FINAL Environmental Assessment

Jefferson Labs Campus Development Project
3900 NCTR Road
Jefferson, Arkansas

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Prepared for:

Food and Drug Administration
3900 NCTR Road
Jefferson, Arkansas 72079

Prepared by:

PMI
3512 S. Shackleford Road
Little Rock, Arkansas 72205
501-221-7122
www.pmico.com

March 25, 2020
WERA-11258

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1.0 INTRODUCTION

1.1 Project Overview

In accordance with the Department of Health and Human Services (HHS) Facilities Program Manual Volume 1, HHS Section 3-2, it has been determined that an Environmental Assessment (EA) is required prior to development of HHS/Food and Drug Administration (FDA) property.

This Environmental Assessment (EA) was prepared pursuant to Section 102 of the National Environmental Policy Act (NEPA) of 1969, as implemented by the regulations promulgated by the President's Council on Environmental Quality (CEQ) 40 CFR Parts 1500-1508. The purpose of the EA is to analyze the potential environmental impacts of the proposed project, and to determine whether an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI) should be prepared. Coastal zones, farmlands and wild and scenic rivers were excluded from this assessment as they do not pertain to the proposed project area. The project site is located in the outer region of the New Madrid seismic zone. This region of the seismic zone requires design professionals to refer to building codes for seismic design categories. The impact of seismic zones were excluded from this assessment.

1.2 Project Background and Location

The subject of this Environmental Assessment is the Food and Drug Administration (FDA) Jefferson Laboratories (Jefferson Labs) Campus located in Jefferson, Arkansas. Jefferson, Arkansas is a rural community located approximately 35 miles southeast of Little Rock and 20 miles north of Pine Bluff. The entire Jefferson Labs property is 496 acres. The portion of the property included in this study is the developed Campus, which is approximately 115 acres in area. The site is comprised of 40 buildings totaling 1.2 million square feet. Jefferson Labs is a scientific research facility investigating FDA-regulated products. Structures onsite include research laboratories, animal rooms, office buildings, mechanical and maintenance areas, and a water treatment plant.

The Jefferson Labs Campus was formerly a part of the U.S. Army's Pine Bluff Arsenal. Most of the buildings on the Campus were constructed in the 1950s for the U.S. Army's biological warfare weapons program. The U.S. Army researched biological pathogens and produced chemical warfare substances onsite. Chemical warfare operations at the facility ceased in 1969 and the buildings were decommissioned and sterilized. In 1971, the buildings and 496 acres were separated from the Pine Bluff Arsenal and transferred to the FDA. The FDA repurposed the buildings into the present-day research and testing facility.

Please refer to Figure Number 1 for a Site Location Map, Figure 2 for a Topographic Map and Figure 3 for an Aerial Site Plan of the proposed project area. Site Photographs of the project area are included in Appendix A.

2.0 PURPOSE AND NEED

In order to understand the purpose and need of the Proposed Action, it is necessary to understand how existing conditions at the Campus provide rationale for the proposed improvements included in the project.

2.1 Existing Campus Facilities

Jefferson Labs is comprised of the FDA's National Center for Toxicological Research (NCTR) and the Office of Regulatory Affairs' (ORA) Arkansas Regional Laboratory. The ORA operates in Building 26 and NCTR utilizes the remaining structures on the Campus. Figure 4 represents a map of the existing Campus buildings.

The NCTR conducts scientific research to develop and support tools and approaches that FDA uses to protect and promote individual and public health. This includes evaluating the toxicity of FDA-regulated projects (i.e. sunscreen, tattoo ink, chemicals in plastics, etc.). The ORA protects consumers and enhances public health by maximizing compliance of FDA regulated products and minimizing risk associated with those products. This includes microbiological and sanitary food testing for human and animal consumption for regulatory purposes.

The current Campus population is approximately 700. This includes over 150 PhD, DVM and MD-level scientists. In general, the Campus's research and support facilities can be summarized as:

- 15 lab/animal research buildings
- 82 animal rooms
- A diet and dose-preparation facility
- A nonhuman primate research center
- 132 special purpose research labs and 62 analytical labs
- Specialized labs for pathologicalp #éq' ssing and evaluation
- Nanotechnology labs
- A phototoxicology research center
- An imaging center
- Multiple administrative offices
- Mechanical and maintenance buildings

The administrative functions are centralized at the facility, while the animal facilities are dispersed in Buildings B05A, B62, B62A, B53A, B53B, and B53C. Please refer to Figure 5, Current Campus Function.

The majority of the Campus underwent interior renovations in the 1970s and 1980s to transition the original structures into laboratory research facilities. However, several of the maintenance and storage buildings (B16, B17, B28, B32, B37, and B52) remain in the original 1950s condition. Additionally, B85B and B85C were constructed with blast proof cast-in concrete and numerous compartments that were designed specifically for weapons manufacturing. Because of structure and specificity, these buildings are considered unsuitable for renovation/reuse.

Recent Campus renovation projects include the following:

- B50 was gutted and received a new building envelope in 2000
- B26 (ORA lab) was constructed in 2000
- B05A was partially renovated in 2010
- Renovation/construction of B14 began in 2016. This project is still underway and is expected to be completed in August 2019.

As illustrated in Table I below, with the exception of the recent renovations, the overall facilities condition index (FCI) of the Campus is poor. Refer to Figure 6 for a Campus map with the FCI.

Table I: Facilities Condition Index (FCI)

Building	Size (ft²)	FCI	Use	Last Renovation		Building	Size (ft²)	FCI	Use	Last Renovation
B05A	39,800	0.04	Laboratory/Animal	2010/ (Partial)		B44	7,033	0.27	Utilities	1990
B05B	76,550	0.24	Laboratory	1975		B45	21,288	0.13	Maintenance	1990
B05C	50,787	0.11	Laboratory	2005 (Partial)		B46	7,280	0.03	Utilities	1985
B05D	44,800	0.18	Laboratory	1990		B50	116,779	0.04	Administration	2006
B06	11,090	0.37	Laboratory	1975		B51	105,926	0.06	Laboratory	1980
B07	16,500	0.57	Heating	1990		B52	110,135	0.14	Storage	1955
B09	2,570	0.12	Heating	1978		B53A	36,155	0.45	Laboratory/Animal	1984
B10	21,300	0.06	Library	1996		B53B	30,102	0.11	Laboratory/Animal	1984
B11	10,393	0.17	Utilities	1978		B53C	46,303	0.21	Laboratory/Animal	1984
B12	27,144	0.13	Dining	1980		B53D	26,138	0.09	Laboratory/Animal	1984
B13	16,090	0.18	Office	1980		B53E	9,189	0.13	Laboratory	1984
B14	58,630	N/A	Laboratory/Office	Under Construction		B54	20,473	0.12	Administration	2002 (Partial)
B15	11,876	0.20	Administration	2004		B58B	8,484	0.03	Administration	1984
B16	1,073	0.24	Maintenance	1955		B60	15,044	0.11	Laboratory	1980
B17	9,553	0.40	Maintenance	1955		B62	87,003	0.10	Laboratory/Animal	2010 (Partial)
B20	6,762	0.11	Storage	1955		B70	1,423	0.29	Multi-use	1990
B21	2,199	0.03	Administration	2005		B85A	52,165	0.42	Storage	1955
B26	177,867	0.01	Laboratory	2001		B85B	113,138	0.43	Storage	1955
B28	484	0.17	Maintenance	1955		B85C	49,744	0.33	Storage	1955
B31	1,603	0.20	Office	1980		BT-45	6,056	0.07	Office	1985
B32	422	0.11	Storage	1955		BT-5	1,174	0.28	Office	1980
B37	12,594	0.09	Maintenance	1955						

Good (under 0.05)
Fair (0.05 to 0.10)
Poor (over 0.10)

2.2 Purpose and Need for the Proposed Action

The intent of the Proposed Action at the Jefferson Labs Campus is to replace aging facilities and infrastructure and to upgrade laboratories to comply with NIH laboratory safety requirements.

Many of the existing buildings on the Campus are aging and do not meet the needs of the facility. The Campus streets and storm drainage features are in fair condition. Campus water and sanitary sewer lines are in poor condition and require frequent maintenance. The aging buildings and utilities are not energy efficient and cannot be easily renovated.

Additionally, laboratories in the older structures will be out of compliance with National Institute of Health (NIH) laboratory codes and standards in the near future. The architectural component of the facilities have outlived their useful life and can no longer support todays' science which requires flexible labs with capacity and capabilities for modularity.

Jefferson Labs also proposes to develop a data center that will provide sufficient data recovery for the Jefferson Labs Campus, as well as serve as a disaster recovery site for national HHS and FDA research activities. Constructing a national data recovery center on the Jefferson Labs Campus is more cost-effective than doing so at another location throughout the nation.

The implementation of the Proposed Action will address the following needs:

- Revitalization of aging facilities and infrastructure
- Provision of modern, flexible research and support facilities to accommodate existing and new research initiatives
- Good stewardship of FDA facilities
- Need to establish a supportive work environment to improve retention and recruitment of staff

3.0 ALTERNATIVES

Federal environmental regulations require that all reasonable alternatives that may accomplish the purpose and need of a proposed project be identified and evaluated. It is also necessary to consider a No Action Alternative to serve as a reference point for existing conditions.

3.1 Alternatives Evaluated

This EA is performed in conjunction with the Campus Master Plan, which is a 15- to 20-year plan to guide future development of the property to improve the sustainability and efficiency of the Jefferson Labs Campus. The plan is to construct new buildings as replacements for the aging structures, transfer equipment and personnel, demolish the buildings that cannot be renovated, and to consolidate/repurpose the remaining structures. Some of the smaller ancillary structures would be removed in order to create space for the new buildings. Failing utilities, roads, and drainage would be addressed, as well. The current initiative is to replace facilities so that the

new Campus has a square footage of net zero and to open up space on the Campus for additional growth opportunities in the future.

Several design iterations of Campus plans to improve the overall flow of research and animal functions on the Campus were initially considered. Due to minimal variances between several of the iterations, the iterations were consolidated into three (3) main options.

Due to the poor condition and lack of functionality of buildings B06, B13, B16, B17, B20, B31, B37, B15/53, B46, B51, B60, B62, and B52/85, all Campus plan options include the removal of these structures. All options also propose the removal of the empty 1,000,000-gallon aboveground storage tanks (ASTs) located on the northwestern portion of the campus. These ASTs have been out of use for over 15 years. Additionally, the temporary structure T45 will be replaced with a permanent structure. Buildings B05B, B05C and B05D will be consolidated into an archive facility and receiving/distribution/storage facility.

3.1.1 Campus Plan Option 1

Campus Plan Option 1 includes the development of the following structures:

- Scientific Computation Facility (SCF) Office Tower, three (3) data centers and associated chillers on the northeastern corner of Campus
- Three (3) Consolidated Animal Functions (CAFF) Buildings and the future Emerging Technologies Facility (ETF) lab facility on the western portion of Campus (location of the 1,000,000-gallon ASTs)
- Energy plant & cooling tower on the western portion of the Campus (location of the 28,000-gallon ASTs)
- Replacement of chillers on the eastern portion of the Campus
- Chilled water line in a rectangular loop within the interior of the Campus

A negative of Campus Plan Option 1 is that the proposed laboratory and data center facilities are on opposite ends of the Campus. Additionally, the laboratory buildings on the western portion of the Campus would be constructed in the location of the former 1,000,000-gallon ASTs. Due to former fuel storage in this area and the potential for hydrocarbon vapor migration into the buildings, it may be necessary that a vapor barrier be installed during construction of the buildings. This could be an added expense for the project.

3.1.2 Campus Plan Option 2

In an effort to centralize laboratory functions on the Campus, Option 2 was generated. Campus Plan Option 2 includes the development of the following structures:

- SCF Data Center, SCF Office Tower and Café & Conference Center (to replace the existing cafeteria) on the north-central portion of Campus

- Three (3) CAFF Buildings and the future ETF lab facility on the northeastern portion of Campus
- Energy plant & cooling tower on the western portion of Campus (location of the eastern 1,000,000-gallon AST)
- Chilled water line that extends from the west to the east along the road north of B14

A drawback of Campus Plan Option 2 is the location of the chilled water loop, which is a main thoroughfare of existing utilities on the Campus. It would be complicated and expensive to work around the existing utilities to install a new chilled water line in this area.

3.1.3 Campus Plan Option 3

Campus Plan Option 3 includes the development of the following structures:

- SCF Data Center, SCF Office Tower and Café & Conference Center on the north-central portion of Campus
- Two (2) CAFF Buildings and the future ETF lab facility on the northeastern portion of Campus
- Energy plant & cooling tower on the western portion of Campus (location of the western 1,000,000-gallon AST)
- Renovation of B10 to include a fitness center on the western portion
- Replacement facility for B62 (labs, primates and imaging) on the eastern portion of the campus
- Chilled water line that follows the northern perimeter road of the Campus
- Sewer line main along the eastern perimeter road of the Campus
- Pedestrian walkways and landscaping throughout the interior areas of the Campus

Campus Plan Option 3 maintains a centralized laboratory function area of the Campus and further condenses the CAFF buildings into two (2) structures. New utility buildings and lines are proposed for areas that are not already inundated with existing utilities.

3.1.4 No Action Alternative

The No Action Alternative for this EA consists of the existing Jefferson Labs facilities. The laboratory facilities will not meet NIH laboratory safety standards in the near future and the overall facilities condition index of the Campus is poor. The efficiency and operational functionality of the majority of the facilities do not meet existing or future demands. Therefore, the No Action Alternative would not meet the project Purpose and Need. However, because CEQ regulations require consideration of the No Action Alternative as a baseline, it is carried forward for evaluation.

3.2 Alternatives Considered for Further Review

Alternative 1 – No Action Alternative

Under the No Action Alternative, HHS/FDA would not approve the Campus development project and the facilities would remain in their current condition.

Alternative 2 – Preferred Alternative for the Proposed Action

Campus Plan Option 3 is considered the preferred alternative as it provides a comprehensive means of achieving the Purpose and Need for the Proposed Action, with less disturbance and impacts to environmental resources. Refer to Figure 7 for Proposed Features of the Preferred Alternative.

Implementation of the Preferred Alternative is dependent upon funding. At this time, funding has been obtained for the construction of the Scientific Computation Facility (SCF) Data Center. The SCF is a single-story, 9,500-square foot building proposed for the north-central portion of the campus. The SCF will provide data recovery for the Jefferson Labs Campus, as well as for national HHS and FDA research activities. Construction of the SCF is the immediate objective of the Proposed Action. Refer to Figure 8A for a Site Plan and Figure 8B for an Aerial Layout of the proposed SCF Data Center.

Anticipated Time Frame

The priority of activities for the Preferred Alternative is the following:

2019: B18 Scientific Computation Facility (SCF) Data Center

2019-2021: Campus roads & drainage (phase 1), Campus utilities (phase 1), west chiller plant, Campus pedestrian walkway and landscaping (phase 1)

2022-2024: B18 SCF Office Tower, B12 Cafeteria & Conference Center replacement, Campus pedestrian walkway & landscaping (phase 2), B17 Biometrics replacement facility, B12/31/20/17/16 demolition, Consolidated Animal Function Facility (CAFF) replacement (phase 1)

2025-2027: B44/B45/B45T & B16 replacement renovation facility, B05/B/C/D consolidated receiving storage archiving facility, Campus pedestrian walkway & landscaping (phase 3-south/west), B37/46/52/85 building demolition

2028-2030: B19 Emerging Technologies Facilities (ETF), CAFF replacement (phase 2), Campus pedestrian walkway & landscaping (phase 3-north/east), Campus roads & drainage (phase 2), Campus utilities (phase 2)

2031-2033: B54 Health & Fitness Center replacement facility, CAFF (phase 3), B54 controls monitoring replacement facility, B15/51/53/54/62 building demolition, Campus pedestrian walkway & landscaping (phase 4-east/south)

4.0 AFFECTED ENVIRONMENTS, POTENTIAL IMPACTS AND MITIGATION OF THE ALTERNATIVES CONSIDERED

This section describes relevant existing conditions for resources potentially affected by the Proposed Action, as well as the No Action Alternative. This section also outlines the potential environmental consequences of the Proposed Action and No Action Alternative.

This EA analyzes the following resource areas: geology and soils, land use and zoning, floodplains, transportation, public health and safety, socioeconomics and environmental justice, air quality, noise, visual quality, public services and utilities, water quality, wetlands, wildlife and vegetation, and cultural resources.

4.1 Geology and Soils

4.1.1 Geology

According to the Geologic Map of Arkansas, the property is located in the West Gulf Coastal Plain physiographic province. Eastern and southern Arkansas are underlain by Cretaceous age through recent sedimentary deposits with small areas of igneous intrusions of Cretaceous age. Southern Arkansas is dominated by Tertiary marginal marine and coastal plain continental deposits with a veneer of Quaternary terrace and alluvial deposits. Eastern and northeastern Arkansas is dominated by Quaternary terrace and alluvial deposits with minor exposures of Tertiary units. At least three terrace levels are recognized in the region. The Mississippi Embayment manifests a north-south linear erosional remnant Crowley's Ridge, which is generally capped by Quaternary loess and preserves minor exposures of Tertiary deposits along its margins. Topographically, the entire area ranges from essentially flat terrain to low hills, with elevations ranging from approximately 100 feet above mean sea level (amsl) to over 250 feet amsl.

The site is underlain by the Tertiary-aged Jackson Group. The Jackson Group is divided into two distinct units in Arkansas: a lower marine unit called the White Bluff Formation and an overlying non-marine unit called the Redfield Formation. The blue-gray to off-white White Bluff Formation has three dominate facies: an argillaceous sand containing glauconite and rich in molluscan fossils, a calcareous glauconitic clay with common invertebrate fossils, and a blocky clay with some silt and a trace of sand and invertebrate (mostly molluscan) molds. The Redfield Formation is typically a sequence of light-gray, thinly laminated silts, silty clays, and silty sands. Crossbedded sands and minor lignite beds are present in the Redfield Formation with plant remains being locally abundant. A minor disconformity occurs at the base of the Jackson Group sequence.

The thickness of the Jackson Group may be 300 feet, but no outcrop areas exhibit the entire Arkansas section.

According to the 7.5-minute Quadrangle Maps of Wright, White Hall, Hardin and Redfield, Arkansas (dated 2014), topography of the project site is 275 feet above mean sea level. The project site is relatively level. Surface water runoff appears to drain to the east and south towards Phillips Creek and unnamed tributaries of Eastwood Bayou. Please refer to Figure 2: Topographic Map.

4.1.2 Soils

The soil survey for Jefferson County prepared by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (USDA-NRCS) indicated the soil types mapped on the property are Savannah fine sandy loam, 3 to 8 percent slopes, and Pheba silt loam, 0 to 2 percent slopes. Refer to Figure 8 for the NRCS Soils Map of the Campus.

Savannah fine sandy loam is a moderately well drained, nearly level to gently sloping soil on the Coastal Plain. Individual areas range from 10 to 300 acres. Typically, the surface layer is yellowish brown fine sandy loam about 9 inches thick. The subsoil above the fragipan is yellowish brown loam that extends to a depth of about 24 inches. The upper part of the fragipan is yellowish brown, mottled loam that extends to a depth of about 35 inches. The middle and lower parts of the fragipan are loam and sandy loam that are mottled in shades of gray and brown and that extends to a depth of about 59 inches. The underlying material, extending to a depth of 72 inches or more, is mottled yellowish brown and gray sandy loam. Permeability is moderate in the upper part of the subsoil and moderately slow in the fragipan. Runoff is medium. Available water capacity is medium.

Pheba silt loam is a somewhat poorly drained, nearly level soil on the smoother parts of the Coastal Plain. Individual areas are 10 to 40 acres. Typically, the surface layer is dark grayish brown silt loam about 4 inches thick. The subsurface layer is pale brown silt loam that extends to a depth of about 9 inches. The upper part of the subsoil is light yellowish grown, mottled silt loam that extends to a depth of 23 inches. The next layer is light brownish gray, mottled silt loam that is mostly material from the subsurface layer and that extends to a depth of about 29 inches. The middle part of the subsoil is brown, mottled silt loam that is compact and brittle and that extends to a depth of about 40 inches. The lower part, extending to a depth of 72 inches or more, is yellowish brown, mottled silt loam that is compact and brittle. Permeability is moderate to moderately slow, and available water capacity is medium.

Based on information obtained from a subsurface investigation conducted on the western portion of the property, a silty to sandy clay was documented on the upper five to six feet of soil. Below this interval, a fine grained gray to greyish brown sand or silty sand extended to a terminal depth of 20 feet below ground surface (bgs).

A geotechnical investigation on the northwest portion of the property in the proposed Data Center location identified comparable findings. Subsurface stratigraphy from 2- to 6-feet bgs consisted of fill material comprised of stiff to very stiff brown, tan and gray fine sandy clay and silty clay and dense brown and tan clayey fine sand. The fill material also contained crushed stone fragments. The natural near-surface soils beneath the fill consisted of stiff to very stiff tan, brown, reddish brown, gray and light gray fine sandy clay and dense to very dense brown, gray and tan clayey fine sand. This layer extended to a depth of 13 to 28 feet bgs.

Soils information is presented in Appendix B.

4.1.3 Impacts to Geology and Soils

Alternative 1 – No Action Alternative

The No Action Alternative would result in no changes to the property and, therefore, would not impact geology or soils.

Alternative 2 – Proposed Action

Geology

The Proposed Action would not affect the geologic units underlying the Campus or its surroundings. While proposed construction would likely require some excavation, filling and grading, the area is relatively flat and no substantial topographic features would be affected by the development.

Soils

Soils would be disturbed during the construction of new buildings. Temporary disturbance of approximately 10 acres would occur as a result of the construction of the new buildings. Soils would also be disturbed in order to improve/replace utilities and drainage features, streets, pedestrian walkways and landscaped areas.

It is unlikely that excavation, filling and grading the existing soils would substantially alter existing soil conditions. The Campus was previously disturbed as a result of prior development and likely no longer includes the naturally occurring surface soils.

The removal and replacement of structures would not increase the overall footprint of the Campus.

4.1.4 Mitigation Measures for Impacts to Soils

The Proposed Action would not generate significant impacts to soils and mitigation measures would not be required. However, prior to construction activities, the contractor would obtain an Arkansas Department of Environmental Quality (ADEQ) General Stormwater Permit, which would detail Best Management Practices (BMPs) including erosion and sedimentation control (e.g. soil stockpiles, silt fences, straw wattles, vegetative buffers and moisture application to exposed soils) to minimize impacts during the construction phase of the project.

4.2 Land Use and Zoning

Land use typically follows an established zoning code. However, the project site is located within an unincorporated area of Jefferson County and there are no zoning restrictions for the property.

The Campus is located on the southern portion of the FDA property. With the exception of a residential housing unit for visiting scientists and a guard shack, the northern portion of the FDA property is undeveloped forested land. Surrounding land use to the north and east is undeveloped forested land owned by the Jefferson County Alliance (JCA). The Pine Bluff Arsenal surrounds the Campus to the west and south. Please refer to Figure 9 for an Aerial Overview of the Surrounding Land Use and Roads.

The Campus was developed in the 1950s for the U.S. Army's biological warfare weapons program. Chemical warfare operations at the facility ceased in 1969 and the buildings were decommissioned and sterilized. In 1971, the buildings were repurposed into a research and testing laboratory facility. The land use for the property has primarily remained consistent since the 1970s.

4.2.1 Impacts to Land Use and Zoning

Alternative 1 – No Action Alternative

The No Action Alternative would not impact land use and zoning on or surrounding the Jefferson Labs Campus.

Alternative 2 – Proposed Action

The project area is located within an unincorporated area of Jefferson County with no zoning restrictions. As such, the proposed action would not affect the zoning of the property.

The improvements will be constructed on the existing Campus and will not affect the land use of the surrounding properties. The proposed improvements will be compatible with the existing structures and would not result in changes to the current land use.

4.3 Floodplains

Executive Order (EO) 11988 (Floodplain Management) requires that a Federal agency avoid direct or indirect support of development within the 100-year floodplain whenever there is a practicable alternative. The Federal Emergency Management Agency (FEMA) uses Flood Insurance Rate Maps (FIRMs) to identify the regulatory 100-year floodplain for the National Flood Insurance Program (NFIP).

The FEMA Flood Insurance Rate Map (FIRM) for Jefferson County, Arkansas (Community Panel ID 05069C0175D) dated March 16, 2009 indicates that the project area is not located within the 100-year floodplain. The FEMA floodplain map is presented as Figure 10.

4.3.1 Impacts to Floodplains

Alternative 1 – No Action Alternative

The No Action Alternative would not impact floodplains.

Alternative 2 – Proposed Action

The project area is not within the 100-year floodplain; therefore, the proposed action would not impact floodplains.

4.4 Transportation

The Arkansas Highway and Transportation Department (AHTD) is responsible for the design, construction and maintenance of the State of Arkansas' Highway System, as well as the portion of Federal Interstate Highway within Arkansas' boundaries. Arterials, connectors, rural roads, and local roads are constructed and maintained by county or city governments.

There are two (2) access roads leading to the Jefferson Labs Campus. Rainey Road (NCTR Property Road) is the main access for employees, deliveries, emergency vehicles, etc. to the Jefferson Labs facility. Rainey Road connects to NCTR Road approximately one mile north of the Campus. NCTR Road is a narrow, winding road that extends eastward from Highway 365 to Rainey Road, and then further east until it terminates at a private drive. Rural residences, a church, and a public use lock and dam area are located along NCTR Road. NCTR employees and occupants of rural residences in the area primarily travel this road.

The alternate access point for employees is Roemer Road, which extends westward from the Campus toward Highway 365 through the Pine Bluff Arsenal. A badge is required to enter the Arsenal. Roemer Road is a straighter road and many employees prefer to travel this route for the added safety.

There are several private roads through the Campus for service vehicles, golf carts, and pedestrian traffic.

Please refer to Figure 9 for locations of roads in the project vicinity.

4.4.1 Impacts to Transportation

Alternative 1 – No Action Alternative

The No Action Alternative would not affect transportation.

Alternative 2 – Proposed Action

The impact to traffic along Rainey Road and NCTR Road would be short term during the time of active site preparation and construction activities of the improvements. There would also likely be increased traffic along Roemer Road, as additional employees would travel this route to avoid construction-related traffic. There will be impacts to roadways within the Campus during construction of buildings, utilities, pedestrian walkways, etc.

The overall census of the Campus after all improvements are complete is estimated to be a net zero; therefore, there will be no impact by increased census.

4.4.2 Mitigation Measures for Transportation Impacts

The proposed project would not generate significate transportation impacts and mitigation measures would not be required. However, the contractor would be required to submit a proposed sequence of construction to minimize disturbance to the business traffic associated with the Jefferson Labs facility and employees.

4.5 Hazardous Materials, Pollution Prevention and Solid Waste

Federal actions to fund, approve, or conduct an activity require consideration of hazardous material, pollution prevention, and solid waste impacts. This includes evaluation of the hazardous nature of any materials or wastes to be used, generated, or disturbed by the proposed action, as well as the control measures to be taken.

A hazardous material is a material that, because of its quantity, concentration, or physical and chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or environment.

CERCLA (commonly referred to as Superfund) is the Comprehensive Environmental Response, Compensation, and Liability Act. It requires community relations components during

the assessment of hazardous substances at inactive waste sites. Key communication pieces include a community relations plan, public access to the complete administrative record, an information repository, and advertisement of public involvement opportunities. Health and ecological impact may be determined that requires worker and public notification. Emergency removal actions may be required.

RCRA is the Resource Conservation and Recovery Act, which establishes regulatory standards for the generation, transportation, storage, treatment, and disposal of hazardous wastes. In regulatory terms, a RCRA hazardous waste is a waste that appears on one of the four hazardous waste lists (F-list, K-list, P-list, or U-list), or exhibits at least one of four characteristics – ignitability, corrosivity, reactivity, or toxicity. Hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA) Subtitle C.

4.5.1 Existing Campus Conditions

4.5.1.1 Hazardous Materials and Petroleum Products

Petroleum Products

Jefferson Labs currently handles, stores and uses petroleum products in the form of gasoline, diesel fuel, No. 2 fuel oil and motor oil. Two (2) 28,000-gallon aboveground storage tanks (ASTs) contain No. 2 fuel oil to serve as a back-up fuel supply for the natural gas steam boilers located in Building 7. Five (5) additional ASTs (one 575-gallon gasoline, one 311-gallon diesel fuel and three 300-gallon diesel fuel) are used to fuel the industrial vehicles utilized at the facility. Multiple 55-gallon steel drums containing diesel fuel and motor oil for pumps and other equipment are stored at various locations across the facility (B07, B11, B45, B46, B85, B37 and B26).

Sixteen (16) emergency generators containing diesel fuel and twenty (20) electrical transformers containing mineral oil are also located across the Campus. The fuel reservoirs for the emergency generators range from 500 gallons to 1,000 gallons in capacity. The transformers contain 140-465 gallon reservoirs of mineral oil. Additionally, some of the buildings (B52, B26) are equipped with hydraulic elevators.

The maximum total petroleum product storage is approximately 75,000 gallons.

Petroleum Storage Tanks

As noted above, Jefferson Labs currently operates five (5) ASTs. The facility formerly operated two (2) 1,000,000 gallon ASTs, that were emptied and taken out of service in approximately 2003. Jefferson Labs/Department of Defense formerly operated seven (7) underground storage tanks that were removed or closed-in-place in 1993. The petroleum storage tanks and their locations are listed in Table II and illustrated in Figure 11.

Table II: Petroleum Storage Tanks							
Tank Type/ID	**Location**	**Construction**	**Capacity in Gallons**	**Contents**	**Use**	**Install Date**	**Status/ Removal Date**
AST	B07 West	Steel	28,000	Diesel/No. 2 fuel oil	Boilers fuel backup	Registered as 1997, though may be 1952	In Use
AST	B07 West	Steel	28,000	Diesel/No. 2 fuel oil	Boilers fuel backup	Registered as 1997, though may be 1952	In Use
AST	46 North	Steel	575	Gasoline	Vehicles	Unknown	In Use
AST	46 North	Steel	311	Diesel	Vehicles	Unknown	In Use
AST	45 East	Steel	300	Diesel	Vehicles	Unknown	In Use
AST	44 West	Steel	300	Diesel	Vehicles	Portable	In Use
AST	44 West	Steel	300	Diesel	Vehicles	Portable	In Use
AST	B14 West	Steel	1,000,000	No. 6 fuel oil	Boilers	1952	Emptied, Out of Service/2003
AST	B14 West	Steel	1,000,000	No. 6 fuel oil	Boilers	1952	Emptied, Out of service/2003
UST (A307-A)	B07 West	Steel	25,000	Heating Oil	Boilers	1957	Removed/ 1993
UST (A307-B)	B07 West	Steel	25,000	Heating Oil	Boilers	1957	Removed/ 1993
UST (A307-C)	B07 West	Steel	25,000	Heating Oil	Boilers	1957	Removed/ 1993
UST (B17)	B17 Southwest	Steel	900	Gasoline/ Empty	Vehicles	1979	Closed in place/1993
UST (B44)	B44 East	Fiberglass Reinforced Plastic	10,000	Diesel	Emergency generators	1985	Closed in place/1993
UST (B60)	B60 Northeast	Steel	600	Gasoline/ Empty	Emergency generator	1976	Closed in place/1993
UST (B62)	B62 Southeast	Steel	275	Gasoline/ Empty	Emergency generator	Unknown	Closed in place/1993

A Phase II Limited Subsurface Investigation was performed by PMI at the NCTR facility in July 2004. The investigation included the installation of twelve (12) soil borings in the fuel storage area on the western portion of the property. Eight (8) borings were installed around each of the four (4) sides of the two (2) out-of-service #6 fuel oil 1,000,000 gallon ASTs, two (2) borings were installed adjacent to the former truck unloading area, and two (2) borings were installed

outside the AST day tank berm. One (1) soil boring was converted into a groundwater monitoring well.

Hydrocarbons were not detected in any of the soil samples, although shallow groundwater in the monitoring well displayed a relatively low concentration of Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO) (5.7 mg/L in first sampling event (March 2004) and 8.9 mg/L in second sampling event (February 2005)).

In 2017, Jefferson Labs personnel discovered a leak due to a crack in one (1) of the 28,000-gallon ASTs. The released fuel was contained to the diked area surrounding the tanks. Jefferson Labs temporarily fueled the boilers with the fuel from the ASTs to draw the fuel down to a level below the crack to prevent any further releases. The released fuel and impacted soil was shoveled into drums and removed by an offsite contractor. Due to the age and poor condition of the ASTs, Jefferson Labs plans to replace one (1) or both of the tanks and associated pumps in the near future.

Other items of note

- Fuel was historically brought onto the Campus via a railroad spur on the southwestern portion of the Campus. The railroad track has been removed from the Campus.
- There is evidence of a potential UST and former dispenser island near B17. It is unclear if the UST is the closed-in-place UST noted in Table II or an additional tank.
- Multiple pumps remain in the former chiller pump house (B20). Moderate oil staining was observed on the concrete foundation around the pumps.

Hazardous Materials

Over 800 chemicals are utilized at Jefferson Labs for laboratory research processes. The chemicals consist of biologic agents, flammable solvents, compressed gases, corrosive liquids, chemical carcinogens and toxic materials, and radioactive materials. Very small quantities of hazardous agents are used in many labs. The table below lists design features of the Campus laboratories related to chemical management.

Table III: Quantities and Management of Chemicals		
Chemical/Infectious Agent Potentially Used	**Approximate Amounts Stored**	**Facility Design Feature**
General laboratories:		
Biologic Agents	Variable	Negative Air Flow with HEPA Filters
Flammable Solvents	Table 2.2 NFPA 49 sets limits	Flammable Storage Cabinets Chemical Fume Hood
Compressed Gases	2 cyl. non-flammable gas	
Corrosive Liquids	Fire code sets limits	Acid Storage Cabinets
Chemical Carcinogens & Toxic Materials	Milliliters and grams	Seamless Flooring, Sealed Penetrations; Used in Chemical Fume Hood; Additional Local Exhaust Systems Over Specific Equipment. Emergency Eyewashes and Showers Accessible to all Labs.
Radioactive Materials	Less than 1 MCl	Used in Radioisotope Fume Hood

Additional chemicals at Jefferson Labs include chlorine and other water treatment process chemicals located at the facility's potable water treatment plant (B11). Several 55-gallon containers of water treatment process chemicals were also noted in the boiler room (B07). An emergency response plan is in place that provides response procedures in the event of a chlorine gas leak from chlorine gas cylinders located at the plant.

Other items of note:

- 55-gallon drums of new alcohol are stored in a vented flammable solvent room in Building 37
- B16 was formerly utilized as a paint booth and paint storage area. Currently, this building is used for storage of portable air conditioning units.
- Four (4) abandoned ASTs are located west of B44. The ASTs are labeled "Abandoned Tank Not in Service." Three (3) of the ASTs formerly contained Methanol. These ASTs have concrete secondary containment. The former contents of the fourth AST are unknown.

Historical Hazardous Materials

As previously noted, the facility was original constructed for the production of chemical warfare substances. Nerve agent and explosive munitions were produced and stored onsite. When the facility was demilitarized in 1968, a state-of-the-art decontamination was undertaken at the site and it was declared "clean" by the Centers for Disease Control and Prevention (CDC) before it began operations under the FDA.

Polychlorinated Biphenyls (PCBs) and Dioxins

According to FDA personnel, Polychlorinated Biphenyl (PCB)-containing transformers were removed from the facility during prior renovation activities, with the exception of one (1) transformer located in the chiller plant in B53A. Due to the size of the unit and equipment in area, the transformer could not be removed. The unit is no longer in use and is labeled, "Caution, Contains PCBs."

The following discussion of PCBs and dioxins is based on a review of Ecology and Environment, Inc.'s (2000) Site Inspection Prioritization Report for National Center for Toxicological Research, NCTR's (2001) Evaluation of Contamination at the FDA Jefferson Laboratories Campus, and NCTR inter-office memos.

The Department of Defense utilized PCB-containing paint during the initial construction of the facility. Additionally, PCB oil was formerly incinerated onsite in B55 (current location of B26). During renovation activities in the mid-1980s and mid-1990s, PCBs, as well as smaller amounts of dioxins/furans were identified in several structures (B05, B50, B52, B62 and B55). Soil samples collected from various areas throughout the Campus were non-detect for PCBs.

During the mid-1990s renovations, a demolition plan, which included worker protection and monitoring for PCBs and dioxans/furans, was implemented. The demolition materials were reportedly disposed of in accordance with EPA and State of Arkansas regulations. Air monitoring for PCBs and dioxins/furans was conducted during and following the demolition activities. The highest levels of airborne levels of dioxins/furans were detected inside the building areas being demolished. There was no conclusive evidence the elevated ambient levels were directly related to the demolition activities, as ambient outside levels at a residence over 5 miles from the Campus were also found to have "elevated" levels similar to those found on the FDA Campus demolishing areas.

The National Institute for Occupational Safety and Health (NIOSH) reviewed the data and performed a Health Hazard Evaluation (HHE) in 1998. Additionally, Jefferson Labs conducted a medical screening/blood-sampling program of 15 employees in 1999. The findings indicated FDA employees had not received any significant body burdens of dioxins/furans or PCBs as a result of the demolition activities or long term employment exposures. The NIOSH did not recommend any additional biological or medical monitoring.

Prior to renovation of original structures, Jefferson Labs performs wipe sampling to analyze for PCBs. It is the Campus' practice that PCBs are removed before being disturbed by renovation according to EPA regulations by licensed abatement contractors.

Asbestos

Asbestos is located throughout the facilities, primarily in plaster and in pipe insulation on the overhead piping systems and roofing materials. Asbestos has been removed from renovated areas, including portions of B07, B05A, B62, B17, B15, B52, B53A, and B85.

When renovation does occur, it is the Campus' practice that asbestos-containing materials are removed before being disturbed by renovation activities according to EPA regulations by licensed abatement contractors.

Lead-based Paint

Lead-based paint is found in several of the older structures. When renovation does occur, it is the Campus' practice that lead-based paint is removed before being disturbed by renovation according to EPA regulations by licensed abatement contractors.

Other items of note:

- Peeling paint was observed on doors/doorways in B20 and B17 during the environmental assessment site walk. It is unknown if the paint is lead-based paint.

4.5.1.2 Hazardous and Petroleum Wastes

Petroleum Wastes

Vehicle maintenance is performed offsite. Used oil (primarily waste pump oil) is containerized in 30- or 55-gallon drums. Typically, the used oil is stored at B37 (Room 104) and/or B26 (Room B169) prior to removal and disposal by a contractor.

Oil water separators

Oil water separators separate oils and fuels from wastewater to prevent contaminates from entering the sanitary sewer and stormwater drainage systems. Two (2) oil water separators are located in the fuel storage areas on the western portion of the property. According to the Campus Spill Prevention, Control and Countermeasure (SPCC) Plan, the oil water separators at the B07 West bulk storage area can hold approximately 6,000 gallons of oil/water. The oil water separator at the B07 West unloading area can hold approximately 8,000 gallons of oil/water.

Other items of note:

- During the environmental assessment site walk, floor drains were observed in the maintenance building B17. It is possible that an additional oil water separator is located in this area.

Oil water separators discharge into the facility sanitary sewer system that ultimately discharges to the Pine Bluff Arsenal.

Hazardous Wastes

The NCTR facility is a small quantity generator and handler of hazardous waste including ignitable waste, corrosive waste, chloroform, pyridine, spent halogenated solvent, nonhalogenated solvents, tetrachloroethylene, trichloroethylene, and RCRA metals. The facility operates pursuant to hazardous waste permit #AR3750030956. The facility received written informal RCRA violations on February 23, 2004. The facility achieved compliance for the violations on April 19, 2004.

With the exception of satellite accumulation areas, a small quantity of chemical waste (1 gallon or less) is stored in individual labs at a time. Per RCRA regulations, the satellite accumulation areas will not have more than 55 gallons of waste at any time.

Multiple 55-gallon drums of column waste, high halogenated and mixture waste is collected in the B26 workroom/flammable solvent room. This room is equipped with an exhaust system, fire alarm, sprinkler and blowout roof. Additional chemical wastes are stored in B37 in flammable solvent/hazardous storage cabinets and vented areas. All regulated hazardous wastes are transferred to an EPA-licensed facility for disposal.

Jefferson Labs performs solvent recycling of used xylene, methanol and ethanol. Some wastes can be mixed for storage and removal. Only liquid chemicals that are not regulated or that have been neutralized are drain disposed.

All used batteries (ranging from AAA to vehicle batteries) are disposed off site by a local contractor.

Other items of note:

- NCTR was classified as a large quantity generator from Aug-Sept 2018; however, recent purging efforts removed 600 chemicals and the facility is now back to small quantity generator status.
- When the facility accumulates approximately 150 chemicals, EEI out of Cincinnati removes the materials for disposal; Rineco removes drums from B26 3-4 times a year.
- The Safety/Hazardous Materials Laboratory is located on first floor of B50.
- Perchloric acid has all been removed from the Campus, with the exception of a small quantity utilized in a single laboratory in B26.

Incineration Research Facility

In 1981, the Environmental Protection Agency (EPA) developed an Incineration Research Facility (IRF) in the present-day B45. The facility researched the treatment/destruction of hazardous wastes by incineration. The IRF received hazardous wastes including spent halogenated solvents, spent nonhalogenated solvents, and wastewater sludge/bottoms from creosote, chlorination, vinyl chloride, and petroleum refining processes generated at industrial and Superfund sites. The wastes were stored in containers prior to being treated by incineration. The facility received various violations ranging from written informal violations to proposed consent administration orders between 1985 and 1994.

A RCRA facility investigation (RFI) was conducted in February 1994 as part of the RCRA Part B Permit application. Soil sampling via hand auger was conducted at two (2) solid waste management units (SWMUs) located to the east and north of the incinerator building. The SWMUs were former storage yards where drums of waste, methanol tanks and equipment were stored between 1988 and 1990.

SWMU No. 3 (east of the building) was analyzed for metals, polychlorinated biphenyls (PCBs), volatile and semivolatile organics, and fluoride. Soil samples from SWMU No. 4 (north of the building) were analyzed for metals, volatile organics, semivolatile organics, and methanol. The RFI report indicated that concentrations were either near or below the background concentrations, below Federal and State TCLP criteria, or below health-based criteria and no further action was recommended.

In 1995, the EPA discontinued operation of the IRF. Facility closure activities were conducted from late 1995 through 1996. Closure activities included decontamination and removal of the Rotary Kiln incinerator, and disassembly and decontamination of the storage tank system that contained scrubber water. Waste storage areas were also decontaminated. Four (4) soil samples were collected from the soil beneath the IRF building. Chromium and lead concentrations were consistent with the results of the RFI. The remaining metals, wastes and PCB constituents were below the Closure Plan criteria. The Arkansas Department of Environmental Quality (then known as the Arkansas Department of Pollution Control and Ecology) approved the clean closure of the IRF on October 1, 1996.

Radioactive waste

Radioactive waste generated at Jefferson Labs includes scintillation fluids, animal carcasses, solid wastes, and liquid wastes. Disposal of radioactive waste is accomplished by decay-in-storage, release into sanitary sewerage, or off-site disposal. Radioisotopes with a half- life of less than 120 days can be decayed on-site for ten half-lives and then disposed of as non- radioactive waste. The U.S. Nuclear Regulatory Commission (NRC) allows limited drain disposal of liquid radioactive wastes. Animal carcasses and scintillation fluids below levels prescribed by

the NRC may be disposed of as non-radioactive waste. All other radioactive wastes are shipped off-site for disposal at an NRC-licensed landfill facility.

4.5.1.3 Emergency Response Plan for Accidental Releases of Oils and Chlorine Gas

The Campus Spill Prevention, Control and Countermeasure (SPCC) Plan provides response procedures for accidental releases of oil from all fuel storage tanks, emergency generators and electrical transformers on the Campus. An emergency response plan is also in place that provides response procedures in the event of a chlorine gas leak from chlorine gas cylinders located at the facility's potable water treatment plant.

4.5.1.4 Biohazard Waste

Any material exposed to infectious organisms is a candidate for special waste handling and disposal. All infectious waste is bagged and labeled, secured and autoclaved before disposal. All lab waste bags are placed in a durable leakproof covered container while they await disposal. Animal carcasses are typically frozen and transferred along with regulated biohazardous wastes to an off-site incinerator for disposal. Autoclaved animal bedding is transferred via a vacuum system to a receptacle in B46 prior to being hauled offsite for landfill disposal. Wastewater generated in the animal care processing areas is routed offsite to the Pine Bluff Arsenal wastewater treatment plant.

4.5.1.5 Solid Waste

Trash

Jefferson Labs generates solid waste in the form of office trash, waste animal bedding, nonhazardous industrial wastes, and construction debris. Several solid waste dumpsters are located throughout the Campus. A private contractor collects and hauls the solid waste offsite for landfill disposal.

Historically, Jefferson Labs incinerated solid waste. Incinerators were formerly located in or near B46, B45, B14, B05 and B55 (current location of B26). All incinerators have been removed, with the exception of the unit in B46, which is no longer in service.

A mound of fill material is located on the northwestern portion of the Campus. The fill material reportedly consists of foundation material from the demolition of B04 and soils from the basement excavation for B26.

4.5.2 Impacts to Public Health and Safety from Hazardous Materials

Alternative 1 – No Action Alternative

The No Action Alternative would result in no changes to the property and, therefore, would not generate hazardous wastes or affect hazardous materials.

Alternative 2 – Proposed Action

Construction activities of the Proposed Action may include the use of fuel, oil, lubricants, paints, coatings, solvents, and fertilizers. The contractor would be required to implement BMPs to minimize release of the substances.

Future operations in the proposed improvements (laboratories, offices, data center) willbe consistent with current operations. Activities should not require additional hazardous materials/petroleum products or significant increases in quantities of materials currently utilized on Campus.

The SCF Data Center will be constructed in an undeveloped area where no current or former hazardous materials use/storage was identified.

The new West Energy Plant will be in the location of the western 1,000,000-gallon aboveground storage tank (AST) and oil/water separator. The chilled water loop will extend eastward toward B26 and along the northern Campus perimeter road. Construction of the new plant and infrastructure will require removal of the 1,000,000-gallon ASTs and excavation of soils for building foundations and utility trenches.

Several buildings will be removed from the northeastern portion of the Campus and the proposed sewer line main will extend along the northeastern portion of the property southward toward the wastewater equalization basin on the southeastern portion of the property. A permanent building will also be constructed on the southeastern portion of the property in place of the modular building (B45T). Some or all of the closed-in-place USTs may need to be removed during redevelopment of the Campus.

Due to previous and current petroleum products/hazardous materials storage and handling operations, there is a potential for encountering contaminated soils and groundwater during construction activities in the vicinity of the fuel storage areas and B45. Subsurface investigations conducted in the fuel storage area on the western portion of the property and on the southeastern portion of the property associated with the former EPA incineration facility did not identify constituents above ADEQ action levels/cleanup criteria. However, there is a potential for soil contamination in areas that were not sampled during the investigations.

Additionally, several underground storage tanks (USTs) that were closed-in-place are located throughout the facility. There is a potential for contaminated soils beneath the USTs.

Proposed demolition of original/non-renovated structures presents the risk of causing PCB- and lead-containing paint, dioxins/furans, and/or asbestos to be emitted to the air.

4.5.3 Mitigation Measures for Public Health and Safety Impacts from Hazardous Materials

Encountering a release of petroleum product or hazardous waste during construction poses a risk to human health and safety for construction workers and potentially Jefferson Labs employees.

Removal of the 1,000,000-gallon aboveground storage tanks (ASTs) will require dismantling the steel tanks, removal of the foundations, sampling the soils below the tanks for Total Petroleum Hydrocarbons (TPH), laboratory analysis and a closure report. If petroleum-contaminated soils are encountered, the impacted soils will have to be removed and disposed of offsite at a licensed disposal facility. Confirmation soil samples will be collected upon completion of the project to confirm petroleum-impacted soils have been removed.

Mitigation/removal of the 1,000,000-gallon ASTs can be accomplished prior to facility construction improvements or as part of the building general construction.

Mitigation of the previously closed-in-place USTs should be accomplished by removal of the tanks prior to building construction. Removal of the USTs will require notice to ADEQ, excavation, removal of the USTs, excavation of any petroleum-impacted soils, verification sampling and final closure reporting.

If contaminated groundwater is encountered, mitigation will involve excavation, removal and disposal of contaminated groundwater.

The impacts to public health and safety can be mitigated by removal of PCB and lead-containing paint, dioxins/furans, and asbestos-containing materials prior to demolition or remodeling. Mitigation will require assessment of the potential PCBs, dioxin/furans, lead and asbestos-containing materials and preparation of a mitigation/removal plan prior to construction activities.

4.6 Socioeconomics, Environmental Justice, and Children's Health and Safety Issues

4.6.1 Socioeconomic Environment

The project is located within an unincorporated area of Jefferson County, Arkansas. The nearest communities are Jefferson (zip code 72079) and Redfield (zip code 72132). Demographic statistics for the project area are listed in Table IV.

As of the census community survey from 2012-2016, there were 606 people and 287 households residing in zip code 72079. The percentage of people with a bachelor's degree or higher was 11.9% and the median household income was $29,798. The percentage of people below the poverty level was 35.3%, which was above the national percentage of 15.1%.

As of the census community survey from 2012-2016, there were 3661 people and 1513 households residing in zip code 72132. The percentage of people with a bachelor's degree or higher was 15.5% and the median household income was $49,850. The percentage of people below the poverty level was 12.2%, which was below the national percentage.

Table IV: Demographic Statistics for the Project Area

Subject	**72079**	**72132**	**United States**
Total Population	606	3661	318,558,162
Under 5 years (%)	0%	8.8%	6.2%
Under 18 years (%)	12.4%	31%	23.1%
65 years and older (%)	23.1%	10.4%	14.5%
Female Population (%)	56.1%	52.8%	50.8%
White (%)	93.9%	89.3%	73.3%
Black or African Americans (%)	6.1%	6.9%	12.6%
American Indian and Alaska Native (%)	0%	0%	0.8%
Asian (%)	0%	0%	5.2%
Native Hawaiian and Other Pacific Islander (%)	0%	0%	0.2%
Other Race (%)	0%	2.2%	4.8%
Two or More Races (%)	0%	1.2%	3.1%
Hispanic or Latino origin (%)	0%	3.6%	17.3%
High School Graduate or Higher (%)	62.2%	86.5%	87%
Bachelor's Degree or Higher (%)	11.9%	15.5%	30.3%
Households	287	1513	134,054,899
Median Household Income	$29,798	$49,850	$55,322
Individuals Below Poverty Level (%)	35.3%	12.2%	15.1%

Sources: U.S. Census, American Community Survey 5-Year Estimates 2012-2016

4.6.2 Environmental Justice

Executive Order 12898 (EO 12898) pertains to Environmental Justice in Minority and Low-Income Populations. This requires federal agencies, departments, and their contractors to consider any potentially disproportionate human health or environmental risks their activities, policies, or programs may pose to minority or low-income populations.

As indicated in Table IV, the racial makeup of zip codes 72079 and 72132 was approximately 90% white. Based on this information, the minority population percentages in the project area are well below the national average percentage.

The individuals below the poverty level percentage is above the national average in zip code 72079, but below the national average in zip code 72132.

4.6.3 Children's Health and Safety Risks

Executive Order 13045 (EO 13045) pertains to Protection of Children from Environmental Health Risks and Safety Risks. This requires federal agencies to identify and assess health risks and safety risks that may disproportionately affect children. As with EO 12898, most federal lead agencies determine impacts to children as part of the NEPA compliance process. Agencies must ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

The closest schools to the project area are White Hall High School and Hardin Elementary School. These schools are located over five miles from the project area.

4.6.4 Impacts to Socioeconomics, Environmental Justice, and Children's Health and Safety

Alternative 1 – No Action Alternative

There would not be any significant changes to the socioeconomic environment around the Campus because of the No Action Alternative. There would not be a disproportionate effect to children or minority or low-income populations by the No Action Alternative.

Alternative 2 – Proposed Action

There would not be any significant changes to the socioeconomic environment in the rural communities within the vicinity because of the Proposed Action. Construction activities may have a temporary positive impact due to construction employment and expenditures in local communities. Jefferson Labs does not anticipate a change in the overall census of the Campus after all improvements are complete.

There would not be a disproportionate effect to children or minority or low-income populations by the Proposed Action.

4.7 Air Quality

Under the Clean Air Act, the U.S. Environmental Protection Agency (EPA) establishes primary and secondary air quality standards. Primary air quality standards protect the public health, including the health of "sensitive populations, such as people with asthma, children, and older adults." Secondary air quality standards protect public welfare by promoting ecosystems health, preventing decreased visibility, and damage to crops and buildings. EPA has set national ambient air quality standards (NAAQS) for six of the following criteria pollutants: ozone (O_3), particulate matter ($PM_{2.5}$ and PM_{10}), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), and lead (Pb).

According to the ADEQ, the entire state of Arkansas is classified as being in attainment, meaning criteria air pollutants do not exceed the NAAQS.

4.7.1 Existing Campus Conditions

Currently NCTR has a minor source air permit through ADEQ, Permit #0406-AR-12. The current air permit covers three (3) boilers, sixteen (16) emergency generators and other insignificant activities at the facility. The permit limits fuel consumption for the steam boilers to 423,300 gallons of diesel oil and 515 MMscf of natural gas in all boilers during any consecutive 12-month period. The emergency generators are limited to no more than 200 hours of non-emergency operation per consecutive 12-month period. Additionally, processing of a 575-gallon gasoline storage tank, a volatile emission source, is limited by the permit to 4,000 gallons of gasoline per month. Insignificant air emission sources, as defined by the ADEQ, include four (4) diesel fuel storage tanks and all laboratory hood vents.

Formerly Jefferson Labs operated incinerators in or near B46, B45, B14, B5 and B55 (current location of B26). All incinerators have been removed, with the exception of the unit in B46, which is no longer in service.

4.7.2 Impacts to Air Quality

Alternative 1 – No Action Alternative

The No Action Alternative would result in no changes to the property and, therefore, would not impact air quality.

Alternative 2 – Proposed Action

The proposed project site is located in an attainment area. The construction phase of the Proposed Action may produce a temporary increase in air pollution through the emissions from construction vehicles (carbon monoxide) and dust resulting from earth moving. Federal and state air attainment levels would not be exceeded.

Disturbance of PCB- and lead-containing paint and/or asbestos-containing materials during building demolition or remodeling could cause contaminants to be emitted to the air that may impact construction workers and Campus personnel.

4.7.3 Mitigation Measures for Air Quality Impacts

Earthwork disturbances of the Proposed Action would not generate significant air quality impacts and mitigation measures would not be required. However, Best Management Practices (BMPs) would be developed and implemented to apply moisture to minimize dust in exposed soil areas, as necessary, and properly maintain and minimize operation hours for fuel-burning equipment.

The Proposed Action could generate PCB and lead-containing dust, as well as disturb asbestos-containing materials, during demolition or remodeling of the buildings. The air quality impacts can be mitigated by removal of PCB and lead-containing paint and asbestos-containing materials prior to demolition or remodeling. Mitigation will require assessment of the potential PCB, lead and asbestos-containing materials and preparation of a mitigation/removal plan prior to construction activities.

4.8 Noise

Sound is most commonly measured in decibels (dB) on the A-weighted scale, which is the scale most similar to the range of sounds that the human ear can hear. The Day-Night Average Sound Level (DNL) is an average measure of sound. The DNL descriptor is accepted by federal agencies as a standard for estimating sound impacts and establishing guidelines for compatible land uses.

Noise, defined herein as undesirable sound, is federally regulated by the Noise Control Act of 1972 (NCA). Although the NCA gives the EPA authority to prepare guidelines for acceptable ambient noise levels, it only charges those federal agencies that operate noise-producing facilities or equipment to implement noise standards. EPA guidelines state that outdoor sound levels in excess of 55 dB DNL are “normally acceptable” for noise-sensitive land uses such as residences, schools, and hospitals.

The project site is in an unincorporated area of Jefferson County that is not covered by a City Noise Ordinance

4.8.1 Impacts to Noise Conditions

Alternative 1 – No Action Alternative

The No Action Alternative would not affect noise conditions.

Alternative 2 – Proposed Action

Construction noise impacts for the Proposed Action would be short-term and limited to the duration of the construction activities during the hours of 8 am and 5 pm. No significant noise impacts would be anticipated.

4.8.2 Mitigation Measures for Noise Impacts

The Proposed Action would not generate significate noise impacts and mitigation measures would not be required. Construction activities would meet all local, state and federal noise regulations.

4.9 Visual Quality

Visual quality is determined by evaluating how the development contrasts with the existing environment and if the Federal agency states the effect is objectionable.

The project area is a fully developed research Campus. The majority of the buildings were constructed in the 1950s and are in poor condition.

The Campus is located in a wooded, isolated area within the FDA property that is not visible to the public. The property is bordered to the south and west by the Pine Bluff Arsenal, which has restricted access. The location of the NCTR Campus offers a buffer area from the closest residences.

4.9.1 Impacts to Visual Quality

Alternative 1 – No Action Alternative

The No Action Alternative would result in no changes to the property and, therefore, would not impact visual quality. The poor condition of several of the structures would remain unchanged.

Alternative 2 – Proposed Action

The proposed buildings are mostly three-story structures. They would be comparable in size to B26 and significantly shorter than B50, which is eight stories. The outdated architecture of the existing buildings would be refreshed with new architecture. The overall aesthetics of the Campus would be improved by additional landscaped areas and pedestrian walkways.

The Proposed Action will improve the architectural layout and overall visual quality of the Jefferson Labs Campus and will appeal to Campus personnel.

4.10 Public Services and Utilities

The majority of the existing utilities were constructed during the 1950s. Portions of the utilities have been replaced when new buildings were constructed or the utility was replaced due to failure. Jefferson Labs provides its own potable water via groundwater wells. Sanitary wastewater is collected on the Campus and transferred to the Pine Bluff Arsenal for treatment. Electric power is supplied by Entergy and natural gas is provided by Centerpoint Entergy.

The existing infrastructure at the Campus is, overall, in poor condition. The water and sewer mains are reaching the end of their operational life and will need to be replaced to meet the current and future Campus needs.

Wastewater System

Jefferson Labs generates wastewater from sanitary, laboratory, animal management, cooking and minor industrial processes. The Campus cafeteria is equipped with a subgrade kitchen grease trap that separates the grease from the cooking and food waste prior to discharge into the sewer system. A private contractor hauls the waste kitchen grease offsite for disposal.

The wastewater is collected on the Campus and discharged to the Pine Bluff Arsenal for treatment. No pre-treatment of wastewater occurs on the Jefferson Labs Campus. The existing wastewater collection system on the Campus was installed in the 1950s and is due for upgrades. The sewer main is 14-16 feet below ground service, which makes it difficult to repair or to replace.

Jefferson Labs formerly operated a wastewater treatment plant in B44. The wastewater treatment system was closed when Jefferson Labs connected to the Pine Bluff Arsenal system. A former treatment lagoon located on the southeastern portion of the Campus is currently in use as an equalization basin.

Stormwater Drainage System

The stormwater drainage system consists of open drainage ditches and underground storm drains. The stormwater drains discharge to the east into an unnamed stream that flows east into Eastwood Bayou or south into the upper reaches of Phillips Creek. Eastwood Bayou and Phillips Creek eventually connect to the Arkansas River.

Natural Gas

Natural gas is provided to the Campus by Centerpoint Energy via an 8-inch steel main. Corrosion of the steel pipes is prevented by a cathodic protection system.

Electricity

Electrical power at the Campus is provided by Entergy. The electrical substation and main switching station are located on the southern portion of the Campus in and near Building 9. Pad-mounted transformers and back-up generators are located throughout the Campus.

Solid Waste Management

Jefferson Labs generates solid waste in the form of office trash, waste animal bedding, nonhazardous industrial wastes, and construction debris. Several solid waste dumpsters are located throughout the Campus. A private contractor collects and hauls the solid waste offsite for landfill disposal.

Waste kitchen grease generated in the cafeteria is collected in receptacles and hauled offsite by a private contractor for recycling.

Potable Water System

Jefferson labs receives potable water from two (2) groundwater wells located on the northeastern portion of the Campus. Water is drawn from the Sparta Sand aquifer and treated via a clarifier and water treatment system in Building 11. Potable water is stored on the Campus in three (3) elevated tanks supplied to the Campus by gravity flow. The water tanks are 150,000 gallons, 300,000 gallons and 500,000 gallons in capacity. Recent water usage at the Campus has ranged from approximately 110,000 to 350,000 gallons per day.

Water well #1 is the primary potable water source for the Campus. The well yield of water well #1 is 800 gallons per minute (GPM). The water wells are further discussed in Section 4.13.1.

Chillers

Chiller plants are located in B15/53A, B05B and B26. Cooling towers are located on the western, eastern and southern portions of the Campus.

Boilers

Heating for the Campus is provided by boilers housed in B07. The boilers are fueled by natural gas, with No. 2 fuel oil as back up. The back-up fuel supply is stored in two (2) 28,000-gallon ASTs located west of the boilers.

4.10.1 Impacts to Public Services and Utilities

Alternative 1 – No Action Alternative

The No Action Alternative would not affect public services and utilities. Some of the existing infrastructure would remain in poor condition.

Alternative 2 – Proposed Action

The Proposed Action may require a temporarily disconnect of utilities during construction activities. The Proposed Action will replace some of the onsite utilities, so there will be some upgrade of existing utilities.

Wastewater System

No change is anticipated to the generation of wastewater because of the construction or demolition activities planned as part of the Proposed Action. The Proposed Action does not anticipate adding personnel to the Jefferson Labs Campus and overall wastewater discharge is not expected to increase. There should be no impact to the wastewater system by the Proposed Action.

The Proposed Action includes the installation of a new sewer main along the eastern portion of the Campus to replace the aging sewer main on the central portion of the Campus.

Stormwater Drainage System

There will be some improvements to the existing stormwater drainage system as part of the Proposed Action. It is anticipated that some open stormwater ditches will be converted to underground stormwater pipes. Installing stormwater pipes may require a Clean Water Action (CWA) Section 404 Permit.

Energy

The demand for energy (electricity, gasoline, diesel) could increase during the demolition and construction phases of the Proposed Action. The current energy supply should be sufficient for the temporary minor increase in demand.

The new buildings will not exceed the square footage of the existing structures; however, as several of the current structures are not utilized, there may be a slight increase in utility usage. The proposed buildings will be energy efficient, so the increase should be minimal.

Solid Waste Management

Solid waste and construction demolition debris will likely increase during the demolition phase of the Proposed Action. The contractor will need to haul off and dispose the material per ADEQ solid waste regulations.

Potable Water

The use of potable water for dust control during the construction and demolition activities would cause a minimal increase in potable water demand. The Campus' potable water supply should be sufficient for the minor, temporary increase in demand.

Jefferson Labs does not anticipate a large increase in personnel or water consumption due to the Proposed Action. Jefferson Labs will need to evaluate water consumption periodically to determine if an additional water source will be needed. The Proposed Action should not impact the current potable water system.

Chillers

The Proposed Action includes the construction of a new energy plant and cooling tower to replace the existing system. The new plant will provide cooled water for the existing structures, as well as for the proposed improvements. A new chilled water line will be installed along the northern portion of the Campus. The new chilled water system will be more energy efficient than the current system; therefore, the Proposed Action should not impact Jefferson Labs or the surrounding environment.

Boilers

The current boilers are fired by natural gas with Fuel Oil #2 as backup. The current boiler system should be adequate to support the Proposed Action; therefore, there should be no impact to the Jefferson Labs Campus or the surrounding environment.

4.10.2 Mitigation for Public Services and Utilities Impacts

A scheduled short-term shut down of utilities would likely be scheduled during active site preparation and construction activities. Normal construction permits and BMPs would be undertaken to minimize disruption to utilities in the area.

The installation or replacement of stormwater pipes may require a Section 404 Permit; otherwise, there should not be significant impacts or mitigation for utilities as part of the Proposed Action.

4.11 Water Quality

Water quality considerations for this project primarily consist of the groundwater sources, surface water conditions, and stormwater management.

4.11.1 Groundwater

Per the Safe Drinking Water Act (42 U.S.C. 300f, et seq.), federal agencies are to determine if an action will have an environmental effect on a sole or principal drinking water source that would constitute a significant hazard to a human population.

The proposed project site is located in the Mississippi River Valley alluvial aquifer. The Mississippi River Valley alluvial aquifer is composed of unconsolidated materials ranging from clay and silt in the upper part and grading downward to coarse sand and gravel at the base. The principal source of recharge to the aquifer is by direct infiltration of rainfall. In 2010, 94 percent of all groundwater use in Arkansas was from the Mississippi River Valley alluvial aquifer.

The Arkansas River is located east of the project site and is considered the principal governing influence on local groundwater behavior. Static groundwater levels in the upper unconfined aquifer are typically above a depth of 20 feet below ground surface (bgs). Groundwater flow direction generally corresponds with the surface topography flowing from areas of high elevation to areas of low elevation. The expected groundwater flow for the proposed site is to the east/northeast towards Eastwood Bayou and the Arkansas River.

Two (2) groundwater wells (#1 and #14) are located on the northern portion of the Jefferson Labs Campus. Two (2) additional groundwater wells (#15 and #16) are located to the south and southeast of the Campus on the adjacent Pine Bluff Arsenal property. The water wells are drilled into the Sparta Sand aquifer. The Sparta Sand is the primary drinking water source for the area. Refer to Figure 12 for the groundwater well locations in the project area.

Well #1 is the primary potable water source for the Jefferson Labs Campus. The well was installed in 2016. The depth of the well is 970 feet below ground surface (bgs). Wells #14, #15 and #16 were installed in 1951 and 1952 to depths ranging from 950 to 1046 feet below ground

surface (bgs). Well #14 is used minimally and #15 is currently inoperable. Well #16 is currently out of use.

During a previous environmental assessment of the fuel storage area on the western portion of the Campus, a groundwater monitoring well was installed near B07. The groundwater well was installed in the upper saturation zone and groundwater was encountered at 7.6 feet bgs. Groundwater sampling analysis found that groundwater was impacted by diesel-range organics (5.7 mg/L to 8.9 mg/L). The groundwater impacts were found in the shallow groundwater and should not affect the deeper drinking water source.

4.11.2 Impacts to Groundwater

Alternative 1 – No Action Alternative

The No Action Alternative would not affect groundwater.

Alternative 2 – Proposed Action

Groundwater in the area is typically 10-20 feet bgs; however, groundwater may be encountered during construction activities. The contractor should utilize BMPs to minimize impacts to the shallow subsurface groundwater. There is a minor risk of a contractor encountering the shallow contaminated groundwater in the fuel storage area. If contaminated groundwater is encountered, the contractor should not pump the groundwater out of an excavation, but should sample, remove and dispose the contaminated groundwater. Groundwater used as a drinking water source is located at a depth that will not be impacted by construction activities.

4.11.3 Mitigation for Groundwater Impacts

The Proposed Action should not impact the drinking water sources and mitigation measures would not be required.

4.11.4 Surface Water

The Clean Water Act (CWA), as amended in 1977, established the basic framework for regulating discharge of pollutants into the water of the United States. Section 303(d) of the CWA requires states to prepare lists of waters for which effluent limitations are not stringent enough to comply with water quality standards. The State establishes a priority ranking for the waters, taking into account the severity of the pollution and the uses of the waters.

The closest mapped waterways are Eastwood Bayou and Phillips Creek, which ultimately drain into the Arkansas River. Refer to Figure 2, Topographic Map, for locations of waterways in the project vicinity.

Eastwood Bayou and Phillips Creek are not listed on the 303(d) list. The Arkansas River is listed as a limited water body on the 303(d) list for the following causes: dissolved oxygen from hydroelectric power generation and total dissolved solids and chlorides from unknown sources.

4.11.4.1 Existing Campus Conditions

Drainage from the site flows through seven (7) storm drains. From the storm drains, stormwater is discharged to the east into an unnamed tributary that flows east into Eastwood Bayou or to the south into the upper reaches of Phillips Creek.

Wastewater discharges from operations at the NCTR potable water treatment plant are permitted with the ADEQ. Monthly flow reports and quarterly sample analyses are submitted to the ADEQ as a condition of the permit. The pH for the wastewater effluent is required to be between 6 and 9. Total suspended solids are limited to a monthly average of 20 ppm and a daily maximum of 30 ppm. Dissolved iron and dissolved manganese are both limited to a monthly average of 1 ppm and a daily maximum of 2 ppm. Residual chlorine is limited to a daily maximum of 1 ppm. Filter backwash from the potable water treatment system is discharged into the Campus sanitary sewer system.

4.11.5 Impacts to Surface Water

Alternative 1 – No Action Alternative

The No Action Alternative would not affect surface water.

Alternative 2 – Proposed Action

There are no mapped waterways within the project area. Construction and demolition activities of the Proposed Action may result in temporary increases in erosion and sedimentation of the internal Campus drainage system.

The new infrastructure/drainage improvements will improve internal Campus drainage and should not impact offsite drainage.

4.11.6 Mitigation for Surface Water Impacts

No major impacts to surface water drainage during construction are anticipated. However, prior to construction activities, the contractor would obtain an ADEQ General Stormwater Permit, which would detail Best Management Practices (BMPs) including erosion and sediment controls. The contractors would be required to follow all applicable regulations.

The Proposed Action should not increase the Campus stormwater runoff volume; however, if the overall stormwater volume increases, Jefferson Labs should consider onsite detention of stormwater.

4.12 Wetlands and Waters of the United States

NEPA regulations require that impacts on wetlands be assessed and alternatives for protection of these resources be evaluated in accordance with Wetlands Environmental Review Requirements (10 CFR 1022.12) and Executive Order 11990 (Protection of Wetlands).

Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Waters of the U.S. are within the jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to the Clean Water Act. This includes wetlands, ponds, lakes, territorial seas, rivers, tributary streams including any definable intermitted waterways and some ditches below the Ordinary High Water Mark (OHWM).

A detailed site survey was conducted to document the presence of wetlands and streams located on the Jefferson Labs Campus. Detailed survey information and wetlands analysis is included in the Wetland Delineation Report in Appendix B. The delineation documents the presence of linear drainage ditches, two (2) ephemeral streams, and one (1) small wetland. The USACE Regulatory Division of the Little Rock District should be contacted if any of these features are altered.

4.12.1 Impacts to Wetlands and Waters of the United States

Alternative 1 – No Action Alternative

The No Action Alternative would not involve construction or other activities; therefore, the No Action Alternative would not affect wetlands and streams.

Alternative 2 – Proposed Action

The immediate plan to construct the SCF Data Center will require the installation of approximately 135 linear feet of culvert into the linear drainage ditches for roadways leading to the new building. The USACE confirmed that the linear drainage ditches in this area do not meet the definitions of wetlands and waters of the U.S. and a Section 404 Permit is not required. The USACE Approved Jurisdictional Determination is provided in Appendix C.

The long-range plan to install new chiller and sewer lines may temporarily impact linear drainage ditches. Construction of roads, pedestrian walkways, buildings and landscaped areas, as well as demolition of existing structures, may also impact drainage areas. Once detailed

construction plans for the future improvements are completed, the plans will need to be evaluated to determine the need for a USACE Section 404 Permit.

4.12.2 Mitigation for Wetland and Waters of the United States Impacts

In accordance with Executive Order 11990, direct and indirect impact to wetlands and streams would be avoided and minimized as much as possible. Jefferson Labs would develop and implement an ADEQ General Stormwater Permit for Construction, which would detail BMPs including erosion and sediment controls (e.g. silt fences and rock check dams along drainage areas and moisture application to exposed soils) to minimize impacts during the construction phase of the Proposed Action.

Construction of the SCF Data Center should not impact wetlands or Waters of the U.S. Altering drainage areas during future activities may require a Clean Water Act (CWA) Section 404 Permit and mitigation of impacts. Jefferson Labs is located within the USACE Little Rock District and their Regulatory Division should be contacted if any linear drainage ditches, ephemeral streams, or wetlands are to be altered. Prior to the construction of future phases of the Proposed Action, an approved jurisdictional determination (AJD) should be requested from the USACE.

With appropriate permitting and potential mitigation of impacts, the impacts to wetlands/Waters of the U.S. from the Proposed Action should not be significant.

4.13 Wildlife and Vegetation

Wildlife and vegetation includes the living, native or naturalized plant and animal species and their habitats.

The Campus was cleared of vegetation during initial development and currently contains very low to no ecological valued habitat. Minor areas within the Campus contain reestablished native vegetation including loblolly pine (*Pinus taeda*), American sycamore (Platanus occidentalis), sweetgum (*Liquidambar styraciflua*), Southern cat-tail (*Typha latifolia*), groundsel bush (Baccharis halimifolia), and goldenrod (*Solidago canadensis*). The majority of the Campus consists of maintained lawns with bermuda grass (*Cynodon dactylon*) and Saint Augustine grass (*Stenotaphrum secundatum*). Areas surrounding the buildings have been landscaped with horticultural species such as red maple (*Acer rubrum*), bald cypress (*Taxodium distichum*), Southern magnolia (*Magnolia grandiflora*), sweetbay magnolia (*Magnolia virginiana*), river birch (*Betula nigra*), oak leaf hydrangea (*Hydrangea quercifolia*), nandina bush (*Nandina domestica*), crepe myrtle (*Lagerstroemia* sp.), boxelder (*Buxus* sp.), holly (*Ilex* sp.), azalea (*Rhododendron* sp.), and monkey grass (*Liriope* sp.).

4.13.1 Impacts to Wildlife and Vegetation

Alternative 1 – No Action Alternative

The No Action Alternative would not disrupt land or soil and would, therefore, not impact wildlife and vegetation.

Alternative 2 – Proposed Action

No significant impacts to wildlife and vegetation are anticipated, as construction activities will be conducted in areas with low to no ecological valued habitat. The Proposed Action includes expanding landscaped areas, which will have a beneficial aesthetic impact.

4.13.2 Threatened and Endangered Species

The Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.) establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants, and the preservation of the ecosystems on which they depend. The ESA is administered by the U.S. Fish and Wildlife Service (USFWS). Section 7(a)(2) of the ESA requires federal agencies to ensure that the actions they authorize, fund, and carry out do not jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat.

The USFWS lists one (1) federally protected species for the project area: the Piping Plover (*Charadrius melodus*). There are no critical habitats within the project area.

4.13.3 Impacts to Threatened and Endangered Species

Alternative 1 – No Action Alternative

The No Action Alternative would not impact threatened and endangered species.

Alternative 2 – Proposed Action

The Piping Plover is a shore bird; therefore, there is not suitable habitat in the project area and the Proposed Action will not affect this species. The official species list and correspondence with the USFWS is presented in Appendix D.

4.14 Cultural, Historical and Archaeological Resources

A cultural resource is an object, structure, building, site or district that provides irreplaceable evidence of natural or human history of national, state, or local significance, such as National Landmarks, archeological sites, and properties listed (or eligible for listing) on the

National Registry of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to consider the effects of their actions on historic properties.

A Cultural Resources Survey was conducted of the Jefferson Labs Campus in April 2019 to determine if archaeological or historical resources are present within the project area. The archaeological survey, including the excavation of 68 shovel tests, produced negative findings; no artifacts or cultural deposits were identified. Building 5A-D, Building 37 and Building 52/85A-C were determined to be potentially eligible for the NRHP for their association with the U.S. Army's Cold War biological weapons program. The Cultural Resources Survey is included in Appendix E.

4.14.1 Impacts to Cultural, Historical and Archaeological Resources

Alternative 1 – No Action Alternative

The No Action Alternative would not impact cultural resources, historic properties, or archaeological resources.

Alternative 2 – Proposed Action

The Proposed Action should not impact Building 5A-D; however, Building 37 and Building 52/85A-C may be demolished in the future. The Arkansas Historic Preservation Program (AHPP) required the completion of Architectural Resources Survey Forms for the three potentially eligible buildings. Architectural Resources Survey Forms were completed and approved by the AHPP on July 31, 2019. The immediate plan to construct the SCF Data Center should not impact these buildings.

4.14.2 Mitigation for Cultural, Historical and Archaeological Resources Impacts

Based on correspondence with the AHPP, no mitigation is required at this time. Prior to the demolition of Buildings 37 and 52/85A-C, the AHPP recommends that FDA consult with the State Historic Preservation Officer (SHPO) to develop a memorandum of agreement (MOA) that defines the means for resolving adverse effects. AHPP correspondence is included in Appendix E.

4.15 Summary of Impacts for the Proposed Action

Table V is a summary of the potential environmental impacts and mitigation strategies of the Proposed Action.

Table V: Impacts Summary of the Proposed Action		
Affected Resource Area	**Impacts**	**Mitigation**
Geology and Soils	No impacts to geology are anticipated. During the construction period, there may be temporary impacts to soils, though soil loss is unlikely to occur.	Not required; however, BMPs including erosion and sedimentation control would be implemented.
Land Use and Zoning	No impacts to land use and zoning are anticipated.	None.
Floodplains	No impacts to floodplains are anticipated.	None.
Transportation	There may be a minor temporary increase in the volume of construction traffic on roads in the immediate vicinity of the property. There may be short-term pedestrian and Campus vehicle encumbrances within the Campus during construction.	Not required; however, the contractor would be required to submit a proposed sequence of construction to minimize disturbance to business traffic. Appropriate signage would be posted on affected roadways.
Public Health and Safety from Hazardous Materials	There are no known impacts to public health and safety. Construction activities may include the use of small quantities of fuel, oil, lubricants, paints, solvents and fertilizers. Two (2) 1,000,000-gallon empty ASTs and several closed-in-place USTs may be removed. Excavation of existing materials may uncover potential contamination from current and former petroleum products/hazardous materials storage and handling operations. Proposed demolition of original/non-renovated structures presents the risk of encountering asbestos, PCBs, dioxins/ furans and/or lead-based paint.	BMPs would be implemented to minimize release of any hazardous substances used during construction activities. Removal of the ASTs and USTs will require soil sampling for TPH, laboratory analysis, and closure reporting. If petroleum-impacted soils or groundwater are encountered, the materials will have to be removed and disposed of at a licensed landfill. Mitigation/ removal of the tanks can be accomplished prior to facility construction improvements or as part of the building general construction. Construction activities may expose or affect unknown subsurface hazardous wastes or materials. Any hazardous materials discovered during construction should be managed and disposed of in accordance with applicable local, state, and federal regulations.

Table V: Impacts Summary of the Proposed Action		
Affected Resource Area	**Impacts**	**Mitigation**
		The impacts to public health and safety can be mitigated by removal of PCB and lead-containing paint, dioxins/furans, and asbestos-containing materials prior to demolition or remodeling. Mitigation will require assessment of the potential PCBs, dioxin/furans, lead and asbestos-containing materials and preparation of a mitigation/removal plan prior to construction activities.
Socioeconomics, Environmental Justice and Children's Health & Safety	No impacts to the socioeconomic environment is anticipated. No disproportionate adverse effects to children or minority or low-income populations are anticipated.	None.
Air Quality	Short-term impacts to air quality may occur during the construction period. Windblown dust/dirt and exhaust from machinery may be produced from construction activities. Disturbance of PCB- and lead-containing paint and/or asbestos-containing materials during building demolition or remodeling could cause contaminants to be emitted to the air that may impact construction workers and Campus personnel.	BMPs would be implemented to apply moisture to minimize dust in exposed soil areas and minimize operation hours for fuel-burning construction equipment. The air quality impacts can be mitigated by removal of PCB and lead-containing paint and asbestos-containing materials prior to demolition or remodeling. Mitigation will require assessment of the potential PCB, lead and asbestos-containing materials and preparation of a mitigation/removal plan prior to construction activities.
Noise	Construction noise impacts would be short-term. No significant noise impacts are anticipated.	Not required; however, construction would take place during normal business hours (8:00am–5:00pm) and equipment and machinery installed would meet all local, state and federal noise regulations.
Visual Quality	No visual quality impacts are anticipated.	None.

Table V: Impacts Summary of the Proposed Action		
Affected Resource Area	**Impacts**	**Mitigation**
Public Services and Utilities	There may be a temporary disconnect of utilities during construction. There will be some upgrade of existing utilities; and it is anticipated that some open stormwater ditches will be converted to underground stormwater pipes.	Necessary construction permits and BMPs will minimize disruption to public utility services. The installation of stormwater pipes may require a Section 404 permit; however the immediate plan to construction the SCF data center does not require a permit.
Groundwater	No impacts to groundwater resources are anticipated.	None.
Surface Water	Construction and demolition activities may result in temporary short-term impacts to the internal Campus drainage system. The new infrastructure/drainage improvements will improve internal Campus drainage and should not impact offsite drainage.	The contractor will obtain an ADEQ General Stormwater Permit, which will detail appropriate BMPs, such as erosion and sediment controls, to minimize surface water runoff during construction activities. Though not anticipated, if the new improvements increase the Campus stormwater runoff volume, a mitigation option would be onsite detention of stormwater.
Wetlands and Waters of the United States	The USACE confirmed that construction of the SCF Data Center should not impact wetlands or Waters of the U.S. The long-range plan to install utility lines and stormwater drainage improvements, demolish structures, and construct buildings, roads and landscaped areas may impact drainage areas identified in the Wetlands Survey.	Direct and indirect impact to wetlands and streams would be avoided and minimized as much as possible. BMPs would be implemented to minimize impacts during construction. Construction of the SCF Data Center does not require a Section 404 Permit and an approved jurisdictional determination (AJD) was obtained. Altering drainage areas during future activities may require a Section 404 Permit and mitigation of impacts. With appropriate permitting and potential mitigation of impacts, the impacts should not be significant.
Wildlife/Vegetation and Threatened and Endangered Species	No significant impacts to wildlife/ vegetation or federally protected species are anticipated.	None.

Table V: Impacts Summary of the Proposed Action		
Affected Resource Area	**Impacts**	**Mitigation**
Cultural Resources	No impacts to cultural resources are anticipated during construction of the SCF Data Center. Buildings 5A-D, 37 and 52/85A-C are being recorded in the National Register of Historic Places (NRHP). Future plans to demolish Buildings 37 and 52/85 A-C will adversely affect these structures.	No mitigation is required at this time. Prior to the demolition of Buildings 37 and 52/85A-C, the FDA should consult with the State Historic Preservation Officer (SHPO) to develop a memorandum of agreement (MOA) that defines the means for resolving adverse effects.

4.16 Cumulative Effects

NEPA requires evaluation of the cumulative effects of a proposed project. Per 40 CFR 1508.7, cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." Direct and indirect effects of the action are to be considered.

The Proposed Action will not increase the overall footprint of the Campus and Jefferson Labs does not anticipate a census growth.

The area surrounding the Campus is largely undeveloped with the exception of the Pine Bluff Arsenal to the west and south. The potential for future development in the area exists with the potential development of the JCA Bioplex properties to the north and east of the Jefferson Labs property. Development of the JCA property is foreseeable but uncertain, given the length of time it has remained undeveloped.

The direct and indirect effects of the Proposed Action will have minimal impact to the environment and area at present. Impacts caused by the Proposed Action should not have an incremental impact when added to the past and future actions in the vicinity.

5.0. INTERAGENCY COORDINATION AND CONSULTATION

This EA was prepared pursuant to regulations implementing NEPA (42 U.S.C. 4321 et seq.), which requires federal agencies to assess the impacts that their actions may have on the environment. The following acts and agencies were consulted as a portion of this assessment:

- Executive Order 11988, Floodplain Management
- Farmland Protection Policy Act
- Wild and Scenic Rivers Act, Public Law 90-542 (16 U.S.C. 1271, et seq.)

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations

- Executive Order 13045, Protection of Children from Environmental Health and Safety Risks

- Clean Air Act (42 U.S.C. 7401, et seq.)

- The Federal Noise Control Act of 1972 (42 U.S.C. 4901 et seq.)

- Safe Drinking Water Act (42 U.S.C. 300f, et seq.)

- Clean Water Act (CWA), including Sections 401, 402, and 404

- Wetlands Environmental Review Requirements (10 CRF 1022.12) and Executed Order 11990 (Protection of Wetlands)

- Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.), Section 7(a)(2)

  The U.S. Fish and Wildlife Service (USFWS) was consulted regarding construction affecting federally protected species in the proposed project location. Correspondence with the USFWS is included in Appendix C.

- Executive Order 12088, Pollution Control Standards

- National Historic Preservation Act (NHPA), Section 106

  The Arkansas Historic Preservation Program (AHPP) staff was consulted regarding construction affecting cultural resources and historic properties in the proposed project location. The response from the AHPP is included in Appendix D.

- In accordance with applicable local, state and federal regulations, the contractor will be responsible for acquiring any necessary permits prior to commencing construction at the proposed project site. All construction and required regulatory permits will be maintained and posted at the construction site.

6.0. PUBLIC PARTICIPATION

The Food and Drug Administration (FDA) will follow the public notice/public comment protocols set forth in the Code of Federal Regulations (CFR) for the National Environmental

Policy Act (NEPA) and for the Council on Environmental Quality (CEQ), which are contained within Title 40: Protection of Environment. These protocols are cited below.

40 CFR Part 6.203 – NEPA

The NEPA Responsible Official will, to the greatest extent possible, give notice to any State or local government, or Federally-recognized Indian tribe that, in the Official's judgment, may be affected by an action for which EPA plans to prepare an Environmental Assessment (EA). *40 CFR Part 6.203(a)(4)*

The Responsible Official must make reasonable efforts to involve the potentially affected communities where the proposed action is expected to have environmental impacts or where the proposed action may have human health or environmental effects in any communities, including minority communities, low-income communities, or Federally-recognized Indian tribal communities. *40 CFR Part 6.203(a)(5)*

At least thirty (30) calendar days before making the decision on whether, and if so how, to proceed with a proposed action, the Responsible Official must make the EA and preliminary Finding of Non-Significance (FONSI) available for review and comment to the interested Federal agencies, State and local governments, Federally-recognized Indian tribes and the affected public. The Responsible Official must respond to any substantive comments received and finalize the EA and FONSI before making a decision on the proposed action. *40 CFR Part 6.203(b)(1)*

40 CFR Part 1500, Section 1506.6 – CEQ Regulations

Agencies shall:

(a) Make diligent efforts to involve the public in preparing and implementing their NEPA procedures.
(b) Provide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected.
    (1) In all cases the agency shall mail notice to those who have requested it on an individual action.
    (2) In the case of an action with effects of national concern…(does not apply)
    (3) In the case of an action with effects primarily of local concern the notice may include:
        (i) Notice to State and area-wide clearinghouses pursuant to OMB Circular A-95 (Revised).
        (ii) Notice to Indian tribes when effects may occur on reservations.
        (iii) Following the affected State's public notice procedures for comparable actions.

(iv) Publication in local newspapers (in papers of general circulation rather than legal papers).
(v) Notice through other local media.
(vi) Notice to potentially interested community organizations including small business associations.
(vii) Publication in newsletters that may be expected to reach potentially interested persons.
(viii) Direct mailing to owners and occupants of nearby or affected property.
(ix) Posting of notice on and off site in the area where the action is to be located.

(c) Hold or sponsor public hearings or public meetings whenever appropriate or in accordance with statutory requirements applicable to the agency.

7.0. REFERENCES

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8.0 LIST OF PREPARERS

-Wm. Doug Ford, Senior Professional Engineer
Education: B.S. Civil Engineering
Experience: Over 30 years of civil and environmental engineering experience

-John T. Metrailer, Senior Professional Engineer
Education: M.S. Environmental Engineering, B.S. Natural Resources
Experience: 8 years of engineering experience/11 years of environmental experience

-Andrew R. Hight, Environmental Scientist
Education: B.S. Environmental Science, B.A. Sociology
Experience: 13 years of environmental consulting experience

-Hope N. Sharp, Environmental Professional
Education: B.A. Biology Emphasis
Experience: 12 years of environmental consulting experience

PMI
3512 South Shackleford Road
Little Rock, Arkansas 72205
(501) 221-7122

9.0 SUPPLEMENT TO REPORT

After issuance of the Draft EA for public comment, there was a slight change to the phases and schedule of the proposed project (see attached drawing and schedule included in Appendix F). The modified phases and schedule do not impact the findings of the report.