NATIONAL BIO AND AGRO-DEFENSE FACILITY

Science and Technology Directorate/Office of National Laboratories







US DEPARTMENT OF HOMELAND SECURITY NATIONAL BIO AND AGRO-DEFENSE FACILITY

DRAFT ENVIRONMENTAL IMPACT STATEMENT

JUNE 2008

U.S. DEPARTMENT OF HOMELAND SECURITY

COVER SHEET

LEAD AGENCY: U.S. Department of Homeland Security (DHS)

CONSULTING AGENCY: U.S. Department of Agriculture

PROPOSED ACTION: To site, construct, and operate the National Bio and Agro-Defense Facility (NBAF) in the United States.

POTENTIALLY AFFECTED LOCATIONS: The NBAF site alternatives considered are; South Milledge Avenue Site in Athens, Georgia; Manhattan Campus Site in Manhattan, Kansas; Flora Industrial Park Site in Flora, Mississippi; Plum Island Site in Plum Island, New York; Umstead Research Farm Site in Butner, North Carolina; and, Texas Research Park Site in San Antonio, Texas.

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TITLE: National Bio and Agro- Defense Facility Draft Environmental Impact Statement (NBAF DEIS)

ABSTRACT: This environmental impact statement presents an evaluation of the DHS proposal to site, construct and operate the NBAF. Operation of the NBAF as a biosafety level-3 (BSL-3) and BSL-4 research facility would allow basic and advanced research, diagnostic testing and validation, countermeasure development, and diagnostic training for addressing high-consequence livestock diseases to U.S. agriculture and public health. Six alternative NBAF sites are evaluated in the DEIS: Athens, Georgia; Manhattan, Kansas; Flora, Mississippi; Plum Island, New York; Butner, North Carolina; and, San Antonio, Texas. The No Action Alternative of not constructing and operating the NBAF is also analyzed. Resource areas analyzed for comparative effects include land use, infrastructure, air quality, noise, geology, water, biological and cultural resources, and socioeconomics, traffic, waste management, and health and safety. DHS specifically considered major issues raised in public comments during the DEIS scoping period, including concerns about building the NBAF in a densely populated area, impacts on resources, especially water, and site-specific issues. Since the proposal could involve construction and operation activities at any of the site alternatives, there were many common areas of potential effects among the sites. For example, NBAF operations at any of the sites could result in increased use of sanitary sewer, electrical power, potable water, and other utilities. Best management practices during construction and compliance with regulatory permit requirements would be expected to minimize effects of increases or potential increases in resource areas such as noise, traffic, air, emissions, soil disturbance, vegetation, and storm water runoff. Evaluation of each alternative also includes measures to mitigate risk from accidental or intentional releases.

PUBLIC COMMENTS: The comment period for this DEIS began with the publication of the Notice of Availability in the *Federal Register* on June 27, 2008. The 60-day public review and comment period ends on August 26, 2008. Comments may be submitted using any of the following mechanisms:

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1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action – siting, construction, and operation of the National Bio and Agro-Defense Facility – is to comply with the Homeland Security Presidential Directive 9 by providing an enhanced domestic research capability on foreign animal diseases and zoonotic diseases (transmitted from animals to humans). Operation of an integrated, biosafety level 3 and 4 research facility would allow for basic research, diagnostic testing and validation, countermeasure development (i.e., vaccines and antiviral therapies), and diagnostic training for high-consequence livestock diseases with potentially devastating impacts to U.S. agriculture and threats to public health.

1.1 PROPOSED ACTION

The United States (U.S.) Department of Homeland Security (DHS) and the U.S. Department of Agriculture (USDA) have identified a capability gap in the nation's coordinated biodefense strategy that cannot be met at any existing U.S. research facility. To provide the needed capability and to comply with Homeland Security Presidential Directive 9 (HSPD-9), "Defense of United States Agriculture and Food," DHS proposes to build an integrated research, development, test, and evaluation facility called the National Bio and Agro-Defense Facility (NBAF).

The Proposed Action to site, construct, and operate the NBAF would allow researchers to study foreign animal diseases (FAD) and zoonotic diseases (transmitted from animals to humans) for basic and advanced research, provide training for FAD diagnosticians improving diagnostic tests, and develop effective vaccines and other countermeasures such as antiviral therapies. Similar facilities in Winnipeg, Canada, and Geelong, Australia, do not have the capacity to address the outbreak scenarios in the U.S. in a timely manner and could not guarantee their availability to meet U.S. research requirements.

Co-locating DHS, USDA's Animal and Plant Health Inspection Service-Veterinary Services (APHIS-VS), and Agricultural Research Service (ARS) at the NBAF would enable research, diagnostics, and responses to outbreaks in vulnerable agricultural animals including cattle, swine, and sheep at a U.S.-based facility.

If built, the NBAF would meet the capabilities required in HSPD-9 by providing a domestic, modern, integrated high-containment facility (including BSL-3 and BSL-4[1]) for an estimated 250 to 350 scientists and support staff to safely and effectively address the accidental or intentional introduction into the U.S. of animal diseases of high consequence. Pending DHS decisions, the NBAF could be operational as soon as 2014.

[1] In addition to BSL-4, the NBAF would have animal biosafety level-4 (ABSL-4) in which special biocontainment features are used to conduct research involving high-consequence livestock pathogens in large animal species. In this document, BSL-4 refers to both BSL-4 and ABSL-4.

The NBAF would:

- Serve as a unique BSL-3 and BSL-4 livestock facility capable of developing countermeasures for FADs and zoonotic diseases;
- Provide advanced test and evaluation capability for threat detection, vulnerability, diagnostics, training for diagnosticians, and countermeasure assessment for agricultural and zoonotic diseases; and
- Support licensing of vaccines and other countermeasures developed jointly by ARS and DHS.

Approximately 11% of the 500,000 to 520,000-square-foot NBAF would be designed for BSL-4 research, which would allow directed research on diseases that have not been well characterized and can only be studied in a high-containment facility.

The NBAF research mission would be based on current pathogen and disease risk assessments, subject to change as threats and risk assessments change. DHS anticipates that the NBAF initially would focus BSL-3Ag research on African swine fever, classical swine fever, foot and mouth disease (FMD), Japanese encephalitis, Rift Valley fever (RVF), and contagious bovine pleuropneumonia, a bacteria. BSL-4 research would focus on Hendra and Nipah viruses. These types of pathogens must be studied in the heightened security that only a high-containment BSL facility can provide. DHS plans to conduct research at the NBAF to study how these pathogens enter animals, the types of cells the pathogens affect, the effects pathogens have on cells and animals, and how newly developed countermeasures help animals develop protection against these pathogens and thus prevent disease (CRS 2007). As new diseases emerge and threaten U.S. livestock, additional risk assessments would be performed and the list of high-consequence diseases studied at the NBAF could change. However, the biosafety features that are part of the NBAF design, as well as the protocols that would be followed, would ensure that new pathogens would be handled with the same degree of protection and safety as those currently planned for research at the NBAF.

NBAF activities, operations, and research would be performed solely for scientific research and biodefense purposes (i.e., developing effective vaccines and other countermeasures such as antiviral therapies) and would be conducted in accordance with treaty obligations of *The Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, as ratified by the U.S. Senate on March 26, 1995. This treaty prohibits the development, production, and stockpiling of biological and toxin weapons.

What are biosafety levels?

Four levels of biosafety are used to define the types of facilities, protective equipment, and administrative controls needed to conduct research on pathogens. Each level is meticulously designed to prevent laboratory-acquired infections and to protect the environment from potentially hazardous pathogens. The NBAF would provide:

BSL-1. Facility requires no special engineering or containment equipment. There is minimal potential hazard to personnel and the environment.

BSL-2. Facilities appropriate for handling indigenous agents of moderate risk to personnel and the environment. Pathogens worked with in BSL-2 facilities are transmitted through ingestion or introduction via punctures or mucous membrane exposure.

BSL-3. Facilities appropriate for handling pathogens of indigenous or exotic origin with a known potential for aerosol transmission. Agents worked with in BSL-3 facilities may cause serious and potentially lethal infections. More emphasis is placed on primary and secondary barriers to protect personnel and the community.

BSL-3E. Refers to the protective enhancements commensurate with the risk assessment of the pathogens and requirements for agricultural protection.

BSL-3Ag. Refers to research involving large agricultural animals and foreign and emerging pathogens that may cause serious consequences in livestock but that are not harmful to humans because protective measures are available.

BSL-4. Facilities appropriate for handling exotic pathogens that pose a high risk of life-threatening disease in animals and humans through the aerosol route and for which there is no known vaccine or therapy. BSL-4 facilities have complex, specialized ventilation requirements and waste management systems to prevent release of viable agents to the environment.

1.2 BACKGROUND

Many U.S. institutions and companies with biohazardous materials research programs have BSL-3 laboratory facilities to perform their research. Most such laboratories, however, are small and dedicated to particular uses or are in need of modernization. In addition, some hospitals have laboratory or clinical areas that can operate at this level, including space for isolating patients suspected or known to have certain highly contagious diseases. Before 1990, all BSL-4 laboratories were at federal institutions – either at the U.S. Army Medical Research Institute for Infectious Diseases or at the Centers for Disease Control and Prevention (CDC). Today, expansion is taking place within the federal sector as well. There are seven new federal facilities recently built, currently under construction, or planned, which have one or more BSL-4 laboratories. There are also BSL-4 laboratories at universities and in the private sector. While the number of BSL facilities is difficult to quantify, many more BSL-3 laboratories exist compared with BSL-4 labs (GAO 2007). The U.S. Government Accountability Office conducted a survey in 2006/2007 of U.S. academic, biotechnology, and pharmaceutical facilities to better define the location, capacity, and status of existing and operating U.S. laboratory facilities that incorporate BSL-3 and BSL-4 containment. The survey results identified 1,356 CDC or USDA registered laboratories in 46 states that currently have BSL-3 capable laboratories and 15 planned, under construction, or capable BSL-4 laboratories (GAO 2007). There are no existing large animal or livestock BSL-4 laboratories in the United States. The proposed NBAF would provide an integrated facility that would conduct research and develop countermeasures for zoonotic and foreign animal diseases.

1.2.1 Foreign Animal Diseases

The global marketplace and increased imports of agricultural products and growing numbers of international travelers into the U.S. have increased the number of pathways for the movement and introduction of foreign and invasive agricultural pests and diseases, such as RVF and FMD (GAO 2006). More than 40 contagious animal diseases identified in other countries (i.e., FADs) threaten the U.S. agricultural economy (GAO 2003).

Agriculture is the largest industry and employer in the U.S., generating more than $1 trillion in economic activity annually, including more than $50 billion in exports. U.S. agriculture is threatened by the entry of foreign pests and pathogens that could harm the economy, the environment, plant and animal health, and public health (GAO 2005a). A key component of this economy is the livestock industry, which contributes over $100 billion annually to the gross domestic product (GAO 2005b). Diseases affecting livestock could have significant impacts on the U.S. economy and consumer confidence in the food supply (GAO 2003). The introduction of animal and plant diseases at the farm level would cause severe economic disruption given that agriculture accounts for 13% of the U.S. gross domestic product and 18% of domestic employment. Losses to producers could result from decreases in the price of livestock, poultry, and crops; reductions in sales due to a decline or halt in productivity; inability to move animals to the market; and costs associated with disease control, including disposal of contaminated animals or plants. Losses could be particularly severe in states where animal and crop production is concentrated. For example, Iowa, North Carolina, and Minnesota produce 53% of the total U.S. swine production (GAO 2005a).

Consequences of disease outbreaks affecting livestock illustrate the potential economic devastation of a naturally occurring or deliberate release. For example, the United Kingdom estimated that a 2001 FMD outbreak resulted in over $10 billion in losses to tourism and the food and agriculture sectors and the slaughter of over 4 million animals. Another FMD outbreak occurred in Surrey, England, in August 2007. An epidemiological investigation report concluded that the live virus release was most likely from the drainage system connecting the vaccine production plant to the sodium hydroxide treatment building on another part of the site. It is believed that the virus was carried offsite when soil, water, or other material was contaminated by effluent from the treatment tank and then deposited on an adjacent road. It was confirmed that, as of February 19, 2008, the United Kingdom was disease free, and independent reviews produced a number of recommendations to improve biosecurity and biosafety at the site (DEFRA 2007). Estimates of direct costs for a FMD outbreak in the U.S. similar to the United Kingdom outbreak run as high as $24 billion, with the destruction of about 13 million animals. Even a single case of the disease would cause our trading partners to

ban imports of live animals and animal products from the U.S. and could result in losses of between $6 billion and $10 billion per year while the country eradicated the disease and regained disease-free status (GAO 2003).

FMD is one of the most devastating viral animal diseases affecting cloven-hoofed animals (animals with split hooves such as cattle, deer, goats, sheep, and swine). It has occurred in most countries of the world at some point over the past century. The last FMD outbreak in the U.S. was in 1929 (GAO 2003). The terrorist attacks of September 11, 2001, have heightened concerns about agriculture's vulnerability, including the deliberate introduction of diseases affecting livestock, poultry, and crops (GAO 2006). Many of these diseases are endemic in other parts of the world, and the pathogens could be extracted from common materials such as soil or isolated from infected animals and plants.

The highly concentrated breeding and rearing practices of the U.S. livestock industry make it a vulnerable target because pathogens could spread rapidly and be very difficult to contain. For example, between 80 and 90% of grain-fed beef cattle production is concentrated in less than 5% of the nation's feedlots. Therefore, introduction of a highly contagious pathogen in a single feedlot could have serious economic consequences (GAO 2005a). USDA calculated that an FMD outbreak could spread to 25 states in as little as 5 days (GAO 2003).

While many animal diseases are not transmittable to humans, diseases classified as zoonotic are transmittable. When this type of transmission occurs, there could be serious human health consequences (GAO 2005a). In fact, according to the CDC, nearly 70% of infectious disease episodes during a 10 year period were attributed to zoonotic pathogens (GAO 2004).

The Office of Science and Technology Policy Blue Ribbon Panel on the Threat of Biological Terrorism Directed Against Livestock (OST 2004) identified numerous key weaknesses inherent in the U.S. agriculture sector and provided a set of recommendations. Recommendations relevant to the Proposed Action include:

- Increase laboratory experimentation focused on FMD virus aerobiology and more intensive research to determine rough estimates of FMD virus survivability on various organic/inorganic surfaces and substances (including potential methods of smuggling);
- Enhance laboratory testing to ascertain the specific disease parameters and epidemiologic dynamics of Nipah, Hendra, and other viruses;
- Initiate a dedicated research and development program focused on unknown agents and the factors that might cause specific viral pathogens to jump the species barrier; and
- Consider the feasibility of constructing a BSL-4 facility with a significant large-animal capacity to research existing and emerging highly contagious diseases.

The priorities assigned to the pathogens identified in these recommendations (FMD, Nipah and Hendra viruses, and emerging pathogens) were based on the following criteria:

- Economic impacts;
- Virulence and potential for pathogen spread;
- Zoonotic potential;
- Morbidity or lethality of disease;
- Likelihood that pathogens will spread to other species;
- Ability of terrorists to naturally acquire or otherwise manufacture a particular pathogen; and
- Level of difficulty associated with weaponization of the pathogen.

In addition to the Office of Science and Technology Policy Blue Ribbon Panel, several other entities have expressed the need for a facility such as the NBAF and the research that would be conducted there. For example, in 2005, the National Research Council echoed the need for a BSL-4 facility capable of handling

large animals (CRS 2007). In 2007, the Foreign Animal Disease Threat Subcommittee established by the Homeland Security Council identified FMD and RVF as high-priority threats (FADT 2007).

1.2.2 Department of Homeland Security Responsibilities

DHS is charged with the responsibility and has the national stewardship mandate for detecting, preventing, protecting against, and responding to terrorist attacks within the U.S. These responsibilities, as applied to the defense of animal agriculture, are shared with USDA and require development of a coordinated strategy to adequately protect the nation against biological threats to animal agriculture. Consultations between DHS and USDA on a coordinated agricultural research strategy, as called for in the *Homeland Security Act* of 2002, revealed a capability gap that must be filled by an integrated research, development, test, and evaluation infrastructure for combating agricultural threats and public health (i.e., zoonotic diseases). The DHS Science and Technology Directorate is responsible for filling the identified gap.

The *Homeland Security Act* of 2002 recognized that protecting the U.S. agricultural infrastructure is a critical element of homeland security and transferred the Plum Island Animal Disease Center (PIADC) (located off the northeast tip of Long Island, New York), where much of the current research on animal diseases is performed, from USDA to DHS in 2003. While DHS now has responsibility for operating PIADC, both DHS and USDA conduct programs there as part of an integrated agro-defense strategy. Further, the agencies have established a senior leadership group at PIADC to integrate research efforts in general and to coordinate the management for joint research projects, including FMD research (GAO 2005b).

The highest level of biocontainment currently available for livestock research in the U.S. is BSL-3 at PIADC and BSL-3Ag at the National Center for Animal Health, Building 9, in Ames, Iowa, which is not yet operational. This biosafety level limits the kind of research that can be conducted. For example, research on the Nipah virus must be performed in a BSL-4 laboratory. Because the U.S. has no space at which to perform livestock research under BSL-4 biocontainment, U.S. scientists have gone outside the country (e.g., Canada) to conduct experiments (Roth 2005). The U.S. government has determined that to achieve our research and response requirements, we must ensure that this research can be performed in the U.S.

The United States Code (21 U.S.C.Section 113a) stipulates that live FMD virus cannot be studied on the U.S. mainland unless the Secretary of Agriculture makes a determination that such study is necessary and in the public interest and issues a permit for such research to be conducted on the mainland. Consequently, either Congress or the Secretary of Agriculture will have to act to allow FMD virus to be studied on the U.S. mainland.

PIADC is over 50 years old, nearing the end of its intended lifecycle, is too small to accommodate necessary research, does not have BSL-4 capabilities, and is becoming more costly to maintain. In addition to proposing to construct and operate the NBAF, DHS is currently investing money to improve and upgrade the laboratory facilities at PIADC.

1.3 *NATIONAL ENVIRONMENTAL POLICY ACT*

The *National Environmental Policy Act* (NEPA) requires federal agencies to examine the impacts of their proposed actions before decisions are made. This Draft EIS (DEIS) has been prepared in accordance with NEPA, as amended (42 U.S.C. 4321, et seq.), as well as the Council on Environmental Quality's "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" (40 CFR, Parts 1500-1508) and DHS's Management directive 5100.1, "Environmental Planning Program" (FR Vol. 71, 100 No. 64). DHS, the lead federal agency on this Proposed Action, published a Notice of Intent (NOI) to prepare an EIS and hold public scoping meetings in the *Federal Register* on July 31, 2007 (Appendix A).

In accordance with NEPA regulations, this DEIS evaluates a No Action Alternative, in which the NBAF would not be built and DHS would continue to use PIADC with necessary investments in facility upgrades, replacements, and repairs so that it could continue to operate at its current BSL-3 capability (FR Vol. 72, No. 146). Under the No Action Alternative, DHS/ARS would be forced to rely upon non-U.S. BSL-4 facilities, as it does currently. The DEIS also evaluates the impacts of the Proposed Action, i.e., siting, constructing, and operating the NBAF at one of six site alternatives (discussed in Section 1.4). This EIS also provides DHS with environmental information that could be used, if the NBAF is built and operated, to develop and implement any necessary mitigation actions to minimize or avoid adverse effects to the quality of the human environment and natural ecosystems from the pathogens proposed to be studied or those that might be studied in the future or from the effects of constructing the NBAF and siting it in any particular location.

1.4 ENVIRONMENTAL IMPACT STATEMENT SCOPE

The scope of this DEIS includes analyses of activities associated with the No Action and the Proposed Action at each of the site alternatives that could impact the natural or human environment. The scope was determined, in part, through the public involvement process (Section 1.6). Six site alternatives are being considered for the construction and operation of the proposed NBAF (Figure 1.4-1).

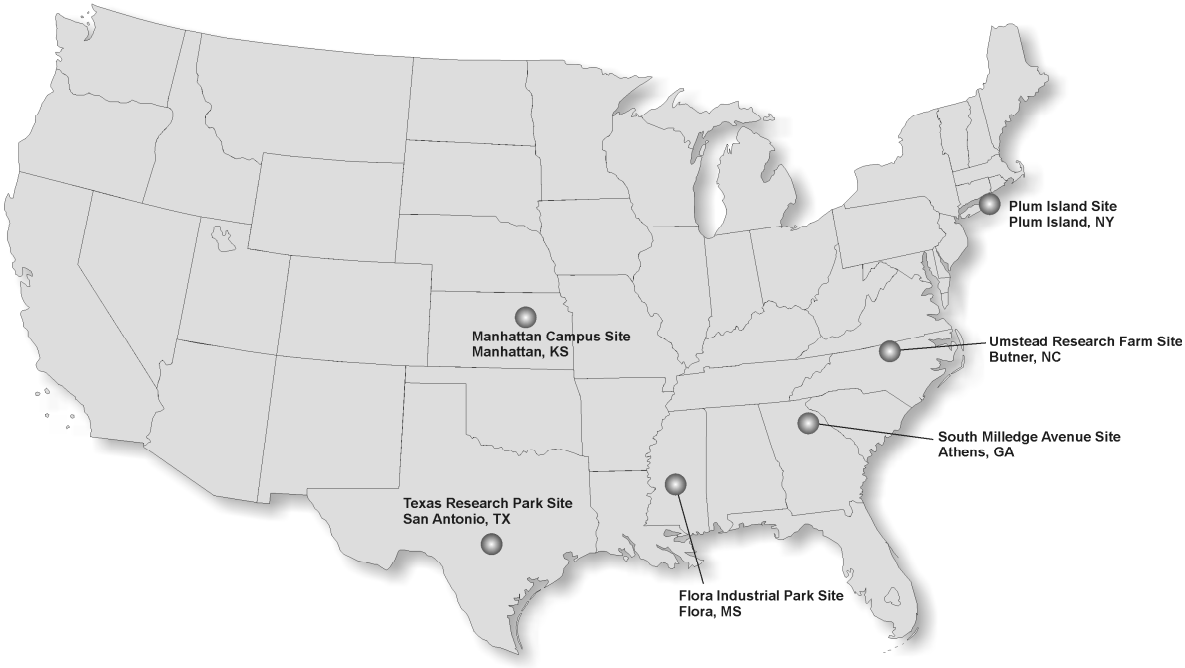

Figure 1.4-1 — Six Site Alternatives

1.4.1 No Action Alternative

Under the No Action Alternative, the NBAF would not be constructed. DHS would rely on PIADC with its limitations to conduct BSL-3 research on FADs and zoonotic diseases and on non-U.S. facilities for any research requiring BSL-4 research.

1.4.2 Site Alternatives

Under the Proposed Action, the NBAF would be constructed and operated at one of the following six site alternatives:

- South Milledge Avenue Site; Athens, Georgia
- Manhattan Campus Site; Manhattan, Kansas
- Flora Industrial Park Site; Flora, Mississippi
- Plum Island Site; Plum Island, New York[2]
- Umstead Research Farm Site; Butner, North Carolina
- Texas Research Park Site; San Antonio, Texas

1.5 DECISIONS TO BE MADE

DHS will base its decisions concerning the NBAF on the Final EIS (FEIS) analysis, public and agency comments, mission requirements, national policy considerations, and supporting studies currently in development, including cost and security analyses. The Record of Decision (ROD) will address

- Whether the NBAF should be built,
- At which site it would be built, and
- How environmental harm would be avoided or mitigated at the site selected.

The draft cost and engineering analyses along with the threat and risk assessment are being conducted in parallel with the NBAF EIS. Data from these analyses have been used in Chapter 2 when describing the NBAF construction and operations, as well as in the impacts analyses found in Chapter 3. DHS's goal is to ensure the safety and protection of DHS employees and the public at large, consider environmental and historic preservation concerns, and maximize use of taxpayer monies, all while meeting the mission of the NBAF. In the final design of the facility, to be completed after the NEPA ROD is issued, DHS will factor in the appropriate mitigation measures.

1.6 PUBLIC INVOLVEMENT IN DEVELOPING THE SCOPE OF THE NBAF EIS

In accordance with NEPA regulations, DHS initiated a public scoping period for the NBAF EIS that began with publication of the NOI on July 31, 2007. The 60-day comment period ended on September 28, 2007. In the NOI, DHS invited individuals, organizations, and agencies, including minority, low income, disadvantaged, and Native American groups, to submit oral or written comments concerning the scope of the NBAF EIS. In addition to the announcement in the NOI, DHS mailed postcards to approximately 2,650 initial stakeholders on July 31, 2007. The initial stakeholder database was provided by PIADC and was expanded to include relevant federal agencies, state NEPA points of contact, non-governmental organizations, and associations, as well as mailing lists developed by the potential site consortia. DHS also developed a Web page at http://www.dhs.gov/nbaf where scoping meetings were announced and interested stakeholders could request to be added to the mailing list.

At the DHS public scoping meetings, the public was given the opportunity to provide written comments or submit comments by mail, toll-free fax, or e-mail (via the NBAF web page at http://dhs.gov/nbaf). Oral comments could also be submitted at the public meetings, where they were recorded by a court reporter, or by calling a toll-free telephone number. Commentors who provided contact information were automatically included in the stakeholder database to receive future NBAF information and public outreach opportunities.

DHS conducted eight public meetings in the vicinity of the six site alternative locations: Old Saybrook, Connecticut; Southold, New York; Manhattan, Kansas; Flora, Mississippi; San Antonio, Texas; Creedmoor, North Carolina; and Athens, Georgia, along with one regional meeting in Washington, DC. More than 1,350 individuals attended the meetings. Each meeting began with an open house, which afforded attendees the opportunity to view informational materials; talk informally with subject matter experts from DHS, APHIS-VS, and ARS; and obtain forms and fact sheets to guide them in fully participating in the NEPA process. The DHS NBAF program manager then presented an overview of the NBAF EIS and DHS's approach to meeting

[2] The Plum Island Site refers to the option of constructing and operating the NBAF on Plum Island at a site east of the existing PIADC.

its obligations under NEPA. The presentation was followed by a brief question-and-answer period before attendees were invited to provide oral comments, which were recorded by a court reporter. Nearly 300 people provided oral comments at the public meetings, and more than 880 comment documents were received during the comment period.

Oral and written comments were analyzed yielding more than 3,870 individual comments. These comments were grouped by similar concerns into the following issue categories:

- Accidents, threat, and risk
- Air quality
- Alternatives
- Biological resources
- Cultural resources
- Design, construction, operation, and decommission
- Environmental justice
- Geology and soils
- Government intentions and capabilities
- Human health and safety
- Infrastructure
- Land use and visual resources
- Mitigation
- Noise
- Purpose and need
- Recreation
- Regulatory compliance
- Socioeconomics
- Traffic and transportation
- Waste management
- Water resources
- Comments outside the scope of this EIS

The identification and categorization of individual comments is subjective; however, every effort was made to ensure that all public input was carefully considered and placed in the most appropriate issue category possible given the spirit and context of each comment. DHS relied on this public input in developing the scope of this DEIS. Details on the scoping process and issues identified are documented in the *NBAF EIS Scoping Report* (DHS 2008), which is available online at http://www.dhs.gov/nbaf (click on Public Involvement) and in NBAF reading rooms in public libraries at each site alternative (see http://www.dhs.gov/nbaf and click on Public Reading Rooms).

1.7 DEIS ORGANIZATION AND CONTENT

This DEIS consists of one volume that contains the Executive Summary, main text, and technical appendixes that support the analyses or provide the background documentation. A separate Executive Summary is also available.

This DEIS contains Chapters 1 through 9, as described below:

Chapter 1: Purpose and Need
This chapter provides information regarding the purpose of and need for the Proposed Action, outlines the NBAF mission, and provides background on animal disease research and DHS's responsibilities. It also describes the NEPA process, alternatives, decisions to be made, and the results of the public scoping process.

Chapter 2: Alternatives
Chapter 2 describes the Proposed Action to site, build, and operate the NBAF. It also describes the No Action Alternative and alternatives considered but eliminated from detailed analysis. It presents the conceptual design of the NBAF, including the operations and activities that would be conducted. The chapter concludes with a comparison of the effects from implementation of the Proposed Action at each site alternative and the No Action Alternative.

Chapter 3: Affected Environment and Consequences
This chapter describes the potentially affected environments under the No Action Alternative and six site alternatives and the approach taken in defining those environments. The potential environmental impacts are identified after each site description. This chapter forms the scientific and analytic basis for comparison of

the site alternatives. The discussion includes the identification of cumulative impacts, unavoidable adverse impacts, irreversible or irretrievable resource commitments, and the relationship between short-term use and long-term productivity that may occur should the Proposed Action be implemented.

Chapter 4: Index
The index of key terms was developed based on specific public comments regarding a particular resource or topic area or for terms that could not be found though use of the table of contents.

Chapter 5: References
This chapter provides the list of references that are cited in the DEIS.

Chapter 6: List of Preparers
The DEIS provides a list of preparers and document reviewers, their academic qualifications, and areas of responsibility.

Chapter 7: Distribution List
This chapter identifies those individuals and organizations that have received the DEIS.

Chapter 8: Glossary
The glossary defines the technical terms used in the DEIS.

Appendixes

The six appendixes include supporting documentation and descriptions of methods used to estimate environmental impacts of the alternatives. The appendixes include the following:

Appendix A: *Federal Register* Notices
Appendix B: Biocontainment Lapses and Laboratory Acquired Infections
Appendix C: Socioeconomics Tables
Appendix D: Potential Economic Consequences of Pathogen Releases from the Proposed NBAF
Appendix E: Accidents Methodology
Appendix F: NEPA Disclosure Statement