USAWC STRATEGY RESEARCH PROJECT

U.S. Army Corps of Engineers: The Nation's Homeland Security Engineers

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ABSTRACT

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Following the September 11, 2001 terrorist attacks, President Bush created the Department of Homeland Security and developed a Homeland Security Strategy. Federal, state, and local governments as well as the private sector share responsibility for critical physical infrastructure security and for preparedness and response to attacks against the homeland. As a major Army command, the U.S. Army Corps of Engineers is an organization that can provide unique technical expertise not yet available in the private sector, in support of the homeland security mission. In addition, the geographic structure and the established relationships the U.S. Army Corps of Engineer Divisions and Districts have with state and local governments can assist in the establishment of the initial intergovernmental relationships needed to begin the partnership between the levels of government. This strategic research paper will review the historical and traditional roles, responsibilities, and functions of the U.S. Army Corps of Engineers and examine the feasibility of the Corps to serve as the nation's engineers by providing unique technical expertise and assistance to all levels of government to meet Homeland Security requirements.

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The homeland security, and critical infrastructure and key asset protection strategies are undergoing dramatic developments in response to increasing threats to our nation's homeland. Analyzing the emerging strategy to address these threats and the role of the U.S. Army Corps of Engineers (USACE) within those national level strategies in the midst of these dynamic times has been a challenge in the writing of this strategy research project. Consequently, this analysis is based on what is current as the time of publishing.

My personal and professional development as an U.S. Army Corps of Engineer officer has benefited exponentially from this research effort. Previous to this year, my exposure to the strategic aspects of the Corps of Engineers has been limited, primarily focused on tactical and operation levels during combat, stability and support operations. This research has expanded my knowledge of that unique aspect of the U.S. Army Corps of Engineer to provided domestic assistance and civil support in response to the defense of the nation.

Several professionals assisted me in the preparation of this project. Colonel John F. Troxell, who as my project advisor, established the necessary contacts with subject matter experts in the Headquarters, U.S. Army Corps of Engineers. His advice and critical review greatly improved the quality of this project. I would like to thank COL K. Cortez Dial for his support through the process. As a mentor, Cortez encouraged me to expand my critical thinking and professional development as an Army engineer. Additionally, several USACE professionals, Ms. Becki J. Dobyns, COL (R) Bruce Elliot, Mr. Rich Taylor, and Dr. Mary Ellen Hynes, all encouraged me and supported my examination of the implications to USACE regarding the homeland security mission. These professional contributed immeasurably to my efforts.

Finally, I would also like to acknowledge the support of my wife Fran and children. Without their understanding, encouragement and support the completion of project would not have been possible.

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U.S. ARMY CORPS OF ENGINEERS, THE NATION'S HOMELAND SECURITY ENGINEERS

The basic purpose of any government is to maintain the rule of law and to protect the people. The United States federal government's primary role is to protect America against adversaries and to provide for the safety and security of its citizens both at home and abroad. As an element of national power, the military services can accomplish many missions to fulfill aspects of this role. The United States Army has an instrument of military power with unique capabilities that enable the federal government to mitigate attacks and manage the consequences of attacks that occur on American soil. That instrument of military power is the United States Army Corps of Engineers (USACE). USACE is fully capable as the nation's engineer to develop, protect, and sustain critical physical infrastructure vital to the nation's economic prosperity and domestic security. Every aspect of this paper is directed towards one goal: to analyze the role of USACE as the world's premier engineer organization within the context of the Homeland Security mission. Though USACE will remain primarily in a supporting role in the consequence management effort, the command has strategic relevance in the defense of the nation's infrastructure. This paper will make recommendations on how USACE can respond to these requirements focusing on military support to civil authorities, leadership abilities, and mobilization of engineer and technical expertise in the government and private sectors.

The collapse of the Soviet Union precipitated significant geo-strategic changes. The United States emerged as the sole superpower with a pre-eminent position in the economic, military, political, and informational elements of national power. Nations grew more interdependent as the world experienced economic and political globalization. Lacking a requirement to directly confront a military peer competitor, the United States downsized its military, reduced its forward presence posture, realigned and closed military facilities and developed strategic power projection platforms in order to deploy its military power abroad. With a smaller force, the need for robust and redundant defense industrial complexes and strategic distribution centers dropped significantly. Reductions in warehouse requirements and the military's move to modern business practices, such as "just in time" logistics, resulted in the consolidation of strategic logistics centers to distribute supplies and materials to military forces both in the states and abroad.

The consolidation of logistical functions and the move to military power projection came with some risks. The U.S. possesses both the world's strongest military and the largest national economy. Those two elements of national power are mutually reinforcing and dependent. For

example, the U.S. military and the economy have become increasingly interdependent on certain critical infrastructures such as ports, harbors, and inland waterways. An attack intended to degrade or close one of the nation's major harbors or ports would adversely affect the nation's ability to project military power from that seaport. Furthermore, the closure of a major port would severely impact the delivery of imports and exports and thereby have a devastating affect on our economy.

Because the U.S. conventional military capabilities overwhelm practically all potential enemies, future adversaries are expected to respond in an asymmetrical manner and target vulnerable critical infrastructure and citizens in the U.S. homeland. The terrorist attacks of the Oklahoma City Federal Building, the World Trade Center and the Pentagon demonstrate the desire of our adversaries to create mass casualties and cause dramatic and devastating property losses on American soil. Our adversaries' use of non-military, commercially available equipment and supplies such as fertilizer, box knives, trucks, and airliners as weapons targeted against symbols of American power, reflects ingenuity and a willingness to use extreme tactics. Additional threats recently identified to U.S. national security interests and the homeland are foreign regimes that might employ a variety of strategies from supporting terrorists to developing weapons of mass destruction. Therefore, future attacks against America's physical infrastructure may come in many forms: from truck bombs, water reservoir contamination, radiological, biological or chemical contamination, enhanced high explosive weapons and suicide attacks. Any one of these potential attacks are difficult to defend against, and if considered in combinations, prohibitively expensive to protect against. The September 11th attacks highlight that the U.S. homeland is vulnerable to a wide range of emerging threats and that the nation needs to re-examine and prioritize the defense of the homeland.

ASSUMPTIONS AND PRECEPTS

The mission and scope of homeland security are in a state of flux. As recently as October 2002, both the federal government and Department of Defense re-organized, creating a new Department of Homeland Security. The cascading effects of these changes in organizational structures have caused several governmental agencies and organizations to adjust to the new environment. The following assumptions or premises apply to this issue:

- USACE will continue to serve as the Department of Defense agent for civil works.
- The current asymmetric threats to the U.S. remain.
- USACE will continue to serve as the Federal Emergency Management Agency's (FEMA) engineers.

The roles and responsibilities of USACE with regard to homeland security are to meet national level civil works requirements as assigned by the Department of the Army. In December 2002, Secretary of Defense Donald H. Rumsfeld commented that these functions would be better suited for other governmental agencies in an effort to civilianize and privatize many of the government's functions.[1] Given the federal government's already daunting task of organizing the Department of Homeland Security, the present is not the time to re-align critical infrastructure responsibilities. The effect of re-assigning the civil works mission of the Department of the Army to another government agency would require additional study outside the scope of this discussion. For the purpose of this study, USACE will continue to support the nation's civil works requirements and the USACE organization, structure, and capabilities will remain unchanged

The second assumption is that the U.S. will continue to be engaged in the current asymmetric style of warfare by both domestic and international adversaries who have resorted to using terror tactics. Adversaries will continue to seek to use unconventional tactics, techniques, and procedures to create mass casualties and significant damage to property. Waging a war against terrorism abroad while simultaneously protecting the homeland requires a comprehensive strategic plan that adequately addresses the defense of critical infrastructure.

Until the Department of Homeland Security develops its policies and procedures USACE will continue to provide military support to civil authorities for natural and manmade disasters funded on a contingency basis primarily through FEMA. In the past, FEMA worked as a separate agency supporting the President directly. FEMA now serves under the Department of Homeland Security. What remains to be determined is the integration of USACE into the national homeland security.

BUILDING A STRATEGY TO PROTECT NATIONAL VALUES AND INTERESTS

The federal government and Department of Defense have developed several strategies which protect the nation's vital interests. At the presidential level, the executive office develops the *National Security Strategy of the United States*. In response to the terrorist attacks, the executive office also developed a second strategy to address protecting the homeland, the *National Strategy for Homeland Security.* In support of these strategies the Department of Defense prepares its Quadrennial Defense Review (QDR), which serves as a driving document leading to the publication of the *National Military Strategy*.

Under President George W. Bush's leadership, the federal government developed the *National Security Strategy of the United States*. This document outlines the broad application of

the Nation's political, economic, military, and information elements of power to guarantee the sovereignty and independence of the United States, with our fundamental values and institutions intact.[2] *The National Strategy for Homeland Security* seeks to deny those opposed to America's role in the world from threatening and attacking the homeland, with the goal of damaging the United States' national interests and security.[3] By denying this avenue of attack, the strategy provides a secure foundation for America's ongoing global engagement. *The National Security Strategy of the United States and National Strategy for Homeland Security* are mutually supporting documents. These two strategies take precedence over all other national strategies, programs, and plans, establishing the framework for the Chairman of the Joint Chiefs of Staff to develop the *National Military Strategy of the United States of America* which sets priorities for our military forces.[4]

In February 2003, President Bush recently released *The National Strategy for the Physical Protection of Critical Infrastructures and Key Assets.* This strategy sets goals and objectives, outlines the guiding principles for infrastructure protection and establishes the imperative that all levels of government and the private sector must cooperate and collaborate to protect the nation's vital infrastructure. The strategic objectives that underpin the protection effort include: identifying and assuring the protection of infrastructures and assets critical to national-level public health and safety, governance, economic and national security, and public confidence consequences; providing timely warning and assuring the protection of those infrastructures and assets; and assuring the protection of other infrastructures and assets that may become terrorist targets over time. The strategy stresses the establishment and maintenance of a collaborative environment in which federal, state, and local governments and the private sector can better protect the infrastructures and assets they control. It further specifies that these partners must collaborate closely to develop thorough assessment and alert processes and systems to ensure that threatened assets receive timely advance warnings. In addition, the actors must cooperate to provide focused protection against the anticipated threat.[5]

The need for regional partnerships and collaboration between all levels of government and the private sector for infrastructure security is an integral part of the *National Homeland Security Strategy*. Homeland security is a complex mission and demands a wide range of government and private sector capabilities. A centrally planned and coordinated *National Strategy for Homeland Security* requires focused effort from many actors who are not otherwise required to work together. In most cases, concern for security is not always a primary mission for these actors. After the events of September 11th, the nation recognized the challenges associated with homeland security and began to develop a coordinated effort to defend the

homeland. One of the challenges was the lack of a common definition and scope of the homeland security requirement. In July 2002, the federal government released the *National Strategy for Homeland Security*. This strategy defines homeland security as, "a concerted national effort to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that do occur."[6] Based on this definition of homeland security, the strategy went on to establish the following three objectives in priority: 1) prevent terrorist attacks within the United States; 2) reduce America's vulnerability to terrorism; and 3) minimize the damage and recover from the attacks that do occur.[7]

The first Department of Defense document that addressed the terrorist threat following the September 11th attacks was the Quadrennial Defense Review (QDR) released on September 30, 2001. The QDR states that the U.S. military serves to defend the Nation, to demonstrate our resolve to honor international commitments to the security and well-being of our allies and friends, and to ensure the nation's economic well-being and security. The QDR "restores the emphasis once placed on defending the United States and its land, sea, air, and space approaches."[8] The QDR establishes as its highest priority for the U.S. military is the defense of the nation from all enemies which includes maintaining forces to protect the U.S. domestic population, its territory and its critical infrastructure.[9] The Department of Defense must support the nation and possess the capability to operate across the spectrum of military operations which includes on the low end support to domestic disturbance and support to domestic crisis.

In September 2002, the Chairman of the Joint Chiefs of Staff, General Richard B. Myers, released a pre-decisional draft of an updated *National Military Strategy* which addressed the military's support to the Secretary of Defense's QDR. The first and foremost military objective listed in the *National Military Strategy* is defending the U.S. homeland. The *National Military Strategy* states, "US Armed Forces take actions at home and abroad to protect the US, its interests, and its allies."[10] General Myers acknowledges that a safe and secure homeland is the first priority of the nation and is fundamental to the successful execution of the *U.S. National Military Strategy*. The security of our homeland serves to protect and advance other U.S. interests abroad.

THE NATION'S HOMELAND SECURITY ENGINEERS – CRITICAL INFRASTRUCTURE EXPERTS

> The terrorist enemy that we face is highly determined, patient, and adaptive. In confronting this threat, protecting our critical infrastructures and key assets represents an enormous challenge. We must remain united in our resolve, tenacious in our approach, and harmonious in our actions to overcome this challenge and secure the foundations of our Nation and way of life.
>
> –President George W. Bush
> The National Strategy for the Physical Protection of Critical Infrastructures and Key Assets
> February 2003, p.iv

Coupled with the proliferation of missile technology, chemical, biological, radiological and enhanced high explosive weapons technology, the threats of direct attacks against the U.S. territories, its infrastructure and its citizens has grown. Hostile states and well supported terrorist organizations and other actors have shown their determination to exploit vulnerabilities to attack the U.S. and affect our interests both domestically and abroad by launching devastating attacks against the U.S. homeland.

Throughout our history, the Army has served to support and defend the nation's homeland. Numerous natural and manmade disasters have required states to request support from the federal government and the federal armed forces. The *National Military Strategy* recognizes that America's military may respond to a variety of national needs other than waging war. The strategy notes that threats at home or abroad may exceed the capacity of other agencies and require the use of military forces, depending on applicable law, the direction of the National Command Authority and the national interest involved and the intensity of that interest. The strategy continues by specifying that military resources will continue to support civil authorities in executing missions such as civil works, disaster relief, and domestic crises.[11]

The *National Military Strategy* identifies military support to civil authorities (MSCA) as an integral component of the homeland security which is critical to the role of USACE as the nation's homeland security engineers. MSCA is defined by the Department of Defense as, "activities and measures to assist and support any civil government agency in planning or preparing for or responding to the consequences of civil emergencies or attacks, including national security emergencies."[12] Military support to civil authorities is a key component of homeland security because of the complex and potentially catastrophic impact on the homeland

as a result of natural and manmade disasters and emergencies. An overriding consideration of military assistance to civil authorities is insuring the continuity of government. And with that continuity, the reassurance it provides citizens and affirmation that military support is not an imposition of undue military involvement or control.[13]

The federal government's responsibilities in responding to a terrorist attack have historically been divided into two categories – crisis management and consequence management. Crisis management consists of measures taken to anticipate, prevent and resolve attacks and threats and is most often associated with intelligence and law enforcement functions. Because of the investigative and law enforcement nature of crisis management, the lead federal agency for this activity is the Department of Justice and the lead operational agency is the Federal Bureau of Investigation. The recently released *National Strategy for The Physical Protection of Critical Infrastructures and Key Assets*, highlights the need for a partnership approach between all levels of government, between agencies, and the private sector.[14] Examples of where USACE responded to threat information include the reinforcing and hardening critical buildings such as the Pentagon during renovation projects and installing protective barriers and gates to government facilities and buildings. Recently, USACE divisions conducted security assessments of their civil works infrastructure. These security assessments may lead to design and construction of security upgrades.[15] Because USACE is responsible for an extensive array of locks and dams which support transportation, water resource management, and the production of hydroelectric power, as well as support for harbor maintenance in many of the Nation's seaports, USACE must maintain situational awareness to terrorist threats against these critical infrastructures.[16] As a supporting agency, USACE must have access to the nature of the developing threats and targets in order for it to develop engineering solutions to address physical infrastructure protection.[17]

Consequence management consists of the essential activities, services, or measures implemented to manage and mitigate problems resulting from disasters and catastrophes. These services and activities "may include transportation, communications, public works and engineering, fire fighting, information planning, mass care, resources support, health and medical services, urban search and rescue, hazardous materials, food, and energy."[18] Consequence management primarily involves response and recovery following a disaster. The lead federal agency for this activity is the Department of Homeland Security and the lead operational agency is the Federal Emergency Management Agency (FEMA). Since 1989, USACE has had a longstanding vital role in consequence management following natural or manmade disasters, primarily in support of the FEMA.

THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) AND THE FEDERAL RESPONSE PLAN (FRP)

USACE'S CIVIL MANDATE

Through public laws, USACE has legitimate authority to act and provide public works and engineering assistance to protect human life, reduce suffering, and mitigate damage and threats to improved property. However, the distinction between crisis management and consequence management is not always a clear one. Under Public Law 84-99, USACE has the authorization to undertake a broad range of readiness and response activities including disaster preparedness. This law provides the authority for USACE to employ pro-active measures to prepare for expected natural disasters and to provide essential services to preserve life and protect property in flood-impacted areas for up to ten days, subsequent to a Governor's request for Federal assistance.[19] A second authority for USACE to respond is provided through the Stafford Act, (P.L. 93-288) which empowers FEMA to respond quickly to all types of national disasters and emergencies.

Prior to establishment of the Department of Homeland Security (HLS), FEMA reported directly to the President and had the responsibility for coordinating the delivery of federal assistance covering the full range of requirements following a major disaster or emergency. To accomplish this task, the agency developed the Federal Response Plan (FRP), which describes the "Federal response, recovery, and mitigation resources available to augment State and local efforts to save lives; protect public health, safety, and property; and aid affected individuals and communities in rebuilding after a disaster."[20] The FRP provides the structure for a coordinated response of Federal assistance to a disaster or emergency that overwhelms the response capabilities of State and local governments. Serving as the basis for the development of supporting plans to implement federal response activities, the FRP further designates a lead and supporting federal agencies for each function. Through the FRP, USACE uses its public works and engineering capabilities to support FEMA and other Federal agencies in disaster and emergency response and recovery.[21]

President Bush recently created the Department of Homeland Security and as a result FEMA now reports to the Department of Homeland Security rather than directly to the President. Despite this re-organization FEMA and its FRP are currently valid and working concepts. The FRP is still executed in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring Federal assistance under a Presidential declaration of a major disaster or emergency.

As the nation's engineers, USACE responds directly to emergencies primarily in support of the Department of Defense and FEMA. When the FRP is implemented, federal resources are deployed by emergency support functions (ESF). The Department of Defense has designated USACE as the primary agency for planning, preparedness, and response under the ESF #3, Public Works, and Engineering. Some of the activities within the scope of ESF #3 include emergency clearance of debris, restoration of critical public services and facilities, including the supply of adequate amounts of potable water, temporary restoration of water supply systems, technical assistance, structural evaluation of buildings, and needs and damage assessment.[22] Additionally, USACE provides emergency access routes, which includes repairs to damaged streets, bridges, ports, waterways, and airfields. USACE may conduct emergency demolition or stabilization of damaged structures and facilities designated by state or local governments. USACE conducts emergency contracting for ice, power, or temporary housing to support public health and safety. Finally, to ensure its disaster preparedness, USACE participates in pre-disaster activities with state and local governments. USACE carries out mission assignments within the provisions of the FRP and participates in FEMA disaster recovery efforts by accomplishing mission assignments within its area of expertise.[23]

USACE's current performance while executing ESF #3 has been exceptional. The organization's success is a result of detailed planning, effective organizational design, extensive training and determined preparation. At the national level, USACE created systems and procedures which have provided for the development of a wide range of ESF #3 capabilities and the procurement of specialized equipment. USACE has institutionalized the development of response elements that parallel each of FEMA's regions at every level of government. The creation of planning and training programs assists in the sharing of knowledge of these capabilities. To meet region specific needs, USACE divisions and districts have also incorporated tailored programs into their organizations, training programs and preparation for disaster response.[24] The programs have created a system that facilitates sharing knowledge across division and district boundaries. Through public law, procedures, and working relationships USACE has the legitimate authority and the expertise to respond to FEMA needs.

USACE'S MILITARY FOUNDATION

Prior to the establishment of a combatant command responsible for the defense of North America, the USACE role in national defense was primarily through military support to civil authorizes as discussed above. However, on October 1, 2002, the U.S. Department of Defense created Northern Command (NORTHCOM), which transferred the mission of Homeland

Defense from U.S. Joint Forces Command (JFCOM). NORTHCOM's geographic area of responsibility includes the air, land, and sea approaches and defense of the continental United States, Alaska, Canada, and Mexico and the waters out to approximately 500 nautical miles. NORTHCOM's responsibilities also include providing military assistance to civil authorities when directed by the President or the Department of Defense.[25] USACE has eight divisions with 41 district offices and supporting field offices around the world. The USACE division and district boundaries follow watershed boundaries so a state could be divided into several divisions or districts. The overlap of USACE's regional areas of responsibilities compliment NORTHCOM's geographic area and support the protection of the nation's critical infrastructure and key assets.

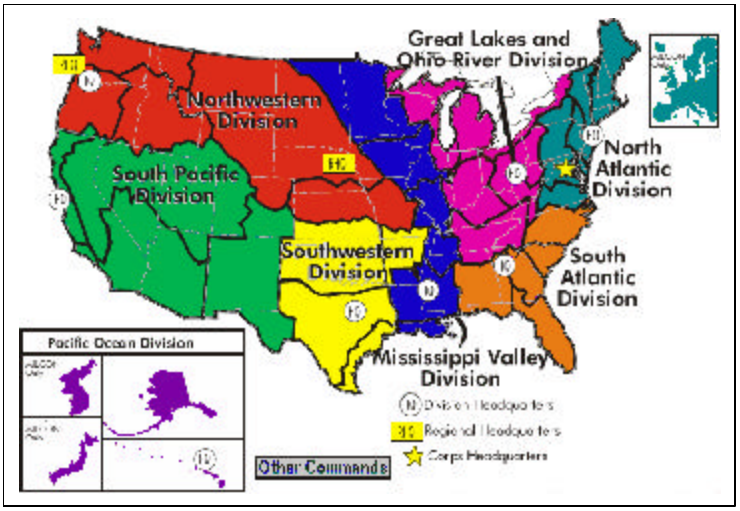

FIGURE 1: MAP OF USACE DIVISION BOUNDARIES[26]

USACE has an established presence with developed regional expertise throughout the nation and is uniquely prepared to provide technical support and regional expertise to NORTHCOM. USACE has a vital support role to NORTHCOM's homeland security mission especially in the areas of critical infrastructure protection related to in-land waterways, transportation, power production, and water resources. Unquestionably, USACE has strategically placed response and recovery capabilities to support the NORTHCOM homeland security mission.

THE U.S. ARMY CORPS OF ENGINEERS – "LET US TRY!"

> Rest assured that the Corps leadership is on point, and our [USACE] capabilities are ready to support this nation. We've never let our country down when it's needed us, and in this regard, today is no different than any other.
>
> –Lieutenant General Robert B. Flowers
> Chief of Engineers
> 11 September 2001

For over 200 years, Army engineers have proudly served this nation by designing, building, and protecting the nation's infrastructure. President George Washington established the Corps of Engineers to provide the technical expertise needed for the further development of the nation's infrastructure. The Corps' early achievements were vital to America's economic and social development and established the foundations for the future expansion of the nation. When President George W. Bush established the Department of Homeland Security, a requirement to protect the nation's physical infrastructure emerged. USACE has the technical and regional expertise combined with the leadership and experience not only in disaster relief but also in applying engineering solutions to protecting critical infrastructure to meet that requirement.

CRITICAL CAPABILITY – DISASTER RESPONSE AND RECOVERY

Today USACE has the ability to rapidly mobilize unique capabilities and deploy to a disaster area with technical expertise in several engineering fields. In addition, USACE can mobilize and deploy elements of a specialized engineer unit that is trained and capable of providing emergency electrical power.[27] On the morning of September 11, 2001, the New York Engineer District immediately responded to the aftermath of the terrorist attacks with the following assistance: emergency evacuation of people, debris removal, structural damage inspections, restoration of power, and deployable operations centers.[28] District personnel also contracted and managed a dredging project which allowed city barges access to remove debris and ship it to the USACE supervised Staten Island landfill.[29] The prime power team from USACE provided technical assistance to Consolidated Edison for the restoration of power to New York City's financial district allowing markets to re-open more quickly.[30]

FIGURE 2: A DEPLOYABLE OPERATION CENTER SUPPORTS NEW YORK CITY

Following the strike on the Pentagon, USACE and the Engineer Regiment employed the Fort Belvoir, Virginia Fire Department, and the Military District Washington Engineer Company to complete search and rescue operations, and restoration of electrical power to affected areas. Through both of these attacks, the relationship between the USACE and FEMA was strengthened.

In instances when the nature of the disaster exceeds the capabilities of state and local agencies, USACE provides immediate response and assistance to supplement the efforts of the state and local authorities. In response to natural disasters, USACE provides an emergency management organization, which plans, trains, and maintains adequate supplies, tools and equipment to respond to these emergencies. USACE also provides assistance for the preservation of life and the protection of residential and commercial developments that provide public services. In the event of a major disaster, USACE assists the lead federal agencies that have the responsibility in other Emergency Support Functions while responding to federally declared disasters.[31] With its current preparedness program, USACE is prepared and organized to meet current and future national emergency response requirements challenges and can support anticipated future requirements.

CRITICAL CAPABILITY -- TECHNICAL EXPERTISE

The professional working relationships established and fostered with the private engineer and construction industry during normal operations are essential to USACE preparedness for

national emergencies. Developing partnerships and mutual support agreements develops the trust and understanding and ensures an immediate and ready force of technical expertise and capabilities.[32] USACE continues its efforts to promote partnerships between critical actors at the federal, state, local and private sector to facilitate maximizing resources and support coordinated at the regional level. These partnerships share information and provide mutual aid. Pre-arranged contracts with private firms to provide emergency services on short notice to respond to emergencies are in place and have served the nation's needs well throughout time.

The degree to which a civilian, military and technological base can be converted into an effective response or an asset during a domestic crisis and the Nation's readiness for homeland defense cannot be underestimated. For example, in the national effort to identify critical infrastructure that should be protected or hardened, USACE can lend its technical expertise to assist in determining the effects of nuclear, biological, chemical, and enhanced explosive weapons. In this role USACE expertise and computerized structural analysis capability can simulate the blast effects against structures. This capability has the potential to greatly assist in developing control measure to reduce the risk of these potential terrorist targets. This high level contribution of technical effort to reduce vulnerabilities and mitigate risks of attacks can directly contribute to the overall effort of prioritizing infrastructure to be protected. The result of these developed priorities is a more efficient allocation of the finite resources for homeland security.[33]

CRITICAL CAPABILITY – LEADERSHIP AND REGIONAL PARTNERSHIP

In times of national emergency, strong leadership is required. USACE provides that leadership, expertise, and experience. The Department of Defense senior leadership provides the services with initial guidance, direction and assistance to supporting federal agencies during the initial response stages. USACE receives direct guidance from U.S. Army senior leaders and USACE commanders who have experience and training in planning, coordinating, staffing, and supervising the execution of complex plans and operations. USACE also has extensive practical experience with coordinating public and private efforts to complete federal engineering projects. This experience and expertise can be directly applied to the emergency conditions resulting from a natural or man made disaster.

USACE senior leaders have adopted modern business practices to create efficiencies and enhance the organization's effectiveness, which contribute directly to the USACE role in Homeland Security. USACE has developed the Centers of Expertise program to improve capabilities and management, eliminate redundancy, and optimize the use of specialized expertise and resources. These centers provide capability and expertise in specialized areas.

Within USACE, the centers provide consistency, facilitate technology transfer, and maintain institutional knowledge in key areas.[34] For instance, USACE's Omaha District serves as the command's Protective Design Center of Expertise. This center is USACE's proponent for projects vital to homeland security such as: design for chemical, biological, or radiological agent protection; design to resist air blast or penetration effects from weapons such as vehicle bombs and man-portable rockets; and design of active or passive vehicle barrier systems.[35]

USACE has a regional presence and an existing relationship with many civilian partners that can easily be adapted for use in the homeland security mission. According to President Bush's *National Strategy for The Physical Protection of Critical Infrastructures and Key Assets*, homeland security is a shared responsibility that requires coordinated action on the part of federal, state, and local governments; the private sector; and concerned citizens across the country.[36] Because USACE performs the Army's civil works functions and manages natural water resources, USACE division and district boundaries are usually determined by watersheds and river drainage basins. Each district has a single point of contact for all emergency activities; responsible for emergency preparedness and plans for responding to disasters. These plans are based on hazards unique to their area of responsibility and the plans are coordinated with state and other federal agencies, as appropriate. By participating in federal and state coordination meetings and exercises, USACE districts develop partnerships that prove invaluable during emergencies. The USACE districts work with state and local agencies to obtain a bottom up review of emergency resources available to rapidly respond to emergencies. Through pre-coordinated contracts and mutual agreements, engineer resources and technical expertise can be mobilized on short notice.

RECOMMENDATIONS

> While your [Corps] history is impressive, given the current situation, your finest hour is a chapter yet to be written.
>
> –Honorable Thomas White
> Secretary of the Army
> September 2001

In response to the recent release of the President's *National Strategy for Homeland Security, and Strategy for the Protection of Critical Infrastructure and Key Assets*, USACE must critically analyze the implications associated with its role in support of the homeland security mission. Specifically, how will USACE be utilized in support of the Department of Homeland

Security as the federal engineer agency for the security of the nation's critical physical infrastructure. Despite ongoing efforts to privatize many functions within the Army, USACE should continue military support to civil authorities in support of national security and homeland defense. As a federal agency, USACE should continue to provide immediate services, develop and apply technologies to seize the initiative and begin real progress towards protecting the nation's infrastructure. In the interest of national security, USACE should assume a leadership role as the Nation's Homeland Security Engineers. As Homeland Security Engineers, USACE should initiate efforts to develop bomb blast design standards, to lead designs of stand off distance protection in order to protect of existing infrastructure, to develop integrated protection standards for future critical infrastructure, and to develop and maintain partnerships between critical actors at all levels. Finally, USACE should execute a public awareness campaign to inform the public and government officials of the contributions USACE is making in the crisis prevention and mitigation efforts.

Critical physical plants and facilities, particularly infrastructure related to public works and government, must be assessed for vulnerabilities and risks then protected. This type of critical infrastructure serves the public, supports the economy, and provides essential human and governmental services. Included in this list of critical infrastructure may be the nation's monuments and American icons which can be targeted by terrorists. The first step of this effort includes conducting vulnerability and risk assessment of the civil works structures and facilities USACE currently controls. Critical USACE infrastructure includes dams, locks, reservoirs, water plants, and power plants, ports and harbors. Federal intelligence agencies need to solicit technical expertise and develop solutions to critical infrastructure vulnerabilities in concert with USACE. When requested, USACE should participate in vulnerability and risk assessments and provide the technical assistance to state and local agencies. USACE laboratories and engineering expertise could be used to develop engineering solutions to critical vulnerabilities with identified infrastructures. Armed with USACE technical support and expertise, communities and officials can employ control measures to harden potential targets against attacks.

USACE should serve as the nation's critical infrastructure and key assets guardian by developing and refining plans to assess regional vulnerabilities in response to the emerging asymmetrical threats prevalent in the 21st century. Prudent preparation measures have already been initiated to be able to respond quickly for natural disasters. Currently, USACE responds to natural and manmade disasters based on the request for support initiated at the local and state governments through FEMA. Until the FRP is activated, USACE can only use the limited emergency management funds allocated within its authorities. Additional FRP funds are only

available when disaster strikes, therefore any initiatives which may be considered preventative are not funded. The Department of Homeland Security should address these needs and provide funding for a more proactive role for the homeland security mission USACE performs.

USACE should continue efforts to establish and maintain relationships and partnerships between critical actors at the federal, state, local and private sector to facilitate maximizing of resources and support coordinated at the regional level. The geographically diverse location of USACE offices nationwide assures an immediate response to disasters in any area. During disasters, personnel in any locale may be quickly mobilized to assist in response and recovery work. Each USACE office develops plans based on hazards unique to their area, coordinates with appropriate agencies and identifies response teams to support the assigned missions in the FRP. Training and exercises are conducted frequently to ensure the readiness of emergency team members. Pre-arranged contracts with private firms to provide emergency services on short notice to respond to emergencies are in place and have repeatedly served the nation's needs well. The public works services and contingency contracts effectively meet immediate first responder requirements. In some areas the types of engineer and technical assistance that may be offered include the specific areas of risk management and technical structural expertise.

USACE should publicize their contributions in the Homeland Security efforts. This major undertaking will serve to inform the public and private sectors in the regional areas of ongoing federal security measures being implemented for their protection. Federal engineers visible at the state and local levels indicate that the government is fulfilling its obligation to protect its citizens. USACE efforts to address the security of the critical infrastructure needs of this nation need to be recognized within the professional and private engineering sectors. The aim is to draw on technical regional "think tank" expertise, regional partnerships and coordination to develop solutions to vulnerabilities. This open dialogue will serve as a force multiplier maximizing the important role USACE performs in the Nation's homeland security effort.

CONCLUSION

The September 11, 2001 terrorist attacks made it clear that America is vulnerable to asymmetrical threats to the homeland. The American people must have trust and confidence that the government can respond to future natural and man-made disasters. Only the federal government can mobilize and deploy resources to combat terrorism, respond, and recover from the damage and loss of lives on the scale of similar attacks. The severity and uncertainty of damages created by natural and other disasters require a ready, rapid emergency management response. This challenge will always remain an area of national need. USACE has

demonstrated its ability to respond to that need as it has proven itself capable of anticipating and responding to disasters throughout its history as the nation's engineers.

USACE is committed to national interests, and is developing a strategic direction to address growing emergency management demands. The important role of USACE in the security of the U.S. national infrastructure and preparedness to respond to disasters is built on the various strategies which protect U.S. values and interests. USACE has extensive experience in the development and maintenance of the Nation's critical ports and harbors, inland waterways, dams, and hydroelectric power plants. With the ability to draw on its centers of expertise and developed regional partnerships, USACE is the nation's critical infrastructure expert. USACE is postured and proven to be the nation's homeland security engineers. USACE serves as a critical Army asset in support of the NORTHCOM. Empowered through existing civil and military mandates, USACE can exercise its technical expertise, leadership, and experience to effectively and efficiently meet the nation's homeland security requirements.

Word Count = 6,205

ENDNOTES

[1] Secretary of Defense has commented that the environmental and civil works functions would be better suited for other governmental agencies. Irvin Jackson, "Rumsfeld Eyes Plan To Shift Environmental Duties Away From Army Corps Of Engineers", Available from <http://www.InsideEpa.com>; Internet; accessed 12 December 2002.

[2] George W. Bush's, National Strategy for Homeland Security, (Washington, D.C.: The White House, July 2002), 1.

[3] Ibid., v.

[4] Ibid., 5.

[5] George W. Bush, The National Strategy for the Physical Protection of Critical Infrastructures and Key Assets (Washington, D.C.: The White House, February 2003), 2-3.

[6] Bush, National Strategy for Homeland Security, 2.

[7] Ibid., 3.

[8] Donald H. Rumsfeld, Quadrennial Defense Review (Washington, D.C.: Department of Defense, 30 September 2001), 14.

[9] Ibid., 18-20.

[10] Richard B. Myers National Military Strategy of the United States of America (Pre-Decisional Draft), (Washington, D.C.: Government Printing Office, 19 September 2002), 11.

[11] Ibid.,14-15.

[12] Department of Defense, Military Assistance to Civil Authorities, Department of Defense Directive Number 3025.15 (Washington, D.C.: U.S. Department of Defense, 18 February 1997), 20.

[13] U.S. Army War College Department of Command, Leadership, and Management's reference manual, How the Army Runs: A Senior Leader Reference Handbook. 2001-2002. (Carlisle, PA: Government Printing Office, 15 May 2001), 23-2.

[14] Bush, The National Strategy for the Physical Protection of Critical Infrastructures and Key Assets, vii.

[15] Following the 11 September 2001 attacks, LTG Robert B. Flowers directed that the USACE divisions conduct security assessments of civil works infrastructure. The USACE Southwest Division's efforts to accomplish this mission are found in USACE Southwest Division's, "Operation Noble Eagle," The Army Engineer, November – December 2002, 27.

[16] The USACE civil works missions fall in four broad areas: water infrastructure, environmental management and restoration, response to natural and manmade disasters, and engineering and technical services to the Army, Department of Defense and other Federal

agencies. USACE is the nation's fifth largest electric supplier -- operating 75 power plants and producing one fourth of the nation's hydro-electric power. USACE reservoirs supply water to nearly 10 million people in 115 cities. USACE operates an aqueduct and the two water purification plants which supply water for Washington, D.C. and portions of Northern Virginia. U.S. Army Corps of Engineers, "Services for the Public", available from <http://www.usace.army.mil/public.html#Support>; Internet; accessed 31 January 2003.

[17] Owens, Dallas D., "The Military's Role in the New Domestic Security Environment: Will Army Missions Change?" Defeating Terrorism Strategic Issue Analysis, Strategic Studies Institute, available from <http://carlisle-www.army.mil/usassi/welcome.htm>; Internet; accessed 11 October 2002.

[18] Department of Defense, Military Assistance to Civil Authorities, Department of Defense Directive Number 3025.15 (Washington, D.C.: U.S. Department of Defense, 18 February 1997), 16.

[19] USACE emergency response activities are supplemental to state and local efforts. Assistant Secretary of the Army (Civil Works), "Emergency Preparedness and Disaster Relief," available from <http://www.hqda.army.mil/asacw/relief.asp>; Internet; accessed 14 January 2003

[20] Federal Emergency Management Agency, The Federal Response Plan, Basic Plan (Washington, D.C.: Federal Emergency Management Agency, April 1999). Available from <http://www.fema.gov/rrr/frp/frpintro.shtm>; Internet; accessed 25 November 2002. 1.

[21] The plan designates a lead and supporting federal agencies for each function and describes the mission, policies, concept of operations, and responsibilities of the primary and support agencies which supplement state and local activities. Ibid.

[22] Federal Emergency Management Agency, "Federal Response Plan - ESF#3 - Public Works and Engineering Annex", (Washington, D.C.: Federal Emergency Management Agency, April 1999). Available from <http://www.fema.gov/rrr/frp/frpesf3.shtm.>; Internet; accessed 25 November 2002.

[23] Ibid.

[24] Jeffrey C. Smith, Call for Help!: The U.S. Army Corps of Engineers as Part of an Interagency Team in Providing Disaster Relief under the Stafford Act, Strategy Research Project (Carlisle Barracks: U.S. Army War College, 24 September 2002), 4-10.

[25] U.S. Northern Command plans, organizes, and executes homeland defense and civil support missions. The newly activated, NORTHCOM gained control of Joint Forces Headquarters Homeland Security (JFHQ-HLS) and its subordinate joint task forces (JTF) -- JTF 6 and JTF Civil Support. Joint Force Headquarters - Homeland Security is the homeland security component of U.S. Northern Command that coordinates the land and maritime defense of the continental United States. JTF 6 supports the counter-drug effort along the continental U.S.'s southern border. In the event of an attack on the United States, JTF Civil Support supports civil authorities. In addition to the homeland defense mission, NORTHCOM coordinates and directs the military's support to civil authorities. Summarized from

NORTHCOM's Webpage at <http://www.northcom.mil/index.cfm?fuseaction=s.whoweare.>; Internet; accessed on 31 January 2003.

[26] U.S. Army Corps of Engineers, "Where We Are", available from <http://www.usace.army.mil/divdistmap.html>; Internet; accessed 31 January 2003

[27] USACE is comprised of 270 military personnel, 35,000 civilians, 147,000 contractors and 249th Engineer Battalion (Prime Power). The Prime Power Engineer Battalion is a specialty unit that is trained and capable of providing emergency electrical power and may be activated to deployed to a disaster area. USACE may also supervise the support from other military engineer units; such as Army Engineer Units, Navy Seabee Construction Units and Warehouse Managers. Colonel (Retired) Bruce Elliot provided this information through a briefing chart on 6 September 2002 during a visit to the Army War College.

[28] Federal Emergency Management Agency, "Recovery Efforts Continue at Terrorist Attack Sites," available from <http://www.fema.gov/nwz01/nwz01_128.shtm>; Internet; accessed 16 September 2002.

[29] Federal Emergency Management Agency, "Moving Sacred Ground: U.S. Army Corps of Engineers Oversee Sensitive Mission," available from <http://www.fema.gov/remember 911/911_sacred.shtm>; Internet; accessed 1 November 2002.

[30] Federal Emergency Management Agency, "One Week After Terrorist Attacks, Site Clearance and Facilities Restoration Continue," available from <http://www.fema.gov/nwz01/nwz01_114.shtm>; Internet; accessed 16 September 2002.

[31] The limitations placed on USACE support to civil authorities and a complete description of the Federal Response Plan is found in the U.S. Army War College. Department of Command, Leadership, and Management. How the Army Runs: A Senior Leader Reference Handbook. 2001-2002. 23-15 to 23-16. Available from <http://www.carlisle.army.mil/usawc/dclm/LinkedHTARChapters/CHAPTER_23.pdf>; Internet; accessed 25 November 2002.

[32] Ibid., 21-3.

[33] The value of using a risk management approach to prioritize infrastructure to be protected and a proposed method of using a systematic and analytical approach to identify threats, vulnerabilities, and consequences which leads to a critically assessment of infrastructure is in the General Accounting Office's report, Homeland Security: A Risk Management Approach Can Guide Preparedness Efforts, GAO-02-208T, (Washington, D.C.: U.S. General Accounting Office, October 2001).

[34] Department of the Army, Engineering and Design Corps-wide Centers of Expertise Programs Engineer Regulation - 1110-1-8158 (Washington, D.C.: U.S. Army Corps of Engineers, 16 January 1998), 1, available from <http://www.usace.army.mil/inet/usace-docs/eng-regs/er1110-1-8158/entire.pdf.>; Internet; accessed 15 February 2003

[35] Department of the Army, Mandatory Centers of Expertise. (Washington, D.C.: U.S. Department of the Army), available from

<http://www.usace.army.mil/civilworks/cecwe/coexpert/mcx/pdc/pdc.htm>; Internet; accessed 15 February 2003.

[36] Bush, George W., National Strategy for the Physical Protection of Critical Infrastructures and Key Assets (Washington, D.C. The White House, July 2002), Available from <http://www.whitehouse.gov/pcipb/physical.html.>; Internet; accessed 15 February 2003, vii.

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