



**Materials Distributed at
Public Scoping Meetings on Proposed
National Bio and Agro-Defense Facility (NBAF) Sites**

September 6, 2007, 12:30 p.m.

Grand Hyatt Washington
1000 H Street NW
Washington, DC 20001



National Bio and Agro-Defense Facility

NATIONAL BIO AND AGRO-DEFENSE FACILITY
Science and Technology Directorate/Office of National Laboratories

NEED FOR A BIOSAFETY LEVEL 4 FACILITY

The proposed National Bio and Agro-Defense Facility (NBAF) would provide an integrated facility for studying foreign animal and zoonotic diseases (transmitted from animals to human beings).

The Plum Island Animal Disease Center (PIADC) currently performs much of this research but is nearing the end of its lifecycle, is too small to accommodate necessary research, and does not have biosafety level 4 (BSL-4) capabilities. The Homeland Security Act of 2002 recognized that protection of U.S. agriculture is a critical element of homeland security and transferred ownership of PIADC from the U.S. Department of Agriculture (USDA) to the U.S. Department of Homeland Security (DHS). While DHS now has responsibility for operating PIADC, both DHS and USDA conduct scientific research, diagnostic, and training programs there as part of an integrated strategy to protect U.S. agriculture.

The missions of the DHS, USDA Animal and Plant Health Inspection Service-Veterinary Services (APHIS-VS), and the Agricultural Research Service (ARS) are expanding to ensure protection of the nation's livestock and, thereby, public health. The NBAF would:

- serve as a unique BSL-3 and BSL-4 livestock laboratory capable of developing countermeasures for foreign animal and zoonotic diseases;
- provide advanced test and evaluation capability for threat detection, vulnerability, diagnostics, and countermeasure assessment for agricultural and zoonotic diseases; and
- support licensing of vaccines and other countermeasures developed jointly by ARS and DHS.

The NBAF would provide a safe and secure facility in which basic research, diagnostic development and validation, diagnostic testing, advanced countermeasure development, and training for high-consequence livestock diseases can occur. Approximately 10 percent of the 520,000 square foot NBAF would be designed for BSL-4 research. This would allow directed research on diseases not previously well characterized.

RESEARCH TO BE CONDUCTED IN THE NBAF

Research performed at the NBAF would include basic discovery and countermeasure development, advanced countermeasure development (in collaboration with industry), and diagnostic assay development and validation. In some cases, researchers would study a disease to determine:

- the mechanism it uses to enter animals;
- the type cell the disease affects, and the effects the disease causes on the cells;
- how to develop countermeasures to help animals develop protection against the disease; and
- how quickly animals can become protected from the disease after they are vaccinated.

DHS and USDA have identified the following diseases that would potentially be studied at the NBAF. This list may change based upon continued evaluation of risks to the U.S. agricultural system.

- **Foot and Mouth Disease (FMD).** Viral disease of domestic and wild cloven-hoofed animals; acute disease characterized by fever, lameness, and vesicular lesions on the feet, tongue, mouth and teats; FMD is considered to be one of the most contagious, infectious diseases known; cost estimates of an introduction of FMD in the U.S. are more than \$37 billion.
- **Classical Swine Fever (CSF).** Wild and domestic swine are the only known natural reservoir; widespread throughout the world and has the potential to cause devastating epidemics, particularly in countries free of the disease; any outbreak of CSF would have serious consequences for domestic and international trade of swine and swine products; improved countermeasures are needed.
- **African Swine Fever (ASF).** Infected animals have high mortality rates; effective countermeasures are not available for infected animals; no vaccines are available to prevent infection; no treatment exists for ASF and countermeasures need improvements.

- **Rift Valley Fever (RVF).** Virus affects human beings and cloven-hoofed animals (sheep, goats, cattle, camels, buffalo and deer); suitable countermeasures to respond in the U.S. do not exist; risk for establishment of endemic disease; ranked as a major disease of concern with USDA, DHS, and other stakeholders.
- **Contagious Bovine Pleuropneumonia (CBPP).** Caused by an infective microorganism (*Mycoplasma mycoides*); primarily affects cattle including European-bred cattle and Zebu; a related form can affect goats; may survive for days in the environment; no treatment available.
- **Japanese Encephalitis (JE) Virus.** Similar to St. Louis encephalitis virus; JE virus is amplified in the blood of domestic pigs and wild birds; the virus can infect humans, most domestic animals, birds, bats, snakes and frogs.

Diseases Studied in BSL-4 Facilities

- **Nipah Virus.** Virus was discovered in 1999; causes disease in swine and in humans through contact with infectious animals; mode of transmission between animals and from animals to humans is uncertain (appears to require close contact with infected tissues or body fluids); caused respiratory disease and encephalitis in people in Malaysia and Singapore; no drug therapies have yet been proven to be effective in treating Nipah infection; no countermeasures exist.
- **Hendra Virus.** Formerly called equine morbillivirus; first isolated in 1994; the natural reservoir for Hendra virus is still under investigation; human beings and equines seem to be predominately affected; caused respiratory and neurological disease in horses and humans in Australia.

BIOCONTAINMENT AND SAFETY FEATURES OF THE NBAF

The NBAF would include the latest advances in security and technology. Safety features would include Class III gloveboxes, Class I or II biological safety cabinets (BSCs) in BSL-3 labs, and Class III BSCs or Class I or II BSCs in combination with full-body, air-supplied, positive-pressure personnel suits in BSL-4 labs. There would be personnel controls to include federal background checks, biometric testing required for entry to the labs and no solitary access to BSL-4 microorganisms would be allowed.

The NBAF BSL-4 lab design would employ a box-in-box principle with a pressure-controlled buffer surrounding it. There would be air pressure differentials between zones of containment and directional airflow would be exhausted toward high-efficiency particulate air (HEPA) filters. The exhaust air would not be recirculated and all water and air that leaves the lab would be purified (i.e., no research microorganism would enter the sewage system or outside air). All critical functions would have redundant systems.

AGENCY RESPONSIBILITIES

The NBAF would be owned by DHS with ARS and APHIS-VS as primary partners. These same agencies are currently working at PIADC. The Department of Health and Human Services and other agencies may also occupy space in the NBAF as dictated by the need for assistance.

DHS and USDA work cooperatively to set priorities regarding diseases to be researched. Interagency working groups utilize a variety of agricultural risk assessments and gap analyses to prioritize research and diagnostic capabilities. ARS performs basic research in discovery in mechanisms of disease and countermeasure development and works to transition prospective candidates for advanced countermeasure development to DHS. DHS further develops these candidates and transitions them to commercial partners for complete development and hand off to APHIS-VS for deposition in the National Veterinary Stockpile. DHS, ARS, and APHIS-VS work to develop diagnostic tools to be utilized in the reference and state laboratories.

Once developed, APHIS-VS is responsible for validating the new assays/tools and deploying them to the National Animal Health Laboratory Network. APHIS-VS is also responsible for operating the Foreign Animal Disease Diagnostic Laboratory for diagnosis of FMD and other high-consequence foreign animal diseases (FADs), as well as training veterinarians (as part of the Foreign Animal Disease Diagnostician's school) in the recognition and diagnosis of FADs.

CONSORTIUM ROLE

The site consortium would assist in the NBAF's mission but would not have a direct role in overall operations. The consortium would provide access to:

- a vibrant research area for collaboration between NBAF researchers and others such as veterinary diagnostic laboratories, the state veterinary office, students and faculty;
- a trained workforce with graduate and post doctoral degrees; and
- continuing education and sabbatical opportunities for NBAF researchers.



National Environmental Policy Act Process

The National Environmental Policy Act (NEPA) of 1969 requires the preparation of an environmental impact statement (EIS) for major federal actions that may significantly affect the quality of the environment. Under NEPA, the term “environment” encompasses the natural and physical environment (i.e., air, water, geography, and geology), as well as the relationship of people with that environment (i.e., health and safety, socioeconomic conditions, cultural resources, noise, and aesthetics). NEPA requires federal agencies to use all practicable means within their authority and consistent with other essential considerations of national policy, to create and maintain conditions under which people and nature can exist in productive harmony. Congress enacted NEPA to ensure that, before any action is taken, federal agencies consider the potential environmental impacts of their proposed actions and alternatives that would avoid or minimize adverse effects upon the quality of the environment.

The Council on Environmental Quality (CEQ) established regulations for implementing NEPA applicable to all federal agencies, including procedures for preparing an EIS. Individual agencies, including the U.S. Department of Homeland Security (DHS), have established their own implementing regulations to meet or exceed these requirements. The major steps in the NEPA process for preparing an EIS are illustrated in Figure 1. Issuing a Notice of Intent (NOI) begins the EIS process, followed by gathering input on the issues and alternatives to be considered in the EIS (scoping process) from federal agencies, state and local governments, Native American tribes, and other interested individuals and organizations. This information is analyzed to determine the potential for significant impacts to the environment. The environmental impact analysis is presented in the draft EIS, which is released to the public for comment. Public comments on the draft EIS are analyzed, responded to, and any resulting changes to the analyses are documented in the final EIS. Decisions are not made in the EIS, but are issued in a Record of Decision (ROD) published after the final EIS.

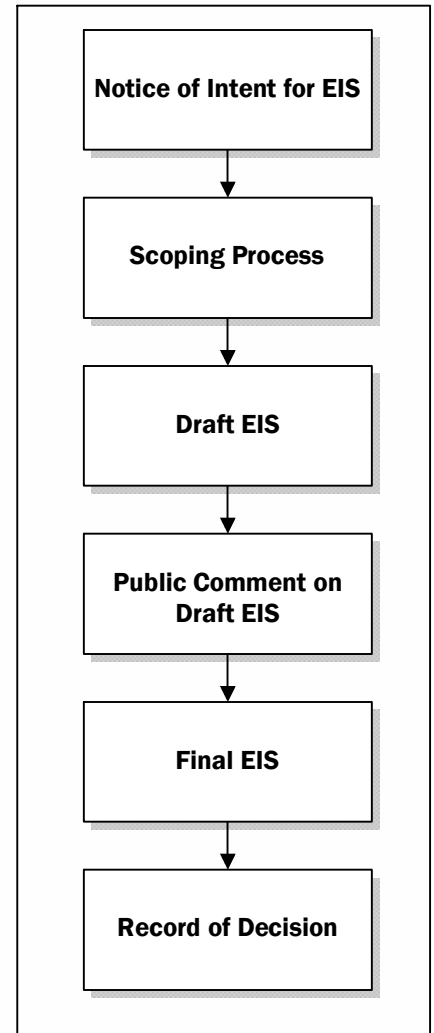


Figure 1. NEPA Process

NOTICE OF INTENT AND SCOPING PROCESS

A federal agency first issues a NOI to prepare an EIS. The NOI is issued in the *Federal Register* to inform the public that an EIS will be prepared, and to formally announce the beginning of the scoping process. The NOI describes the proposed action and alternatives the agency is considering; provides information on issues and potential impacts; and invites comments, questions, and suggestions (both written and oral) on the scope of the EIS. This scoping process provides opportunities for the public to give their comments directly to the federal agency on the scope of the EIS. This aids the federal agency in determining the alternatives, issues, and potential environmental impacts to be analyzed in the EIS. While not a specific requirement, but in keeping with the spirit of NEPA and agency policy, DHS is holding scoping meetings to inform the public and facilitate the collection of public input.

DRAFT ENVIRONMENTAL IMPACT STATEMENT

The draft EIS is the next step in the NEPA process. It describes, analyzes, and compares the potential environmental impacts of the alternatives to accomplish the purpose and need to which the agency is responding. It also provides information on the methodologies and assumptions used for the analyses. If one or more preferred alternatives exist at this stage of the NEPA process, they are identified in the draft EIS.

PUBLIC COMMENT ON THE DRAFT EIS

Once the EIS is issued, a minimum of 45 days is provided for federal agencies, state and local governments, Native American tribes, and stakeholders to provide comments. The public comment period begins with the publication of a Notice of Availability (NOA) of the draft EIS in the *Federal Register*. At least one public meeting is held to solicit public input on the draft EIS. As with scoping, DHS is planning to hold meetings in the communities potentially affected by the proposed action to keep the public informed and to augment other communication mechanisms that include toll-free telephone and fax lines, internet, and U.S. mail. All comments received, whether oral or written, will be equally considered in the preparation of the final EIS.

FINAL EIS

Following the public comment period, a final EIS is published and distributed. The final EIS reflects consideration of comments, includes DHS responses to comments, and provides any necessary revisions to the EIS. In addition, the final EIS will identify DHS' preferred alternative, if it wasn't identified in the draft EIS. The release of the final EIS is announced by publishing a NOA in the *Federal Register*.

RECORD OF DECISION

Once the final EIS is published, a minimum 30-day waiting period is required by NEPA before a Record of Decision (ROD) can be issued in the *Federal Register*. The ROD notifies the public of decisions on the proposed action and the reasons for them. The ROD may also include consideration of other decision factors such as costs, technical feasibility, agency statutory mission, and/or national objectives.

The NEPA process does not dictate that an agency select the most environmentally beneficial alternative. The purpose of the NEPA process is to ensure that accurate environmental studies are performed; that they are done with public involvement; and that public officials make decisions based on an understanding of environmental consequences.

YOU ARE VITAL TO THE PROCESS

DHS is committed to open communication and providing public access to pertinent information and opportunities for involvement throughout the NEPA process. Accordingly, DHS encourages your participation because it helps shape the scope and issues addressed in the NBAF EIS.

U.S. MAIL

U.S. Department of Homeland Security
Science and Technology Directorate
James V. Johnson
Mail Stop #2100
245 Murray Lane, SW
Building 410
Washington, DC 20528

ONLINE: <http://www.dhs.gov/nbaf>
(click on Public Participation)

TOLL-FREE FAX: 1-866-508-NBAF (6223)

TOLL-FREE VOICE MAIL: 1-866-501-NBAF (6223)



The National Bio and Agro-Defense Facility Environmental Impact Statement

NATIONAL BIO AND AGRO-DEFENSE FACILITY Science and Technology Directorate/Office of National Laboratories

PURPOSE AND NEED

The U.S. Department of Homeland Security (DHS) is leading a requirements analysis process to identify a next-generation biological and agricultural defense facility to replace the important but aging facility at Plum Island, NY. The Plum Island Animal Disease Center (PIADC) is an essential component of the national strategy for protecting U.S. agriculture from a bioterrorist attack involving the intentional introduction of foreign animal diseases such as foot-and-mouth disease, as described in the Homeland Security Presidential Directive, "Biodefense for the 21st Century." DHS is working closely with the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service-Veterinary Services (APHIS-VS) and Agriculture Research Service (ARS) to evaluate current and future needs for agricultural biosecurity.

PROPOSED ACTION

A Notice of Intent (NOI) was published in the *Federal Register* on July 31, 2007, announcing DHS's intention of preparing an environmental impact statement (EIS) to evaluate siting alternatives for the construction and operation by DHS of a proposed National Bio and Agro-Defense Facility (NBAF). A gap in the nation's coordinated biodefense strategy has been identified that must be filled by an integrated research, development, test and evaluation infrastructure for combating biological and agricultural threats from natural and manmade sources. The proposed action is to build the NBAF that would fill this gap and help DHS fulfill its mission of detecting, preventing, protecting against and responding to incidents within the United States.

RANGE OF REASONABLE ALTERNATIVES

The National Environmental Policy Act (NEPA) requires that federal agencies consider a range of reasonable alternatives for implementing a proposed action. The NBAF EIS will analyze the following preliminary alternatives; however, public input during the scoping period may result in the addition of other alternatives.

- No action alternative (i.e., maintain current research capability at PIADC and do not proceed with the proposed NBAF). NEPA requires agencies to consider a no action alternative.
- Build and operate the proposed NBAF at one of the following sites:
 - South Milledge Avenue Site; Athens, Georgia
 - Manhattan Campus Site; Manhattan Kansas
 - Flora Industrial Park Site; Flora, Mississippi
 - Plum Island Site; Plum Island, New York
 - Umstead Research Farm Site; Butner, North Carolina
 - Texas Research Park Site; San Antonio, Texas

ISSUES TO BE ANALYZED IN THE NBAF EIS

The following issues have been identified for analysis in the NBAF EIS; the list is preliminary and is intended to facilitate public comment on the scope of the EIS. Other issues will be identified through public involvement and interagency coordination.

- Land-use plans, policies, and controls
- Visual resources
- Air quality

- Acoustic (noise) environment
- Geology and soil characteristics
- Water resources, including surface and groundwater, floodplains and wetlands, and water use and quality;
- Plants and animals, and their habitats, including federally listed threatened or endangered species and their critical habitats, wetlands and floodplains
- Cultural resources, including historic and prehistoric resources and traditional cultural properties encompassing Native American or culturally important sites
- Human health and safety (involving both members of the public and laboratory workers)
- Socioeconomic effects that may be related to the new construction and facility operations
- Public infrastructure, including utilities and local transportation
- Waste management practices and activities including the handling, collection, treatment, and disposal of research wastes
- Compliance with all applicable federal, tribal, state, and local statutes and regulations and with international agreements, and required environmental permits, consultations and notifications

DECISIONS TO BE MADE

Environmental consequences are of great importance to the federal departments involved in this endeavor and will be an integral part of the decisionmaking process. No decisions will be made in the EIS itself; however, the decisions whether to build the NBAF and where will be made based on the EIS analyses, as well as a combination of environmental, economic, engineering and other technical factors, policy considerations, and public comment. Decisions will be announced in a Record of Decision after the final NBAF EIS has been completed and released to the public.

PUBLIC PARTICIPATION

DHS is currently soliciting public input on the scope of the draft NBAF EIS and holding public meetings in communities that may host the facility, as well as a regional meeting. In addition to providing oral comments or submitting written comments at the meetings, the following communication mechanisms are available. All comments, both oral and written, received during the scoping period (July 31 through September 28, 2007), will be given equal consideration.

U.S. MAIL:

U.S. Department of Homeland Security
 Science and Technology Directorate
 James V. Johnson
 Mail Stop #2100
 245 Murray Lane, SW
 Building 410
 Washington, DC 20528

ONLINE: <http://www.dhs.gov/nbaf> (click on Public Involvement)

TOLL-FREE FAX: 1-866-508-NBAF (6223)

TOLL-FREE VOICE MAIL: 1-866-501-NBAF (6223)

NBAF EIS SCHEDULE

Scoping Period	July 31 through September 28, 2007
Draft NBAF EIS and public meetings	Spring 2008
Final NBAF EIS	Fall 2008
Record of Decision	At least 30 days after publishing the final NBAF EIS



NBAF EIS Content Areas and Potential Issues

KEY CONTENT AREAS OF THE EIS DOCUMENT

- **Purpose of and Need for the Proposed Action**
 - Description of the U.S. Department of Homeland Security's (DHS) mission and infrastructure needs as called for in the Homeland Security Presidential Directive, "Biodefense for the 21st Century".
 - Description of scoping activities conducted and summary of scoping comments.
 - Identification of how and where scoping comments were addressed in the draft EIS.
- **Description of the Proposed Action and Alternatives Considered**
 - Definition of the **proposed action**—construct and operate the National Bio and Agro-Defense Facility (NBAF) at a single site.
 - Description of facility design and construction activities and requirements.
 - Description of the proposed NBAF, including, but not limited to:
 - research to be conducted,
 - laboratory operations,
 - animal care and use,
 - special engineering considerations and safeguards,
 - access control and physical security, and
 - biosurety (biosafety).
 - Description of alternatives considered, including:
 - no action alternative (i.e., maintain current research at the Plum Island Animal Disease Center and do not proceed with the proposed NBAF),
 - six site alternatives for constructing and operating the NBAF, and
 - alternatives considered but dismissed (will not be analyzed in the EIS).
- **Affected Environment**
 - Description of the **existing** natural and human environment that could be impacted by the proposed action and the six site alternatives considered.
 - Discipline (topical) areas include, but are not necessarily limited to:
 - land use, including planning and zoning considerations;
 - visual resources (viewshed/vistas);
 - site infrastructure, including utilities and transportation;
 - meteorology and climate;
 - air quality and acoustic (noise) environment;
 - geology and soils, including site/regional geologic hazards;
 - water resources, including surface and groundwater;
 - ecological resources (terrestrial and aquatic), including wetlands and threatened and endangered species;
 - cultural resources, including American Indian, historic, archaeological, and paleontological resources;
 - socioeconomic conditions, including demographics, employment, housing, and community services; and
 - waste management and hazardous materials, including available waste management infrastructure and existing contamination.



➤ **Environmental Consequences**

- Description of the **potential** impacts on the environment and human health that could result from implementation of the proposed action and the six site alternatives, as well as the no action alternative.
- Potential for impacts assessed for each of the disciplines identified in the affected environment, as well as those unique to the NBAF; analysis focused on significant environmental issues and alternatives with issues analyzed and potential impacts discussed at a level of detail commensurate with their importance (“**sliding scale**” approach)
- Examples of areas of potential impacts that would be evaluated include, but are not necessarily limited to:
 - change in land use character;
 - utility consumption and capacity limitations;
 - consumption of rock and mineral resources;
 - facility constraints and design considerations due to geologic hazards;
 - air emissions and compliance with applicable standards;
 - disturbance of ecological resources, including wildlife habitat and/or sensitive species;
 - disturbance of cultural resources, including American Indian, historic or archaeological sites;
 - liquid effluents, disposal, and compliance with applicable standards;
 - public and worker health and safety, including potential effects from facility accidents and intentional acts;
 - change in socioeconomic conditions, including local employment, traffic, need for community services, housing, etc.; and
 - waste generation, transportation, and disposal.

➤ **Applicable Laws, Regulations, and Other Requirements**

- Description of the applicable federal, state, and local laws and regulatory requirements that apply to the proposed action and alternatives, including:
 - laws, regulations, and other requirements that form the basis for or govern DHS actions;
 - governing federal, state, and local environmental, safety, and health laws and regulations that could apply; and
 - consultation requirements between the DHS and other federal, state, and local agencies and federally-recognized American Indian Nations.

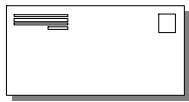


Opportunities for Public Comment

NATIONAL BIO AND AGRO-DEFENSE FACILITY
Science and Technology Directorate/Office of National Laboratories

The U.S. Department of Homeland Security (DHS) is committed to providing the public with access to pertinent information and opportunities for involvement in the environmental impact statement decisionmaking process. Accordingly, the DHS Science and Technology Directorate is soliciting written and oral comments on the proposed scope of the National Bio and Agro-Defense Facility Environmental Impact Statement (NBAF EIS).

The following communication mechanisms are available for providing comments. All comments received by close of business September 28, 2007, both written and oral, will be given equal consideration when defining the scope of the NBAF EIS. Late comments will be considered to the extent practicable.



U.S. Department of Homeland Security
Science and Technology Directorate
James V. Johnson
Mail Stop #2100
245 Murray Lane, SW
Building 410
Washington, DC 20528



<http://www.dhs.gov/nbaf> (click on Public Involvement)



Oral comments may be submitted by calling our 24-hour toll-free number, which is equipped with a voice mail system:
1-866-501-NBAF (6223)



Written comments may be submitted by faxing to our 24-hour toll-free number:
1-866-508-NBAF (6223)



Participants in public meetings will have access to the following tools to assist them in submitting comments:

<i>Comment Forms:</i>	To prepare and submit written comments
<i>Court Reporter:</i>	To record oral comments
<i>Exhibit Area:</i>	To view exhibits and review information material



Scoping Meeting Objectives and Agenda

SCOPING MEETING OBJECTIVES

The objectives of the National Bio and Agro-Defense Facility Environmental Impact Statement (NBAF EIS) scoping meeting are to:

- inform stakeholders about the proposed action to build the NBAF, and
- solicit relevant, focused, input from stakeholders on the scope of the NBAF EIS.

SCOPING PROCESS

The U.S. Department of Homeland Security (DHS) is sponsoring public scoping meetings and encouraging meaningful public involvement in the vicinity of sites identified for proposed construction and operation of the NBAF. The department will also conduct a regional meeting in Washington, D.C. Participants will have the opportunity to meet officials from the DHS Office of National Laboratories, which is tasked with preparing the EIS, as well as officials from the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service-Veterinary Services (APHIS-VS) and Agricultural Research Service (ARS), which are working cooperatively with DHS in setting priorities regarding diseases that would be researched in the NBAF. The purpose of the meetings is to collect input from the public on the NBAF EIS alternatives and issues. At the same time, the meetings provide a better understanding among members of the public concerning the proposed action and a better understanding the federal agencies involved.

A court reporter will transcribe comments provided during the formal comment period. Comments obtained at these scoping meetings, as well as oral and written comments obtained from other communication mechanisms, will be given equal consideration in defining the scope of the NBAF EIS.

SCOPING MEETING AGENDA

Registration: 12:30 p.m.

- Receive registration packet
- Sign-up to provide comments
- View exhibits and review information materials

Presentation: 1:30 p.m.

- Welcome and introductions
- Presentation and questions and answers

Formal Comment Period: 2:30 p.m. – 4:30 p.m.

- Participants provide comments
- Concluding remarks
- Comments captured by a court reporter

NOTE: Times are approximate and are subject to change based on meeting attendance levels.



Biosafety Levels

BIOSAFETY LEVELS (BSL)

- There are four levels of biosafety used to designate and regulate lab work with microorganisms.
- Each level is designed to prevent lab-acquired infections and to protect the environment from potentially hazardous agents.
- The higher the level of the biosafety lab, the more stringent the level of protection required to work in these areas.

BSL-1: Microorganisms not known to cause disease in healthy adult human beings.

- Potential hazards to laboratory personnel and the environment are minimal.
- Work is conducted on open bench tops using standard microbiological practices (lab coats, safety glasses and gloves).
- Lab personnel have specific training in the procedures conducted in the lab and are supervised by a scientist with general training in microbiology or a related science.
- BSL-1 labs are located in high school and college-level biology and chemistry classrooms and research institutions.

BSL-2: Microorganisms of moderate potential hazard to personnel and the environment.

- Lab personnel have specific training in handling pathogenic agents and are supervised by scientists competent in handling infectious agents and associated procedures.
- Access to the lab is limited when work is being conducted.
- All procedures in which infectious aerosols or splashes may be created are conducted in biological safety cabinets or other physical containment equipment.
- BSL-2 labs are located in research institutions, essentially all hospitals, and medical and veterinary schools.
- **An example of a microorganism that would be studied in a NBAF BSL-2 lab is the inactivated virus that causes foot and mouth disease.**

BSL-3: Microorganisms present in the United States, and foreign and emerging agents that may cause serious consequences in livestock but are not harmful to human beings because of available protective measures.

- Lab personnel have specific training in handling pathogenic microbes potentially lethal to animals and are supervised by trained scientists who are experienced in working with these agents and associated procedures.
- Access to the lab is controlled (i.e., card reader for entry; self-sealing, double door access, etc.)
- All procedures involving the manipulation of infectious materials are conducted within biological safety cabinets or other physical containment devices, or by personnel wearing appropriate personal protective clothing and equipment.
- BSL-3 labs have special engineering and design features to enhance safety.
- BSL-3 labs are located in research institutions, hospitals, and medical and veterinary schools.
- **An example of a microorganism that would be studied in a NBAF BSL-3 lab is the live virus that causes foot and mouth disease in cloven-hoofed animals.**



BSL-4: Microorganisms that pose a high risk of life-threatening disease and for which there is no known vaccine or therapy.

- Lab personnel have specific and thorough training in handling extremely hazardous infectious agents and fully understand all containment functions, practices, equipment and lab design characteristics.
- Lab personnel are supervised by trained scientists who are experienced in working with the microorganisms and with associated procedures.
- Access to the lab is strictly controlled. The facility is in a controlled area within a building, which is completely isolated from all other areas.
- There are four BSL-4 facilities currently operating in the United States in populated urban areas: Atlanta, Georgia; Fort Detrick, Maryland; Galveston, Texas; and San Antonio, Texas. There has never been a public exposure at a BSL-4 lab in the United States.
- **Examples of microorganisms that could possibly be studied in a NBAF BSL-4 lab include Nipah and Hendra viruses, both of which are emerging zoonotic diseases that can spread from their natural reservoir to human beings, and are often fatal.**



Glossary of Technical Terms

Biological Safety Cabinets (BSCs): The most effective and the most commonly used primary containment devices in laboratories working with infectious agents. There are three general types available (Class I, II, III). Properly maintained Class I and II BSCs, when used in conjunction with good microbiological techniques, provide an effective containment system for safe manipulation of moderate and high-risk microorganisms (biosafety level 2 and 3 microorganisms). Class II BSCs also protect the research material itself through high-efficiency particulate air filtration (HEPA filtration) of the air flow down across the work surface. Class III cabinets offer the maximum protection to laboratory personnel because all hazardous materials are contained in a totally enclosed cabinet.

Biosafety Levels (BSLs): There are four levels of biosafety used to designate and regulate lab work with microorganisms. The range is BSL-1 in which the microorganisms are not known to cause disease in healthy adult human beings to BSL-4 in which the microorganisms pose a risk of life-threatening disease and for which there is no known vaccine or therapy. BSL-3Ag refers to research involving large agricultural animals. There are guidelines in place to ensure safe work sites through a combination of engineering controls, management policies, work practices, and procedures. Increasing levels of personnel and environmental protection are provided for by the different biosafety levels used in microbiological/biomedical laboratories. The higher the level of the biosafety lab, the more stringent the level of protection.

Countermeasures: A collective term used in biocontainment laboratories to include vaccines, biotherapeutics, diagnostic assays, therapies, and vector control.

Diagnostic Assay: A test to determine presence or absence of infectious agents or antibodies to determine if an animal has or has been exposed to an agent.

Environmental Impact Statement: A document required of federal agencies by the National Environmental Policy Act for major federal actions that may significantly affect the quality of the environment. A tool for decisionmaking, it describes, analyzes, and compares the potential environmental impacts of the alternatives to accomplish the purpose and need to which the agency is responding.

Glovebox: A sealed container designed to allow a trained scientist to manipulate microorganisms while being in a different containment level than that of the agent they are manipulating. Built into the sides of the glovebox are two glove ports arranged in such a way that one can place their hands into the ports, into gloves and perform tasks inside the box without breaking the seal. There are three general types available (Class I, II, III) based on the material the box and gloves are made of.

High-Consequence Foreign Animal Diseases (FADs): Diseases not present in the United States that are capable of rapidly spreading and causing high numbers of deaths and/or devastating economic consequences (e.g., foot and mouth disease).

Homeland Security Presidential Directives 9 and 10: These directives established a national goal to protect agricultural infrastructure to ensure our livestock and food safety and security.

Host: In biology, a host is an organism that harbors a virus or parasite, typically providing nourishment and shelter.

National Bio and Agro-Defense Facility (NBAF): Proposed facility that would address both current and future requirements in research, diagnostics, and training for combating high-consequence agricultural threats. Research would focus on early development and discovery of vaccines and diagnostic tests for these important agricultural diseases.

National Environmental Policy Act (NEPA):

Requires the preparation of an environmental impact statement (EIS) for major federal actions that may significantly affect the quality of the environment. In NEPA, the term “environment” encompasses the natural and physical environment (i.e., air, water, geography, and geology), as well as the relationship of people with that environment (i.e., health and safety, socioeconomic conditions, cultural resources, noise, and aesthetics).

Natural Reservoir: Refers to the long-term host of the pathogen of an infectious disease. It is often the case that hosts do not get severely ill.

Pathogen or Infectious Agent: A biological agent that causes disease or illness to its host. The term is most often used for agents that disrupt the normal physiology of an animal or person.

Plum Island Animal Disease Center (PIADC):

U.S. laboratory for the diagnosis, research, and training for foreign animal diseases. The U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Foreign Animal Disease Diagnostic Laboratory is located at PIADC. This laboratory has the capability of diagnosing over 30 foreign animal diseases and is responsible for educating veterinarians in the recognition and diagnosis of these diseases. The USDA Agricultural Research Service (ARS) operates a program focused on basic discovery and research of foreign animal diseases. The DHS scientific program focuses primarily on the advanced development of vaccines and other countermeasures.

Wildlife Reservoir: Wildlife, normally defined as wild, free-roaming animals (e.g., mammals, birds, fish, reptiles, and amphibians), therefore, this refers to a wild animal as long-term host of the pathogen of an infectious disease. It is often the case that hosts do not get the disease carried by the pathogen or it does not show symptoms of the disease and is non-lethal.

Zoonotic: A term for diseases transmitted by animals to humans.



Flora Industrial Park Site Flora, Mississippi

NATIONAL BIO AND AGRO-DEFENSE FACILITY
Science and Technology Directorate/Office of National Laboratories

CONSORTIUM

The Gulf States Bio and Agro-Defense Consortium is a coalition of public and private entities working collectively to attract the National Bio and Agro-Defense Facility (NBAF) to Mississippi. The Consortium is comprised of the State of Mississippi, the University of Mississippi (UM), the University of Mississippi Medical Center (UMMC), Mississippi State University (MSU), Jackson State University (JSU), Tulane University, the Tulane National Primate Research Center, the University of Texas Medical Branch (UTMB), Tougaloo College, and Battelle Memorial Institute. Except for UTMB, all members of the Consortium are within a two-hour drive of the proposed site. The Consortium has committed to providing regular shuttle services to and from the NBAF for all university participants.

PROPOSED NBAF SITE LOCATION

The proposed site is located in the Flora Industrial Park in Madison County, Mississippi. A mixed-use commercial park, the Flora site offers a gentle rolling terrain with nearby access to interstates, railways, and the Jackson-Evers International Airport. The Madison County Economic Development Agency maintains the park's more than 150 acres. The portion under consideration for the NBAF currently has no tenants or physical structures and is approximately 150 acres. The only tenant in the Flora Industrial Park is Primus, a manufacturing company.

COMPLEMENTARY RESEARCH AND WORKFORCE

The Consortium partners bring a diverse set of capabilities and significant biosafety level 3 (BSL-3) and BSL-4 experience to NBAF operations. MSU has a veterinary school, maintains significant research programs in animal sciences, and operates a BSL-3 facility on its main campus. MSU also operates the state diagnostic veterinary laboratory in Pearl, Mississippi, a 40,000 square foot facility that will have an active BSL-3 within two years. The university also has collaborations with the U.S. Department of Agriculture Agricultural Research Services (ARS), a facility that has the distinction of possessing the greatest number of agricultural doctorate degrees in the nation. The UM has a world renowned program in pharmaceutical sciences that would be crucial to NBAF's countermeasure development and licensing activities. The National Center for Natural Products located at UM currently screens more than 30,000 samples and houses more than 18,000 natural products with proven medicinal/agricultural properties. UMMC and Tulane University have programs in medical research and in clinical trial development and execution.

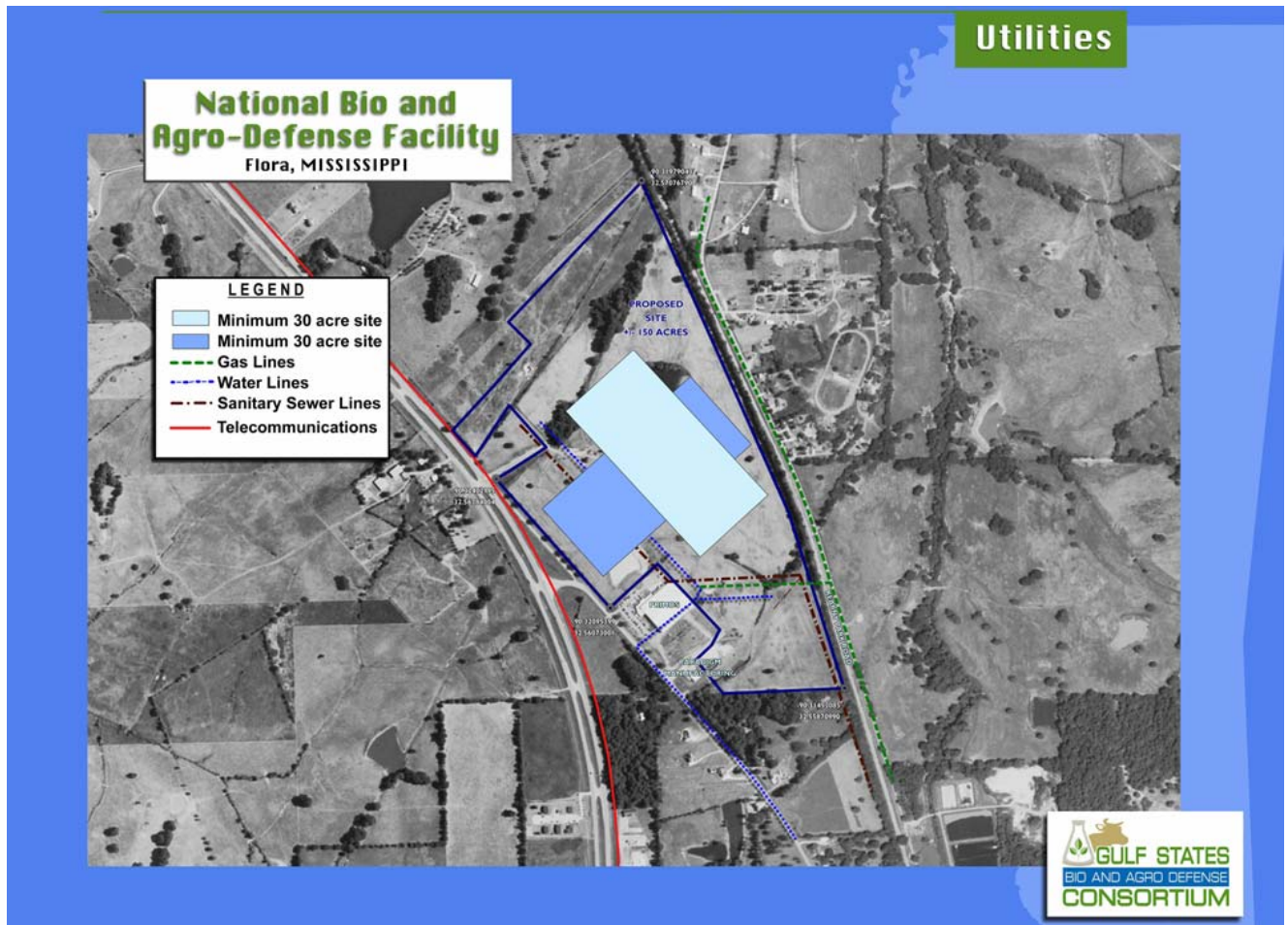
Currently, UMMC has over 350,000 square feet of research space, with an additional 178,000 square feet of new construction to be completed within two years. UMMC researchers have recently been recognized at the national level for research involving anthrax and potential treatments. Both institutions have infectious diseases doctoral and medical training and operate BSL-3 facilities certified by the Centers for Disease Control and Prevention and Federal Drug Administration. TNPRC has a free-standing 3,000-square foot facility dedicated to BSL-3 animal research. UTMB has an established research program in infectious diseases directly relevant to bioterrorism and operates one of the few BSL-4 facilities in the nation. Battelle has a long history of successfully managing national laboratories, including West Jefferson BSL-3 laboratory, the Oak Ridge National Laboratory and the National Biodefense Analysis and Countermeasures Center. Battelle is responsible for the operation of over 50,000 square feet of research facilities with research and development totaling over \$4 billion. JSU has a National Center for Environmental Health and the National Center for Biodefense Communications.

The Consortium also provides a strong workforce for the NBAF in Mississippi. JSU and Tougaloo College are Historically Black Colleges and Universities that produce significant numbers of African-Americans in the sciences. Collectively, the Consortium graduates approximately 40 doctorate-, 100 masters- and 370

baccalaureate-level students in relevant life sciences each year (average over the past five years). Their fields of study include biology, chemistry, biochemistry, animal sciences and physiology, bioengineering, and pharmaceutical sciences. Annually, approximately 100 medical doctors, 50 doctors of veterinary medicine, and 75 professional pharmacists graduate from the Consortium academic partners. Currently, approximately 60 percent of bachelor-level and above-degree professionals leave the area because life sciences opportunities cluster elsewhere in the nation.

AVAILABLE SITE INFRASTRUCTURE

The proposed site is adjacent to U.S. Route 49, a major four-lane divided highway. It is connected via major highways Interstate 55 (approximately 17 miles), which supports north/south interstate traffic, and to Interstate 20 (approximately 20 miles), which supports east/west interstate traffic. The State of Mississippi will commit to providing any needed utility improvements for the NBAF. The utilities for the site are supplied by Entergy Corporation, which has a three-phase power onsite. Natural gas is available onsite (6-inch main). Water is supplied by the Town of Flora. Currently, the site is supplied by a 10-inch pipe adjacent to the site, with 100,000- and 200,000-gallon storage tanks located within 0.75 miles. Sewer services (treatment plant) are also provided by the Town of Flora; there is currently an 8-inch main adjacent to the site.





Manhattan Campus Site Manhattan, Kansas

NATIONAL BIO AND AGRO-DEFENSE FACILITY
Science and Technology Directorate/Office of National Laboratories

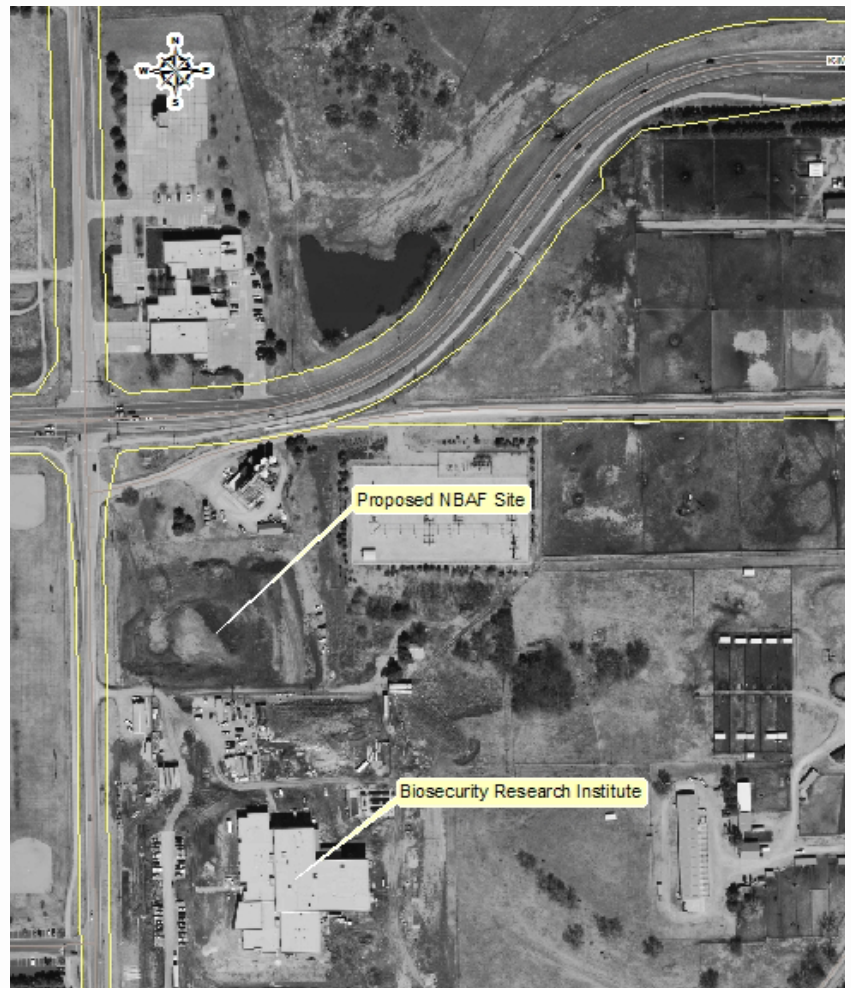
CONSORTIUM

The Heartland Bio Agro Consortium (HBAC) is led by Kansas State University and the Midwest Research Institute, with the Kansas City Area Life Sciences Institute providing the cohesive leadership that unites the diverse membership. HBAC partners include a number of research universities within the Kansas, Iowa, Missouri and Nebraska region, and several research universities outside the region chosen to complement strategic research foci. HBAC partners include private research institutes and research hospitals. The greater Kansas City area is a major hub of the veterinary pharmaceutical industry, having companies in the vaccine development, production, and distribution arenas. HBAC partners include a number of these organizations.

PROPOSED NBAF SITE LOCATION

The proposed site for locating the National Bio and Agro-Defense Facility (NBAF) is on the Manhattan, Kansas, campus of Kansas State University, immediately adjacent to the Biosecurity Research Institute (BRI). The BRI is a \$54 million research/education facility having biosafety level 3 (BSL-3), BSL-3 Enhanced (BSL-3E), and BSL-3 Agriculture (BSL-3Ag) state-of-the-art research space. The site borders on the research laboratories and teaching hospital of the Kansas State University College of Veterinary Medicine. Adjacent land is available for pasturing animals.

The Kansas legislature has passed a bill authorizing the transfer of all or part of a tract of land located in township ten (10) south, range eight (8) east of the sixth (6th) Principal Meridian in Riley County, Kansas. The total acreage is just less than 45 acres when the land containing the BRI is subtracted.



COMPLEMENTARY RESEARCH AND WORKFORCE

HBAC is a unique combination of research universities, research institutes and hospitals, subject-matter experts, and leading firms in the bioscience industry – all capable of providing a collaborative, enriched, and valuable environment for the NBAF. A spectrum of activities comprises the lifecycle of bioscience/biomedical innovation, including basic research, discovery, validation, Good Labor Practices (GLP) manufacturing, government regulatory issues, clinical trials, in-hospital diagnostic support, and defined outcomes. HBAC and the Kansas City region have adopted a one-medicine/one-health approach which links the animal health and the human health communities in a joint search for answers to intriguing health and bioscience questions. This approach is particularly relevant to biodefense and emerging infectious disease research for several important

reasons. First, many of the emerging diseases are zoonotic in nature, and these diseases pose real threats not only in the food animal and wildlife arenas, but on the human health side as well. Second, solutions to the problems in both animal health and human health require a fundamental understanding of the same basic principles of disease physiology and require the same tools and technology to bring the solutions from concepts to reality.

HBAC is in a region rich in animal infectious disease research, pharmaceutical production, and workforce availability. The Kansas City bioscience industry is an internationally-recognized leader in the animal health arena. Its strength is in its numbers: the region is home to 165 life science companies, with 37 focused on protecting and securing animal health. Within the \$14.5 billion animal health industry, more than 40 percent of the U.S. sales and 26 percent of worldwide sales are those of companies having a presence in the Kansas City area. There is a major focus on research and development, GLP/Good Manufacturing Practices(GMP) manufacturing, and translation into the marketplace. More than 5,000 animal health workers provide a uniquely skilled workforce.

AVAILABLE SITE INFRASTRUCTURE

Utilities available to the site include water, electricity, sewer, telecommunications, and natural gas. The site is within 1,000 feet of a fire station and within 1 mile of a hospital having emergency room service. Adjacent to the site is the Kansas State University Research Park, allowing co-location of industrial research facilities as the NBAF matures. The Biosecurity Research Institute and the College of Veterinary Medicine ensure a critical neighboring mass of infectious disease research.



Texas Research Park Site San Antonio, Texas

NATIONAL BIO AND AGRO-DEFENSE FACILITY
Science and Technology Directorate/Office of National Laboratories

CONSORTIUM

The Texas Biological and Agro-Defense Consortium (TBAC) is a collection of stakeholders formed to bring the National Bio and Agro-Defense Facility (NBAF) to San Antonio. Members of the TBAC include the Southwest Foundation for Biomedical Research (SFBR), the University of Texas at San Antonio (UTSA), the University of Texas Health Science Center, San Antonio (UTHSCSA), Brooks Development Authority (BDA), and the Texas Research & Technology Foundation (TRTF).

SFBR is a leading independent biomedical research institution, home to the Southwest National Primate Research Center, which includes the capacity for non-human primate studies in biosafety level 4 (BSL-4), and a veterinary technical staff experienced in the management and use of nonhuman primates ranging from chimpanzees to marmosets.

UTSA has created several research centers and institutes which have formed collaborative programs with institutions and private research entities. A number of research programs are focused on parasitic and fungal disease, biotechnology problems of national strategic need, including detection and analysis of influenza, genomic sequencing of biothreat agents and novel vaccine development.

UTHSCSA is home to numerous research programs focused on established and emerging infectious diseases caused by parasitic, fungal, viral, and bacterial pathogens. A significant number of these programs in the Department of Microbiology and Immunology focus on potential bioterror threats related to the NBAF mission.

TRTF owns and operates the 1,236-acre Texas Research Park (TRP). TRTF is a 501(c)(3) non-profit innovation-based economic developer for San Antonio and South Texas.

PROPOSED NBAF SITE LOCATION

The San Antonio site alternative is located on 100 acres within the TRP, Bexar and Medina Counties. The TRP site is part of a former working ranch that was donated to TRTF in 1986. The TRP is approximately four miles west of the City of San Antonio; it is in its extra-territorial jurisdiction, and it is a Designated Industrial District of the City.

COMPLEMENTARY RESEARCH AND WORKFORCE

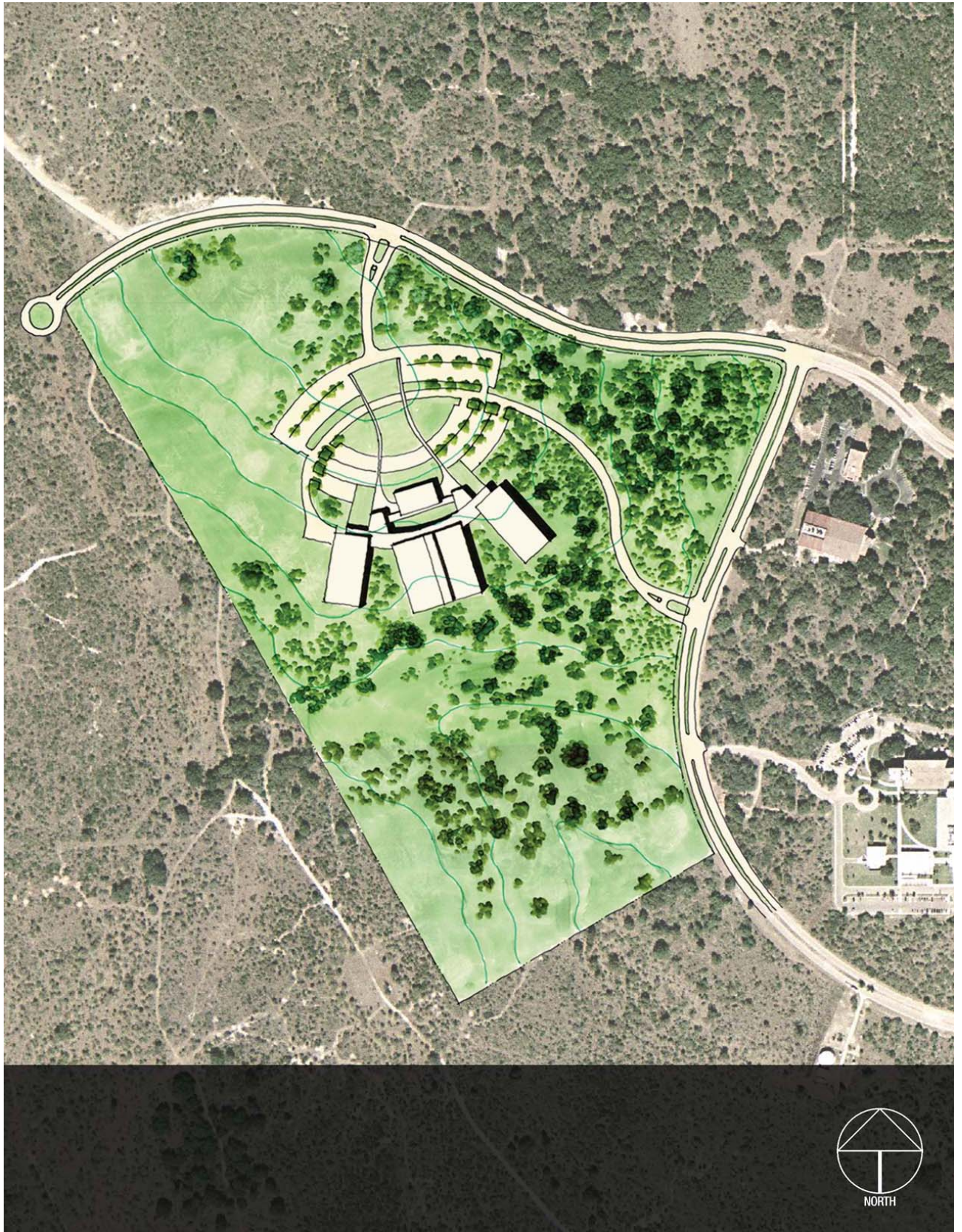
San Antonio is home to a comprehensive research community with ongoing research programs related to the NBAF mission. The bioscience and healthcare industry sector is the largest economic generator in the community. The TRP site is within proximity of skilled research and technical staff with expertise in design, construction, and operations conducted at biological and agricultural research facilities.

AVAILABLE SITE INFRASTRUCTURE

Available site utilities are adjacent to the TRP site with capacities that meet or exceed NBAF requirements. Facilities to increase water capacity are currently under construction, as is a 200-megawatt electrical substation in the TRP. Natural gas capacity is more than adequate for the NBAF and future resident tenant needs. Existing wastewater lines are adequate, and planned upgrades would service the NBAF and future tenant needs.

Transportation arteries are adjacent and nearby the TRP and the alternative site. The TRP fronts on State Highway 211 (Texas Research Parkway). To the south, State Highway 211 connects to U.S. Highway 90 approximately two miles from the TRP. To the north, State Highway 211 intersects with State Highway 1957

(Potranco Road) and will be extended northward within four years to connect to the northwest segment of State Highway 211.





Umstead Research Farm Site Butner, North Carolina

NATIONAL BIO AND AGRO-DEFENSE FACILITY
Science and Technology Directorate/Office of National Laboratories

CONSORTIUM

The North Carolina Consortium for the National Bio and Agro-Defense Facility (NBAF) is a statewide public-private partnership. Academic members include two land-grant agriculture universities, a veterinary college, three medical institutions (two with public health components), and the North Carolina (NC) Community College Bionetwork. Government participants include federal, state and local officials, in addition to the North Carolina Departments of Agriculture, Health, Commerce, Environment, and Crime Control. Agriculture is represented by our major livestock associations (beef, dairy, poultry, and swine), the NC Farm Bureau, and the NC Agribusiness Council. Biotechnology is represented by non-profit groups promoting biotechnology statewide, and by private sector members in biological research and development, vaccine manufacturing, diagnostics, and similar fields.

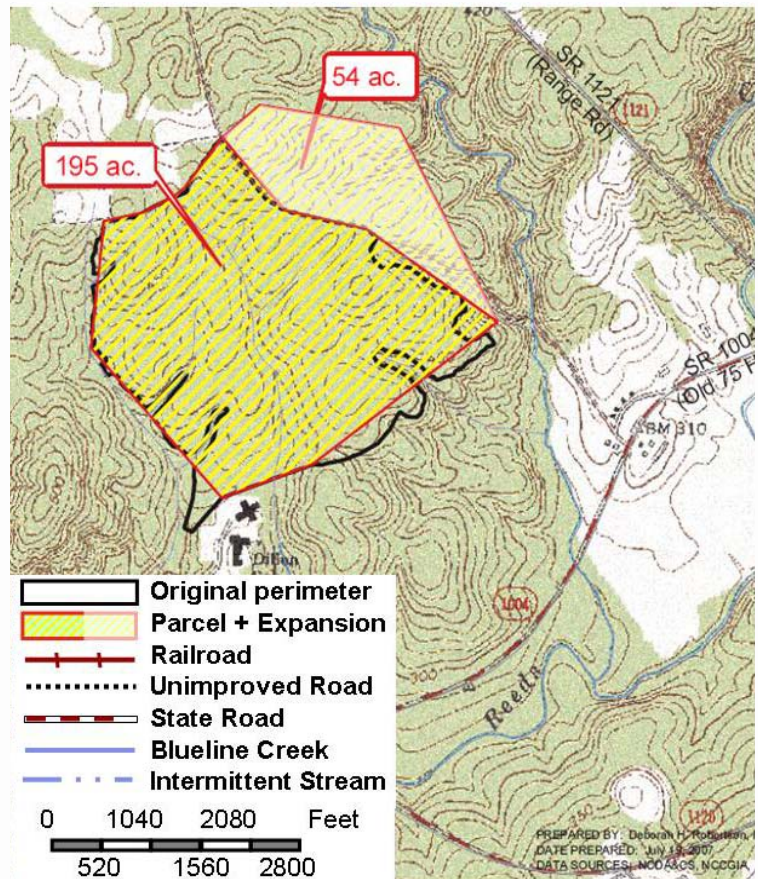
PROPOSED NBAF SITE LOCATION

The proposed site comprises 195 acres in the Granville County portion of the 4,035-acre NC Department of Agriculture Umstead Research Farm (URF). The parcel is unimproved land that was partially logged in 2000. There is a 54-acre area on the northeast side available for expansion, although there are other expansion options available within the farm. URF neighbors include the NC Department of Health and Human Services, a National Guard facility, NC State University, and federal, county, and state entities.

Four large universities, the Research Triangle Park, the Eastern Regional Offices of U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service-Veterinary Services (APHIS-VS), and state agencies, are within a 25- to 45-minute drive. The site's proximity to nationally ranked research universities, the Triangle area's private sector, our agriculture resources, and government facilities, offers opportunities for synergies, communications, collaborations, and efficiencies that make it highly attractive.

COMPLEMENTARY RESEARCH AND WORKFORCE

The Triangle region, and the state, have garnered multiple awards and continuous recognition for its depth in science and engineering. This strength is generated by its research universities and community college training programs, and is enhanced by its extensive science and technology-based private sector, supported by science-and engineering-friendly communities. The Research Triangle region of North Carolina, within which the URF is centrally located, is a national resource in health, engineering, general science, and technology research. In the past few years, North Carolina ranked 7th and 15th nationally for total National Institutes of Health and National Science Foundation research funding. The Consortium also excels at moving research into the



Revised Umstead Research Farm parcel simplifying perimeter outline to be appropriate for surveying and legal deeding

marketplace as evidenced by having two partner institutions (NC State University and UNC-Chapel Hill) in the Milken Institute's September 2006 top 25 U.S. Universities for Technology Transfer and Commercialization.

Resources are plentiful. Based on a quick survey, it is estimated that in the Research Triangle Park and immediate vicinity, private sector companies with at least 20-percent research laboratory space have nearly 8.6 million square feet of research laboratory space dedicated to addressing NBAF relevant issues. Note this does not include the large federal (U.S. Environmental Protection Agency and National Institute of Environmental Health Sciences), state (NC Agriculture, Environment, and Public Health), or university facilities.

The availability of highly trained workers extends across NBAF workforce needs, starting with construction and design workforce availability. From 2003 to 2006, the Research Triangle Regional Partnership projected a Triangle area three-year track of \$800 million in biotechnology construction projects employing over 15,000 workers. North Carolina has approximately 30 architecture/engineering companies, and as many contractor companies, with a total of more than 1,500 employees with expertise in laboratory planning. At least five national architecture/engineering firms with experience in high biocontainment facilities have offices and employees in the area, with yet another moving to the Triangle this year. The workforce availability also includes those in the technical life science disciplines. Nearly half of North Carolina's 48,000 bioscience-related business employees work in the Triangle area. Approximately 10,000 employees work for pharmaceutical companies statewide carrying out aseptic manufacturing operations at the highest standards.

The workforce pipeline in North Carolina is also formidable. Central to this is the NC Community College System's (NCCCS) BioNetwork, a statewide program offering training from short courses and certificates through associate degree programs in biomanufacturing, biotechnology, and facility validation for life science technical, design, and construction workers. Statewide, during past three years nearly 2,850 students were enrolled in NCCCS biotechnology programs. For the academic year ending in 2005, over 1,200 more enrolled in relevant continuing education courses. In addition, the University of North Carolina system provides advanced training and facilities in these areas throughout the state. During the 2005-2006 academic year, NC institutions conferred nearly 8,000 bachelor's and graduate degrees in NBAF relevant areas.

AVAILABLE SITE INFRASTRUCTURE

A major interstate highway (Interstate 85) is within three miles of the site, and connects with Interstates 40 and 95. Service spurs for the Norfolk-Southern Railroad exist in Butner, approximately three miles south. The Raleigh-Durham International airport is less than 25 miles away, and the Piedmont-Triad International airport is just over an hour drive from the proposed site. Public safety is managed by the NC Department of Crime Control & Public Safety, which offers the formidable resources of state-level security and protection to the NBAF site.

Power is supplied by Duke Energy Corporation (also supplies power to the Research Triangle Park), and would be able to provide any load demand to the NBAF. Natural gas is supplied by Public Service Company of North Carolina, a regulated public utility serving over 400,000 customers throughout a 28-county area.

Telephone and telecommunications is supplied locally by the town of Butner and/or the NC Department of Health and Human Services. Business telephone service is offered by Sprint/Embarq, and multiple cellular companies cover the area. Telecommunications availability includes the T1 service at the John Umstead Hospital in Butner, as well as regular commercial services via several private companies.

Water and sewer service is supplied by the South Granville Water and Sewer Authority. It has an operating water and sewer capacity of three million gallons per day (MGD) and five MGD, respectively, and is operating at approximately 50 percent capacity. Power, water, and communications are currently supplied throughout and around the URF, allowing several options for bringing service to the proposed site.



South Milledge Avenue Site Athens, Georgia

NATIONAL BIO AND AGRO-DEFENSE FACILITY
Science and Technology Directorate/Office of National Laboratories

CONSORTIUM

The Georgia Consortium for Health and Agro-Security is headed by Governor Sonny Perdue, a veterinarian who appreciates the threats to Georgia's citizenry and economy posed by zoonotic diseases, along with Senators Saxby Chambliss and Johnny Isakson. The consortium includes our Congressional delegation, Department of Economic Development, the Board of Regents and Chancellor of the University System of Georgia (USG), the state's research universities and Georgia Research Alliance (GRA); Mayor Heidi Davison and other state and regional government leaders and agencies; Georgia Department of Agriculture and a coalition of Georgia's agricultural associations and stakeholder groups formed to attract the National Bio and Agro-Defense Facility (NBAF); Georgia Power, Merial and other companies; private/non-profit biomedical and health agencies; local and state economic development foundations and chambers of commerce; Georgia's Department of Technical and Adult Education (DTAE) and Athens Technical College; the Office of Homeland Security/Georgia Emergency Management Agency; local health officials, including the CEOs of Athens Regional and St. Mary's hospitals. The University of Georgia (UGA) has provided leadership and will have close ties to the NBAF and serve as its local host.

PROPOSED NBAF SITE LOCATION

The proposed site is a 67-acre parcel owned by UGA located southwest of the intersection of South Milledge Avenue and Whitehall Road in Athens-Clarke County, Georgia. It is located behind the UGA Livestock Instructional Arena and is used as horse pasture. The site, currently known as a portion of Tax Map Parcel No. 18-3-010, is surrounded by a large tract of UGA property. There are no adjacent neighborhoods. The title to the property is vested in the USG Board of Regents, which will deed the property to the federal government if the site is selected for construction of the NBAF.

COMPLEMENTARY RESEARCH AND WORKFORCE

UGA excels in research relevant to the NBAF, with prominent programs in livestock and wildlife health and disease surveillance, global emerging infectious diseases, microbiological food safety and agro-security. UGA has new initiatives in public health, and with the Medical College of Georgia is planning a new Athens' medical campus to open in 2009. It has made major investments in relevant research infrastructure, including the Paul Coverdell Biomedical and Health Sciences Center and the Animal Health Research Center, and has a history of productive interactions with university, federal and industrial partners. Also in Athens, Merial – a world-leading producer of animal health care products – has expertise in vaccine production that would greatly assist the NBAF, and the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) Southeast Poultry Research Lab is a principal repository of national expertise in avian influenza. A major pharmaceutical company is considering Athens as one of two sites for construction of a major pandemic vaccine production facility, which would dovetail perfectly with the mission of the NBAF.

The Athens site would locate the NBAF an hour away from the Centers for Disease Control and Prevention (CDC), the world's health sentinel, which responds to emerging infectious diseases and thus would naturally interact with the NBAF. Also in Atlanta, Emory's School of Medicine and School of Public Health are world class and offer vaccine and infectious disease research programs that are among the nation's best. Additionally, Georgia Tech is increasing its biomedical programs and offers state-of-the-art engineering solutions to diagnostic and therapeutic problems, and Georgia State has a National Resource Center for Viral Immunology. Collectively, these Athens-Atlanta assets offer the NBAF the best potential to respond to natural pandemic or bioterror threats in a robust, well-coordinated fashion.

Other features distinguish the research environment offered by an Athens location. Building on strengths identified by outside consultants, the Georgia Research Alliance recently received the first \$10 million

installment on a major, multi-year state investment in vaccine and anti-viral research infrastructure. The Georgia life science industry is booming and now ranks 7th in the United States for number of companies. And, Georgia has invested statewide in specialized containment facilities for infectious disease research – from biosafety level 4 (BSL-4) facilities at the CDC and Georgia State in Atlanta to the BSL-3-Ag facilities at the USDA, and the near-completed UGA Animal Health Research Center in Athens. Thus, Georgia has ample high-containment design, building and operations expertise, and it also offers relatively low building costs in a national comparison.

Athens provides an attractive location in which to recruit scientific staff, and the state provides a robust and customizable pipeline for workforce recruitment and training. The USG graduates over 7,000 bio/health science majors per year and Georgia offers state-of-the-art programs for tailored workforce recruitment. DTAE and Athens Technical College, in particular, provide a range of biotechnology workforce training, and DTAE's nationally recognized Quickstart program allow for customization of workforce training to meet specific NBAF needs. This commitment and array of unique programs ensures the availability of a well-trained and sustainable NBAF workforce.

AVAILABLE SITE INFRASTRUCTURE

Athens-Clarke County (ACC) has ample water and sewer capacity to serve the NBAF. ACC can withdraw 35 million gallons per day (MGD) from Bear Creek reservoir and another 28 MGD from the North and Middle Oconee Rivers. The ACC water treatment facility can treat 28 MGD but will be upgraded and expanded to 32 MGD by 2008. ACC's existing peak-day water demand is 26 MGD. An 8-inch water line is accessible on South Milledge Avenue, but will be upgraded to a 12-inch line to better serve the NBAF. There are no sewer lines close to the proposed site, hence a force main will be installed along South Milledge Avenue and waste pumped via an onsite lift station to the ACC's Middle Oconee Wastewater Treatment Facility (about three miles away). Currently, the facility has a capacity of 6 MGD with an existing demand of 3.5 MGD. The facility will be upgraded and expanded to 10 MGD by 2012. Georgia Power will provide electrical service from two separate substations through existing electrical distribution infrastructure, mitigating transient power loss.

The site is located 1.5 miles from the Athens Perimeter (Loop 10), a four-lane bypass that quickly connects to Atlanta and Hartsfield Jackson International Airport via Georgia Route 316, or to Interstate 20 or 85 via U.S. Route 441.





Plum Island Site

Plum Island, New York

NATIONAL BIO AND AGRO-DEFENSE FACILITY
Science and Technology Directorate/Office of National Laboratories

Plum Island Animal Disease Center

The Plum Island Animal Disease Center (PIADC) has been protecting America's livestock from foreign (not present in the United States) animal diseases for more than 50 years.

The U.S. Department of Homeland Security (DHS) has operational oversight of PIADC. The U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) conducts basic and applied research to formulate better countermeasures against foreign animal diseases. The USDA Animal and Plant Health Inspection Service (APHIS) conducts diagnostic testing and maintains the North American Foot and Mouth Disease Vaccine Bank. The DHS Targeted Advanced Development (TAD) group is focused on expediting the development of promising countermeasures such as vaccines and antivirals.

PIADC began in 1954 when the island, which was owned by the Army, was turned over to the Agriculture Department to establish a research center dedicated to the study of foot and mouth disease in response to outbreaks of the disease in Canada and Mexico.

PIADC is currently the only place in the United States where research work can be performed with live foot and mouth disease virus. PIADC operates biosafety level 3 agriculture (BSL-3 Ag), BSL-3 and BSL-2 laboratory facilities.



PROPOSED NBAF SITE LOCATION

The National Environmental Policy Act (NEPA) requires that federal agencies consider a no action alternative in addition to a range of reasonable alternatives for implementing a proposed action in an environmental impact statement (EIS). The proposed action is to build the National Bio and Agro-Defense Facility (NBAF) to fill an identified gap in the nation's coordinated biodefense strategy. The NBAF would provide a safe and secure BSL-4 facility in which basic research, diagnostic development and validation, diagnostic testing, advanced countermeasure development, and training for high-consequence livestock disease can occur. PIADC is the no action alternative (i.e., maintain current research capability at BSL-3 and do not proceed with the proposed NBAF). PIADC is also considered a reasonable alternative and will be evaluated in the NBAF EIS based on the fact that Plum Island currently performs much of the research with an existing workforce that assesses potential threats to animals from foreign animal diseases. In addition, the federal government already owns and controls the property on which PIADC is located.

The existing facility on Plum Island is more than 50 years old, is too small to accommodate the expanded USDA and DHS mission research, and does not have BSL-4 capabilities. The proposed NBAF would be constructed and operated on approximately 30 acres in the vicinity of the existing facility. Plum Island is an 840-acre island that lies 1.5 miles from Orient Point, New York, and 9 miles from Old Saybrook, Connecticut.

COMPLEMENTARY RESEARCH AND WORKFORCE

More than 300 employees from DHS, USDA and contracting companies work together at PIADC to support the crucial shared mission of providing the nation's first defense against foreign animal diseases.

DHS's TAD unit partners with the USDA ARS, academia, and industry scientists to deliver promising vaccines and antivirals to USDA for licensing and inclusion in the USDA APHIS National Veterinary Stockpile.

USDA ARS performs basic and applied research to formulate better countermeasures against foreign animal diseases, including strategies for prevention, control and recovery. ARS focuses on developing faster-acting vaccines and antivirals to be used during outbreaks to stop or limit transmission. Antivirals prevent infection while vaccine immunity develops. Primary research is conducted on foot and mouth disease, classical swine fever and vesicular stomatitis virus.

USDA APHIS operates the Foreign Animal Disease Diagnostic Laboratory, an internationally recognized facility performing diagnostic testing of samples collected from U.S. livestock. APHIS also tests animals and animal products being imported into the United States. APHIS maintains the North American Foot and Mouth Disease Vaccine Bank at PIADC.

Since 1971, APHIS has hosted the Foreign Animal Disease Diagnostic (FADD) schools to train federal, state and foreign national veterinarians and laboratory diagnostic staff, military veterinarians and veterinary school faculty on foreign animal diseases. These hands-on courses allow students the unique opportunity to observe first hand the signs of foreign animal diseases. They also instruct students on sample collection and submission in the event of a suspected foreign animal disease outbreak. By 2006, PIADC had run its 116th FADD school and had educated more than 3,000 participants.

Operations and support staff include personnel in administration, engineering, environmental protection, security, safety and occupational health, information technology, emergency services (fire and emergency medical technicians), transportation management, grounds maintenance, finance, purchasing, hospitality, maintenance, and public affairs.

AVAILABLE SITE INFRASTRUCTURE

As the sole occupant of Plum Island, the center operates what could be considered a small city to support the facility's infrastructure and operations. In addition to the biocontainment research facility, PIADC infrastructure facilities include a power plant, back-up generators, fire house, waste water treatment plant, and a freshwater supply system. Transportation to the island is provided by government ferries running from Orient Point, New York, and Old Saybrook, Connecticut. Transportation on the island is provided by a motor pool of government-supplied vehicles including buses, vans and security vehicles.

Relationships and mutual aid agreements exist with local police, fire and emergency services. Federal Protective Services staff stationed at PIADC augment the security forces staffing and provides additional capabilities (e.g., arrest authority).

Airports within proximity of Plum Island include Bradley International near Hartford, Connecticut, and McArthur Airport in Islip, New York.