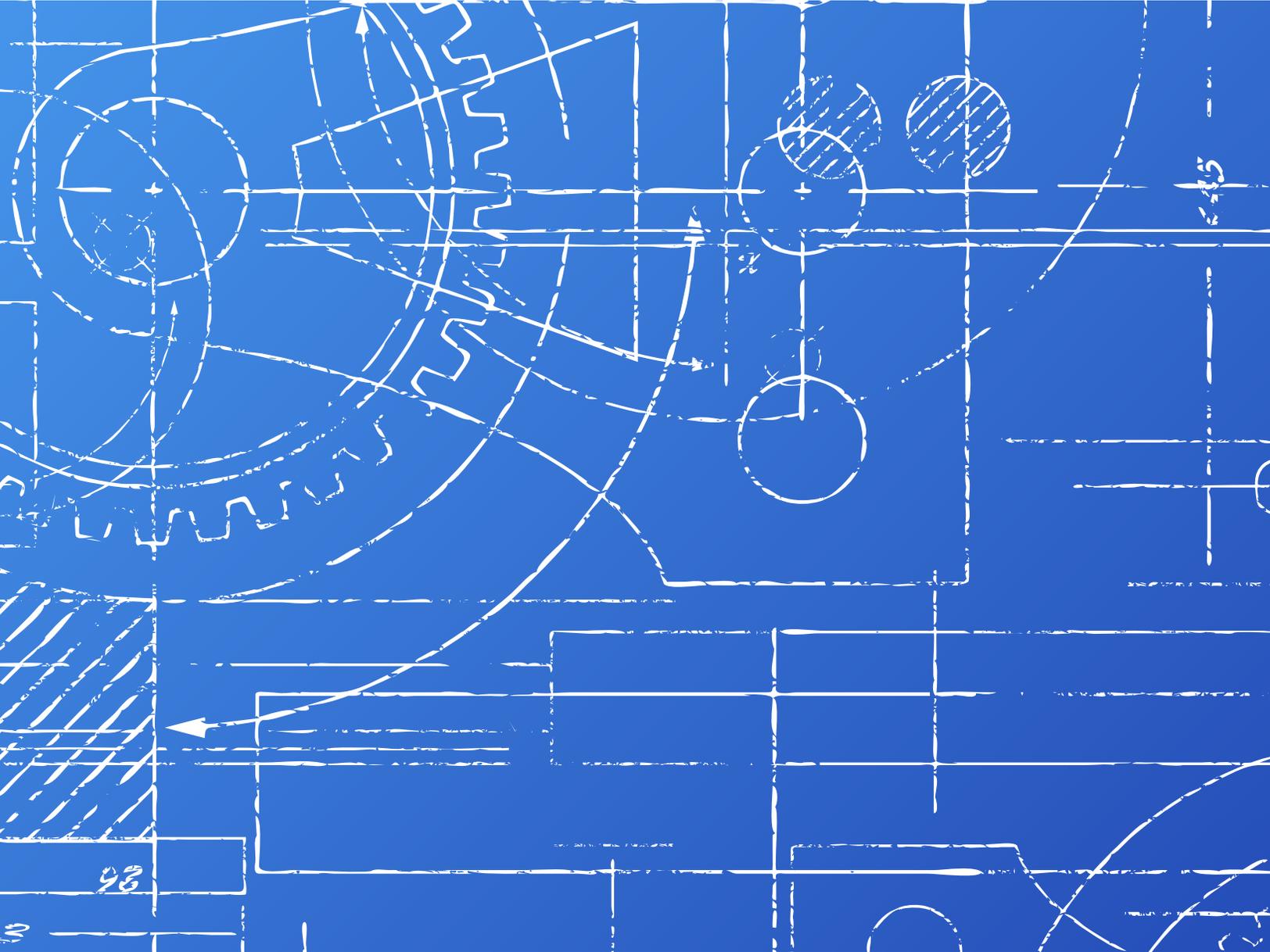




Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE



Capital Asset Improvement Plan For Scientific and Laboratory Facilities

July 2023

Introduction

The U.S. Department of Agriculture’s Animal and Plant Health Inspection Service (APHIS) safeguards the health, welfare, and value of American agriculture and natural resources. Key to this mission is work conducted at scientific and laboratory facilities around the United States and the world. They develop and use state-of-the-art methods and technologies to prevent and control the spread of animal and plant pests and diseases and reduce damage caused by wildlife. These scientific and laboratory facilities require highly specialized equipment and systems – including air ventilation and wastewater treatment – to properly function. In addition, they often must be built and maintained to meet mandated biosafety requirements to protect human, animal, and plant health, as well as the environment. Many of these facilities are approaching or have exceeded their life span.

Maintaining the condition and functionality of facilities is an ongoing process that demands significant management of capital resources. The Agency receives approximately \$3 million each year in appropriations to repair and maintain its broad portfolio of capital assets. This amount of funding is negligible compared to the full scope of the Agency’s facility needs, and APHIS must also use program funding to make necessary facility repairs where appropriate and needed, at the expense of program operations.

APHIS developed this Capital Asset Improvement Plan to strategically prioritize its facility needs. The project was led by the APHIS Capital Asset Improvement Plan working group, which included representatives from Marketing and Regulatory Programs Business Services’ Acquisition and Asset Management Division and Policy and Program Development’s Budget and Program Analysis Staff. Representatives from each APHIS program unit provided expertise and details on individual facility repair and replacement needs to effectively capture the program-level facility data.



APHIS Facility Evaluation and Prioritization Process

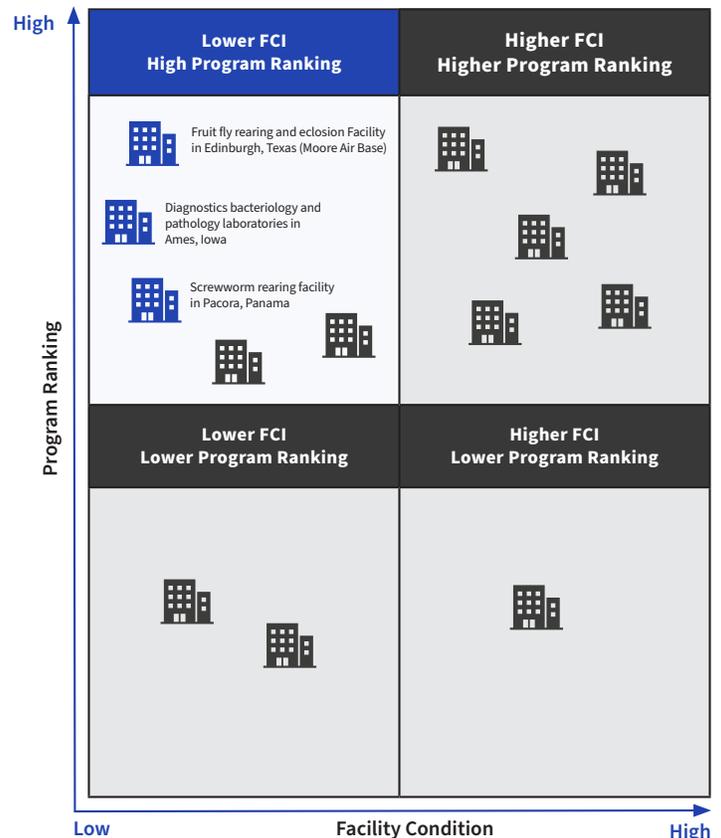
The APHIS Capital Asset Improvement Plan working group inventoried our more than 70 scientific and laboratory facilities. The group focused on mission-critical facilities that would create a significant work stoppage should the facility fail. They further narrowed the list by focusing on government-owned facilities. APHIS operates in a mix of government-owned and leased facilities, as well as other types of arrangements. Focusing on government-owned facilities will make the construction process simpler and provides more long-term benefits to the Agency and taxpayers. Finally, only facilities fully funded through appropriations were considered. Some facilities are funded in part or in whole by user fees, and these fees are intended to cover a program's full operational costs, including facilities.

The consolidated group of 13 facilities was then plotted in a matrix (Figure 1) based on a program priority ranking method used in the budget formulation process and each facility's Facility Condition Index (FCI). The FCI is the sum of the costs of needed repairs divided by the replacement value of the facility. APHIS strives to maintain an FCI for facilities assessed of less than 0.10, meaning that the cost to make repairs is less than 10 percent of the estimated replacement value for the facility.

Three facilities ranked highest based on both the program priority ranking and the FCI scores (above 0.10). The top three Federally owned, appropriated funded, highest priority facilities in need of repair are as follows:

1. Fruit fly rearing and eclosion facility in Edinburg, Texas (Moore Air Base)
2. Diagnostics bacteriology and pathology laboratories in Ames, Iowa (National Centers for Animal Health)
3. Screwworm rearing facility in Pacora, Panama

Figure 1. Program Priority Ranking and Facility Condition Index Matrix



Fruit Fly Rearing and Eclosion Facility in Edinburg, Texas (Moore Air Base)



Exotic fruit flies are among the most destructive pests of fruits and vegetables in the world. APHIS and cooperating State departments of agriculture have used surveillance, quarantine restrictions, and mating disruption to keep fruit flies from establishing in this country for the past 2 decades. Mating disruption involves releasing sterile flies into a target area to reduce the reproductive potential of any wild flies in the area. The sterile eggs are produced in a rearing facility, after which they move to an eclosion facility to hatch.

The current facility at Moore Air Base is more than 35 years old. Despite upgrades, it often incurs production losses due to aging infrastructure and building environmental problems that prevent the facility from meeting the capacity needed for sterile Mexican fruit fly (Mexfly) releases. High temperatures and humidity in the facility facilitate the growth of mold in the heating, ventilation, and air conditioning system. Interior doors, door hardware,

flooring, ceilings, air registers, and other hardware, need repair or replacement. In addition to the poor conditions at the facility, it does not have enough capacity to produce the required number of sterile flies for an effective preventive release program to prevent Mexfly outbreaks that occur annually, threatening the production of the Texas citrus industry. Congress previously provided \$47 million to build a replacement facility in the same location. It is located on USDA property that includes access to runways and is close to the sterile release sites in commercial citrus groves and vulnerable residential areas in the Lower Rio Grande Valley. Additional funding is needed for this project to increase the capacity for sterile fly production to quickly eradicate outbreaks.



Appropriations for fruit fly activities have remained relatively flat in recent years, which has limited the Agency's ability to invest in the necessary infrastructure to keep this program operating at the full scale needed to address exotic fruit flies. APHIS

has been able to use flexibility within the Specialty Crop Pests and the Agency's Buildings and Facilities line items to implement small repairs and maintenance projects at these facilities. However, APHIS must implement major renovations and construction projects to ensure continued program success. Additional resources above the currently funded line item are needed for these mission-critical facility projects without significantly impacting program activities. Having a secure, steady supply of sterile insects is essential to preventing Mexfly from becoming established in the Lower Rio Grande Valley and protecting the Texas citrus industry.



Diagnostics Bacteriology and Pathology Laboratories in Ames, Iowa (National Centers for Animal Health)



The Mycobacteria and Brucella (MB) laboratory was built as a 5-year temporary facility while the combined laboratory facility was built on the National Centers for Animal Health (NCAH) campus in Ames, Iowa. It was originally occupied in 2004. Space intended for the MB laboratory was not built into the combined laboratory facility as planned due to escalating project costs.

The temporary facility is now more than 12 years beyond its lifespan. Repairs and facility failures are expensive and logistically challenging, hindering the program's ability to conduct the mission work in this laboratory. The facility also continues to develop structural problems associated with age and wear. Additionally, the facility does not have a modern backup system and experiences frequent power failures. These failures directly impact the safety and security the building.

The MB laboratory houses several mission-critical functions including the reference laboratory for the Agency's bovine tuberculosis and brucellosis programs and the next generation core sequencing laboratory for the National Veterinary Services Laboratories (NVSL). NVSL is recognized by the World Organization for Animal Health and the Food and Agriculture Organization as an international reference laboratory for significant animal diseases. NVSL provides diagnostic testing services ranging from a single laboratory test to comprehensive laboratory services covering many pathogens for suspected outbreaks of domestic and foreign animal diseases. APHIS does not have other facilities to support the testing volume currently supported by this building. The core sequencing laboratory enables APHIS to identify and monitor endemic and emerging diseases and supports One Health efforts with zoonotic pathogens like SARS-CoV-2 and Salmonella.



This laboratory contains biosafety level (BSL)-2 and BSL-3 laboratory spaces. It also contains Select Agents, biological agents that could pose a severe threat to animal and public health and safety. In addition, the facility is not built to modern biosecurity and biosafety standards, has significant structural issues including water leakage and ventilation issues, and does not have the redundancies and the engineering controls of a permanent facility. The MB replacement laboratory would be built as an addition to the existing Building 21 laboratory on the NCAH campus. Building the addition allows for a state-of-the-art facility in fewer square feet than the current laboratory while incorporating modern laboratory standards and best practices.

Replacing this facility is an urgent need. If this laboratory were to fail, it would lead to an immediate halt of program efforts, harming producers and APHIS disease control programs.



Screwworm Rearing Facility in Pacora, Panama



APHIS and its cooperators have eradicated the New World screwworm (NWS) from the United States, Mexico, Belize, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, and down to the southern-most portion of Panama. APHIS' international efforts prevent the reestablishment of screwworm in the United States by collaborating with Panama and Colombia to maintain a biological barrier zone in Eastern Panama along the border of Colombia and Panama. The program relies on field operations (including epidemiological surveillance, animal movement control, and outreach to industry about screwworm prevention) and sterile insect technique, a process where APHIS and cooperators produce and sterilize insects and release them in the barrier zone to mate with wild insects and prevent reproduction. The United States also has access to the sterile flies in the event of an outbreak in U.S. territory. APHIS and cooperators produce approximately 20 million sterile flies per week at the Panama rearing facility. The facility has a maximum capacity of 80 million per week.

APHIS and Panama's Ministry of Agricultural Development established the Commission for the Eradication and Prevention of Screwworm (COPEG) as an independent commission in 1994. At the time, APHIS and cooperators produced sterile insects in Mexico. The screwworm population had been eradicated from North America and pushed further into Central America, and APHIS and cooperators determined that the sterile insect production facility should be located closer to the barrier. Construction on the current facility began in 2003 and was completed in 2006. It became fully operational in 2008. COPEG operates the only sterile NWS production facility in the world. APHIS estimates that the NWS program saves \$2.3 billion for cattle producers in North and Central America each year.



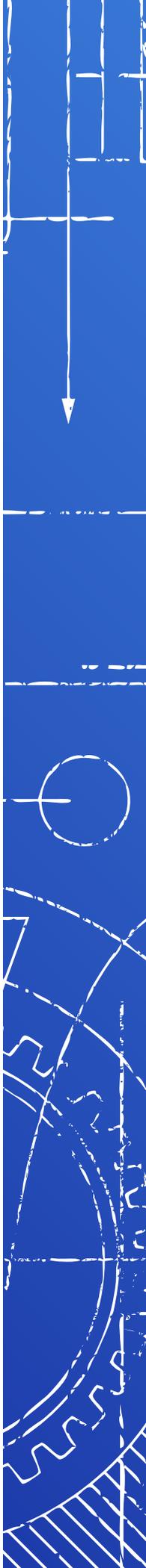
The facility is now more than 15 years old, and its maintenance needs are increasing. Additionally, due to the use of an irradiator, the facility also has significant security infrastructure needs. Over the next several years, APHIS has identified priority projects for the facility in several areas:

- 
1. **Critical Infrastructure Upgrades:** Upgrade existing fire suppression systems, recharge the cobalt irradiator (or replace with a cobalt alternative depending on outcomes of research underway), ensure operation of the back-up electricity supply monitoring system, and replace the obsolete water treatment system.
 2. **Security Initiatives:** Improve security of entrance gates and control points for critical assets.
 3. **Maintenance/Repairs:** Maintain production plant and mechanical equipment monitoring systems to ensure biological security and renovate air ventilation systems.
 4. **Equipment:** Replace insect research laboratory equipment and sterile insect eclosion equipment for dispersal operations.

This critical but aging facility will require additional resources to continue producing high-quality sterile insects for the ongoing barrier maintenance program, as well as developing research and methods that enhance the efficiency and quality of sterile screwworm production and dispersal. If this facility fails, NWS populations would grow and spread throughout Central America and could be reintroduced into the United States, which would significantly impact cattle producers and consumers. Without a reliable source of sterile insects, control and eradication of screwworm would be much more difficult.

Conclusion

The APHIS Capital Asset Improvement Plan is the first step to ensuring that the Agency's mission-critical scientific and laboratory facilities remain not only functional but state-of-the-art. This is necessary to recruit the best scientists around the world and to ensure APHIS can accomplish its mission to protect American agriculture and natural resources. This plan aligns with and supports Agency and Departmental efforts to better manage and maintain its overall portfolio of capital assets.





USDA is an equal opportunity provider, employer, and lender.