARYFILES/FILENAME/0000000605/nw09030114p.pdf (accessed on September 15, 2006).

[78] Centers for Disease Control (CDC), *The Laboratory Response Network (LRN): Partners in Preparedness* (Atlanta, GA: March 11, 2005), 1; http://www.bt.cdc.gov/lrn/pdf/lrnhistory.pdf (accessed on September 15, 2006).

monitor the effectiveness of prevention and treatment measures; knowledge of disease processes in populations to determine appropriate responses such as quarantine, decontamination or the dissemination of treatment recommendations; and coordination with partners to establish effective planning and response.[79]

Such a decentralized framework, while aimed at meeting and responding to local level requirements, also requires the appropriate tools — the sufficient capacity and integration — at the lowest levels for it to work effectively. Given this framework, which crosses several levels of government and other sectors, some of the key performance parameters that support a rapid local response with robust laboratory capacity are the sufficient equipment and laboratory space to identify and analyze pathogens, the education and training of its personnel, and the ability to plan and coordinate across various organizational levels. Physical capacity, professional knowledge, and data sharing are the critical components.

The Laboratory Response Network has distinct protocols and structures for responding to chemical and biological scenarios. It also operates under an organizational framework similar to any public health response. The initial incident assessment will involve local public health officials. Based on their assessment, local jurisdictions can draw upon other local, state, and federal support should the incident be of sufficient magnitude.[80]

Although these laboratories are currently divided into three categories — national, reference, and sentinel labs — in 2001, this tiered architecture was divided into four groupings of laboratories each designed to fulfill certain functions. Inherent to the efficient operation of this network is the ability to quickly detect, classify, and manage data amongst the different levels. Descriptions of the levels are contained below:

- Level A: Focused on early detection of biologic agents. Laboratories at this level would typically be local public health or hospital laboratories

---

[79] Congressional Research Service (CRS), *An Overview of the U.S. Public Health System in the Context of Emergency Preparedness* (Washington D.C: Library of Congress, 17 March 2005), 3; http://www.fas.org/sgp/crs/homesec/RL31719.pdf (accessed on September 14, 2006).

[80] United States General Accountability Office, *Bioterrorism: Public Health Response to Anthrax Incident of 2001*, GAO-04-152 (Washington, DC: GPO, September 3, 2003), 17; http://www.gao.gov/new.items/d04152.pdf (accessed on September 4, 2006).

lower biosafety protocols. Laboratory staffs are trained to identify potential harmful pathogens for further shipping and analysis by laboratories with higher biosafety protocols.

- Level B: Typically state or local public health laboratories with the ability to conduct presumptive-testing and identification of specific pathogens. The focus of Level B laboratories is to conduct confirmatory testing.

- Level C: Are located typically at advanced state, academic institutions, or the federal level to conduct highly advanced testing of pathogen samples. The laboratories have the ability to conduct pathogen evaluations for possible treatment solutions.

- Level D: These laboratories are at the federal level and consist of highly developed capabilities to evaluate and test very rare and harmful pathogen strains. These laboratories also contain the highest level of biosafety protocols.[81]

State and local laboratories operating at different levels and with different capabilities would factor significantly to the CDC's response during the anthrax incident.

The laboratories that participate as part of the Laboratory Response Network are also required to meet certain federal criteria such as justifications on how the laboratory supports state or local public health efforts, meeting prescribed safety standards, adhering to federal standards for physical and personnel security requirements, and ensuring secure communications for transmission of pathogen test information.[82] In return, these laboratories receive federal support and grants. Although the Laboratory Response Network has grown, the first true test of the network's ability to respond to a national emergency occurred during the anthrax attacks in 2001.

---

[81] Centers for Disease Control (CDC), *Biological and Chemical Terrorism: Strategic Plan for Preparedness and Response – Recommendations of the CDC Strategic Planning Working Group* (Atlanta, GA: April 21, 2000), 10; http://www.cdc.gov/mmwr/PDF/RR/RR4904.pdf (accessed on September 15, 2006).

[82] Morse and others, "Detecting Biothreat Agents: the Laboratory Response Network," 436.

### 3. Status of Public Health and Laboratory Response Network prior to the 2001 Anthrax Attacks

The status of the Laboratory Response Network in 2001 must be viewed within the wider context of strategic public health investment and focus given the network's integral role within public health. The strategic focus and investment in the country's public health infrastructure declined after World War II. Significant advances in the development of medicines and medical treatment shifted "the biomedical paradigm for responding to infectious disease."[83] The paradigm shift focused on individual care versus more traditional community-wide public health approaches. Although the focus shifted to individual care and advances in medicine "the proportion of total health spending dedicated to public health rose from 0.72 percent in 1960 to 1.32 percent in 2000."[84] When considering inflation, population growth, and the paradigm shift, this increase represented very little real growth, if any, in public health spending and investment for services that addressed broader population needs. A 1996 study from two state public health departments indicated that more than two-thirds of public health spending was dedicated to personal care versus broader population-based services.[85]

The focus of public health spending and investment also shifted from the federal government to state and local responsibility. The federal government expanded its role during the 1930s as part of the *New Deal* with the creation of the National Institute of Health (NIH) and several programs aimed at training public health professionals.[86] This trend shifted after World War II. By the 1990s, approximately 29 percent of public health spending came from federal sources while the rest came from state and local funding.[87]

---

[83] Eileen Salinsky, "Public Health Emergency Preparedness: Fundamentals of the System," *National Health Policy Forum* (April 3, 2002): 3; http://www.nhpf.org/pdfs_bp/BP_Public_Health_4-02.pdf (accessed on September 10, 2006).

[84] Bill Frist, "Public Health and National Security: The Critical Role in Increased Federal Support," *Health Affairs* 21, no.6 (November/December 2002): 117; http://www.pubmedcentral.nih.gov/picrender. fcgi.artid=158003adblobtype=pdf (accessed on September 20, 2006).

[85] Congressional Research Service (CRS), *An Overview of the U.S. Public Health System in the Context of Emergency Preparedness*, 13.

[86] Frist, "Public Health and National Security: The Critical Role in Increased Federal Support," 120.

[87] Congressional Research Service (CRS), *An Overview of the U.S. Public Health System in the Context of Emergency Preparedness*, 14.

Additionally, overall decreases in public health spending during the 1990s resulted in a decline of public health services.[88]

Investment in public health infrastructure and training aimed at broad-based population services lessened as a result of the paradigm shift. Coupled with the lack of real growth in the public health sector and a decrease in federal focus, the overall structure of the system was neglected. In public health, critical capacities are considered a "comprehensive preparedness and response plan, building adequate laboratory capacity, and ensuring the capability to communicate between public health departments and law enforcement agencies."[89] In the decades leading up to the twenty-first century, direct investment in laboratory capacity and data sharing capabilities were neglected.[90] The CDC was forced to rely on antiquated laboratories with little funding for capital investment. Data sharing capabilities were also neglected. A survey in 1998 revealed that only 45 percent of local public health departments had the ability to send alerts via fax to their respective communities.[91] Additionally, as late as 2001, only 68 percent of the nation's county health agencies possessed Internet connectivity.[92]

The network's capacity was also limited in terms of its physical dimension. The CDC's effort in the late 1990s and early 2000 resulted in great strides to network laboratories and improve collaboration. The physical capacity, the underlying laboratory facilities, equipment, and data handling mechanisms, still required improvement. It required direct investment, which at the time would have meant a significant front-loaded and follow-on sustainment cost. This lack of investment would result in a marginally networked laboratory system focused on response, but weak in terms of an underlying

---

[88] Grant Makers Health (GIH), *Strengthening the Public Health System for a Healthier Future*, Issue Brief 17 (Washington DC: GIH, February 2003), 11; http://www.gih.org/usr_doc/public_health.pdf (accessed on September 5, 2006).

[89] Leif Haase Wellington, *Breathing Easier? Report of the Century Foundation Working Group on Bioterrorism Preparedness* (New York: The Century Foundation, 2004), 6; http://www.tcf.org/Publications/HomelandSecurity/breathingeasier.pdf (accessed on September 15, 2006).

[90] Frist, "Public Health and National Security: The Critical Role in Increased Federal Support," 120.

[91] Centers for Disease Control and Prevention, *Public Health's Infrastructure: A Status Report*, Response to Senate Report 106-166 (Washington, DC: GPO, 1999), 8.

[92] Edward L Baker and Jeffrey P. Koplan, "Strengthening the nation's public health infrastructure: Historic challenge, unprecedented opportunity," *Health Affairs* 21, vol.6 (November/December 2002): 17; http://content.healthaffairs.org/cgi/reprint/21/6/15.pdf (accessed on October 27, 2006).

*capacity cushion* that could absorb heightened national demands.[93] In essence, capabilities had been sought, but the underlying capacity to produce, integrate, and expand these capabilities on a larger scale was lacking.

Public health training programs also suffered. A national survey conducted in 1983 concluded that only 57 percent of epidemiologists met the academic qualification standards for that profession.[94] Another bioterrorism training study in 2000 for state public health agencies indicated that only 5 percent of their personnel had received training.[95] Despite the heightened awareness in the 1990s, personnel training and professional development initiatives aimed at increasing levels of awareness remained problematic.

The CDC ramped up its bioterrorism planning effort in the 1990s after decades of neglect to the public health infrastructure, training, and lack of strategic direction. From 1998 to 2001, the CDC was not only leading the development of the Laboratory Response Network, but was developing diagnostic and epidemiologic standards and increasing the capability of the Strategic National Stockpile.[96] The multiplicity of several significant organizational tasks also overstretched the CDC. Despite these efforts, coordination between the various public health government entities, non-governmental organizations, and the private sector remained highly fragmented.[97]

---

[93] Robert Hayes and others, *Operations, Strategy, and Technology: Pursuing the Competitive Edge* (Hoboken, New Jersey: John Wiley & Sons, Inc., 2005), 86. In this case, the authors define *capacity cushion* as, "the amount of capacity in excess of expected demand."

[94] Robert A. Gunn, and others, "State Epidemiology Programs and State Epidemiologists: Results of a National Survey," *Public Health Reports* 104, no.2 (March/April 1989): 172; http://www.pubmedcentral. nih.gov/picrender.fcgi ?artid=1580032&blobtype=pdf (accessed on September 20, 2006).

[95] Michael R. Fraser and Donna L. Brown, "Bioterrorism Training and Local Public Health Agencies: Building a Response Capacity," *Public Health Reports* 115, no.4 (July/August 2000): 330; http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1308572&blobtype=pdf (accessed on September 20, 2006).

[96] United States General Accountability Office, *Bioterrorism: Public Health Response to Anthrax Incident of 2001*, 8.

[97] United States General Accountability Office, *Bioterrorism: Public Health and Medical Preparedness*, GAO-02-141T (Washington, DC: October 9, 2001), 8; http://www.gao.gov/ new.items/d02141t.pdf (accessed on September 4, 2006).

## B.     2001 ANTHRAX ATTACKS

### 1.     *Bacillus Anthracis*

*Bacillus Anthracis*, more commonly known as anthrax, is a naturally occurring disease that can be transmitted from animals to humans. It is found globally, although the more high risk areas are usually in those countries that have poor public health infrastructures.[98] It is a bacteriological disease that can spread quickly among animals causing significant losses. In its natural state, the disease can have several and often lethal effects if transmitted to humans.

Anthrax is also of significant concern as a biological weapon.[99] The bacteria itself poses risks; however, the greater concern is the dry and concentrated form of anthrax spores. These spores, when inhaled, reach into the respiratory system and concentrate in the lymph nodes, which reproduce in the blood stream to produce toxins that can lead to death.[100] Although humans can become infected through various forms — through skin contact or inhalation — the critical factor is the bacteria's incubation period. The effects of cutaneous anthrax are usually less than one day and inhalation anthrax less than one week.[101] Given a possible one-week period, the key factor in combating anthrax is the in-place disease surveillance measures and laboratory testing ability to determine if an actual occurrence has taken place or to determine a false-positive.

There were 22 people directly affected by anthrax between October 4 and November 22, 2001. Of the 22 cases, 11 were from skin exposure and 11 from inhalation anthrax. The five fatalities were from the respiratory form of infection.[102] The epicenters

---

[98] Robbin S. Weyant, John W. Ezzell, Jr, and Tanya Popovic, *Basic Laboratory Protocols for the Presumptive Identification of Bacillus Anthracis* (Atlanta: GA, April 18, 2001), 3; http://www.bt.cdc.gov/Agent/Anthrax/Anthracis20010417.pdf (accessed on September 19, 2006).

[99] Erlendur Helgason and others, "Bacillus anthracis, Bacillus cereus, and Bacillus thuringiensis: One Species on the Basis of Genetic Evidence," *Applied and Environmental Microbiology* 66, no.6 (2000): 2627; http://aem.asm.org/cgi/reprint/66/6/2627.pdf (accessed on September 19, 2006).

[100] G.F. Webb, "A silent bomb: The risk of anthrax as a weapon of mass destruction," *Proceedings of the National Academy of Sciences* 100, no.8 (April 7, 2003): 4355; http://www.pnas.org/cgi/reprint/100/8/4355.pdf (accessed on September 15, 2006).

[101] Centers for Disease Control and Prevention, *Fact Sheet: Anthrax Information for Health Care Providers* (Atlanta, GA: March 8, 2002), 1-2; http://www.bt.cdc.gov/agent/anthrax/anthrax-hcp-factsheet.pdf (accessed on September 16, 2006).

[102] Daniel B. Jernigan and others, "Investigation of Bioterrorism-Related Anthrax, United States, 2001: Epidemiologic Findings," *Emerging Infectious Diseases* 8, no.10 (October 2002): 1019; http://www.cdc.gov/ ncidod/EID/vol8no10/pdf/02-0353.pdf (accessed on September 4, 2006).

of the attacks were in Florida, New York, New Jersey, Virginia, Maryland, Pennsylvania, Connecticut, and Washington D.C. Despite being confined to seven states and the federal district, the 2001 attacks had national implications. As a GAO report found: "[E]ven in areas far removed from the epicenters, residents brought samples of suspicious powders to officials for testing and worried about the safety of their daily mail."[103]

The first case occurred in Florida when a media employee was identified with the inhalation form of anthrax. Other cases were then identified in New York and New Jersey. These cases were cutaneous and affected postal workers through exposure of anthrax-laced envelopes. The fourth case — a cutaneous incident — occurred in Washington, D.C. by opening an envelope mailed to Capitol Hill. The next case, from an affected postal worker, occurred in the Washington D.C. area. This case, however, was inhalational and showed that people could be affected by this more fatal form by handling sealed envelopes. The following anthrax cases in New York, New Jersey, and Connecticut, which affected more postal employees, were inhalational and further confirmed that exposure to sealed envelopes could result in inhalational anthrax.[104] The average duration between anthrax exposure and the manifestation of symptoms was 4.5 days.[105] Although the attacks affected a small group of people, the scale of the response and clean-up was massive. For example, the Environmental Protection Agency estimated the total cost and time for cleaning up the Capitol Hill epicenter was $28 million with three months of processing over 10,000 air and surface samples.[106]

### 2.     Physical Laboratory Limitations during the 2001 Anthrax Incidents

The Laboratory Response Network consisted of 80 labs during in 2001.[107] The CDC along with other federal, state, and local governments to include the private sector

---

[103] United States General Accountability Office, *Bioterrorism: Public Health Response to Anthrax Incidents of 2001*, 1.

[104] Ibid., 9.

[105] Jernigan and others, "Investigation of Bioterrorism-Related Anthrax, United States, 2001: Epidemiologic Findings," 1002.

[106] Sandia National Laboratories, "Sandia tool speeds up environmental cleanup, reopening of contaminated facilities," *Sandia News Release* (June 7, 2006): 1; http://www.sandia.gov/news/resources/releases/2006/broom-commercial.html (accessed on September 13, 2006).

[107] Wellington, *Breathing Easier? Report of the Century Foundation Working Group on Bioterrorism Preparedness*, 17.

developed this network as a result of rising bioterrorism concerns in the late 1990s. The ability of the network to perform its mission, however, is directly dependent upon a wider set of public health infrastructure. The CDC views the Laboratory Response Network as an essential capability — closely linked with disease surveillance and epidemic investigation — within the wider public health infrastructure and response.
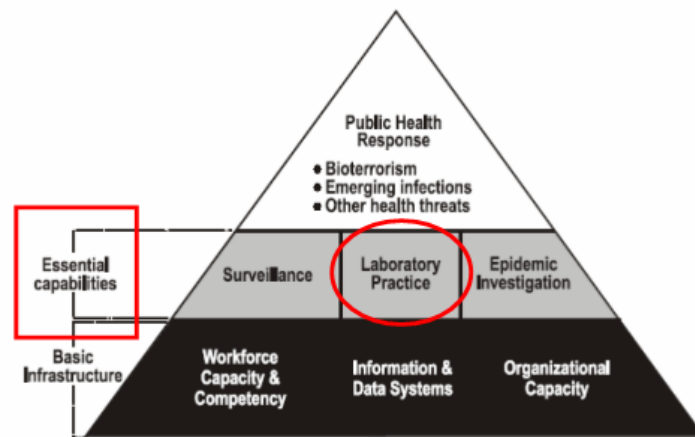


Figure 2.     Pyramid of Public Health Preparedness (After the Center for Disease Control and Prevention, *Public Health's Insfrastructure: A Status Report*)

Disease surveillance measures, laboratory practice, and epidemic investigation efforts must be synchronized and planned for the overall system to operate effectively. They are the essential elements necessary for an effective public health response.

The Laboratory Response Network is also dependent on other factors. The public health model for analyzing naturally occurring outbreaks or a covert release of a biological agent is for those affected to first seek treatment with their local health provider to diagnose and treat symptoms. After these providers report symptoms, local and state public health officials collect and monitor this data for trend analysis. Laboratories collect clinical and environmental samples for further testing and epidemiologists use disease surveillance systems and reported data to assess and characterize disease outbreaks. After determining the size, scope, and nature of the outbreak, public health officials are responsible for providing treatment protocols and information to the clinical community and the public.[108]

---

[108] United States General Accountability Office, *Bioterrorism: Public Health Response to Anthrax Incidents of 2001*, 7.

In terms of throughput capacity, a typical Laboratory Response Network facility operated under some preconceived assumptions prior to the 2001 attacks. For example, the New York City's Public Health laboratory "processed one or two samples per month, utilizing a small Biosafety Level 2 (BSL-2) room with two dedicated personnel."[109] The capacity assumptions to support a crisis would prove false. The sample throughput increased approximately 3,000 times after the anthrax incidents.[110]

There were also issues with physical capacity. In New York's case, the laboratory's size was a 400 square foot area, which contained biosafety and analysis equipment, incubators and refrigeration units for storage, and a computer for data-entry.[111] The laboratory's configuration was consistent with the design recommendations from the Department of Health and Human Services and CDC, which contained requisite safety equipment serving as the primary protection barrier — specialized cabinets, containers, and personal protective equipment and physical design and construction as the secondary protection barrier — physical obstacles and ventilation equipment.[112]

The anthrax incident also led to increased demands for laboratory space and personnel. Laboratory space was at a premium and personnel requirements increased 25 times. Six tons of additional equipment and supplies were required in New York's Public Health laboratory to support the surge. Demands on maintaining custody, tracking requirements, and having to hastily institute a database management system for receipt, analysis, and sample forwarding quickly overwhelmed preconceived planning assumptions and working models.[113] A comparative synopsis is shown below:

---

[109] Michael B. Heller, "Laboratory Response to Anthrax Bioterrorism, New York City, 2001," *Emerging Infectious Diseases* 8, no.10 (October 2002): 1096; http://www.cdc.gov/ncidod/EID/ vol8no10/pdf/02-0376.pdf (accessed on September 20, 2006). The laboratory was set up according to CDC protocols and staff members were trained by CDC on methods for isolating and identifying bioterrorism agents.

[110] Ibid., 1097.

[111] Ibid., 1096-1097.

[112] U.S. Department of Health and Human Services, *Biosafety in Microbiological and Biomedical Laboratories*, 4th Edition (Washington, DC: GPO, 1999), 9-10; http://www.cdc.gov/od/ohs/pdffiles/ 4th%20BMBL.pdf (accessed on September 10, 2006).

[113] Heller, "Laboratory Response to Anthrax Bioterrorism, New York City, 2001," 1097.

| | Before October 12, 2001 | After the surge of specimens |
|---|---|---|
| Specimen load | 1 every 2–3 months | 2,700 nasal swabs/2 weeks<br>3,200 environmental specimens/2 months |
| Laboratory space | One room | 10 laboratories<br>3 evidence rooms<br>4 support areas<br>Command center (suite of offices)<br>Separate storage area for supplies |
| Staff | 2 people rotating on call schedule | >75ᶜ |
| Technology | Basic microbiology capabilities<br>γ phage DFA | Rapid PCR assays with conventional basic<br>microbiology capabilities |
| Supplies | General laboratory supplies | 6 tons flown to NYC from CDC |
| Miscellaneous | No database<br>1 stand-alone computer | Clinical database<br>Environmental database<br>30 computers linking all areas of the building |

Figure 3.    New York City Laboratory Comparison (From Michael B. Heller's *Laboratory Response to Anthrax Bioterrorism*)

A GAO report concluded that "the large influx of samples strained the physical capacities of the laboratories."[114] According to the CDC, over 125,000 clinical samples and 1 million environmental samples were processed.[115] The physical limitations identified included a shortage of biosafety cabinets, insufficient testing chemicals, and other supply shortages. Other critical functions, primarily epidemic investigation, were also overstretched. Public health departments and a variety of Level A and B laboratories required individual support from outside agencies like the CDC or the DoD to meet their epidemiological needs. Additionally, the use of volunteers was limited due to the lack of a credentialing system.[116] Interestingly, when viewed over time, "State health agencies employed fewer epidemiologists — specialists in infectious disease investigations — in 2002 than they had a decade earlier."[117] The physical and manning capacities had regressed. In this case, there was a negative *capacity cushion* — the amount of capacity in excess of expected demand — that had been allowed to diminish.

[114] United States General Accountability Office, *Bioterrorism: Public Health Response to Anthrax Incidents of 2001*, 20.

[115] James M. Hughes and Julie Louise Gerberding, "Anthrax Bioterrorism: Lessons Learned and Future Directions," *Emerging Infectious Diseases* 8, no.10 (October 2002): 1013; http://www.cdc.gov/ ncidod/ EID/vol8no10/pdf/02-0466.pdf (accessed on September 15, 2006).

[116] United States General Accountability Office*, Bioterrorism: Public Health Response to Anthrax Incidents of 2001*, 13, 19.

[117] Wellington, *Breathing Easier? Report of the Century Foundation Working Group on Bioterrorism Preparedness*, 1.

### 3. Strategic Public Health Response Limitations

The 2001 Anthrax attacks severely strained local capacities as evidenced by the challenges facing the New York City's Public Health laboratory. There were also significant challenges at the strategic level. The CDC was hard pressed to maintain an effective response during the months of October and November 2001 despite the relatively localized geographic scope and the limited amount of people exposed to anthrax. The first challenge centered on a preexisting planning assumption that later proved false. The CDC had never responded nor was optimally postured to deal with the multiple outbreaks caused by the intentional release of a biological agent.[118] Despite having global influence and national responsibilities, the organization was not postured physically or with sufficient personnel to respond to multiple issues. During this period, the CDC was faced with having to support multiple localities — many located away from actual epicenters. They also had to individually tailor their support based on unique state and local responses and on their individual response capacities. These local requirements also varied greatly. Some localities relied solely upon the CDC for epidemiologic investigation while others simply required support for surge laboratory requirements.[119]

The CDC was also faced with serving as the clearinghouse and a central node for receiving and disseminating critical information in response to a nationwide event. To support the increased data handling requirements, the CDC had to quickly convert an auditorium into a 24-hour-a-day, multi-agency, operations center in order to respond to varied and numerous requests.[120] Other CDC shortfalls included "surveillance; clinical, epidemiologic, and environmental investigation; laboratory work; communications; coordination with law enforcement; medical management, administration of prophylaxis; monitoring of adverse events; and decontamination."[121]

---

[118] United States General Accountability Office, *Bioterrorism: Public Health Response to Anthrax Incidents of 2001*, 2.

[119] Ibid., 22.

[120] United States General Accountability Office, *Bioterrorism: Public Health Response to Anthrax Incidents of 2001*, 27.

[121] Ibid., 21.

## C.    LABORATORY RESPONSE NETWORK: CAPACITY BUILDING?

### 1.    Implications

A review of the Laboratory Response Network and its ability to respond to the 2001 Anthrax Attacks reveals two points. First, while there was a networked set of laboratories, the prevailing assumptions of their ability to handle a national incident proved false. The network was barely able to maintain the demand for its services. The network was not prepared to handle the size and scale of the clinical and environmental samples. In this case there was little to no *capacity cushion* built into the system. Laboratory space and equipment were overstrained and there was insufficient data handling equipment to collect, catalogue, and report findings. In terms of manning, there were also insufficient staff, laboratory technicians, and epidemiologists with the sufficient training and in sufficient numbers to respond.

Second and perhaps more importantly, there is considerable doubt whether these levels of activity would have been sustainable. This incident affected all fifty states. Each state and large metropolitan area had individual sustainment issues, which required support from the CDC whether in terms of epidemiology, laboratory technicians, or basic supplies. The CDC, not suited to respond to multiple requests, was not postured to deal with more than one incident at a time. Despite the recognized threat posed by terrorism in the 1990s and the recognized need to develop capabilities, there was no corresponding effort to develop larger foundational capacities to support and sustain these capabilities on a larger and more sustained scale.

In context, the Laboratory Response Network can be viewed as a critical homeland security capacity — essential to the national public health response and continuity during an emergency and foundational to the performance and continuity of this homeland security mission. Under the intent of *Homeland Security Presidential Directive (HSPD)-8* (*National Preparedness*), *capacity building* can be interpreted to mean that the U.S. government will engage in capacity building measures by increasing investments in specific areas to expand or recapitalize critical systems that support homeland security efforts — in this case, the Laboratory Response Network. This interpretation would be consistent with acknowledged capacity building activities in the scientific and medical community, which include the procurement of new systems and

48

equipment, training of personnel, the creation of new research centers, new laboratories, and the implementation of new data sharing systems.[122]

## 2. Challenges

### *a. Nature of Costs*

There are two challenges with utilizing this interpretation of *capacity building* — the nature of the costs involved and political acceptability. The nature of the cost is founded on three factors. You need to know where you are, where you need to be, and how you want to get there.[123] A current assessment of the Laboratory Response Network is necessary to know where you are. An envisioned goal is also necessary to know where you need to be. A strategic investment strategy is fundamental to determining how the envisioned goal can be attained. The stated overarching goal for Public Health Laboratory Testing is:

> Chemical, radiochemical, and biological agents . . . are rapidly detected and accurately identified by the public health laboratory within the jurisdiction or through network collaboration with other appropriate local, State, and Federal laboratories. The public health laboratory, working in close partnership with public health epidemiology, environmental health, law enforcement, agriculture and veterinary officials, produce timely, accurate data to support ongoing public health investigations and the implementation of appropriate preventative or curative counter-measures. Public health laboratory activities will also be coordinated with public safety, law enforcement, hospitals, and other appropriate agencies.[124]

This goal articulates the envisioned attributes of the network — rapid assessment, accuracy, collaboration, and coordination. These attributes represent the desired end-state, or clear idea of success, of where the network needs to be. The network should have cutting-edge equipment, streamlined and robust data sharing mechanisms, and a trained workforce in sufficient numbers for rapid and accurate assessments. The specific

---

[122] Caroline S. Wagner and others, *Science and Technology Collaboration: Building Capacity in Developing Countries?* (Santa Monica, DA: RAND, March 2001), 7; http://www.rand.org/pubs/ monograph_reports/2005/MR1357.0.pdf (accessed on September 15, 2005).

[123] John M. Bryson, *Strategic Planning for Public and Nonprofit Organizations: A Guide to Strengthening and Sustaining Organizational Achievement*, 3rd Edition (San Francisco, CA: Jossey-Bass, 2004), 7.

[124] Department of Homeland Security, *National Preparedness Goal*, 9.

or measurable physical level or throughput envisioned in the end-state is contained in the *Target Capabilities List* (TCL). In this instance, the targeted capacity for a state public health laboratory would be the ability to process 40 samples per day under given planning assumptions.[125]

The TCL also contains numerous statements on laboratory equipment, data handling requirements, training, and personnel levels.[126] Although the TCL identifies an estimated capacity — in this instance for a state public health laboratory — along with targeted capabilities and estimated capacities for other requirements, the underlying *capacity building* issue for the Laboratory Response Network centers on a strategic capacity building investment strategy that addresses the question of how you want to get there consistent with achieving the most from limited national means. The capacity building strategy factors the network's present condition, envisioned goals and the necessary capacity building investments to implement and sustain this capacity. In this case, there is no capacity building strategy to answer these questions.

The development of a capacity building strategy represents a strategic decision point and critical implementation issue. Congressional testimony given after the 2001 Anthrax and 2003 SARS incidents on public health preparedness would indicate:

- Laboratory capacity is not "uniformly robust" throughout the network.
- Only half of the states have a laboratory with the requisite equipment and personnel training for "rapidly assessing and correctly identifying biological agents."
- Approximately half the states reported having a laboratory with sufficient biosafety measures to handle biological agents like anthrax.
- Data handling and communication remains an issue.[127]

Despite some initiatives, there is clearly room for improvement. Given the targeted levels in the TCL, a capacity building strategy to improve this network would have to consider

---

[125] Department of Homeland Security, *Target Capabilities List*, 247.

[126] Ibid., For detailed Laboratory Response Network requirements see 233-252.

[127] United States General Accountability Office, *Public Health Preparedness: Response Capacity Improving, but Much Remains to Be Accomplished*, GAO 04-458T (Washington, DC: GPO, February 12, 2004), 5-6; www.gao.gov/new.items/d04458t.pdf (accessed on September 3, 2006).

the capital investments and costs that are necessary to expand laboratory capacity, the necessary equipment for laboratory testing, data handling requirements, and sustainment.

In a capacity building strategy, the nature of these costs is threefold. Capital investment requires up-front or front-loaded costs. Equipment purchases, laboratory expansion, adherence to safety standards, and implementation of data handling protocols require initial outlays of capital and resources. It also requires a determination of a realistic *capacity cushion* to absorb unforeseen and unplanned requirements. Lastly, associated sustainment costs are necessary for the continued viability of the network and to prevent obsolescence.

A capacity building strategy aimed at building the viability of the Laboratory Response Network requires front-loaded costs. These costs should factor "… how much of what kinds of capacity are to be provided over time, given the likely evolution and variability …."[128] For example, are estimated laboratory sample estimates contained in the TCL accurately considering the new threat posed by a worldwide pandemic? Are differences between chemical and biological responses and testing considered? How are increases in population factored into the strategy over time? Other variables can include the amount of given laboratory floor space, types of equipment, personnel shifts, and organizational procedures.[129] These issues, particularly when viewed at a broad level and considering the front-loaded nature of the cost represents a strategic decision point and a commitment to implement the initiative. They also represent a risk because the capacity building steps taken today may not be realized until some point in the future.[130]

A realistic *capacity cushion* for the Laboratory Response Network is also a strategic necessity. Given the criticality of the network, this cushion factors unforeseen circumstances, unplanned requirements, and allows the network greater flexibility and

---

[128] Robert Hayes and others, *Operations, Strategy, and Technology: Pursuing the Competitive Edge*, 77.

[129] Ibid., 42.

[130] Ibid., 90.

redundancy to respond. Maintaining excess capacity is typically an expensive proposition — another factor when considering the implementation of a long-term capacity building strategy.[131]

The last cost associated with this capacity building strategy is the inherent sustainment costs that are associated with maintaining the network's viability. Long-term sustainment costs are perhaps the greatest concern. There is considerable debate whether the federal government's homeland security initiatives will be sustained to support continued mechanisms over the long-term. As Falkenrath points out: "There is a real risk that the improvements put in place will not be sustained. Equipment purchased may grow obsolete and inoperable. The training provided may be forgotten, lost to turnover, or not offered to new public servants."[132] Given the historical nature of tight state and local operating budgets, not accounting for sustainment costs will result in an ineffective program. Although economies of scale are gained through long-term capital investments and increased standardization, sustainment costs are a necessary consideration.[133]

The front-loaded and sustainment cost considerations represent an opportunity cost and a trade-off consideration. Front-loaded investment decisions require an up-front commitment and buy-in. It requires a determination of the capacity's scope and how other factors relate to the investment in a critical capacity, whether political, economic, or societal. These factors also affect the necessary, but narrower issues, of developing specific capabilities that would be inherent to successfully enhancing the network. In short, this interpretation of capacity building would require planners to consider the scope, focus, and methodology to assess the wide implications of implementing strategy.

---

[131] Robert Hayes and others, *Operations, Strategy, and Technology: Pursuing the Competitive Edge*, 86.

[132] Richard A. Falkenrath, "Problems of Preparedness: U.S. Readiness for a Domestic Terrorist Attack," *International Security* 25, no.4 (Spring 2001): 184.

[133] Robert Hayes and others, *Operations, Strategy, and Technology: Pursuing the Competitive Edge*, 77.

### b.     *Political Acceptability*

Political acceptability is also a challenge with this type of capacity building interpretation. Federal, state, and local governments are typically wary of initiatives requiring front-loaded costs with significant long-term commitments. The allocation of large amounts of money and resources also represents an opportunity cost. Simply put, money allocated towards revamping and sustaining the Laboratory Response Network means that those resources cannot be applied elsewhere. Strong commitments to these types of initiatives require a clear external stimulus — as evidenced by the historical examples of World War II and the Eisenhower *National Defense Education Act of 1958*.

The issue with revamping the Laboratory Response Network and associated disease surveillance and epidemiologic capabilities is a challenging proposition. The United States experienced a decline in wider public health investment since the 1960s. There were still significant shortcomings to the Laboratory Response Network in 2001 despite the increased emphasis in the late 1990s on bioterrorism issues. Additionally, there remain significant capacity issues despite the 2001 Anthrax incident and the 2003 SARS outbreaks. State and local jurisdictions are still challenged to seek and retain epidemiologic and laboratory personnel.[134] A 2004 study revealed that "29 states and [Washington] D.C. reported they did not have adequate numbers of lab scientists to test for a potential anthrax or plague incident."[135] This report also indicated that for about half the states, over 25 percent of their public health officials were nearing retirement age.

It would seem that there has been a very limited stakeholder buy-in or emphasis given the nation's slow decline in public health and the continued challenges facing the Laboratory Response Network. This decline has occurred despite the external

---

[134] United States General Accountability Office, *Public Health Preparedness: Response Capacity Improving, but Much Remains to Be Accomplished*, 6-7.

[135] Hearne, Shelley A., Lara M. Segal, and Michael J. Earls, *Ready or Not? Protecting the Public's Health from Diseases, Disasters, and Bioterrorism* (Washington DC: Trust for America's Health, December 2005), 19; http://healthyamericans.org/reports/bioterror05bioterrori05Report.pdf (accessed on September 27, 2006).

stimuli of 9/11, the 2001 Anthrax incident, and the 2003 SARS case. The underlying capacity issues, whether in the form of equipment or personnel, remain problematic.

This lack of progress may be the product of a larger context. It is acknowledged by non-governmental organizations engaged in third world capacity building efforts that "political leadership and the prevailing political and governance systems are critical factors in creating opportunities and setting limits for capacity development efforts."[136] These organizations view these governance systems as the *enabling environment*.

The *enabling environment* in the United States is its federalist governance structure and the variety of programs that support public health initiatives. As outlined in a Council of Foreign Relations report:

> National coordination, resource support, and leadership by the federal government are all essential. But encouraging the capacity for states, localities, and the private sector to experiment and to be flexible in adapting to local and regional circumstances will ensure that our nation's approach to homeland security will be as dynamic as the threat that confronts us.[137]

National support, collaboration, flexibility, and adaptation are some of the key factors that are necessary for revamping the nation's public health and the Laboratory Response Network. The overarching problem is that public health initiatives have typically not received wide political support. Additionally, despite the increased availability of funding after 9/11 and the 2001 Anthrax incidents, allocated funds were required to be spent during a short time period resulting in limited time to "develop coherent effective plans and meet the immediate needs for workforce training and preparation."[138] This is indicative of an inflexible and hasty implementation approach. Quickly reacting to a

---

[136] Organisation for Economic Development and Cooperation, "The Challenge of Capacity Development: Working Towards Good Practice," 3. The *enabling environment* is defined as the structures of power and influence and the institutions in which they are embedded.

[137] Council on Foreign Relations, *America Still Unprepared – America Still in Danger* (Council on Foreign Relations: New York, 2002), 15.

[138] Center for Infectious Disease Research and Policy (CIDRAP), *Providing a Framework for Public Health Bioterrorism Preparedness: Public Health Workforce Collaboration and Infrastructure Issues* (University of Minnesota: May 17, 2002), 2; http://www.cidrap.umn.edu/cidrap/center/ mission/papers/ btworkforce.html (accessed on October 16, 2006), 2.

situation, while necessary during an on scene response or tactical event, typically leads to wasteful spending and poor coordination with the overall implementation effort at the strategic level.[139]

Utilizing a capacity building definition that defines homeland security capacity building efforts as — The U.S. government will engage in capacity building measures by increasing investments in specific areas to expand or recapitalize critical systems that support homeland security efforts — inevitably requires a solid stakeholder analysis that seeks and promotes buy-in. It also requires a careful consideration of a capacity building strategy, the opportunity costs involved, and the sustainment issues. Given the wide and complex nature of the disparate elements involved in the Laboratory Response Network and its associated public health elements, taking the time to develop and implement a strategy based on realistic timetables and measures will better address the front-loaded nature of the costs, the necessary capacity building strategies, the strategic decisions, and the sustainment issues that are associated with revamping a critical system that directly supports the nation's overall homeland security.

---

[139] Council on Foreign Relations, *America Still Unprepared – America Still in Danger*, 16.

THIS PAGE INTENTIONALLY LEFT BLANK

# IV.  FOCUSING ON KEY HOMELAND SECURITY PROGAMS: THE REVAMPING OF THE DEPARTMENT OF HOMELAND SECURITY'S GRANT PROGRAM

## A.  THE DHS GRANT PROGRAM

### 1.  Background

Another capacity building alternative is to reform key areas in the government to better support the homeland security effort. The United States can engage in capacity building measures aimed at improving the organizational capacity of key programs and functions to increase efficiencies, streamline processes, and transform government to ensure that homeland security missions are carried out effectively and in support of national goals. These programs can range from government reform initiatives — for example, the streamlining of the DHS or DoD — to key individual programs that have a vital impact. The streamlining of government and key programs focuses on improving efficiencies, identifying cost savings, and eliminating redundancies. A key program that is vital to homeland security is the DHS Grant Program.

The members of the 9/11 Commission recognized the key obstacle to homeland security assistance. As stated in their report, they recognized the inherent difficulties for the government to set priorities, to ensure equity in providing assistance, and to link assistance funding to risk. One of the Commission's key recommendations stated that assistance should be based on risks and vulnerabilities. They also cautioned that this program ". . . should supplement state and local resources on the risks and vulnerabilities that merit additional support. Congress should not use this money as a pork barrel."[140]

The *Homeland Security Act of 2002* granted the DHS Secretary the authority to consolidate key areas to form the department.[141] In January 2004, the DHS Secretary combined the Office of Domestic Preparedness (ODP) and the Office of State and Local Government Coordination (SLGC) to form the Office of State and Local Government

---

[140] National Commission on Terrorist Attacks Upon the United States, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the Unites States* (New York: W.W. Norton & Company, 2004), 395-396.

[141] U.S. Congress, Senate, *Homeland Security Act of 2002*, Public Law 107-296, sec. 706 (2002), 215; http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=104_cong_public_laws&docid=f:pub1201. 104.pdf (accessed on October 12, 2006).

Coordination and Preparedness (SLGCP). The purpose of the reorganization was to consolidate all assistance and grant programs into one office to streamline the process, closely link it to the office of the Secretary, and to create a single focal point for homeland security assistance matters.[142] In 2005, the SLGCP was further consolidated into the DHS' Preparedness Directorate as the Office of Grants & Training (G&T).

The G&T's mission is to:

. . . prepare America for acts of domestic terrorism by developing and implementing a national program to enhance the capacity of state and local agencies to respond to incidents of terrorism, particularly those involving chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents, through coordinated training, equipment acquisition, technical assistance, and support for Federal, state, and local exercises.[143]

Inherent to the G&T's mission is the need to enhance the capacity of state and local jurisdictions to more effectively respond to homeland security incidents. The implied goal of the grant program is to engage in *capacity building* measures to foster the development of homeland security capabilities.

## 2.      Purpose and Organization of Grants

Grants serve as policy tools, along with other regulations or tax strategies, to focus government resources and efforts into particular areas. Ideally, the system of grants is used to "enhance the capacity of all levels of government to target areas of highest risk and greatest need, promote shared responsibilities by all parties, and track and assess progress toward achieving national goals."[144] The government utilizes these policy tools to foster additional capabilities for public goods that have interjurisdictional spillover

---

[142] Congressional Research Service, *First Responder Grant Formulas: The 9/11 Recommendation and other Options for Congressional Action*, RL32475 (Washington, DC: Library of Congress, August 5, 2004), 2; http://fpc.state.gov/ documents/organization/35801.pdf (accessed on October 29, 2006).

[143] Department of Homeland Security, Office of Grants and Training, *G&T Mission*, http://www.ojp.usdoj.gov/odp/about/mission.htm (accessed on October 30, 2006).

[144] United States General Accountability Office, *Effective Intergovernmental Coordination is Key to Success*, GAO-02-1011T (Washington, DC: GPO, August 20, 2002), 3; www.gao.gov/new.items/ d021011t.pdf (accessed on November 4, 2006).

effects in society.[145] Examples of these public goods range from medical care and public health to law enforcement — and in this case, first responders.

Grants are designed in various forms, address specific issues, and contain different criteria. In general, grants can be divided into three categories — each allocating different levels of responsibility to grant recipients. On one extreme, there are categorical grants, which limit the recipient's flexibility on how grant funds can be allocated. General revenue sharing grants allow the greatest flexibility while block grants achieve some measure of balance between the government and the recipient.[146]

Categorical grants are the most common form of federal assistance. They are designed to support specified and defined activities. Categorical grants can be divided into four different types — formula grants, project grants, formula-project grants, and open-end grants. Formula grants are designed where legislative rulings mandate that funds be distributed according to a formula.[147] A contemporary form of a formula grant was passed by the Congress with the enactment of the *Patriot Act*, which mandated that each state receive 0.75 percent of homeland security preparedness grants.[148] A specific group of interested recipients compete for project grant funds while open-end grants are those where the government commits to subsidize a portion of state or local spending.[149]

Block grants are a method to consolidate grants that have similar goals and focus on similar areas. They typically pass the preponderance of responsibility to state and local

[145] Wallace E. Oates, "On the Theory and Practice of Fiscal Decentralization," *Institute for Federalism & Intergovernmental Relations*, IFIR Working Papers Series, no. 2006-05 (May 2006): 5; http://www.ifigr.org/publication/ifir_working_papers/IFIR-WP-2006-05.pdf (accessed on November 1, 2006).

[146] United States General Accountability Office, *Grants Management: Additional Actions Needed to Streamline and Simplify Processes*, GAO-05-335 (Washington, DC: GPO, April, 2005), 5; http://www.gao.gov/new.items/d05335.pdf (accessed on October 4, 2006).

[147] Carol S. Weissert, *The Intergovernmental Grant System: An Assessment & Proposed Policies* (Washington DC: Advisory Commission on Intergovernmental Relations, January 1978), 9; http://www.library.unt.edu/gpo/ACIR/Reports/brief/B-1.pdf (accessed on October 4, 2006).

[148] Veronique de Rugy, "What Does Homeland Security Spending Buy*?*," *American Enterprise Institute (AEI) for Public Policy Research*, Working Paper #107 (April 1, 2005): 15; http//www.aei.org/docLib/20050408_wp107.pdf (accessed on October 1, 2006).

[149] Weissert, *The Intergovernmental Grant System: An Assessment & Proposed Policies*, 9-10.

officials for administration and monitoring.[150] Consolidating block grants is a strategy to streamline grants into similar categories to facilitate the allocation process for recipients. Most block grants are also formula-based but allow greater discretion to the recipient.

Preparedness grants are a combination of formula, project, project-formula, and open-ended grants. The Citizen Corps, the State Homeland Security Grant Program, the Law Enforcement Terrorism Prevention Grants, and Emergency Management Performance Grants (EMPG) are formula driven based on the 0.75 percent of allocations. Assistance to Firefighters' (FIRE) grants is a project grant and based on recipient applications and competition. EMPG and FIRE grants are also open-end grants where the federal government matches 50 percent of the total costs.[151] Lastly, the Urban Area Security Initiative (UASI) is a discretionary grant based on vulnerability assessments, population density, and critical infrastructure.[152] The major grants are below:

| Program | Present Administering Agency |
| --- | --- |
| Metropolitan Medical Response System | Emergency Preparedness and Response Directorate (EPR) |
| Assistance to Firefighters | Office for Domestic Preparedness (ODP) |
| Emergency Management Performance Grants | Federal Emergency Management Agency (FEMA) |
| Citizen Corps | ODP |
| Interoperable Communications | FEMA |
| Port Security Grants | Transportation Security Administration (TSA) |
| Intercity Bus Security Grants | TSA |
| Operation Safe Commerce | TSA |
| Trucking Industry Security Grant Program | TSA |
| State Homeland Security Grant Program | ODP |
| Law Enforcement Terrorism Prevention Grants | ODP |
| National Exercise Program | ODP |
| Urban Area Security Initiative | ODP |

Figure 4.     Selected Consolidated Terrorism Preparedness Programs Within the Office for Domestic Preparedness (From Congressional Research Service, *First Responder Grant Formulas: The 9/11 Recommendation and other Options for Congressional Action*)

---

[150] United States General Accountability Office, *Grant System Continues to be Highly Fragmented*, GAO-03-718T (Washington, DC: GPO, April 29, 2003), 14; http:// www.gao.gov/cgi-bin/getrpt?GAO-03-718T (accessed on October 7, 2006).

[151] Congressional Research Service, *First Responder Grant Formulas: The 9/11 Recommendation and other Options for Congressional Action*, 4.

[152] Department of Homeland Security, Office of Domestic Preparedness, *FY2004 Urban Area Security Program Guidance* (Washington DC: GPO, November, 2003), 4.

### 3. The Evolution and Consequences of the Federal Grant System

The role and use of grants within the U.S. federalist structure has evolved greatly over time. Grants, along with other tools, which include regulatory mechanisms and tax incentives, have been implemented to focus resources into particular areas. The use of these tools also affects the sustainability of government efforts.[153] The U.S. government's involvement with grants goes back to the beginning of the Republic when the Congress passed the *Land Ordinance of 1785*, which required localities to set aside land for support to public schools.[154] Other significant legislation occurred in the 1860s, with the passage of the *Morrill Act*. This Congressional initiative provided to the states a categorical grant designed to assist the states in establishing colleges.[155] Consistent with the design of categorical grants were the inclusion of highly specified responsibilities placed on the state to meet federal objectives.

There was a significant paradigm shift in the 1960s with the federal government's role in providing grant assistance. Although the U.S. government's role in giving assistance to state and local jurisdictions started to rise as part of President Roosevelt's *New Deal*, President Johnson greatly expanded the role of the federal government as part of the *Great Society* initiatives. There were more grant programs developed during his administration than in all the preceding administrations combined.[156] These programs targeted the expansion of educational opportunities, intercity development, medical care, and combating poverty in all aspects of society.[157] During this period there was an additional dynamic at work. Although there was an effort to devolve as much responsibility to the states from the federal government as part of an overall

---

[153] United States General Accountability Office, *Effective Intergovernmental Coordination is Key to Success*, 15.

[154] Congressional Research Service, *Federal Grants to State and Local Governments: A Brief History*, RL30705 (Washington, DC: Library of Congress, February 19, 2003), 1; http://usinfo.state.gov/ usa/infousa/politics/states/ fedgrants.pdf (accessed on October 10, 2006).

[155] United States General Accountability Office, *Grant System Continues to be Highly Fragmented*, 2.

[156] Congressional Research Service, *Federal Grants to State and Local Governments: A Brief History*, 7.

[157] United States General Accountability Office, *Grant System Continues to be Highly Fragmented*, 2.

decentralization initiative, there was a corresponding effort by the federal government to tighten control on the use and purposes of grants — leading to an inflexible system.[158]

From the period of President Eisenhower's administration (1953-1961) and the expansion of the government's support to education as seen by the *National Defense Education Act of 1958* to President's Johnson's *Great Society* (1963-1969), the U.S. government's total grant outlays nearly ten times, from $2.1 billion to $18.6.[159] The federal government's influence into local affairs also grew exponentially as a result of its commitment in terms of actual dollars and the proliferation of numerous grant programs aimed at targeting a variety of social issues. An entire infrastructure was developed at all levels to process, track, and assess grant outlays.

Reforming the U.S. government's grant system is not a new issue. Due to widespread proliferation, increasing complexity, and inflexibility within the grant system itself, the Government Accountability Office stated in 1975 that the increasing problem of managing grants stemmed directly from their proliferation.[160] Several attempts have been made to reform the system. Congress passed the *Intergovernmental Cooperation Act of 1969* in an attempt to address some of the federal, state, and local coordination issues.[161] The Nixon administration attempted to organize and simplify the complex grant system to improve efficiencies and streamline processes.[162] The *Joint Funding Simplification Act of 1974* introduced some flexibility allowing grant recipients to combine funding from different federal grants.[163] Although President Reagan's *Omnibus*

---

[158] Weissert, *The Intergovernmental Grant System: An Assessment & Proposed Policies*, 11-12.

[159] David B. Walker, *The Rebirth of Federalism: Slouching Toward Washington*, 2nd Edition (New York: Chatham House Publishers, 2000), 103; Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism, 1985-1986* (Washington DC: GPO, 1986), 19.

[160] United States General Accountability Office, *Fundamental Changes are Needed in Federal Assistance to State and Local Governments*, GGD-75-75 (Washington, DC: GPO, August 20, 1975), 9; http://archive.gao.gov/f0302/096846.pdf (accessed on October 8, 2006).

[161] United States General Accountability Office, *Grant System Continues to be Highly Fragmented*, 3.

[162] Congressional Research Service, *Federal Grants to State and Local Governments: A Brief History*, 9.

[163] United States General Accountability Office, *Grant System Continues to be Highly Fragmented*, 3.

*Reconciliation Act of 1981* consolidated 77 programs into 9 block grants, the overall grant program has increased in terms of number and complexity over time.[164]

As far back as 1978, the National Governor's Association recommended two policy decisions for the Carter Administration, which stemmed from their concern over the federal government's grant system. First, they noted the continuing erosion of state government responsibilities as a result of direct federal funding to local jurisdictions. Second, they highly encouraged the administration to streamline the grant process, while recommending the "cutting of red tape and high administrative costs, and reduction of mandates that impose substantial burdens on state and local taxpayers for relatively small benefits."[165] Although there have been several governmental attempts to reform the grant program, these periods of reforms are typified by subsequent periods of grant proliferation with corresponding overhead management costs to track, monitor, and assess the multitude of programs.
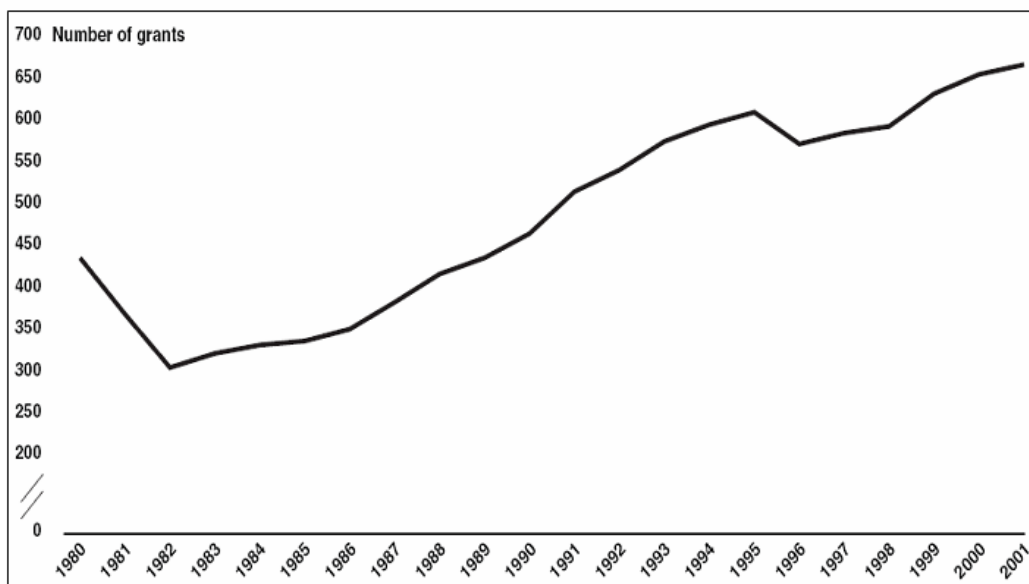


Figure 5.     Trend in the Number of Federal Grant Programs to State and Local Governments (From General Accountability Office, *Grant System Continues to be Highly Fragmented*)

---

[164] Congressional Research Service, *Federal Grants to State and Local Governments: A Brief History*, 10.

[165] Julian M. Carroll and Richard A. Schnelling, "A Letter to the President, December 20, 1978, from the National Governors' Association," *Publius: A Journal of Federalism* 9, no.1 (1979): 91-92;  http:// publius.oxfordjournals.org/cgi/reprint/9/1/91 (accessed on October 10, 2006).

The trend in grant proliferation and increased federal government involvement over the last fifty years has led to several consequences. One consequence of increased federal involvement has been the erosion of state authority at the expense of direct federal interaction with local — particularly county — jurisdictions.[166] This erosion of state authority has consequences with developing strategies that require regional approaches. Additionally, direct federal involvement at the expense of the states has redefined the concept of federalism — a factor the *National Strategy for Homeland Security* considers essential to successfully implementing an effective homeland security program tailored to meet local needs.[167] Diminution of state authority and the complexity of federal assistance to varying jurisdictional levels have further contributed to state and local fragmentation.[168] Increased degrees of fragmentation lead to further integration problems and the achievement of national goals.

Another consequence of utilizing grants to attain national objectives has been the propensity of the Congress to attach additional layers of requirements, many of which often have no direct association with the grant program itself.[169] Unlike the *National Defense Education Act*, which emphasized a specific, highly targeted, and simplified process, compliance with these additional requirements, which range from national policy goals such as a clean environment, discrimination, or equal hiring practices, leads to increased administrative and overhead costs to expedite the grant program. These national goals, while laudable, cumulatively increase administrative and processing costs. The enforcement of national goals — not directly related to the grant program itself — should not impede the allocation of the grant. Additionally, the proliferation of grants further exacerbates the problem because many of the grants can be used for similar, if not identical, purposes.[170] The proliferation of grants, overlapping programs, and excessive

---

[166] Weissert, *The Intergovernmental Grant System: An Assessment & Proposed Policies*, 13-14.

[167] Office of Homeland Security, *National Strategy for Homeland Security*, vii.

[168] United States General Accountability Office, *Grant System Continues to be Highly Fragmented*, 13.

[169] Weissert, *The Intergovernmental Grant System: An Assessment & Proposed Policies*, 16-17.

[170] United States General Accountability Office, *Grant System Continues to be Highly Fragmented*, 5.

administrative requirements results in confusion at state and local jurisdictions.[171] The insertion of additional requirements not directly associated with the grant program and the multiplicity of similar and overlapping programs are indicative of a total lack of strategic perspective within the overall grant process.

Despite the intent of the grant process to promote self-sustainment, the expansion of grants has resulted in an increased reliance on the government for areas that were previously administered by the states. With homeland security, federal grant funding has increased immeasurably. This increased reliance on the federal government has resulted in a phenomenon known as the "raiding of the fiscal commons."[172] These raids occur in areas where there are soft budget constraints and in areas where lower levels of government count on financial support from the central government.[173] As highlighted by Oates: "Intergovernmental grants are a fundamental source of soft budget constraints."[174] Despite maintenance of effort clauses within individual grants, a federal grant system that has the side effect of promoting increased reliance on the federal government brings forth the issue of and concern of sustainment.[175] Over dependence on the central government directly affects sustainability — particularly if grant efficiency and continued funding stability are questionable.

Lastly, an unintended consequence of expanding federal grants has been the increase in having to deal with the administrative minutiae of processing grants. The proliferation, complexity, and overlapping nature of grants have resulted in prodigious amounts of duplication, high administrative costs, and lots of red tape.[176] There has been a corresponding increase in grant proliferation despite repeated attempts to consolidate,

[171] United States General Accountability Office, *Homeland Security: Reforming Federal Grants to Better Meet Outstanding Needs*, GAO-03-1146T (Washington, DC: GPO, September 3, 2003), 4; http://www.gao.gov/ new.items/d031146t.pdf (accessed on October 5, 2006).

[172] Oates, "On the Theory and Practice of Fiscal Decentralization," 18. The *Raiding of the Fiscal Commons* is a concept used to describe the over reliance of lower levels of government on central authorities to underwrite their operating losses.

[173] Ibid., 21.

[174] Ibid., 23.

[175] United States General Accountability Office, *Homeland Security: Reforming Federal Grants to Better Meet Outstanding Needs*, 15.

[176] Julian M. Carroll and Richard A. Schnelling, 92.

streamline, and reform the system.[177] This would indicate that there has also been a corresponding price in the nature of doing business to administer, allocate, and monitor the use of grant funds at all levels of government. In terms of measuring costs over a long period, the cost of administering grants is distributed. These costs accumulate and increase as overlap, proliferation, and complexity increase. Bottom line, the costs associated with the grant program are not front-ended, but are increasingly costly to administer over time.

As Paul Light discusses capacity building concepts concerning nonprofit organizations, "capacity building involves an activity such as planning, reorganizing, merging, downsizing, assessing, auditing, installing, training, recruiting, measuring, treating . . . . As such, the case for capacity building hinges on finding a positive relationship between the activity and organizational effectiveness . . . ."[178] The overall complexity of the grant system, its duplication and administrative red tape make for a poor example of linking effectiveness to a positive relationship.

## B.      THE DHS GRANT SYSTEM SINCE 9/11

### 1.      Strategic Guidance

The terrorist attacks on 9/11 created a significant loss of life and catastrophic damage. As a result of the attacks, the U.S. government fundamentally altered its course and approach to domestic security. For the first time since the Cold War, there were discussions on critical infrastructure protection, border security, and continuity of operations. Despite this policy change, there were many who recognized the importance of carefully crafting a national strategy and strategic guidance to chart the country's efforts. Ideally, this strategy and guidance should create a framework for the long-term sustainment of the homeland security mission.

As noted, the 9/11 Commissioners recognized that one of the most significant challenges for any branch of government is to set priorities. The commissioners understood the government's need to effectively prioritize and set clear guidance based

---

[177] Weissert, *The Intergovernmental Grant System: An Assessment & Proposed Policies*, 10.

[178] Paul C. Light, *Sustaining Nonprofit Performance: The Case for Capacity Building and the Evidence to Support It* (Washington DC: Brookings Institute Press, 2004), 86.

on objective principles — ideally divorced from partisan politics. One of their key recommendations was:

> Homeland security assistance should be based strictly on an assessment of risks and vulnerabilities. . . . We understand the contention that every state and city needs to have some minimum infrastructure for emergency response. But federal homeland security assistance should not remain a program for general revenue sharing. It should supplement state and local resources on the risks or vulnerabilities that merit additional support. Congress should not use this money as a pork barrel.[179]

The Commissioners highlighted the importance of linking assistance to risks, vulnerabilities, and needs while cautioning against the use of homeland security funding for general revenue sharing purposes. Their recommendation also addressed the fundamental need for all jurisdictions to have a minimum — in essence — a baseline of protection. Their proposals have been echoed by others to ensure government spending and grant allocations follow a model of focused and disciplined spending on targeted areas and priorities.[180]

This disciplined construct is also addressed in the *National Strategy for Homeland Security*. The strategy offers seven guiding principles, which are supposed to serve as the philosophical underpinning of the strategy. These principles are:

- Require responsibility and accountability
- Mobilize our entire society
- Manage risks and allocate resources judiciously
- Seek opportunity out of adversity
- Foster flexibility
- Measure preparedness
- Sustain efforts over the long-term
- Constrain government spending[181]

---

[179] *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the Unites States*, 396.

[180] James J. Carafano, "An Appropriator's Guide to Homeland Security," *The Heritage Foundation: Backgrounder*, no.1764 (June 7, 2004): 1; http://www.heritage.org/Research/HomelandDefense/upload/64513_1.pdf1 (accessed on October 10, 2006).

[181] *National Strategy for Homeland Security*, 3-4.

In terms of allocation and management, several of the guiding principles address the need to manage risk while allocating resources in a focused and disciplined manner, to effectively measure preparedness while accounting for minimum baseline requirements, sustaining efforts over a long period, and the importance of establishing trade-offs within the budget by carefully targeting spending.

The *National Preparedness Goal* outlines the need for developing and implementing a system for assessing the nation's overall preparedness. This document recognizes the need for an assessment based on a cooperative and integrated approach with input from all levels of government and the private sector.[182] The *Target Capabilities List* (TCL) identifies the necessary capabilities for jurisdictions to meet 15 all-hazards National Planning Scenarios. In the document, capability elements are equated to the resources necessary to accomplish a given set of tasks.[183] These capability elements can include manpower, equipment, planning resources, and training.

Achieving success in homeland security is compounded by the 87,000 separate jurisdictions that fall under the construct of the strategy plus the numerous foreign dimensions of the homeland security mission. The effectiveness of the strategy is incumbent upon the effective collaboration between the various stakeholders and adoption of a flexible approach that does not attempt to apply one methodology for every jurisdiction.[184] In other words, a federal cookie-cutter approach to homeland security is bound to fail.

The DHS Secretary under the authorities of the *Homeland Security Act of 2002* consolidated disparate grant programs under one office to provide a single focal point for grants. The DHS Grant Program is the federal government's principal mechanism to support state, local, and private effort to increase homeland security preparedness. It is also the mechanism to ensure that the homeland security mission is sustained over the long-term.

---

[182] Department of Homeland Security, *National Preparedness Goal*, 23.

[183] Department of Homeland Security, *Target Capabilities List*, 11.

[184] United States General Accountability Office, *Effective Intergovernmental Coordination is Key to Success*, 10.

## 2.    Challenges to the DHS Grant Program

Utilizing a capacity building definition that focuses on governmental efforts that improve the organizational capacity of key programs — such as the DHS grant program — in order to streamline critical processes that support homeland security is based on a flawed system that stems from the challenges to the overall process. Despite the strategic guidance, these flaws originate from the inability to establish an effective baseline, the continued fragmentation of the grant system, the grant mechanism's complexity, and the underlying organizational structure. Absent in the guidance are the discussion of sustaining efforts over the long-term, trade-off considerations, mechanisms to foster national planning efforts or to prompt any reevaluation of strategic assumptions.

Determining the baseline for 87,000 jurisdictions is a daunting task. Although there are targeted levels of capabilities in the TCL, these levels do not contain the overarching strategies and assessment methodologies to determine the expectation, integration of intergovernmental support, and underlying mechanisms to sustain various initiatives. For example, the *Secure Border Initiative* calls for implementing various technologies to create "smart borders" in conjunction with increased detention capacities and border enforcement personnel.[185] What is not contained is "a clear specification of what is expected of a smart border, including consideration of security and economic aspects of moving people and goods."[186] Another study found flaws in the department's program management strategies for personnel and acquisition of new technologies. There were also shortfalls in linking the strategy to other governmental departments.[187]

In relation to the DHS grant program, another difficulty in determining baseline levels is the inability to develop regional and integrated plans to establish goals, needs, and priorities. Utilizing the border protection example, local agencies are having difficulties in determining the regional approach to border security due to a lack of

---

[185] Customs and Border Protection Agency, *Secure Border Initiative: Fact Sheet*, http://www.cbp.gov/xp/ cgov/newsroom/fact_sheets/border/secure_border_initiative/secure_border.xml (accessed on October 15, 2006).

[186] United States General Accountability Office, *Effective Intergovernmental Coordination is Key to Success*, 13.

[187] United States General Accountability Office, *Border Security: Key Unresolved Issues Justify Reevaluation of Border Surveillance Technology Program*, GAO-06-295 (Washington, DC: GPO, February 2006), 2; http://www.gao.gov/new.items/d06295.pdf (accessed on October 14, 2006).

information on "the amount of first responder grants available to each jurisdiction, budget plans or criteria used to determine spending priorities, and data on funds expended from various sources."[188] The lack of cross-linking individual efforts to wider regional initiatives with federal ones is inconsistent with the principles of the national strategy.

The difficulty in determining an effective baseline is compounded by the continued fragmentation of the DHS Grant System. As the Gilmore Commission noted:

> [T]he absence of coordinated preparedness efforts makes it difficult to develop training and exercised standards that are agreed on and utilized by all relevant training  centers. Some current funding processes have DHS and other agencies awarding preparedness grants directly to public and private recipient organizations with no pre-award coordination with the States. Recognizing that some of the current programs will inevitably not "flow through" the States, there should, at a minimum, be vertical coordination requirements among Federal agencies and local governments with States on all funding allocations, to ensure consistency with statewide strategies.[189]

In addition, with the inability to effectively plan due to bypassing state entities, the continued web of disparate grant programs from multiple federal agencies hampers the implementation of effective state and local strategies. These fragmentation issues are from a lack of coordination and linkages between the wide varieties of terrorism programs in the federal government.[190] Simply put, grant recipients must still work through a maze of grant programs to determine which programs can be financed to meet their needs.[191] Due to the highly fragmented state of grant programs, it is difficult to develop strategies and target funds and resources due to the numerous programs,

---

[188] United States General Accountability Office, *Homeland Security: Effective Regional Coordination Can Enhance Emergency Preparedness*, GAO-04-1009 (Washington, DC: GPO, September 2004), 2; http://www.gao.gov/new.items/d041009.pdf (accessed on October 8, 2006).

[189] The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *Forging America's New Normalcy: Securing our Homeland, Preserving our Liberty: Fifth Annual Report*, (Santa Monica, CA: RAND, December 15, 2003), 26; http://www.rand.org/nsrd/terrpanel/ volume_v/volume_v.pdf (accessed on September 20, 2006).

[190] United States General Accountability Office, *Effective Intergovernmental Coordination is Key to Success*, 4.

[191] United States General Accountability Office, *Grant System Continues to be Highly Fragmented*, 1.

differing grant allocation methods, varying grant requirements, and multiple levels of recipients — state, local, or private.[192]

Compounding the fragmentation challenges lies the issue of complexity within the grant system. State and local grant recipients consistently state that federal programs are "duplicative, confusing, and poorly focused."[193] One 1990s study of federal preparedness programs described the complexity of programs as "mushroomed without supervision, evaluation, or coordination, resulting in a confusing mess."[194] This issue has continued unabated. As the Congressional Budget Office stated: "The allocation of homeland security funding to over 200 appropriation accounts within the federal budget substantially complicates efforts to track such spending."[195] It is difficult to assess whether the U.S. government is effectively targeting funds given a fragmented and complex system that inhibits looking at the issue from a strategic picture.

Lastly, the underlying DHS organizational structure exacerbates the ability to provide effective support to regions, states, and individual localities. The lack of a regional DHS structure that is embedded with state, local and private entities and modeled along regional lines inhibits collaboration, contingency planning, and an effective response. The federal response to Hurricane Katrina highlighted that the DHS lacked "sufficient field capabilities to organize a fully successful Federal response effort."[196] A regional DHS organization complemented by targeted grant designs that promote regional solutions, whether by establishing a regional requirement as a contingent for federal funds or matching levels of effort, would serve to assess

---

[192] United States General Accountability Office, *Homeland Security: Agency Plans, Implementation, and Challenges Regarding the National Strategy for Homeland Security*, GAO-05-33 (Washington, DC: GPO, January 2005), 116; http://www.gao.gov/new.items/d0533.pdf (accessed on October 21, 2006).

[193] Donald F. Kettl, "Promoting State and Local Government Performance for Homeland Security," *The Century Foundation* (June 1, 2002): 3; http://www.tcf.org/Publications/HomelandSecurity/state_local_gov_perform.pdf (accessed on October 11, 2006).

[194] Amy E. Smithson and Leslie-Anne Levy, *Ataxia: The Chemical and Biological Terrorism Threat and the U.S. Response* (Washington DC: The Stimson Center, 1999), 113.

[195] Congressional Budget Office, *Federal Funding for Homeland Security: An Update* (Washington DC: GPO, July 20, 2005), 3; http://www.cbo.gov/ftpdocs/65xx/doc6566/7-20-HomelandSecurity.pdf (accessed on October 11, 2006).

[196] Office of the President, *The Federal Response to Hurricane Katrina: Lessons Learned* (Washington DC: GPO, February 2006), http://www.whitehouse.gov/reports/katrina-lessons-learned.pdf (accessed on October 5, 2006), 69

preparedness and foster collaboration to target efforts aimed at addressing regional and local problems.[197] Additionally, a DHS regional structure coupled with grant designs that promote regional approaches would enable contingency planning *in advance*, rather than continuing to react to events.

The organizational challenge possesses another dynamic, which directly affects long-term sustainability issues. As James J. Carafano and David Heyman state:

> Experience reminds us that it takes only a few years for a bureaucracy to become entrenched. After that, it becomes nearly impossible to change. The creation of the Department of Defense is a case in point. In the debates over the 1947 National Security Act and again as President, General Dwight D. Eisenhower lobbied for reorganizing the Pentagon to ensure that Army, Navy, Marine, and Air Force assets would work closely together. However, he failed to overcome the political opposition and service parochialism that block reforms. As a result, fundamental problems in joint operations went unaddressed until passage of the Goldwater-Nichols Act in 1986. The lesson is clear: Fix it at the beginning or live with the mistakes for a long time.[198]

The Gilmore Commission recommended a DHS enterprise architecture aimed at facilitating federal support and fostering collaboration with state and local entities to achieve measurable and sustained preparedness.[199] The window of opportunity for change is closing. A more entrenched bureaucracy that is not regionally based and a flawed grant system will continue to disburse funds to buy capabilities that are not linked into a strategic context or into a regionally-based approach. It will also not address the wider actions that are necessary to drive strategic investment, build and strengthen underlying infrastructure, and account for sustainment. Additionally, if organizational and grant reforms were enacted today, the funds and the capabilities that have been

---

[197] United States General Accountability Office, *Homeland Security: Effective Regional Coordination Can Enhance Emergency Preparedness*, 4-5.

[198] James Jay Carafano and David Heyman, "DHS 2.0: Rethinking the Department of Homeland Security," *The Heritage Foundation*, Special Report 2 (December 13, 2004): 8; http://www.heritage.org/ Research/ HomelandDefense/ upload/72759_1.pdf (accessed on September 3, 2006).

[199] The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *Forging America's New Normalcy: Securing our Homeland, Preserving our Liberty: Fifth Annual Report*, 7.

procured to date may not be the optimal ones — particularly if strategic assumptions are not reassessed. This mismatch will increase over time.

### 3.    DHS and Preparedness Funding

The formation of the DHS and the significant increases in preparedness funding since 9/11 bring into consideration whether underlying capacities have been strengthened through the DHS Grant System. There has been a considerable effort to develop national strategies and plans, but often times an overreaction or a hasty approach can lead to wasteful spending, mismanagement of resources, and a focus on the short-term rather than a long view of the problem.[200] Additionally, as part of the strategy, the U.S. government has created the third largest bureaucracy to bolster homeland security and preparedness.[201] As one homeland security professional stated: "[T]he most important question is whether America is getting the maximum level of benefit in exchange for this increase in spending."[202]

The total outlays for all federal grants to state and local jurisdictions were $426.82 billion for FY2005 and an estimated $459.7 billion for FY2007.[203] For specific homeland security funding, the FY2007 budget earmarked $58.3 billion. Since 2001, the U.S. government has disbursed $22.5 billion to state and local preparedness functions, which include assistance to first responders and public health. Annual spending on homeland security has risen from $350 million in 2001 to a projected $4 billion for FY2007 — over a ten fold increase in spending.[204]

Four issues must be considered when assessing whether underlying capacities have been measurably strengthened by the DHS Grant Program. First, there is the question of oversight. Oversight mechanisms are required to track whether sufficient

---

[200] Council on Foreign Relations, *America Still Unprepared – America Still in Danger*, 16.

[201] Carafano and Heyman, "DHS 2.0: Rethinking the Department of Homeland Security," 24.

[202] Veronique de Rugy, "Faster and Smarter Funding for First Responders Act of 2005: The Need for Grant Reform," *American Enterprise Institute (AEI) for Public Policy Research* (April 1, 2005): 1; http://www.aei.org/publications/pubID.22298,filter.all/pub_detail.asp (accessed on October 1, 2006).

[203] Office of Management and Budget, *Budget of the United States Government, FY2007: Analytical Perspectives* (Washington DC: GPO, 2006), 99; http://www.whitehouse.gov/omb/budget/fy2006 (accessed on October 27, 2006), 99.

[204] Ibid., 29.

resources are properly being targeted to address risks and vulnerabilities. Second, is the issue of pork barrel and wasteful spending. Pork barrel spending and general revenue sharing at the expense of homeland security will seriously hamper any effective implementation efforts. The third issue is a grant program throughput issue. In other words, are the allocated resources being expended to improve preparedness? Lastly, the issue of determining trade-offs is vital when considering the long-term sustainment of the homeland security strategy. Are trade-offs being considered given the finite resources of the U.S. government?

Executive oversight for homeland security matters remains problematic. Despite the formation of the DHS to coordinate homeland security activities, actual homeland security related activities are conducted by 33 distinct federal departments and agencies.[205] The oversight effectiveness of the DHS to track these activities, given the wide-spread nature within the executive branch and other organizations and with homeland security funding being separated into 200 distinct funding accounts, is considerably diminished and difficult.[206] Additionally, the ability of the DHS to monitor the effectiveness of the grant program remains weak due to limited ODP staff and infrequent field visits to track grant implementation.[207]

Legislative oversight is also an issue. The 9/11 Commissioners realized the importance of this issue. One of their key recommendations was for Congress to "create a single, principal point of oversight and review for homeland security."[208] As one report stated: "At least 11 full committees in the Senate and 14 full committees in the House — as well as their numerous subcommittees — claim oversight or some responsibility for

---

[205] Office of Management and Budget, *Budget of the United States Government, FY2007: Analytical Perspectives*, 20. See Table 3-1, *Homeland Security Funding by Agency*.

[206] de Rugy, "What Does Homeland Security Spending Buy*?*," 11.

[207] Department of Homeland Security, Office of the Inspector General, *An Audit of Distributing and Spending "First Responder" Grant Funds*, OIG 04-15 (Washington DC: GPO, March 2004), 16; http://www.dhs.gov/xoig/assets/mgmtrpts/OIG_ODP_03-04.pdf (accessed on November 15, 2006).

[208] *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the Unites States*, 421..

various U.S. programs for combating terrorism."[209] Recent reform attempts by creating specialized appropriations subcommittees and a select committee for homeland security have not addressed the underlying issue that approximately 79 oversight panels claim some responsibility over homeland security affairs.[210] The inability of Congress to reform its committee system inhibits oversight effectiveness.

Despite the admonishment of the 9/11 Commission, pork-barrel spending at the expense of homeland security remains a serious issue. Some criteria for pork follow:

- Appropriation not properly authorized by Congress or requested by the administration
- Unauthorized or unrequested appropriation is locality or facility specific
- Appropriation involves transfer of federal resources that circumvent existing laws
- New items added that were not considered in Congressional bills during debate[211]

The recent trend of pork-barrel spending is disturbing. In FY1999, there were 1,000 pork-barrel projects contained in 13 appropriation bills.[212] In FY2006, there were 9,963 pork-barrel projects contained in 11 appropriation bills totaling approximately $29 billion.[213] For example, there has been approximately $560 million dollars allocated to 1,200 projects supporting port security. A recent DHS Inspector General Audit noted that many of the port security grants were allocated for "a purpose other than against an act of

[209] The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *Toward a National Strategy for Combating Terrorism: Second Annual Report*, (Santa Monica, CA: RAND, December 15, 2000), vii; http://www.rand.org/nsrd/terrpanel/terror2.pdf (accessed on September 22, 2006).

[210] Congressional Research Service (CRS), *Homeland Security: Department Organization and Management - Implementation Phase* (Washington D.C: Library of Congress, January 3, 2005), 32; http://www.fas.org/sgp/crs/RL31751.pdf (accessed on November 4, 2006).

[211] de Rugy, "What Does Homeland Security Spending Buy*?*," 29.

[212] Ronald D. Utt, "How Congressional Earmarks and Pork-Barrel Spending Undermine State and Local Decisionmaking," *The Heritage Foundation: Backgrounder*, no.1266 (June 2, 1999): 1; http://www.heritage.org/ Research/Budget/upload/18432_1.pdf (accessed on November 10, 2005).

[213] Citizens Against Government Waste (CAGW), *2006 Congressional Pig Book Summary* (Washington DC: CAGW, 2006), 1; http://www.cagw.org/site/DocServer/ 2006PigBookSummary.pdf?docID=1541 (accessed on November 10, 2006).

terrorism."[214] Earmarking projects in appropriations bills coupled with a poor grant allocation process and dividing 40% of allocation funds equally among states and territories inhibits the targeting and investment of scarce resources for high priority tasks.[215]

The ability of the DHS grant system to quickly process grants and the ability of grant recipients to implement resources to improve preparedness is another factor in assessing effectiveness. This is essentially a system throughput issue. Although there have been improvements to expediting grant requests — averaging 123 days in FY2002 for processing grants versus 15 days in FY2003 — there are still issues with expending funds.[216] The stark realization is that many of the funds that have been allocated for homeland security preparedness have not been expended. As of 2004, approximately $6 billion of homeland security preparedness funding had not been spent due to delays in assessment and other obstacles.[217] Another aspect of the throughput issue is the extensive backlog on first responder equipment orders. One reason for the backorder lies with individual procurement regulations at state and local jurisdictions. In relation to underlying capacity, however, another reason is that first responder equipment purchases have conflicted with military purchasing of similar equipment.[218] With military needs at a higher government purchasing priority, first responder orders lay unsatisfied.

Lastly, the questions of trade-offs and fiscal discipline are of paramount importance. Given the events of 9/11, the formation of the third largest federal

---

[214] Department of Homeland Security, Office of the Inspector General, *Review of the Port Security Grant Program*, OIG 05-10 (Washington DC: GPO, January 2005), 3,35; http://www.dhs.gov/xoig/assets/ mgmtrpts/OIG_05-10_Jan05.pdf (accessed on November 15, 2006).

[215] de Rugy, "Faster and Smarter Funding for First Responders Act of 2005: The Need for Grant Reform," 3. The 40% figure is driven by the Patriot Act mandate for each state to receive 0.75%, to include U.S. territories.

[216] United States General Accountability Office, *Homeland Security: Management of First Responder Grant Programs and Efforts to Improve Accountability Continue to Evolve*, GAO 05-530T (Washington, DC: GPO, April 12, 2005), 8; http://www.gao.gov/new.items/d05530t.pdf (accessed on November 3, 2006).

[217] U.S. Congress, House, House Select Committee on Homeland Security, *An Analysis of First Responder Grant Funding* (Washington DC: April 12, 2004), 16; http://emd.wa.gov/5-prog/prgms/policy/emc/misc-rpts/FirstResponderReport.pdf (accessed on November 6, 2006).

[218] U.S. Congress, House, Committee on Homeland Security, Subcommittee on Emergency Preparedness, Science, and Technology, *Statement of J. Richard Berman - Assistant Inspector General for Audits - Department of Homeland Security* (April 12, 2005), 2; http://www.dhs.gov/xoig/assets/ testimony/OIG_1st_Responder_Testimony_Berman_Apr05.pdf (accessed on November 20, 2006).

bureaucracy and the necessity to implement the homeland security strategy, the ability to make hard choices, eliminate duplicative programs, and streamline efficiencies is tied to sustaining homeland security over the long-term. As one person stated: "Since the number of possible attacks is effectively unlimited and the resources we can devote to the fight against terror are limited, it means that spending should not occur without a careful cost-benefit analysis."[219]

At the strategic level, government outlays between FY2001 ($1.86 trillion) and FY2007 ($2.77 trillion) have increased approximately 48.9 percent.[220] During this period, the DoD budget has grown 73.9% and the DHS budget 190 percent — understandable due to its recent creation. In terms of trade-offs, however, spending for other government programs has also grown at impressive rates. For example, the Department of Health and Human Services grew 64.1 percent and Education 80.5 percent.[221] Security-related and non-security related spending have both increased at significant rates — raising the question on trade-offs, cost benefit analysis and hard choices.

The ability of the U.S. government to conduct effective oversight, eliminate waste, increase the grant system's throughput, and make hard choices directly affects the sustainment of homeland security over the long-term. Eliminating waste and developing realistic budget projections, stable funding lines, with sufficient guidance to state, local, and private grant recipients can sustain homeland security efforts.[222] These efforts play a fundamental — indeed critical — role to support capacity building efforts.

---

[219] de Rugy, "Faster and Smarter Funding for First Responders Act of 2005: The Need for Grant Reform," 2-3.

[220] Office of Management and Budget, *Budget of the United States Government, FY2007: Historical Tables, Table 1.1: Summary of Receipts, Outlays, and Surpluses or Deficits* (Washington DC: GPO, 2006), http://www.gpoaccess.gov/usbudget/fy07/sheets/hist01z1.xls (accessed on October 27, 2006).

[221] Office of Management and Budget, *Budget of the United States Government, FY2007: Historical Tables, Table 4.1: Outlays by Agency* (Washington DC: GPO, 2006), http://www.gpoaccess.gov/usbudget/fy07/hist.html (accessed on October 27, 2006). de Rugy argues these points in "Faster and Smarter Funding for First Responders Act of 2005: The Need for Grant Reform" and highlights the absence of trade-offs within the budget.

[222] United States General Accountability Office, *Homeland Security: Agency Plans, Implementation, and Challenges Regarding the National Strategy for Homeland Security*, 123.

## C.      THE DHS GRANT SYSTEM: CAPACITY BUILDING?

### 1.      Implications

A look at the DHS Grant System and the wider implication of U.S. government fiscal practices illustrates three points. First, while consolidation efforts have taken place to streamline the grant allocation process, there still remain extensive fragmentation, duplication, and inefficiencies within the system. Many of these grant mechanisms also lie outside the purview of the DHS. These inefficiencies are directly related to the flawed system of grant allocation that existed prior to 9/11 and the formation of the DHS. Additionally, new homeland security preparedness funding has had a tenuous link to preparedness standards, expectations, and assessment. A lack of understanding regarding expectations makes it difficult for jurisdictions to project what standard they need to achieve. Related to planning efforts is the lack of regionalization. While not part of the grant system, the inability of the DHS to initially regionalize its organization has hampered planning efforts and regional solutions.

Second, weak executive and legislative oversight for homeland security makes it difficult to assess the effectiveness of past, current, and projected efforts. The spreading of homeland security related functions within the executive department limits the ability of the DHS — the department directly empowered to assess homeland security efforts — to effectively assess activities at a strategic level. The congressional inability to reform its committee structure is also considered by some to be "the single greatest obstacle to creating an efficient and effective Department."[223]

Lastly, the lack of U.S. government fiscal accountability and discipline will directly hamper future homeland security tasks. The inability to control wasteful spending and pork-barrel projects aimed at supporting constituencies with little to no application for homeland security diffuses the effectiveness of supporting capacity building efforts. As evidenced by present fiscal policies, the inability to conduct trade-offs within the budget and to make hard choices to eliminate redundant programs, reduce waste, and reallocate resources to support higher priorities will also directly affect sustainment efforts.

---

[223] de Rugy, "What Does Homeland Security Spending Buy?" 11.

The DHS Grant Program plays a vital role in supporting homeland security activities. It is also critical to the success of sustaining the homeland security mission over the long-term. Additionally, the reforming of the DHS Grant Program has wider implications to the effectiveness of other grant programs, gaining efficiencies in government, eliminating wasteful spending, and fiscal discipline. For the purposes of defining capacity building measures for homeland security — can the DHS Grant Program serve as such a measure?

A comparison between the Laboratory Response Network and the DHS Grant Program reveals a subtle difference. The focus on implementing measures to develop the nation's ability to combat a pandemic or WMD attack centers on an identifiable capacity that is necessary to sustain various capabilities — laboratory testing, epidemiology, and disease surveillance. This capacity is also tied directly to the strategic objectives contained in the *National Strategy for Homeland Security*.[224] The focus of reforming the DHS Grant Program to improve capacity building initiatives is on reforming the grant system itself — not homeland security *capacity building*. Although the ultimate end-state is to have a grant program that effectively supports targeted capacity building efforts, the focus of the department's efforts is on the immediacy of "fixing a problem" versus realizing expanded or sustained capacities that are tied directly to strategic goals. Additionally, focusing on the immediacy of a problem leads to a shorter, versus longer-term, focus that aims to achieve a desired goal.

### 2. Challenges
#### a. *Nature of Costs*

A homeland security capacity building definition aimed at improving the organizational capacities of key program areas to increase efficiencies and streamline critical processes that support homeland security has different sorts of costs than a definition centering on the expansion or revitalization of critical systems. The nature of costs in this case are that they not front-loaded in nature, but rather are spread and increased over time. For example, there have been numerous attempts to improve and

---

[224] Office of Homeland Security, *National Strategy for Homeland Security*, vii. The strategic objectives are to prevent terrorist attacks, to reduce America's vulnerability, and minimize the damage and recovery of attacks.

reform the U.S. government grant allocation process since the 1960s. Despite some successes at reform, consolidation, and streamlining of key programs, the system as a whole has becoming increasingly more complex and fragmented. The nature of "doing business" has also increased over time. Additional layers of bureaucracy, the inclusion of administrative clauses into grants that are not directly tied to the grant's purpose, and laborious grant processing have increased the price of doing business in terms of monetary, temporal, and administrative resources.

Because the DHS Grant System is a product of a flawed grant process, its relative newness to tackling a difficult mission area, and the other issues affecting its performance — oversight, fiscal discipline, and difficulty in assessing the numbers, types of capabilities, and targeting specific areas — there has been very little discussion on opportunity costs. This is directly tied to the absence of trade-offs in the federal budget. The DHS Grant System's inability to ascertain whether resources are being expended in high priority and focused areas according to an overall strategy results in an inability to translate and weigh investment proposals within a wider context. Unlike the *National Defense Education Act*, where President Eisenhower and Congress understood the need for a simple, stable, and effective grant system to stimulate targeted growth, the present system falls short of this ideal. As a result, there is very little debate on decisions being made today and how they affect the sustainment of homeland security over the long-term.

### b. *Political Acceptability*

Political acceptability is less of a challenge with this form of a capacity building interpretation. Without significant front-loaded cost issues to address, there is very little consideration to longer term effects. In general, federal, state, and local jurisdictions are focused on current and short-term fiscal year appropriations. Additionally, a homeland security capacity building definition centered on reforming and streamlining key programs that are integral to the homeland security mission focuses on reform and transformation issues — issues which resonate significantly in both political parties. The problem is that these reform initiatives have typically not taken hold nor have they fundamentally altered or transformed the nature of doing business. A homeland security capacity building definition, however, that would focus on the recapitalization of

critical systems tied directly to an overarching strategy would bring a debate over opportunity costs and trade-offs directly to the forefront.

The issue of transforming government and streamlining the government's grant allocation process is indeed a strategic and arguably more significant issue than implementing an effective homeland security strategy. The price of doing business with regards to grants and transfer of government funds has increased and grown more complex since the 1960s. Direct grants to local and private recipients have also changed the federal nature of the system at the expense of the states. The fundamental question is whether an all encompassing federal grant system supports prudent fiscal decisions that foster disciplined decisions.[225] This debate is much larger than homeland security.

For the purposes of developing a homeland security capacity building definition that is directly tied to improving mechanisms and practices in support of the overarching strategy, the focus on key programs — while an important issue — is more of a support function that constitutes part of the *enabling environment*.[226] The grant program constitutes one of many policy tools that can be used to support or enable growth. It does not constitute a sound definition for capacity building, because it does not capture the wider underlying issues of building, strengthening, and sustaining key homeland security capacities that are vital to realizing an envisioned end-state. It also does not bring forth the trade-off decisions and opportunity costs in terms of weighing short-term commitments and long-term consequences.

---

[225] Oates, "On the Theory and Practice of Fiscal Decentralization," 25.

[226] To restate, the *enabling environment* is defined by relief agencies and Non-Governmental organizations as the structures of power and influence and the institutions in which they are embedded.

THIS PAGE INTENTIONALLY LEFT BLANK

# V.    FOCUSING ON KEY HOMELAND SECURITY MANNING ISSUES: THE NECESSITY FOR PROFESSIONAL DEVELOPMENT AND OTHER TRAINING INITIATIVES

## A.    HOMELAND SECURITY PROFESSIONAL DEVELOPMENT AND TRAINING

### 1.    The Federal Law Enforcement Training Center: A Key Example

The last homeland security capacity building alternative is to focus on measures that seek to improve and expand professional development, training, and education opportunities for those engaged in the homeland security mission to better understand, prevent, and respond to threats. These professional development and training programs can range from formalized schools and training centers to individual instruction or symposiums. The development of homeland security training programs focuses on equipping individuals with the necessary skills to understand the mission, the challenges to successful implementation, and achieving better preparedness.

The homeland security mission is wide and varied. The *National Strategy for Homeland Security* outlines six mission areas. As a review, they are: Intelligence and Warning, Border and Transportation Security, Domestic Counterterrorism, Protecting Critical Infrastructure, Defending against Catastrophic Threats, and Emergency Preparedness and Response.[227] Developing professional development, education, and training opportunities to meet a varied and complex mission is a difficult undertaking — particularly when many of the homeland security mission functions lie outside the DHS or even the federal government.

Despite its complexity, education, training, and professional development has been identified as a key area within the *National Strategy for Homeland Security*. The development of a national training and evaluation system is listed as a major initiative under the strategy, which recognizes up front that there exists a strain on "the nation's system for training its emergency response personnel."[228] Outlined in the strategy is an initiative to meet this demand through consolidating requirements at the DHS and

---

[227] Office of Homeland Security, *National Strategy for Homeland Security* (Washington DC: GPO, 2002), viii-x.

[228] Ibid., 45.

developing standards via the Emergency Management Institute, the Center for Domestic Preparedness, and the National Domestic Preparedness Consortium under a train-the-trainer concept.

The *Homeland Security Act of 2002* consolidated some of the education and training responsibilities under the DHS. One example was the transfer of the Federal Law Enforcement Training Center (FLETC) located in Glynco, Georgia.[229] The FLETC in conjunction with its satellite campuses offers a range of courses on a wide range of topics such as federal air marshal training to explosive forensics. It serves as the primary law enforcement training center for federal agencies. It also provides state and local outreach opportunities for specialized courses on a space available basis.[230]

The ability of the FLETC to train students is one example among the many training initiatives needed to support the homeland security strategy. In response to 9/11, the FLETC increased its student week to 6-days, allowing for a student enrollment increase of 20 percent.[231] From 2002 to 2005, the FLETC has been able to increase its student throughput by approximately 48 percent.[232] Most notably, however, for FY2005 approximately 17 percent of the students trained were from state and local jurisdictions — bringing into question whether outreach efforts beyond the federal system are sufficient given that the majority of law enforcement and first responders are non-federal personnel.[233]

A study conducted in 2003 found strains in capacity at the FLETC and its satellite campuses. This study identifies capacity as:

---

[229] U.S. Congress, Senate, *Homeland Security Act of 2002*, 145.

[230] United States General Accountability Office, *Federal Law Enforcement Training Center: Capacity Planning and Management Oversight Need Improvement*, GAO-03-736 (Washington, DC: GPO, July 2003), 7; http://www.gao.gov/new.items/d03736.pdf (accessed on November 20, 2006).

[231] Federal Law Enforcement Training Center, *2002 Annual Report* (Glynco, GA: 2002), 2; http://www.fletc.gov/reference/reports/annual-report/annual02.pdf/view (accessed on November 21, 2006).

[232] Federal Law Enforcement Training Center, *2005 Annual Report* (Glynco, GA: 2005), 14; http://www.fletc.gov/reference/reports/annual-report/fletc-annual-report.pdf/view (accessed on November 21, 2006).

[233] Federal Law Enforcement Training Center, *Performance and Accountability Report, Fiscal Year 2005* (Glynco, GA: 2005), 15; http://www.fletc.gov/reference/reports/accountability-reports/ar2005.pdf/view (accessed on November 21, 2006).

. . . the resources required, such as instructors, facilities, and equipment, to achieve the optimum level of training. Its measurement depends upon the following factors: type of operation schedule (e.g., 5-day/8-hour schedule), the campus (e.g., Glynco), the time frame (e.g., a given fiscal year), and special considerations (e.g., changes in training priority, mission, or policy).[234]

The study identified several aspects of capacity strains. The first stemmed from the assumption that all the facilities, instructors, and equipment would be available for training students. As the study differentiates, however, "capacity is ultimately a function of facilities, instructors, and equipment that are *actually* available to provide training at a point in time.[235] As the study further outlined, the significant choke points were the strain on facilities, shortage and availability of instructors, and the dimensions of physical student throughput whether through messing and berthing facilities. Another choke point originated from increasing the student week from five to six day per week. This increase affected the quality of instruction, student attrition, instructor workload overload, and the affect on maintenance due to increased use.[236]

The FLETC example illustrates some capacity shortfalls and required outcomes that are consistent with the issues identified with the Laboratory Response Network and the underlying concepts offered by Hayes, Pisano, and Upton who define *capacity cushion* as "the amount of capacity in excess of expected demand." [237] A capacity consisting of instructor personnel, equipment, facilities, and student throughput components all possess attributes that are identifiable and that have finite qualities. At a strategic level, determining how much capacity exists across the wide breadth of homeland security mission areas and whether such capacities — consistent with the national approach of the strategy — can accommodate state, local, and private entities drives the investment decisions and mitigating strategies that are required to address *capacity cushion* shortfalls, the assessment of sustainment costs, and the analysis of

---

[234] United States General Accountability Office, *Federal Law Enforcement Training Center: Capacity Planning and Management Oversight Need Improvement*, 3.

[235] Ibid., 14.

[236] Ibid., 18-19.

[237] Robert Hayes and others, *Operations, Strategy, and Technology: Pursuing the Competitive Edge*, 86.

trade-offs. These issues intuitively lie at the center of homeland security capacity building initiatives and are consistent with the strategic challenges and the sorts of decisions faced by General Marshall and President Eisenhower. These capacity building decisions belong at the forefront of homeland security strategic planning efforts and center on the necessary steps that envision success. Grant programs and other *enabling environment* policy tools play an important, but supportive role that foster the capacity building decisions necessary to fulfill the strategy.

### 2. Homeland Security Professional Development and Training Challenges

The FLETC challenges represent one point amongst a wider set of issues. Despite the education and training intent in the *National Strategy for Homeland Security*, several other challenges exist to implementing such an undertaking. The first challenge deals with the wide scope of the mission. Homeland security includes several elements of the federal government, numerous state and local entities, and private organizations that perform a fundamental role in protecting the nation's critical infrastructure. Many of these organizations, such as public health, have little to no experience in working with law enforcement or other personnel. Second, there is little prior history for homeland security training initiatives. The DHS was created after 9/11, and the attempts to provide training to first responders and consequence management officials during the 1990s were disjointed and uncoordinated.[238] For example, the DoD's commitment to conducting training under the *Nunn-Lugar-Domenici Act* was tepid and "a distraction from the core mission of war-fighting."[239] Lastly, there is a limited strategic impetus that seeks to address and integrate the training and education mechanisms, which support a wide variety of programs and mission sets.

---

[238] Michael Scardaville and Jack Spencer, "Meeting the Needs of America's Crucial First Responders," *The Heritage Foundation: Backgrounder*, no.1548 (October 3, 2002): 1; http://www.heritage.org/research/homelanddefense/BG1548.cfm (accessed on November 17, 2006).

[239] Richard A. Falkenrath, "The Problems of Preparedness: Challenges Facing the U.S. Domestic Preparedness Programs," *Belfer Center and the Taubman Cener for State and Local Government (BCSIA) Discussion Paper*, 2000-28 (December 2000): 5; http://bcsia.ksg.harvard.edu/BCSIA_content/documents/ The_Problems_of_Preparedness.pdf (accessed on November 22, 2006).

A symposium held in December 2003 by the National Academy of Public Administration outlined many of the issues dealing with the practical management of homeland security. Of significance, the symposium identified three issues, which are symptoms of challenges outlined above:

- Lack of common understanding on functions, goals, and outcomes
- Lack of capacity to be effective partners
- Planning identified as the "Achilles Heel" of Homeland Security.[240]

As outlined in the report: "During any sweeping governmental reorganization, considerable misinformation, confusion, and misunderstanding are not only likely, but are to be expected."[241] The lack of common understanding on functions, goals, and outcomes, however, is also a consequence of the disjointed domestic preparedness training approach that occurred during the 1990's. As Richard Falkenrath states:

> [T]he specifics of the program's development [domestic preparedness programs] have been dominated by the fragmented politics of federal budget process. The program that took shape was the result of a series of uncoordinated legislative earmarks, which permitted a succession of relatively minor programmatic initiatives in individual federal agencies. Once established, these programs became the objects of uneasy collaborations between individual legislators and executive branch agencies, which allowed the programs to grow to their present proportions. It was, in other words, a "bottom-up" rather than "top-down" process, with no guiding strategy, concept, or program architecture.[242]

Although training has been highlighted as a key area under the present strategy, the current issue with domestic preparedness deals with the emphasis on table-top exercises where exercise participants simulate various scenarios and actions. There is very little practical emphasis on utilizing the equipment and communications that would

---

[240] National Academy of Public Administration, *Advancing the Management of Homeland Security: Managing Intergovernmental Relations for Homeland Security*, 6-19. The specific issues outlined above are respectively identified as Issues 1, 7, and 8 in the report.

[241] Ibid., 6.

[242] Richard A. Falkenrath, "The Problems of Preparedness: Challenges Facing the U.S. Domestic Preparedness Programs," 3.

actually be used in a response.[243] While table-top exercises provide valuable training to examine responses, identify coordination shortfalls, and catalogue lessons, practical training that emphasizes realistic integration across a wide set of first responders is necessary.

The second issue identified in the National Academy's report highlights the fact that many jurisdictions lack the capacity to be effective partners. Some jurisdictions lack the specific skills, whether through shortfalls in specific law enforcement capabilities, varying levels of public health capacity, or emergency management skills.[244] Compounding this issue is the inability of state and local jurisdictions to train and equip enough personnel in sufficient numbers.[245] This feedback is consistent with the levels of state and local participation at the FLETC in Glynco, Georgia.

Lastly, homeland security planning was identified as the "Achilles Heel" of the overall effort. The shortfalls contained in the report centered on two issues — the need to foster planning efforts through "technical assistance and training, sharing of federal physical and human assets or eligibility for performance-based funding, for example to stimulate effective planning across regions," and the need to develop a comprehensive inventory of capabilities cutting across local, state, and federal organizations.[246] Planning is both an acquired skill with discrete methodologies and a collaborative exercise with all stakeholders participating in the plan's development phase. As a result, effective planning requires supportive training and assistance as well as a venue that brings together different participants to develop the plan. One of the criticisms from state and local constituencies on the *National Strategy for Homeland Security* was the lack of

---

[243] James J. Carafano, "Homeland Security and the Trouble with Training," *The Heritage Foundation: Backgrounder* (October 3, 2002): 7; http://www.csbaonline.org/4Publications/Archive/ B.20021003.Homeland_Security_/B.20021003.Homeland_Security_.htm (accessed on November 17, 2006).

[244] National Academy of Public Administration, *Advancing the Management of Homeland Security: Managing Intergovernmental Relations for Homeland Security*, 17-18.

[245] The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *For Ray Downey: Third Annual Report*, (Santa Monica, CA: RAND, December 15, 2001), 15; http://www.rand.org/nsrd/terrpanel/terror3-screen.pdf (accessed on November 21, 2006).

[246] National Academy of Public Administration, *Advancing the Management of Homeland Security: Managing Intergovernmental Relations for Homeland Security*, 19.

participation in the development of the strategy.[247] An overarching strategy that requires state, local, and private buy-in to successfully implement may fail to achieve the *National Preparedness Goal*, especially with planned reductions in homeland security funding.[248]

Homeland security training and education faces many challenges. As highlighted by the FLETC example, notable capacity strains exist in current facilities. Throughput considerations are not only unique to the FLETC. Another example is the Center for Domestic Preparedness (CDP) in Anniston, Alabama. The CDP is the only facility in the nation chartered to train civilian first responders in a real-live chemically toxic environment.[249] At an optimum throughput capacity, the center can process about 10,000 students per year.[250] It also typically has 5,000 applicants on its waiting list.[251] Individual jurisdictions also have varying degrees of capabilities and skills. This was evidenced in the 2001 Anthrax attacks. The CDC had to deploy tailored support teams to meet individual requirements. Lastly, planning is more than conducting exercises. It is a skill and a collaborative activity. As such, it requires training to instruct and improve planning methodologies as well as venues to effectively implement.

## B.  HOMELAND SECURITY MANNING ISSUES: STRATEGIC CONSIDERATIONS

### 1.  Mechanisms

The homeland security training and education enterprise needs its underlying mechanisms to fall under a clear and concise training strategy that is founded on a regional and enterprise-wide basis. Similar to the U.S. Army's efforts prior to the Second

---

[247] International Association of Chiefs of Police (IACP), *From Hometown Security to Homeland Security: IACP's Principles for a Locally Designed and Nationally Coordinated Homeland Security Strategy* (Alexandria, VA: IACP, 2005), 5; http://www.theiacp.org/ leg_policy/HomelandSecurityWP.PDF (accessed on November 25, 2006). The IACP asserts that state and local participation is regulated to providing post-development comments in advisory panels or working groups that have little impact on policy development.

[248] Congressional Research Service, *State and Local Homeland Security: Unresolved Issues for the 109th Congress*, RL32941 (Washington, DC: Library of Congress, June 9, 2005), 11; http://www.fas.org/sgp/crs/ homesec/RL32941.pdf (accessed on November 24, 2006).

[249] Department of Homeland Security, Office of Grants and Training, *Fact Sheet: Center for Domestic Preparedness (CDP)* (June 2006), http://www.ojp.usdoj.gov/odp/docs/CDP_factsheet_2006.pdf (accessed on November 19, 2006), 1.

[250] Council on Foreign Relations, *America Still Unprepared – America Still in Danger*, 21.

[251] Scardaville and Spencer, "Meeting the Needs of America's Crucial First Responders," 6.

World War, the homeland security enterprise led by the DHS needs to unify its linkages to industry and technology, develop its schools through a combination of technical and professional training, and enhance its training feedback assessment systems.[252] It also needs to bring its efforts in working with civilian academic institutions, state, and local partners as part of a greater and focused strategy.

There are several ways to frame a training strategy to man and equip homeland security professionals with the required skills they need. The first method recognizes that there are several levels and types of education. As Altizer and others point out, there are training and mentoring programs, experiential learning, and formal education.[253] The aim of these different types of training is to ensure technical expertise in particular fields of discipline while broadening an individual's scope and experience as they progress. These levels account for end-to-end professional development.

The DHS and other departments of the federal government possess numerous training facilities and assistance programs aimed at training homeland security professionals. The issue — unlike the U.S. Army's training mandate in the Second World War — is that no single organization is responsible or has insight into the various programs. This leads to excessive duplication and waste.[254] Additionally, there is no corresponding strategic insight into the capacity strains that exist, shortfalls in throughput, required investment decisions to expand, or an assessment whether the current capacity of the homeland security training enterprise can actually fulfill the targeted levels contained in the *National Preparedness Goal*, the TCL, and other strategies.

Homeland security is a new field that encompasses many broad areas. Experiential learning afforded by internships, fellowships, and partnerships with industry and think-tanks allows individuals to expand their experience and knowledge into areas that can support homeland security missions.[255] The essential element for the DHS is to

---

[252] See Chapter II, *Decision Characteristics*, 21-22.

[253] Andy Altizer and others, "A Duty to Educate," *Journal of Homeland Security* (March 2006), 2-4; http://www.homelandsecurity.org/newjournal/ Articles/displayArticle2.asp?article=136 (accessed on November 25, 2006).

[254] Carafano, "Homeland Security and the Trouble with Training," 5.

[255] Andy Altizer and others, "A Duty to Educate," 3.

harness these efforts under a unified approach that is consistent with the *National Strategy for Homeland Security*.[256] Interagency coordination and oversight are key elements in harnessing a broad collaboration strategy to support homeland security.[257]

A government emphasis on orchestrating a strategic approach, similar to the Eisenhower *National Defense Education Act*, is recognized as an essential element to preserving the nation's innovative skills. The need for a similar initiative was recognized and included key recommendations, to include increases in fellowships that support the DHS, other agencies, and federal investment.[258] The *New National Defense Education Act of 2006* was introduced into the Congress for debate in February 2006.[259] Similar to the Eisenhower initiative, this bill seeks to harness the nation's academic and research base to meet the challenges of the twenty-first century. It is essential to the homeland security enterprise that the DHS leverage these initiatives to support the mission. Integrating this strategic initiative into homeland security will greatly increase professional development efforts and foster the skills necessary to successfully implement the strategy.

The second method to approaching training balances the need for different levels of education and training with the unique and broad nature of the homeland security mission. It recognizes the need for combining overarching training, experiential, and professional initiatives with approaching training on a regional basis. Homeland security training needs vary between regions, which possess different critical infrastructures, populations, and trans-border issues.[260] Regionalized training centers focused on meeting

---

[256] Office of Homeland Security, *National Strategy for Homeland Security*, 51-54. Science and Technology is recognized as a foundational element for a successful strategy. The strategy offers several areas to innovation and research that can be harnessed through partnerships with the nation's scientific and industrial base.

[257] Congressional Research Service (CRS), *Homeland Security Research and Development Funding, Organization, and Oversight*, RS21270 (Washington D.C: Library of Congress, August 22, 2006), 4-5; http://www.fas.org/sgp/crs/homesec/RS21270.pdf (accessed on November 27, 2006).

[258] Association of American Universities (AAU), *National Defense Education and Innovation Initiative* (New York: AAU, January 2006), 18; http://www.aau.edu/reports/NDEII.pdf (accessed on November 12, 2006).

[259] U.S. Congress, Senate, Committee on Health, Education, Labor, and Pensions, *The New National Defense Education Act of 2006*, 109th Congress, 2nd sess., S.3502 (Washington DC: GPO, June 3, 2006), http://thomas.loc.gov/cgi-bin/query/C?c109:./temp/~c109x4Gpvr (accessed on November 27, 2006).

[260] Carafano, "Homeland Security and the Trouble with Training," 5.

individual needs to train, equip, and exercise homeland security professionals and tailored to meet the necessary capacities can foster federal and non-federal interaction across multi-disciplinary fields.[261] A combination of regional training centers and computer-based and distance learning training can improve access to state and local communities that require training specific to their needs. Ideally, the regional training approach should be consistent with any initiative to regionalize the DHS enterprise or to integrate the training system with the Federal Emergency Management Agency's (FEMA) regions.

### 2.    Measuring Progress

Measuring training progress, credentials, training capacities, and system throughputs will be difficult if they are not cross-linked and if a regional and national — federal, state, local — approach is not developed. A regional training approach combined with different levels of professional development — training, experiential, and academic — would require a substantive commitment and mobilization of resources. Such an effort can be accomplished. The Eisenhower *National Defense Education Act* was such a strategic initiative and one without precedent until its enactment.

There has also been a recent and similar initiative that required federal, state, and local integration. The nation mobilized its resources and commitment as part of a focused effort to address the Y2K issue.[262] This effort affected all governmental and private activities, resulted in the development of public-private venues to foster collaboration, and utilized extensive *enabling environment* policy tools to accomplish the necessary tasks.[263] Similar to the Y2K effort, an enterprise homeland security approach that seeks to address training needs, capacities, and integration at all levels of government requires the ability to measure the attainment of preparedness goals, readiness, and objectives that

---

[261] Scardaville and Spencer, "Meeting the Needs of America's Crucial First Responders," 8-9.

[262] United States General Accountability Office, *Homeland Security: Responsibility and Accountability for Achieving National Goals*, GAO-02-627T (Washington, DC: GPO, April 11, 2006), 5; http://www.gao.gov/new.items/d02627t.pdf (accessed on November 7, 2006).

[263] United States General Accountability Office, *Homeland Security: Challenges and Strategies in Addresing Short and Long-Term National Needs*, GAO-02-160T (Washington, DC: GPO, November 7, 2001), 6; http://www.house.gov/budget/hearings/walkerterrorstmnt.pdf (accessed on November 7, 2006).

are tied to a defined end-state.[264] Falkenrath's recommendation for developing a statistical measurement of preparedness that incorporates training levels, equipment, and other capabilities would allow homeland security leaders to track chokepoints and progress while identifying baseline levels of preparedness across regions.[265]

The development of a homeland security enterprise approach that trains and educates the wide array of professionals is dependent on two variables. First, it is dependent on a strategy that integrates the various elements of the enterprise. Regionalization of training offers one solution to the integration challenge. The second variable is the assessment of the underlying capacity issues that presently exist, identifying which areas need to be revitalized and those that can be eliminated. These variables need to be linked into a focused effort, similar to Y2K, which supports an envisioned end-state.

*Enabling environment* tools must also be crafted and modified for a successful strategy to work. The shortfalls to the DHS Grant System have already been addressed. Other enabling issues are also pertinent to integration. Memorandums of Agreement, legal reviews, and mutual assistance contracts have to be modified and changed to accommodate regional training and manning approaches. At the federal level, integration issues — particularly between the DHS and the DoD — are key areas of concern. For example, the National Guard by its very nature is federal, state, and local. The Army and Air National Guard are deeply embedded throughout the country, possess unique skills that can be used for homeland security, and operate facilities that can be leveraged to support other homeland security elements.[266] By its nature, the military can rapidly mobilize and project capabilities with requisite command, control, and communications to support all-hazard scenarios.[267] The issue is one of integration. The DoD has typically been reluctant to involve itself in domestic settings. Additionally, the request for

---

[264] United States General Accountability Office, *Homeland Security: Responsibility and Accountability for Achieving National Goals*, 6-7.

[265] Falkenrath, "Problems of Preparedness: U.S. Readiness for a Domestic Terrorist Attack," 175-176.

[266] Scardaville and Spencer, "Meeting the Needs of America's Crucial First Responders," 5.

[267] Lynn E. Davis, David E. Mosher, Richard R. Brennan, Michael D. Greenberg, K. Scott McMahon, and Charles W. Yost, *Army Forces for Homeland Security* (Santa Monica, CA: RAND Corporation, 2004), 22-23; http://www.rand.org/pubs/monographs/2004/RAND_MG221.pdf (accessed on November 26, 2006).

assistance process for Defense Support to Civil Authorities (DSCA) is controlled at the Office of Secretary of Defense (OSD).[268] This contributed to poor coordination and delays in military support during Hurricane Katrina.[269] Combined planning, training, and enterprise approaches to homeland security and defense mission can overcome these delays and contribute to more focused solutions.

Underlying training capacity issues also need to be assessed. The concept of capacity building centers on first knowing the baseline condition of a system. Once determined, a capacity building approach through the identification of capacity needs assessments should address the question: "Capacity for what?"[270] The underlying capacity challenges identified in the FLETC and CDP examples offer some insight into the requirements that need assessing. A determination of capacity strains, chokepoints, training throughput, and sustainment issues would require an assessment at the strategic level. These capacity challenges are consistent with capacity assessments performed in the academic community. A coherent capacity strategy in the academic realm acknowledges the need for a unifying strategy tied to measurable outcomes while giving local administrators the flexibility to adjust teaching methods to achieve goals.[271] It also acknowledges the need for assessing individual capacities — instructor knowledge, professional development opportunities, student environment, and the quality of the curriculum and organizational capacities — the amount of personnel and skills required to support the school environment and linkages with other communities.[272]

The assessment of underlying capacity issues is also dependent on the mission and responsibilities of the individual organizations. The *National Strategy for Homeland*

---

[268] Office of the Undersecretary of Defense for Policy, *FAQs: Defense Support to Civil Authorities*, http://www.dod.mil/policy/sections/policy_offices/hd/faqs/defenseSupport/index.html (accessed on November 29, 2006).

[269] U.S. Congress, House, *Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina, A Failure of Initiative* (Washington DC: February 15, 2006), 204-205; http:// a257.g.akamaitech.net/7/257/2422/15feb20061230/www.gpoaccess.gov/katrinareport/military.pdf (accessed on November 16, 2006).

[270] Organisation for Economic Development and Cooperation, "The Challenge of Capacity Development: Working Towards Good Practice," 4.

[271] Diane Massell, *Special Education in the Era of School Reform: Building the Capacity for Standards-Based Reform* (Washington DC: Federal Resource Center for Special Education, October 2000), 7.

[272] Ibid., 9-10.

*Security* pays particular focus to preparation and response efforts against a catastrophic WMD attack.[273] As Falkenrath points out, a WMD attack is a high consequence/low probability event. Other terrorist activities, however, are of lower consequence but higher probability.[274] A strategy that seeks to train *all* first responders in WMD attack mitigation techniques would be cost prohibitive — particularly for state and local jurisdictions. A more reasonable approach would be to assign primary WMD responsibilities to the National Guard in order to absorb the more expensive *capacity cushion* and sustainment costs. The alignment of organizational responsibilities with mission sets consistent with their roles and capabilities can also serve and rationalize the response and recovery process. The implementation of such a policy would require a trade-off and strategic policy analysis as well as streamlining the adjudication of support between federal departments. The military may also lack some of its traditional capabilities due to recurring commitments overseas.[275] Because of these commitments, any of the mutual agreements between states for use of National Guard forces "may not ensure that capabilities will meet requirements, because it draws from a force pool that is already overtaxed."[276]

The development of a comprehensive and long-range strategy that addresses the shortfalls in homeland security training for the variety of its mission areas requires an approach that addresses training, practical experience, and higher education. It also requires an enterprise approach that incorporates the various agencies of the federal, state, local governments and private organizations. Additionally, individual and organizational capacities, determination of baselines, and capacity needs assessments must be tied to an articulated and clear vision. The *enabling environment*, through the integration of grants, mutual aid agreements, and changes to procedures — particularly between federal agencies such as the DHS and DoD — are also necessary to achieving success under a unified vision. Lastly, due to the fragmented nature of approaching domestic

---

[273] Office of Homeland Security, *National Strategy for Homeland Security*, 37-40.

[274] Falkenrath, "The Problems of Preparedness: Challenges Facing the U.S. Domestic Preparedness Programs," 10-11.

[275] Lynn E. Davis and others, *Army Forces for Homeland Security*, 12.

[276] Brian K. Shaw, "Homeland Security is More than Homeland Defense" (Monograph, U.S. Army War College, 2005), 8.

preparedness, a comprehensive analysis of alternatives, trade-offs, and policy reviews are necessary to revalidate planning assumptions and *capacity cushion* considerations.

## C. HOMELAND SECURITY MANNING ISSUES: CAPACITY BUILDING?

### 1. Implications

A review of various homeland security manning issues identifies several concerns. The first concern highlights the fragmented nature of domestic preparedness strategies. This fragmented approach is due to the weak foundations that arose from U.S. government efforts in the 1990s. This has resulted in numerous overlapping programs, weak linkages between federal training systems and non-federal entities, and poor strategies that fail to consider cross-disciplinary and multi-mission training efforts. While training and properly manning homeland security professionals are identified as important goals under the national strategy, there have been limited attempts at developing and integrating an enterprise architecture to meet these goals.

The second concern stems from the present fragmentation. It is difficult to assess at the strategic level existing shortfalls, excesses, or fundamental baselines in homeland security manning and training. The answers to these questions exist at different levels, usually at the individual level as seen in the FLETC or CDP examples. They are not integrated to offer a broad look across federal, state, and local organizations. This lack of feedback and assessment makes it difficult, if not impossible, to derive benchmarks and assign indicators of progress.

The last concern deals with long-range sustainment. Fragmentation and poor assessment and feedback mechanisms prohibit long-range considerations for adjustments in training, an analysis of trade-offs, or changes in training to meet new threat considerations. Training overlap and narrow versus integrated approaches to addressing these issues will contribute to wasteful spending and poor investment strategies. These factors will directly contribute to homeland security sustainment shortfalls.

Homeland security manning and training considerations have a direct role in supporting the elements of the national strategy. Rationalizing these considerations under a unified vision that institutes an enterprise-approach with broad stakeholder buy-in is

fundamental to sustaining homeland security efforts. Manning and training for homeland security are consistent with the capacity building attributes identified in General Marshall's 90-Division Gamble and President Eisenhower's *National Defense Education Act*. Manning and training for homeland security also:

- Focus on the strategic and the long-term
- Require a substantive or recognized commitment to expand or preserve
- Require knowledge of the end-to-end capacity linkages that produce specific capabilities – infrastructure, training base, logistics – to understand opportunity costs and trade-off decisions
- Contain material and social aspects
- Tie directly to sustainment

A comparison between the issues identified for homeland security manning and training and the Laboratory Response Network also reveals similar consistencies. They are both directly tied to accomplishing the mission. The investment decisions are also front-ended and tied to sustainment. They also bring forth the concept of capacity building in that they identify those decisions and costs that should be invested in the present to sustain future efforts.

## 2. Challenges
### a. *Nature of Costs*

The development of a unified approach and the creation of an enterprise-architecture to address homeland security manning are similar to the costs identified in the Laboratory Response Network. Manning and equipping the various elements of homeland security would be expensive undertakings.[277] The identification of duplicative efforts, unnecessary programs, the leveraging of resources across governmental lines, and new training approaches can cut some of these costs.

The costs associated with developing an enterprise-training architecture and expanding the throughput mechanisms to train, equip, and man critical fields in homeland security is also a massive undertaking. It will require capital investment and

---

[277] Carafano, "Homeland Security and the Trouble with Training,"9.

associated front-loaded costs to revamp facilities, create new regional centers, improve curricula, and account for increases in instructors and supporting staff. It will also require an integrated approach to address which elements will absorb more expensive *capacity cushion* costs.

A capacity development approach to mature a homeland security manning and training strategy must also account for the diverse nature of the mission elements. It must also address the formulation of an accurate baseline, develop capacity needs assessments, and deconflict requirements that are using the same source for their needs — as evidenced by the back-order issue between the DHS and DoD. This capacity building approach should also account for changes to mission areas and new threats that develop over time. Like the considerations for the Laboratory Response Network, investment decisions and commitments represent a strategic decision point, implementation commitment, and risk.

Inherent to this approach are the associated sustainment costs — the greatest area of concern. The importance of stability in capacity building development is recognized as a key factor to success.[278] Lack of commitment by the federal government, administrative turnovers, attrition, continuing *enabling environment* shortfalls, and the lack of addressing realistic trade-offs in the budget will seriously hamper any efforts.

### b.    *Political Acceptability*

Like the Laboratory Response Network, revamping homeland security and domestic preparedness training efforts is a daunting task. Although previous external stimuli affected fundamental change — as seen in World War II or in the case of *Sputnik* — the approach to homeland security after 9/11 saw relatively little fundamental change or mobilization. The threat was more ambiguous than the Fascist or Soviet threats and the economic consequences were less acute.[279] To embark on an expensive undertaking

---

[278] Massell, *Special Education in the Era of School Reform: Building the Capacity for Standards-Based Reform* 43.

[279] Steven Cohen, William Eimicke, and Jessica Horan, *Catastrophe and the Public Service: A Case Study of the Government Response to the Destruction of the World Trade Center* (New York: Columbia University, May 2002), 22-23.

would require an assessment of trade-offs and changes to strategic policy. This also represents a significant opportunity cost.

Developing an enterprise-architecture and strategy would also require extensive buy-in from political parties, entrenched bureaucracies, and a variety of other public and private stakeholders. The enactment of this form of capacity building would also require significant changes to the *enabling environment* — not an easy proposition to change or effect. During the Second World War and the *Sputnik* crisis, there was a greater consensus to building common approaches aimed at mobilizing the nation. Those sets of circumstances do not seem to exist as readily today.

A capacity building definition that defines homeland security efforts as — The U.S. government will engage in capacity building measures to improve and expand homeland security training and planning skills to equip professionals with the skills to understand, prevent, and respond to homeland security threats — requires the integration of disparate elements of several layers of government and private entities. It also requires a solid buy-in from varying elements that may possess differing agendas. This capacity building definition also is characterized by front-loaded costs, trade-off decisions, and sustainment issues.

THIS PAGE INTENTIONALLY LEFT BLANK

# VI. CONCLUSION: CAPACITY BUILDING AND IDENTIFYING THE END-STATE

## A. CAPACITY BUILDING: RELATIONSHIP TO HOMELAND SECURITY

*". . . it is likely that our all our actions will promote the profit and advantage of the state."* — Xenophon[280]

### 1. Capacity Building and the Envisioned End-state: Linkages

The strategic environment in the twenty-first century is characterized by numerous challenges — global technological access and development, the determined threat posed by international terrorism, and the proliferation of WMD.[281] These new challenges have redefined the concept of risk. Despite the rising concerns of these risks during the 1990s, it was the attacks on 9/11 that fundamentally brought forth the need and urgency to meet these challenges. Numerous strategies have been developed since 9/11 to address these challenges — many addressing wider non-military issues such as cyber defense or combating terrorist financing.

Homeland security leaders and planners can lose sight of envisioned goals given the proliferation of strategic challenges, new strategies, and directives, many of which may seem to compete with one another. It is also understandable for organizations attempting to meet these challenges to focus on shorter-term problems and lose sight of the envisioned goals.[282] Given numerous realignments, reorganizations, and new missions, it is also easy to misunderstand the use of the term *strategy*. Angelo Codevilla and Paul Seabury, however, offer a simple definition. They state: "*Strategy* is a fancy word for a road map for getting from here to there, from the situation at hand to the situation one wishes to attain."[283] A homeland security strategy should address the

---

[280] Xenophon, "Ways and Means," in *Hiero the Tyrant and Other Treatises* (London: Penguin Classics, 1997), 183.

[281] Mikkel Vedby Rasmussen, *The Risk Society at War: Terror, Technology, and Strategy in the 21st Century* (Cambridge: Cambridge University Press, 2006), 3.

[282] Joan Magretta and Nan Stone, *What Management Is: How It Works and Why It's Everyone's Business* (New York: The Free Press, 2002), 23.

[283] Angelo Codevilla and Paul Seabury, *War: Ends and Means*, 2d ed. (Washington DC: Potomac Books, Inc., 2006), 91.

present situation and the envisioned end-state that needs to be attained within the larger concept of the nation's *Grand Strategy*.[284]

One critique of the *National Strategy for Homeland Security* is that it contains numerous descriptions of major mission areas, outlines goals and initiatives, and includes suggested policies and objectives, yet falls short of "connecting the dots in a way that conveys a strategy.[285] To utilize Codevilla and Seabury's definition of strategy, the critique suggests that that the *National Strategy for Homeland Security* falls short of what is to be attained. In other words, the envisioned end-state is not defined.

*Homeland Security Presidential Directive (HSPD) - 8 (National Preparedness)* explicitly states that preparedness efforts are integral to preparing the nation in terms of resiliency and sustainment. It also introduces the concept of *capacity building* as it relates to "activities such as information gathering, detection, deterrence, and collaboration related to terrorist attacks."[286] The central premise is that capacity building strategies focused on expanding and sustaining key areas is the underlying principle and critical component to an effective preparedness program.[287] Capacity building strategies should define the necessary actions, outline measures to achieve preparedness, and define a way ahead to achieve these goals while consistent with the desired end-state or envisioned goal. Despite the language contained in HSPD-8, there is no corresponding strategic approach that describes a capacity building strategy from its present situation to the one that needs to be attained in terms of national preparedness. Equating federal assistance to capacity building and implementing a strategy via a flawed system of grants ensure potential resources will be distributed in a non-targeted and inefficient manner. Additionally, annual grant announcements and competition for resources via a grant

---

[284] B.H. Liddell Hart, *Strategy*, 2d ed. (New York: Frederick A. Praeger, 1968), 335-336. Liddell Hart defines *Grand Strategy*, "to coordinate and direct all the resources of a nation, or band of nations, towards the attainment of the political object of the war — the goal defined by fundamental policy."

[285] Michael B. Donley, "Reading Strategy Between the Lines*,*" *Journal of Homeland Security* (August 2002): 1-2; http://www.homelandsecurity.org/newjournal/Commentary/displayCommentary2.asp?commentary=18 (accessed on December 18, 2006).

[286] Office of the President, *Homeland Security Presidential Decision Directive/HSPD-8: National Preparedness*, 3.

[287] Ibid., 2. HSPD-8 defines *preparedness* as the, "existence of plans, procedures, policies, training, and equipment necessary at the federal, state, and local level to maximize the ability to prevent, respond to, and recover from major events."

process does not connote a strategy that illuminates a road-map of success. It institutionally reinforces a shorter-term focus and promotes continued raids of the fiscal commons. This phenomenon brings into question the ability to sustain targeted efforts over the long-term.

As highlighted in capacity building literature: "The mere existence of a capacity building strategy or policy document to which senior officials have put the government's name is not necessarily an indication of real commitment."[288] A capacity building strategy requires that the term be defined and a corresponding decision within the context of homeland security be made to answer: "Capacity for what?"[289] Additionally, achieving preparedness "is not an end unto itself, but rather an intermediate objective."[290] Capacity building strategies aimed at achieving preparedness must be linked with the ultimate objectives and an end-state envisioned for homeland security.

A notable military strategist, Colin Gray, once stated that for strategic success in the military "forces must be internally coherent, which is to say competently joint, be of a quantity and provide a strategic effect scaled to the tasks set by high policy, and be employed coercively in pursuit of military objectives that fit political goals."[291] Arguably, General Marshall's decisions to properly scope and train the U.S. Army during the Second World War within the larger strategic context contributed to the nation's success. To contrast, the lack of sufficient staff, epidemiologists, and physical capacity hampered the Laboratory Response Network's ability to fulfill its mission. In other words, the network lacked the coherency, quantity, and quality to achieve a strategic effect. A capacity building strategy tied to a clear idea of success while properly considering trade-offs and opportunity costs can achieve that strategic effect.

For the nation's present homeland security challenges, the ability to address the coherence of disparate federal, state, and local capabilities in terms of competency, to

---

[288] Organisation for Economic Development and Cooperation, "The Challenge of Capacity Development: Working Towards Good Practice," 21.

[289] Organisation for Economic Development and Cooperation, "The Challenge of Capacity Development: Working Towards Good Practice," 4.

[290] Falkenrath, "Problems of Preparedness: U.S. Readiness for a Domestic Terrorist Attack," 179.

[291] Colin Gray, "Why Strategy Is Difficult," *Joint Forces Quarterly* (Summer 1999): 86; http://www.dtic.mil/doctrine/jel/jfq_pubs/1434.pdf (accessed on December 19, 2006).

determine the quantity that is needed, and to employ these capabilities in pursuit of homeland security objectives lies at the center of a capacity building strategy. Defining capacity building and addressing which areas require emphasis represents the initial point of departure for strategic planning.

Incorporating the capacity building definitions as outlined in the Laboratory Response Network and homeland security manning examples to define *capacity building* as "increasing investment in specific areas to recapitalize critical systems and improve and expand training and planning skills for areas that support homeland security efforts" sharpens the initial investment considerations and decision-making necessary to identify which areas require focus and how to implement major and fundamental change. It also brings forth the opportunity costs and the trade-off decisions to support and scope the strategy. Utilizing a capacity building definition that provides greater coherence begins to address such issues as the 34,000 positions that are required annually to support the foreign language skills of more than 65 federal agencies or the need to fill and sustain 15,000 new employees that are required to support public health functions.[292] Addressing these sorts of issues up front requires specific decisions on which languages are more critical than others, which public health functions require more investment over other functions, and the measures that are necessary to sustain these initiatives. Answering these challenges leads to addressing the appropriate *means* that are necessary to begin achieving the objectives and eventually, the envisioned end-state. To adopt a capacity building definition that is based on the disbursement of grants does not immediately highlight these decisions and "ignores the larger point that the system for disbursing homeland security funds is flawed and does not ensure that the greatest priorities are funded."[293]

---

[292] Commission on the Abraham Lincoln Study Abroad Fellowship Program, *Global Competence & National Needs: One Million Americans Studying Abroad* (Washington DC: November 2005), 6; http://www.lincolncommission.org/LincolnReport.pdf (accessed on December 15, 2006). Council on Foreign Relations, *America Still Unprepared – America Still in Danger*, 31.

[293] de Rugy, "Faster and Smarter Funding for First Responders Act of 2005: The Need for Grant Reform," 6.

### 2.      Capacity Building versus Capability Based Approaches

The terms *capability* and *capacity building* have been used interchangeably and have been part of the public discourse for a long time.[294] These terms are also confused in homeland security. Both terms are similar in that they address preparedness and sustainment issues. A *capability* — an activity that must be performed through combination of resources to achieve a goal — addresses the specific measures and resource management issues to develop and implement discrete functions.[295] For example, many jurisdictions require a *capability* to mitigate the effects of a WMD. *Capability-based* planning offers a methodology to identify, develop, and sustain these discrete functions consistent with meeting particular mission tasks.

As outlined in this thesis, a *capacity building* approach requires a broader and more strategic approach in terms of mobilization, scope, and sustainment. Capacity building for homeland security must focus on wiser investment decisions, trade-off considerations, and opportunity costs. Capacity building approaches must also address the underlying and foundational aspects of supporting and sustaining strategic homeland security initiatives. Capacity building is not necessarily focused on specific capabilities, but seeks to reconcile the support of various capabilities through expanding broader foundational systems and wider training programs with the *enabling environment* — governance issues, society, economics, and organizations.

In terms of homeland security, capability-based planning and a capacity building approach are both necessary. Greater focus has been placed on defining and planning for capabilities. Arguably, greater consideration must be given to identifying the underlying structures and means necessary to support wider strategic and capacity building initiatives to sustain homeland security over the long-term. Upon closer inspection, focusing on capabilities development is a necessary, but more narrowly focused activity to meet specific mission objectives. Conversely, a capacity building approach incorporates a broader set of issues. Both concepts are necessary and linked, but both are

---

[294] John J. Gargan, "Consideration of Local Government Capacity," *Public Administration Review* 41, no.6 (November/December 1981): 649.

[295] Department of Homeland Security, *Target Capabilities List*, 10. To restate the definition of *capability*.

different and seek to address different issues. The relationship between the two, the end-state and the *enabling environment* is illustrated below.



National Policy, Strategies, Directives, & Plans: 1st, 2nd, 3rd Tier Approaches

Homeland Security End-State — Capability Based Planning — Capacity Building Strategies — Enabling Environment
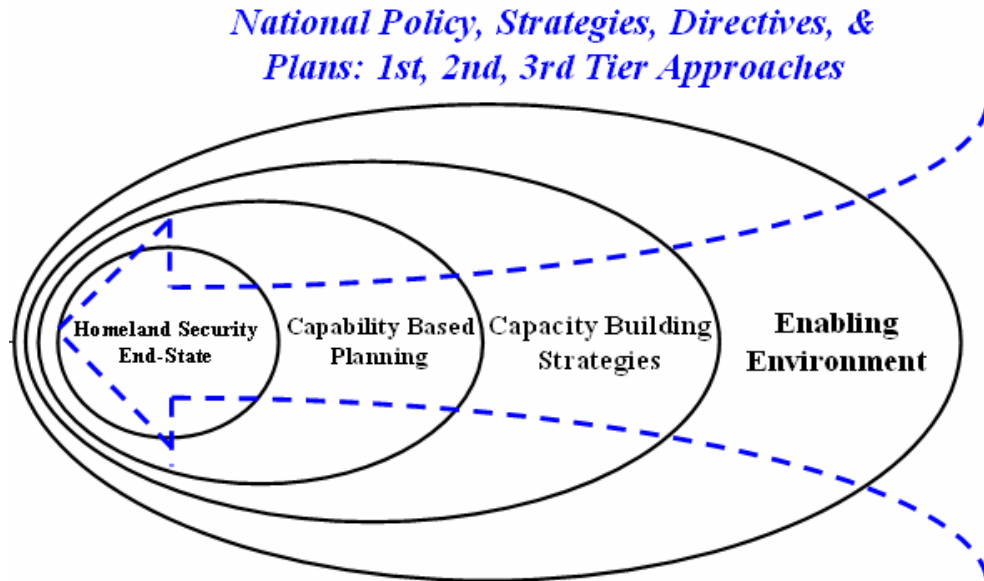
Figure 6.　　Strategy Relationship from Enabling Environment to the End-State

Guided by the varying levels of strategy — whether first, second, or third tier plans, homeland security capability-based planning and capacity building approaches should seek to directly support the envisioned end-state for homeland security. These actions complement one another to produce the specific capabilities that are necessary to reduce risk and uncertainty. The development of capabilities is more closely tied to homeland security's end-state — the specific skills and measurable tasks that support the envisioned goal. As seen in other literature, capacity building strategies encompass broader applications and are dependent on linkages that constitute the *enabling environment* — governance structures, organizations, and wider societal issues — and galvanize and sustain efforts over the long-term. While capabilities-based planning focuses on shorter-term issues, both methodologies, focus on the long-term challenges and in concert, should seek to identify and sustain the overall strategy to meet homeland security objectives. The National Strategy for Homeland Security should provide the vision and illuminate the way to achieving the end-state while linking these various concepts in an integrated and coherent manner.

## B.    CAPACITY BUILDING: INVESTING FOR THE LONG-TERM

"*When we engage in a pursuit, a clear and precise conception of what we are pursuing would seem to be the first thing we need, instead of the last we are to look forward to.*"
— John Stuart Mill[296]

### 1.    Capacity Assessment: Initial Point of Departure

Pursing homeland security initiatives as part of a wider strategy requires a concerted effort to identify critical capacities and a capacity assessment of the present areas that require focus. This is particularly important given that the homeland security strategy falls within a wider context of the nation's grand strategy. The challenges facing the Laboratory Response Network and the broader homeland security manning and training issues offer several points for consideration. As noted, despite the efforts of the CDC during the 1990s to develop the Laboratory Response Network, the 2001 Anthrax attacks revealed that the network could not meet the demand for processing clinical and environmental samples. There remained a backlog of thousands of untested samples seven months after the attacks themselves.[297] This shortfall in capacity was essentially a throughput issue.

For homeland security training, the FLETC example highlighted the challenges to meeting the increased demand for training a wider audience of related homeland security professionals — including state and local representatives. Capacity strains as evidenced by having to increase curriculum instruction, the increased use of facilities, and increased workload for instructors highlighted the shortcomings in the current system for training homeland security professionals. It also brings into question the ability of the system to meet the envisioned target levels of capability under the current strategy. Simply put, a gap exists between the current throughputs of the FLETC versus the envisioned end-state of training homeland security professionals with the requisite skills and in sufficient numbers to meet future goals.

Identifying critical capacities and measuring the ability of the current systems that support these capacities to meet homeland security objectives constitute the initial point of departure and the basis for capacity development. Prioritizing development needs

---

[296] John Stuart Mill, *The Basic Writings of John Stuart Mill: On Liberty, The Subjection of Women & Utilitarianism* (New York: The Modern Library, 2002), 234.

[297] Council on Foreign Relations, *America Still Unprepared – America Still in Danger*, 31.

should be tied directly to reducing fragility in those systems that require immediate attention.[298] The ability to identify and prioritize, while probably the most difficult step, must be conducted within a national context, rather than a strictly federal approach in order to achieve wide buy-in from the disparate groups that are being asked to support the strategy. It is also a strategic implementation issue — the ability to reconcile an organization's mission responsibilities with the personnel and equipment resources that it has been allocated. Levying multiple mission responsibilities without considering the resources that are assigned to an organization, similar to the Laboratory Response Network or the FLETC examples, will lead to a false assurance that the mission will be accomplished effectively. This is also a serious issue to consider, particularly with the multiple reorganizations, and the creation and assignment of new missions to intelligence, law enforcement, and military organizations since 9/11.[299] Simply put, the plan might look sound, but in reality, a gap will exist between the expectations and what the organization can actually accomplish.

Lastly, when considering that homeland security falls within a wider national *grand strategy* — military, economic, or foreign initiatives — the ability to identify and prioritize homeland security capacity building efforts also requires the ability to make difficult choices between alternatives. Current deficit spending leaves little flexibility to pursue ambitious initiatives across multiple fronts. As one report highlighted on the state of federal budget deficits, "by 2030 absent changes in the structure of Social Security and Medicare, there would be virtually no room for any other federal spending priorities, including national defense, education, and law enforcement."[300] Pursing homeland security capacity building initiatives, particularly given the difficulty in the identification and front-loaded nature of their costs, requires hard choices.

---

[298] Organisation for Economic Development and Cooperation, "The Challenge of Capacity Development: Working Towards Good Practice," 29.

[299] Office of the President, *The Federal Response to Hurricane Katrina: Lessons Learned*, 68. The lessons learned from Hurricane Katrina identify the shortfalls and mismatch between the intent of federal transformation efforts versus the actual building of organizational capability to support the homeland security mission.

[300] United States General Accountability Office, *Homeland Security: Challenges and Strategies in Addresing Short and Long-Term National Needs*, 11.

## 2.    *Capacity Cushion*: How Much is Enough?

Identification and prioritization of critical homeland security capacities also requires an assessment of, "How much is enough?" To use the Laboratory Response Network example, the initial estimate of the network's capacity fell short of the unexpected demand for sampling. There was little flexibility to meet demand. Measuring how much capacity is required; particularly how much is required above normal operating conditions is the essential *capacity cushion* issue. Maintaining a capacity cushion might be a strategic necessity, but will likely be unpopular if a wide consensus is not achieved.

Identifying duplication and cutting waste amongst homeland security entities and organizations at the federal, state, and local jurisdictions can streamline investment and rationalize capacity cushion issues. As one study outlined, "over 40 federal entities have roles in combating terrorism and, taken as a whole, past federal efforts often have resulted in a lack of accountability as well as gaps and duplication among programs."[301] This duplication exists at all levels. Assigning specific missions and roles to particular organizations and having these entities assume capacity cushion costs can streamline and rationalize costs. For example, state and local jurisdictions may not have to invest large resources in WMD response capabilities if the National Guard assumed the preponderance of this mission. It would also mean, however, that the National Guard might have to limit its traditional war fighting proficiencies to better coordinate with varying levels of civilian government agencies.[302] This example would in essence be a homeland security trade-off consideration within the larger and competing interests of grand strategy.

Effectively addressing capacity cushion issues also requires an understanding of the dangers inherent to *over mobilization*. Similar to the challenge faced by General Marshall and the *Victory Program*, there is a danger of expending too many resources into specific areas and not enough in others. Identifying a middle ground requires flexibility in planning, an understanding of the present and changing nature of the threat,

---

[301] United States General Accountability Office, *Homeland Security: Responsibility and Accountability for Achieving National Goals*, 7.

[302] Davis and others, *Army Forces for Homeland Security*, 18.

and a reevaluation of the initial planning assumptions that were necessary to the formulation of the plan. It also requires an understanding of underlying resources and a flexibility to utilize existing capabilities to meet different mission sets.

### 3.      Developing Capacity Building Concepts: Envisioning the End-State

An end-state is what is sought to be attained. As highlighted earlier, the *National Strategy for Homeland Security* has been criticized because it does not clearly define an end-state. Although the formulation of a homeland security end-state is beyond the scope of this thesis, its identification would better enable the implementation of effective homeland security capacity building strategies. To paraphrase Mill, if greater precision were given to our pursuit, we would have a better understanding of what the homeland security mission is trying to attain. A better understanding would support the strategic capacity building decisions that are necessary to achieve the end-state.

Despite the absence of a precise or defined end-state, there are several elements that are required to ensuring effective capacity building concepts. First, is the importance of continuity. As Codevilla and Seabury highlight: "[S]trategy consists of a commitment to do whatever is necessary to make the plan work. This does not imply that once a plan is made it should be followed inflexibly. But it does imply the realization that to fight "on the cheap" either materially or politically is to court disaster."[303] The same holds true for long-term capacity building initiatives — the strategic means and commitment to implement and support the strategy. As evidenced by the U.S. Army's efforts in the Second World War and President Eisenhower's *National Defense Education Act of 1958* and the subsequent commitment by following administrations, continuity in planning and political buy-in are necessary to long-term capacity building effectiveness.

Second, it is vital to maintain stability. Within the academic realm, building stability and rationalizing the grant system, contracts, and other incentives offered by governmental policy tools in the *enabling environment* are viewed as critical support components to an effective capacity building strategy.[304] Similarly, an effective

---

[303] Codevilla and Seabury, *War: Ends and Means*, 94.

[304] Massell, *Special Education in the Era of School Reform: Building the Capacity for Standards-Based Reform*, 43.

homeland security capacity building strategy requires stability in order to be effective. The fragmentation, wasteful spending, overlap, and weak organizational oversight identified as part of the shortfalls in the DHS Grant System will continue to provide an unstable environment and eventually hamper any homeland security capacity building initiative.

Lastly, if the intent of HSPD-8 is for the federal government to promote capacity building measures aimed to preparing varying levels of jurisdictions, then there must be incentives for jurisdictions to improve local capacities within a wider homeland security strategy. As one person stated: "Capacity is better spent on local problem solving than on seeking federal funds. In other words, attracting inputs is vital to organizational capacity, but, alone, it is an insufficient concept of capacity."[305] Simply disbursing funds that are not effectively aimed within a larger purpose misses the intent of capacity building. Incentives must be provided for state, local, and private entities in order for capacity building to be effective. Additionally, incentives will also support the longer-term sustainment of the overall strategy. Sound stakeholder identification, meaningful buy-in, and participation in the formulation of plans and initiatives are several methods of offering incentives.

Defining homeland security capacity building, understanding the distinctions between capacity building and capability-based planning, and appreciating the inherent issues with developing a capacity building strategy — capacity assessments, capacity cushion, throughput, and strain issues — better captures the variables and the decisions that are necessary to implementing a coherent homeland security strategy. Linking capacity building to national strategy, investing in critical capacities, preserving and enhancing these capacities, and understanding the consequences of *over mobilization* also bring forth the sustainment challenges that are related to decision-making. The understanding of these issues and the implementation of homeland security capacity building approaches give the larger enterprise its purpose. It will also focus on attaining the envisioned end-state for homeland security.

---

[305] Beth Walter Honadle, "A Capacity Building Framework: A Search for Concept and Purpose," *Public Administration Review* 41, no.5 (September/October, 1991): 576.

THIS PAGE INTENTIONALLY LEFT BLANK

# LIST OF REFERENCES

## ACADEMIC PAPERS

A'Hearn, Francis W. "The Industrial College of the Armed Forces: Contextual Analysis of an Evolving Mission, 1924-1994." Ph.D. diss., Virginia Polytechnic Institute, 1997.

Shaw, Brian K. "Homeland Security is More than Homeland Defense." Monograph, U.S. Army War College, 2005.


## BOOKS AND STUDIES

Bryson, John M. *Strategic Planning for Public and Nonprofit Organizations: A Guide to Strengthening and Sustaining Organizational Achievement*, 3rd ed. San Francisco, CA: Jossey-Bass, 2004.

Center for Military History. *Mobilization: The U.S. Army in World War II*. Washington DC: Center for Military History, 2001.

Clowse, Barbara Barksdale. *Brainpower for the Cold War: The Sputnik Crisis and National Defense Education Act of 1958*. London: Greenwood Press, 1981.

Codevilla, Angelo and Paul Seabury. *War: Ends and Means*, 2d ed. Washington DC: Potomac Books, Inc., 2006.

Cohen, Steven, William Eimicke, and Jessica Horan. *Catastrophe and the Public Service: A Case Study of the Government Response to the Destruction of the World Trade Center*. New York: Columbia University, May 2002.

Davis, Lynn E., David E. Mosher, Richard R. Brennan, Michael D. Greenberg, K. Scott McMahon, and Charles W. Yost. *Army Forces for Homeland Security*. Santa Monica, CA: RAND Corporation, 2004. http://www.rand.org/pubs/monographs/2004/ RAND _MG221.pdf (accessed on November 26, 2006).

Devine, Robert A. *The Sputnik Challenge*. New York: Oxford University Press, 1993.

Greenfield, Kent. *American Strategy in World War Two*. Baltimore: Johns Hopkins Press, 1963.

Hart, B.H. Liddell. *Strategy*, 2d ed. New York: Frederick A. Praeger, 1968.

Hayes, Robert, Gary Pisano, David Upton, and Steven Wheelwright. *Operations, Strategy, and Technology: Pursuing the Competitive Edge*. Hoboken, NJ: John Wiley & Sons, Inc., 2005.

Hearne, Shelley A., Lara M. Segal, and Michael J. Earls. *Ready or Not?: Protecting the Public's Health from Diseases, Disasters, and Bioterrorism*. Washington DC: Trust for America's Health, December 2005. http://healthyamericans.org/reports/bioterror05 bioterrori05Report.pdf (accessed on September 27, 2006).

Jackson, Shirley Ann. *Envisioning a 21st Century Science and Engineering Workforce for the United States: Task for University, Industry, and Government*. Washington DC: The National Academies Press, 2003.

Kim, W. Chan and Renée Mauborgne. *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant*. Boston: Harvard Business School Press, 2005.

Light, Paul C. *Sustaining Nonprofit Performance: The Case for Capacity Building and the Evidence to Support It*. Washington DC: Brookings Institute Press, 2004.

Lloyd, Richard M., ed. *Strategy and Force Planning*, 2d ed. Newport, RI: Naval War College Press, 1997.

Maier, Pauline. *Inventing America: A History of the United States*. Vol. 2. New York: W.W. Norton & Company, Inc., 2003.

Magretta, Joan and Nan Stone, *What Management Is: How It Works and Why It's Everyone's Business*. New York: The Free Press, 2002.

Matloff, Maurice and Edwin M. Snell. *Strategic Planning for Coalition Warfare 1941-1942*. Washington DC: GPO, 1953.

Matloff, Maurice. *Strategic Planning for Coalition Warfare 1943-1944*. Washington DC: GPO, 1959.

_____. "The 90 Division Gamble." In *Command Decisions*, ed. Kent Greenfield, 365-81. Washington DC: Center for Military History, 1990.

Mill, John Stuart. *The Basic Writings of John Stuart Mill: On Liberty, The Subjection of Women & Utilitarianism*. New York: The Modern Library, 2002.

Palmer, Robert R., Bell I. Wiley, and William R. Keast. *The Army Ground Forces: The Procurement and Training of Army Ground Combat Troops*. Washington DC: Center for Military History, 2003.

Pollock, Ethan. *Stalin and the Soviet Science Wars*. Princeton: Princeton University Press: 2006.

Rasmussen, Mikkel Vedby. *The Risk Society at War: Terror, Technology, and Strategy in the 21st Century*. Cambridge: Cambridge University Press, 2006.

Salinsky, Eileen. *Public Health Emergency Preparedness: Fundamentals of the System*. Washington DC: George Washington University, April 3, 2002. http://www.nhpf.org/ pdfs_bp/BP_Public_Health_4-02.pdf (accessed on September 10, 2006).

Smithson, Amy E. and Leslie-Anne Levy. *Ataxia: The Chemical and Biological Terrorism Threat and the U.S. Response*. Washington DC: The Stimson Center, 1999.

Wagner, Caroline S., Irene Brahmakulam, Brian Jackson, Anny Wong, and Tatsuro Yoda. *Science and Technology Collaboration: Building Capacity in Developing Countries?*. Santa Monica: CA, RAND, March 2001. http://www.rand.org/pubs/ monograph_reports/2005/MR1357.0.pdf (accessed on September 15, 2005).

Walker, David B. *The Rebirth of Federalism: Slouching Toward Washington*, 2nd ed. New York: Chatham House Publishers, 2000.

Weinberg, Gerhard L. *A World At Arms: A Global History of World War II*. Cambridge: Cambridge University Press, 1994.

Weissert, Carol S. *The Intergovernmental Grant System: An Assessment & Proposed Policies*. Washington DC: Advisory Commission on Intergovernmental Relations, January 1978. http://www.library.unt.edu/gpo/ACIR/Reports/brief/B-1.pdf (accessed on October 4, 2006).

Wellington, Leif Haase. *Breathing Easier? Report of the Century Foundation Working Group on Bioterrorism Preparedness*. New York: The Century Foundation Press, 2004). http://www.tcf.org/Publications/HomelandSecurity/breathingeasier.pdf (accessed on September 15, 2006).

Xenophon. "Ways and Means." In *Hiero the Tyrant and Other Treatises*. London: Penguin Classics, 1997.

## JOURNALS, ARTICLES, AND LECTURES

Altizer, Andy, Nicole Bradshaw, Peter Courtney, Roby Hill, and Erum Jilani. "A Duty to Educate." *Journal of Homeland Security* (March 2006): 1-5, http://www. homelandsecurity.org/newjournal/Articles/displayArticle2.asp?article=136 (accessed on November 25, 2006).

Baker, Edward L and Jeffrey P. Koplan. "Strengthening the nation's public health infrastructure: Historic challenge, unprecedented opportunity." *Health Affairs* 21, no.6 (November/December 2002): 15-27, http://content.healthaffairs.org/cgi/reprint/ 21/6/15.pdf (accessed on October 27, 2006).

Carafano, James Jay. "An Appropriator's Guide to Homeland Security." *The Heritage Foundation: Backgrounder* 1767 (June 7, 2004): 1-7, http://www.heritage.org/ Research/HomelandDefense/upload/64513_1.pdf (accessed on October 15, 2005).

_____. "Homeland Security and the Trouble with Training." *The Heritage Foundation: Backgrounder* (October 3, 2002): 1-12, http://www.csbaonline.org/ Publications/Archive/B.20021003.Homeland_Security_/B.20021003. Homeland _Security_.htm (accessed on November 17, 2006).

Carafano, James Jay and David Heyman. "DHS 2.0: Rethinking the Department of Homeland Security." *The Heritage Foundation*, Special Report 2 (December 13, 2004): 1-35, http://www.heritage.org/Research/HomelandDefense/upload/ 72759_1.pdf (accessed on September 3, 2006).

Carroll, Julian M. and Richard A. Schnelling. "A Letter to the President, December 20, 1978, from the National Governors' Association." *Publius: A Journal of Federalism* 9, no.1 (1979): 91-95, http://publius.oxfordjournals.org/cgi/reprint/9/1/91.pdf (accessed on October 10, 2006).

Donley, Michael B. "Reading Strategy Between the Lines." *Journal of Homeland Security* (August 2002): 1-2, http://www.homelandsecurity.org/newjournal/ Commentary/ displayCommentary2.asp? commentary=18 (accessed on December 18, 2006).

Falkenrath, Richard A. "Problems of Preparedness: U.S. Readiness for a Domestic Terrorist Attack." *International Security* 25, no.4 (Spring 2001): 147-186.

_____. "The Problems of Preparedness: Challenges Facing the U.S. Domestic Preparedness Programs." *Belfer Center and the Taubman Cener for State and Local Government (BCSIA)*, Discussion Paper 2000-28 (December 2000): 1-29, http://bcsia.ksg.harvard.edu/BCSIA_content/documents/The_Problems_of_ Preparedness.pdf (accessed on November 22, 2006).

Flemming, Arthur S. "Lecture on Education and National Security" (Lecture given to the students and faculty of the Industrial College of the Armed Forces on November 16, 1960), L61-77. http://www.ndu.edu/library/ic4/L61-077.pdf (accessed on October 7, 2007).

_____. "The Philosophy and Objectives of The National Defense Education Act." *Annals of the American Academy of Political and Social Science* 327 (January 1960): 132-138.

Fraser, Michael R. and Donna L. Brown. "Bioterrorism Training and Local Public Health Agencies: Building a Response Capacity." *Public Health Reports* 115, no.4 (July/August 2000): 326-330, http://www.pubmedcentral.nih.gov/picrender.fcgi?artid =1308572& blobtype=pdf (accessed on September 20, 2006).

Frist, Bill. "Public Health and National Security: The Critical Role in Increased Federal Support." *Health Affairs* 21, no.6, (November/December 2002): 117-130, http://content.healthaffairs.org/cgi/reprint/21/6/117 (accessed on October 27, 2006).

Gargan, John J. "Consideration of Local Government Capacity." *Public Administration Review* 41, no.6 (November/December 1981): 649-658.

Gray, Colin. "Why Strategy Is Difficult." *Joint Forces Quarterly* (Summer 1999): 80-86, http:// www.dtic.mil/doctrine/jel/jfq_pubs/1434.pdf (accessed on December 19, 2006).

Gunn, Robert A., Mary C. White, Grayson B. Miller, J. Lyle Conrad, and Carl W. Tyler. "State Epidemiology Programs and State Epidemiologists: Results of a National Survey." *Public Health Reports* 104, no.2 (March/April 1989): 170-177, http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1580032&blobtype=pdf (accessed on September 20, 2006).

Helgason, Erlendur, Ole Andreas Okstad, Dominique A. Caugant, Henning A. Johansen, Agnes Fouet, Michele Mock, Ida Hegna, and Anne Brit Kolsto. "Bacillus anthracis, Bacillus cereus, and Bacillus thuringiensis: One Species on the Basis of Genetic Evidence." *Applied and Environmental Microbiology* 66, no.6 (2000): 2627-2630, http://aem.asm.org/cgi/reprint/66/6/2627.pdf (accessed on September 19, 2006).

Heller, Michael B., Michel L. Bunning, Martin E.B. France, Debra M. Niemeyer, Leonard Peruski, and Tim Naimi. "Laboratory Response to Anthrax Bioterrorism, New York City, 2001." *Emerging Infectious Diseases* 8, no.10 (October 2002): 1096-1102, http://www.cdc.gov/ncidod/EID/vol8no10/pdf/02-0376.pdf (accessed on September 20, 2006).

Honadle, Beth Walter. "A Capacity Building Framework: A Search for Concept and Purpose." *Public Administration Review* 41, no.5 (September/October, 1991): 575-580.

Hughes, James M. and Julie Louise Gerberding. "Anthrax Bioterrorism: Lessons Learned and Future Directions." *Emerging Infectious Diseases* 8, no.10 (October 2002): 1013-1014, http://www.cdc.gov/ncidod/EID/vol8no10/pdf/02-0466.pdf (accessed on September 15, 2006).

Jernigan, Daniel B., Pratima L. Raghunathan, Beth P. Bell, Ross Brechner, and Eddy A. Bresnitz. "Investigation of Bioterrorism-Related Anthrax, United States, 2001: Epidemiologic Findings." *Emerging Infectious Diseases* 8, no.10 (October 2002): 1019-1028, http://www.cdc.gov/ ncidod/EID/vol8no10/pdf/02-0353.pdf (accessed on September 4, 2006).

Kettl, Donald F. "Promoting State and Local Government Performance for Homeland Security." *The Century Foundation* (June 1, 2002): 1-15, http://www.tcf.org/ Publications/HomelandSecurity/state_local_gov_perform.pdf (accessed on October 11, 2006).

Michel, George J. "Success in National Educational Policy from Eisenhower to Carter." *Peabody Journal of Education* 57, no.4 (July 1980): 223-232.

Morse, Stephen A., Richard B. Kellogg, Sam Perry, Richard F. Meyer, David Bray, David Nichelson and J. Michael Miller. "Detecting Biothreat Agents: the Laboratory Response Network." *American Society for Microbiology (ASM) News* 69, no. 9 (2003): 433-437, http://www.asm.org/ASM/files/CCLIBRARYFILES/FILENAME/ 0000000605/nw09030114p.pdf (accessed on September 15, 2006).

Oates, Wallace E. "On the Theory and Practice of Fiscal Decentralization." *Institute for Federalism & Intergovernmental Relations*, *IFIR Working Papers Series*, no. 2006-05 (May 2006): 1-33, http://www.ifigr.org/publication/ifir_working_papers/ IFIR-WP-2006-05.pdf (accessed on November 1, 2006).

Riddle, Oscar. "Must We Fail in Science Education?: National Defense Education Act of 1958," *The Physiologist* 2, no. 2 (May 1959): 55-60.

Rugy, Veronique de. "Faster and Smarter Funding for First Responders Act of 2005: The Need for Grant Reform," *American Enterprise Institute (AEI) for Public Policy Research* (April 1, 2005): 1-15, http://www.aei.org/publications/ pubID.22298,filter.all/pub_detail.asp (accessed on October 1, 2006).

_____. "What Does Homeland Security Spending Buy?" *American Enterprise Institute (AEI) for Public Policy Research*, Working Paper 107 (April 1, 2005): 1-44, http//www.aei.org/docLib/20050408_wp107.pdf (accessed on October 1, 2006).

Scardaville, Michael and Jack Spencer. "Meeting the Needs of America's Crucial First Responders." *The Heritage Foundation: Backgrounder* 1548 (October 3, 2002): 1-10, http://www.heritage.org/research/homelanddefense/BG1548.cfm (accessed on November 17, 2006).

Utt, Ronald D. "How Congressional Earmarks and Pork-Barrel Spending Undermine State and Local Decisionmaking." *The Heritage Foundation: Backgrounder* 1266 (June 2, 1999): 1-14, http://www.heritage.org/Research/Budget/upload/18432_1.pdf (accessed on November 10, 2005).

Webb, G.F. "A silent bomb: The risk of anthrax as a weapon of mass destruction." *Proceedings of the National Academy of Sciences* 100, no.8 (April 7, 2003): 4355-4356, http://www.pnas.org/cgi/reprint/100/8/ 4355.pdf (accessed on September 15, 2006).

## OFFICIAL REPORTS, BRIEFINGS, LEGISLATION

Advisory Commission on Intergovernmental Relations. *Significant Features of Fiscal Federalism, 1985-1986*. Washington DC: GPO, 1986.

Association of American Universities (AAU). *National Defense Education and Innovation Initiative: Meeting America's Economic and Security Challenges in the 21st Century*. New York: AAU, January 2006. http://www.aau.edu/reports/NDEII.pdf (accessed on 16 September 2006).

Center for Infectious Disease Research and Policy (CIDRAP). *Providing a Framework for Public Health Bioterrorism Preparedness: Public Health Workforce Collaboration and Infrastructure Issues*. University of Minnesota, May 17, 2002. http://www.cidrap.umn.edu/cidrap/center/mission/papers/btworkforce.html (accessed on October 16, 2006).

Centers for Disease Control and Prevention (CDC). *Biological and Chemical Terrorism: Strategic Plan for Preparedness and Response – Recommendations of the CDC Strategic Planning Working Group*. Atlanta, GA: April 21, 2000, http://www.cdc.gov/ mmwrPDF/RR/RR4904.pdf (accessed on September 15, 2006).

Centers for Disease Control and Prevention (CDC). *Fact Sheet: Anthrax Information for Health Care Providers*. Atlanta, GA: March 8, 2002, http://www.bt.cdc.gov/agent/ anthrax/anthrax-hcp-factsheet.pdf (accessed on September 16, 2006).

Centers for Disease Control and Prevention (CDC). *Public Health's Infrastructure: A Status Report*. Response to Senate Report 106-166. Washington, DC: GPO, 1999.

Centers for Disease Control and Prevention (CDC). *The Laboratory Response Network (LRN): Partners in Preparedness*. Atlanta, GA: March 11, 2005, http://www.bt.cdc.gov/lrn/pdf/lrnhistory.pdf (accessed on September 15, 2006).

Citizens Against Government Waste (CAGW). *2006 Congressional Pig Book Summary*. Washington DC: CAGW, 2006. http://www.cagw.org/site/DocServer/ 2006PigBookSummary.pdf?docID=1541 (accessed on November 10, 2006).

Commission on the Abraham Lincoln Study Abroad Fellowship Program. *Global Competence & National Needs: One Million Americans Studying Abroad* (Washington DC: November 2005), 6; http://www.lincolncommission.org/ LincolnReport.pdf (accessed on December 15, 2006).

Congressional Budget Office. *Federal Funding for Homeland Security: An Update*. Washington DC: GPO, July 20, 2005. http://www.cbo.gov/ftpdocs/65xx/doc6566/7- 20-HomelandSecurity.pdf (accessed on October 11, 2006).

Congressional Research Service. *An Overview of the U.S. Public Health System in the Context of Emergency Preparedness*, RL31719. Washington DC: Library of Congress, 17 March 2005. http://www.fas.org/sgp/crs/homesec/RL31719.pdf (accessed on September 14, 2006).

Congressional Research Service. *Federal Grants to State and Local Governments: A Brief History*, RL30705. Washington, DC: Library of Congress, February 19, 2003. http://usinfo.state.gov/usa/infousa/politics/states/fedgrants.pdf (accessed on October 10, 2006).

Congressional Research Service. *First Responder Grant Formulas: The 9/11 Recommendation and other Options for Congressional Action*, RL32475. Washington, DC: Library of Congress, August 5, 2004. http://fpc.state.gov/documents/ organization/35801.pdf (accessed on October 29, 2006).

Congressional Research Service. *Homeland Security: Department Organization and Management - Implementation Phase*, RL31751. Washington DC: Library of Congress, January 3, 2005. http://www.fas.org/sgp/crs/RL31751.pdf (accessed on November 4, 2006).

Congressional Research Service. *Homeland Security Research and Development Funding, Organization, and Oversight*, RS21270. Washington DC: Library of Congress, August 22, 2006. http://www.fas.org/sgp/crs/homesec/RS21270.pdf (accessed on November 27, 2006).

Congressional Research Service. *State and Local Homeland Security: Unresolved Issues for the 109th Congress*, RL32941. Washington, DC: Library of Congress, June 9, 2005. http://www.fas.org/sgp/crs/homesec/RL32941.pdf (accessed on November 24, 2006).

Congressional Research Service. *The Economic Effects of 9/11: A Retrospective Assessment*, RL31617. Washington DC: Library of Congress, September 27, 2002). http://www.fas.org/ irp/crs/RL31617.pdf (accessed on December 7, 2006).

Council on Foreign Relations. *America Still Unprepared – America Still in Danger*. New York: Council on Foreign Relations, 2002.

Customs and Border Protection Agency. *Secure Border Initiative: Fact Sheet*. http://www.cbp.gov/xp/cgov/newsroom/fact_sheets/border/secure_border initiative/secure_border.xml (accessed on October 15, 2006).

Department of Defense, Office of the Undersecretary of Defense for Policy. *FAQs: Defense Support to Civil Authorities*. http://www.dod.mil/policy/sections/ policy_offices/hd/faqs/defenseSupport/index.html (accessed on November 29, 2006).

Department of Education. *Federal Role in Education: Overview*. http://www.ed.gov/about/overview/fed/role.html (accessed on October 12, 2005).

Department of Health and Human Services. *Biosafety in Microbiological and Biomedical Laboratories*, 4th ed. Washington, DC: GPO, 1999. http://www.cdc.gov/od/ohs/pdffiles/ 4th%20BMBL.pdf (accessed on September 10, 2006).

Department of Homeland Security. *National Preparedness Goal*. Washington DC: GPO, December 2005. https://www.hsdl.org/ homesec/docs/dhs/nps03-010306-02.pdf. (accessed on March 5, 2006).

Department of Homeland Security, Office of Domestic Preparedness. *FY2004 Urban Area Security Program Guidance*. Washington DC: GPO, November, 2003.

Department of Homeland Security, Office of Grants and Training. *Fact Sheet: Center for Domestic Preparedness (CDP)*. June 2006. http://www.ojp.usdoj.gov/odp/docs/CDP_factsheet_2006.pdf (accessed on November 19, 2006).

Department of Homeland Security, Office of Grants and Training. *G&T Mission*. http://www.ojp.usdoj.gov/odp/about/mission.htm (accessed on October 30, 2006).

Department of Homeland Security, Office of the Inspector General. *An Audit of Distributing and Spending "First Responder" Grant Funds*, OIG 04-15. Washington DC: GPO, March 2004. http://www.dhs.gov/xoig/assets/mgmtrpts/OIG_ODP_ 03-04.pdf (accessed on November 15, 2006).

Department of Homeland Security, Office of the Inspector General. *Review of the Port Security Grant Program*, OIG 05-10. Washington DC: GPO, January 2005. http://www.dhs.gov/xoig/assets/mgmtrpts/OIG_05-10_Jan05.pdf (accessed on November 15, 2006).

Department of Homeland Security. *Securing the Homeland: U.S. Department of Homeland Security Strategic Plan*. Washington DC: GPO, 2004.

Department of Homeland Security. *Target Capabilities List (TCL): A Companion to the National Preparedness Goal*. Washington DC: GPO, August 2006. https://www.hsdl.org/homesec/docs/dhs/nps08-080706-01.pdf (accessed on September 5, 2006).

Federal Law Enforcement Training Center. *2002 Annual Report*. Glynco, GA: 2002. http://www.fletc.gov/reference/reports/annual-report/annual02.pdf/view (accessed on November 21, 2006).

Federal Law Enforcement Training Center. *2005 Annual Report*. Glynco, GA: 2005. http://www.fletc.gov/reference/reports/annual-report/fletc-annual-report.pdf/view (accessed on November 21, 2006).

Federal Law Enforcement Training Center. *Performance and Accountability Report, Fiscal Year 2005*. Glynco, GA: 2005. http://www.fletc.gov/reference/reports/accountability-reports/ar2005.pdf/view (accessed on November 21, 2006).

Grant Makers Health (GIH). *Strengthening the Public Health System for a Healthier Future*. Issue Brief 17. Washington DC: GIH, February 2003. http://www.gih.org/usr_doc/public_health.pdf (accessed on September 5, 2006).

International Association of Chiefs of Police (IACP). *From Hometown Security to Homeland Security: IACP's Principles for a Locally Designed and Nationally Coordinated Homeland Security Strategy*. Alexandria, VA: IACP, 2005. http://www.theiacp.org/leg_policy/HomelandSecurityWP.PDF (accessed on November 25, 2006).

National Academy of Public Administration (NAPA). *Advancing the Management of Homeland Security: Managing Intergovernmental Relations for Homeland Security*. Washington, DC: NAPA, 2004.

National Commission on Terrorist Attacks Upon the United States. *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the Unites States*. New York: W.W. Norton & Company, 2004.

Office of Homeland Security. *National Strategy for Homeland Security*. Washington DC: GPO, 2002.

Office of Management and Budget. *Budget of the United States Government, FY2007: Analytical Perspectives*. Washington DC: GPO, 2006. http://www.whitehouse.gov/omb/budget/fy2006 (accessed on October 27, 2006).

Office of Management and Budget. *Budget of the United States Government, FY2007: Historical Tables, Table 4.1: Outlays by Agency*. Washington DC: GPO, 2006. http://www.gpoaccess.gov/usbudget/fy07/hist.html (accessed on October 27, 2006).

Office of Management and Budget. *Budget of the United States Government, FY2007: Historical Tables, Table 1.1: Summary of Receipts, Outlays, and Surpluses or Deficits*. Washington DC: GPO, 2006. http://www.gpoaccess.gov/usbudget/fy07/Sheets/hist01z1.xls (accessed on October 27, 2006).

Office of the President. *Homeland Security Presidential Decision Directive/HSPD-8: National Preparedness*. Washington DC: GPO, December 17, 2003. https://www.hsdl.org/homesec/docs/whitehouse/nps05-121803-02.pdf (accessed on October 15, 2005).

Office of the President. *Presidential Decision Directive/PDD 39: U.S. Policy on Counterterrorism*. Washington DC: GPO, June 21, 1995. https://www.hsdl.org/homesec/docs/whitehouse/nps03-062703-13.pdf (accessed on November 12, 2006).

Office of the President, *The Federal Response to Hurricane Katrina: Lessons Learned*. Washington DC: GPO, February 2006. http://www.whitehouse.gov/reports/katrina Lessons-learned.pdf (accessed on October 5, 2006).

Organisation for Economic Development and Cooperation (OECD). *The Challenge of Capacity Development: Working Towards Good Practice*. Paris: OECD Development Assistance Committee (DAC), February 14, 2006. http://www.oecd.org/dataoecd/4/36/36326495.pdf (accessed on October 1, 2006).

Sandia National Laboratories. "Sandia tool speeds up environmental cleanup, reopening of contaminated facilities" *Sandia News Release* (June 7, 2006), http://www.sandia.gov/ news/resources/releases/2006/broom-commercial.html (accessed on September 13, 2006).

The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction. *Forging America's New Normalcy: Securing our Homeland, Preserving our Liberty: Fifth Annual Report*. Santa Monica, CA: RAND, December 15, 2003. http://www.rand.org/nsrd/terrpanel/volume_v/volume_v.pdf (accessed on September 20, 2006).

The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction. *For Ray Downey: Third Annual Report*. Santa Monica, CA: RAND, December 15, 2001. http://www.rand.org/nsrd/terrpanel/terror3-screen.pdf (accessed on November 21, 2006).

The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction. *Toward a National Strategy for Combating Terrorism: Second Annual Report*. Santa Monica, CA: RAND, December 15, 2000. http://www.rand.org/nsrd/terrpanel/terror2.pdf (accessed on September 22, 2006).

United States General Accountability Office. *Bioterrorism: Public Health and Medical Preparedness*, GAO-02-141T. Washington, DC: GPO, October 9, 2001. http://www.gao.gov/new.items/d02141t.pdf (accessed on September 4, 2006).

United States General Accountability Office. *Bioterrorism: Public Health Response to Anthrax Incidents of 2001*, GAO 04-152. Washington, DC: GPO, October 10, 2003. http://www.gao.gov/new.items/d05251.pdf (accessed on 29 October 2005).

United States General Accountability Office. *Border Security: Key Unresolved Issues Justify Reevaluation of Border Surveillance Technology Program*, GAO-06-295. Washington, DC: GPO, February 2006. http://www.gao.gov/new.items/d06295.pdf (accessed on October 14, 2006).

United States General Accountability Office. *Effective Intergovernmental Coordination is Key to Success*, GAO-02-1011T. Washington, DC: GPO, August 20, 2002. www.gao.gov/new.items/d021011t.pdf (accessed on November 4, 2006).

United States General Accountability Office. *Federal Assistance: Grant System Continues to be Highly Fragmented*, GAO-03-718T. Washington, DC: GPO, April 29, 2003. www.gao.gov/highlights/d03718thigh.pdf (accessed on October 7, 2006).

United States General Accountability Office. *Federal Law Enforcement Training Center: Capacity Planning and Management Oversight Need Improvement*, GAO-03-736. Washington, DC: GPO, July 2003. http://www.gao.gov/new.items/d03736.pdf (accessed on November 20, 2006).

United States General Accountability Office. *Fundamental Changes are Needed in Federal Assistance to State and Local Governments*, GGD-75-75. Washington, DC: GPO, August 20, 1975. http://archive.gao.gov/f0302/096846.pdf (accessed on October 8, 2006).

United States General Accountability Office. *Flu Vaccine: Recent Supply Shortages Underscore Ongoing Challenges*, GAO-05-177T. Washington, DC: November 18, 2004. http://www.gao.gov/new.items/d05177t.pdf (accessed on February 4, 2006).

United States General Accountability Office. *Grants Management: Additional Actions Needed to Streamline and Simplify Processes*, GAO-05-335. Washington, DC: GPO, April, 2005. http://www.gao.gov/new.items/d05335.pdf (accessed on October 4, 2006).

United States General Accountability Office. *Homeland Security: Agency Plans, Implementation, and Challenges Regarding the National Strategy for Homeland Security*, GAO-05-33. Washington, DC: GPO, January 2005. http://www.gao.gov/ new.items/ d0533.pdf (accessed on October 21, 2006).

United States General Accountability Office. *Homeland Security: Challenges and Strategies in Addressing Short and Long-Term National Needs*, GAO-02-160T. Washington, DC: GPO, November 7, 2001. http://www.house.gov/budget/hearings/ walkerterrorstmnt.pdf (accessed on November 7, 2006).

United States General Accountability Office. *Homeland Security: Effective Regional Coordination Can Enhance Emergency Preparedness*, GAO-04-1009. Washington, DC: GPO, September 2004. http://www.gao.gov/new.items/d041009.pdf (accessed on October 8, 2006).

United States General Accountability Office. *Homeland Security: Management of First Responder Grant Programs and Efforts to Improve Accountability Continue to Evolve*, GAO 05-530T. Washington, DC: GPO, April 12, 2005. http://www.gao.gov/ new.items/d05530t.pdf (accessed on November 3, 2006).

United States General Accountability Office. *Homeland Security: Reforming Federal Grants to Better Meet Outstanding Needs*, GAO-03-1146T. Washington, DC: GPO, September 3, 2003. http:// www.gao.gov/new.items/d031146t.pdf (accessed on 29 October 2005).

United States General Accountability Office. *Homeland Security: Responsibility and Accountability for Achieving National Goals*, GAO-02-627T. Washington, DC: GPO, April 11, 2006. http://www.gao.gov/new.items/d02627t.pdf (accessed on November 7, 2006).

United States General Accountability Office. *Public Health Preparedness: Response Capacity Improving, but Much Remains to Be Accomplished*, GAO 04-458T. Washington, DC: GPO, February 12, 2004. www.gao.gov/new.items/d04458t.pdf (accessed on September 3, 2006).

U.S. Congress. House. Committee on Homeland Security, Subcommittee on Emergency Preparedness, Science, and Technology. *Statement of J. Richard Berman - Assistant Inspector General for Audits - Department of Homeland Security*. Washington DC: GPO April 12, 2005). http://www.dhs.gov/xoig/assets/testimony/OIG_1st_ Responder_Testimony_Berman_Apr05.pdf (accessed on November 20, 2006).

U.S. Congress. House. House Select Committee on Homeland Security. *An Analysis of First Responder Grant Funding*. Washington DC: GPO, April 12, 2004. http://emd.wa.gov/5-prog/prgms/policy/emc/misc-rpts/FirstResponderReport.pdf (accessed on November 6, 2006).

U.S. Congress. House. *Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina, A Failure of Initiative*. Washington DC: GPO, February 15, 2006. http://a257.g.akamaitech.net/7/257/2422/15feb20061230/ www.gpoaccess.gov/katrinareport/military.pdf (accessed on November 16, 2006).

U.S. Congress. Senate. Committee on Health, Education, Labor, and Pensions. *The New National Defense Education Act of 2006*. 109th Cong., 2nd sess., S.Doc 3502. Washington DC: GPO, June 3, 2006. http://thomas.loc.gov/cgibin/query/C?c109:./ temp/~c109x4Gpvr (accessed on November 27, 2006).

U.S. Congress. Senate. *Homeland Security Act of 2002*. Public Law 107-296, Sec. 706. Washington, DC: GPO, 2002. http://fl1.findlaw.com/news.findlaw.com/ hdocs/docs/ terrorism/hsa2002.pdf (accessed on October 12, 2006.

U.S. Congress. Senate. *National Defense Authorization Act for Fiscal Year 1997: Defense Against Weapons of Mass Destruction Act of 1996*. Public Law 104-201. Sec. 1401-1455. Washington, DC: GPO, September 23, 1996. http://frwebgate. access.gpo.gov/cgi-bin/getdoc.cgi?dbname=104_cong_public_laws& docid=f:publ201.104.pdf (accessed on November 28, 2006).

Weyant, Robbin S., John W. Ezzell, Jr, and Tanya Popovic. *Basic Laboratory Protocols for the Presumptive Identification of Bacillus Anthracis*. Atlanta: Centers GA, April 18, 2001. http://www.bt.cdc.gov/Agent/Anthrax/Anthracis20010417.pdf (accessed on September 19, 2006).

# INITIAL DISTRIBUTION LIST

1.      Defense Technical Information Center
        Ft. Belvoir, Virginia

2.      Dudley Knox Library
        Naval Postgraduate School
        Monterey, California

3.      Dr Robert Bach
        Naval Postgraduate School
        Monterey, California

4.      Dr Christopher Bellavita
        Naval Postgraduate School
        Monterey, California