2018 MASTER PLAN FOR THE CONSOLIDATION OF THE U.S. FDA HEADQUARTERS AT THE FEDERAL RESEARCH CENTER AT WHITE OAK LOCATED IN SILVER SPRING MARYLAND

Final Environmental Impact Statement

August 2018

Prepared by:

GSA

In cooperation with:

FDA U.S. FOOD & DRUG ADMINISTRATION

Final Environmental Impact Statement

Responsible Agency:

U.S. General Services Administration

National Capital Region

301 7th Street, SW

Washington, DC 20407

In cooperation with the

U.S. Food and Drug Administration

2018 Master Plan for the Consolidation of the U.S. FDA Headquarters

at the Federal Research Center at White Oak

located in Silver Spring, Maryland

The U.S. General Services Administration (GSA) is studying the impacts resulting from a Master Plan to accommodate future growth and further consolidate U.S. Food and Drug Administration (FDA) operations at the Federal Research Center (FRC) at White Oak, located in Silver Spring, Maryland. The Master Plan would provide a framework for development at the FRC to accommodate up to an approximate 18,000 FDA employees and support staff. This Environmental Impact Statement analyzes the impacts of the No-Action Alternative and three Action Alternatives.

Questions or comments on the Final Environmental Impact Statement should be addressed to:

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If you wish to comment on the Final Environmental Impact Statement, you may submit comments electronically or directly by mail. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made public at any time. While you may request in your comment that your personal identifying information be withheld from public review, we cannot guarantee that we will be able to do so.

EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) has been prepared pursuant to:

- The National Environmental Policy Act of 1969 (NEPA);
- Council on Environmental Quality (CEQ) regulations to implement NEPA contained in 49 Code of Federal Regulations (CFR) Parts 1500 to 1508; and
- PBS (Public Buildings Service) National Environmental Policy Act - NEPA Desk Guide (GSA, October 1999).

PURPOSE OF THE PROPOSED ACTION

The U.S. General Services Administration (GSA) is currently consolidating the U.S. Food and Drug Administration (FDA) headquarters facilities at the Federal Research Center at White Oak (FRC) in Silver Spring, Maryland. The FDA headquarters currently encompasses a 130-acre piece of the FRC, now known as the FDA Campus. Due to new Congressional mandates, FDA is projecting an increase in employees and campus support staff at the FDA Campus. Therefore, the purpose of the proposed action is to provide a Master Plan to accommodate future growth and further consolidate FDA operations. The Master Plan would provide a framework for development at the FRC to accommodate approximately 18,000 FDA employees and support staff.

FDA CAMPUS POPULATION SUMMARY

Current assigned personnel to the FDA Campus	*10,987*
Current peak daily campus population	*7,793*
Projected population	*18,000*

The proposed action assessed in this document is the implementation of a Master Plan for FDA, to include the following:

- Development up to an additional 1,604,393 gross square feet (gsf) of office space and 377,382 gsf of special/shared use space to support FDA's mission for a total of up to 9,285,176 gsf at the FDA Campus;
- Parking would be provided at ratio of 1 space for every 1.8 employees (1:1.8) for a total of 10,000 parking spaces for FDA employees and campus support staff;
- Visitor parking would be increased from 1,000 to 1,615 parking spaces; and
- The East Loop Road would be reconfigured to allow for ease of access into and out of the FDA Campus.

NEED FOR THE PROPOSED ACTION

A Master Plan is needed to continue to support the FDA Headquarters consolidation at the FRC and provide the necessary office space to conduct the complex and comprehensive reviews mandated by Congress. To accommodate this increase in personnel, GSA is studying ways to expand office space at the FRC. In addition, infrastructure improvements would be needed to serve the increase in office space. Comments received on the Draft and Final EIS and through consultation with Federal, state, and county agencies will help to inform the GSA decision. This decision would be documented in a Record of Decision (ROD). The ROD would outline the selected alternative for the Master Plan and describe measures the government would take to reduce impacts from implementation of the Master Plan.

NO-ACTION ALTERNATIVE SUMMARY

7,793 current peak daily population

10,987 existing campus population

3,766,605 gsf

6,817 parking spaces in 3 garages and 4 surface parking lots

Child Care center on the south side of the FDA Campus

Environmental issues were identified through the initial scoping efforts for this EIS and through an interdisciplinary team process. These issues include impacts to transportation; viewsheds; partnering with the community; stormwater management; and preservation of trees and other natural features. These issues are addressed throughout the EIS.

ALTERNATIVES ANALYZED

NO-ACTION ALTERNATIVE

The No-Action Alternative includes the existing built environment at the FRC. Under the No-Action Alternative, FDA would continue its current operations at the FRC and the actions proposed in this EIS would not be taken. Specifically, under the No-Action Alternative the number of employees and support staff would not increase and would remain at approximately 10,987 assigned personnel to the FDA Campus. (The peak daily population at the FDA Campus is 7,793.) The additional employees would need to be located in other government-owned or leased space in the Washington, DC metropolitan area. Locating these employees outside the FDA Campus would result in inefficiencies in coordination of work products and in use of administrative, management, and technical support functions.

At present, the campus includes:

- 10,987 assigned personnel to the FDA Campus with a current peak daily population of 7,793;
- 3,766,605 gsf of office, lab, and central shared/other special spaces with 60,438 gsf of bridges and tunnels and 996,975 gsf parking garages for a total of 4,824,018 gsf;
- 6,817 parking spaces (including visitor parking); and
- Child Care Center located on the south side of the FDA Campus (see **Figure E-1**).

ACTION ALTERNATIVES

Under the Action Alternatives, the number of FDA employees and support staff at the FDA Campus would increase to approximately 18,000. The proposed action would add up to an additional 1,604,933 gsf of office space and 377,382 gsf of shared/special use space to support FDA's mission for a total of up to 9,285,176 gsf. Parking would be provided at ratio of 1 space for every 1.8 employees (1:1.8) for a total of 10,000 parking spaces for FDA employees and campus support staff; and visitor parking would be increased from 1,000 to 1,615 parking spaces. Thus, the total number of parking spaces provided on the FDA Campus would be 11,615, which would include the additional 7,342 new additional parking spaces for FDA and its employees. Additional new parking space include replacement of 2,544 existing surface parking spaces that would be displaced by new buildings.

The East Loop Road would be reconfigured to allow for ease of circulation and access into and out of the FDA Campus. The reconfigured East Loop Road would circle around the new office buildings proposed on the east side of the FDA Campus and would connect with Blandy Road. At Blandy Road and FDA Boulevard, a new traffic circle would be constructed that would connect it with the Southeast Loop Road. The Southeast Loop Road would circle around the Southeast Parking Garage and connect to the existing Southeast Loop Road that would be reconfigured for the connection.

MASTER PLAN ALTERNATIVES SUMMARY

Approximately 18,000 employees and support staff

Approximately 9,285,176 gsf

Parking ratio 1:1.8

10,000 total parking spaces for FDA employees and support staff

Visitor parking of 1,615 parking spaces

Reconfigured East Loop Road

Distribution Center located adjacent to the Northeast parking garage

Truck Screening Facility located at the entrance to the FDA Campus on Michelson Road

Transit Center located along the Northwest Loop Road adjacent to the Visitor Center

Free-standing dining facility

Under each of the Action Alternatives, a distribution center would be constructed adjacent to the Northeast Parking Garage. A Truck Screening Facility would be constructed at the entrance to the FDA Campus on Michelson Road and a new Transit Center would be located on the existing northwest surface lots. A free standing dining facility would be located on the Plaza.

In addition to the above-mentioned elements that are common to all of the Action Alternatives, GSA has proposed three alternatives for accommodating the additional FDA employees for this Master Plan (see **Figure E-1**).

Alternative A: Mid-Rise Buildings

ALTERNATIVE A SUMMARY

1,910,906 of new gsf

Four new office buildings

Office buildings up to 11-stories tall

Three new parking garages

Communication Center on eastern end of campus under the Plaza

Conference center at front of campus

With Alternative A, building heights would be in the range of existing buildings and the planning principle of buildings defining a series of courtyard spaces in the tradition of great university campuses is maintained. The buildings would not be visible from New Hampshire Avenue. New buildings would be placed at the eastern end of the plaza would be extended to facilitate a walkable campus.

Alternative A would also include the following:

- 1,910,906 of new gsf of office buildings, shared use pace, and special use space;
- Four new office buildings up to 11-stories tall;
- Three new parking garages;
- A pedestrian bridge to connect the Southeast parking garage and office building with the new office buildings on the east side of the FDA Campus;
- A Communications Center would be placed with the new buildings on the eastern end of the campus under the Plaza; and
- A Conference Center would be placed on the northwest quadrant and existing main campus.

Alternative B: One Large Tower Office Building

ALTERNATIVE B SUMMARY

1,952,627 of new gsf

Three new office buildings

Office buildings up to 20-stories tall

Three new parking garages

Communication Center on eastern end of campus under the Plaza

Conference center in front of campus

With Alternative B, a 20-story office building would be placed on the eastern end of the FDA Campus. The high-rise office buildings would be visible from New Hampshire Avenue, Route 29, and the Capital Beltway. Additional mid-rise buildings would also be placed at the eastern end of the commons, and the plaza would be extended to facilitate a walkable campus. Alternative B would also consist of the following:

- 1,952,627 of new gsf of office buildings, shared use pace, and special use space;
- Four new office buildings up to 20-stories tall;
- Three to four new parking garages;
- A Communications Center would be placed with the new buildings on the eastern end of the campus under the Plaza; and
- A Conference Center would be placed on the northwest quadrant and existing main campus.

Alternative C: Two Large Tower Office Buildings

With Alternative C, a 16-story and a 14-story office building would be placed on the eastern end of the FDA Campus; framing the view down the axis of the main campus. The high-rise office buildings would be visible from New Hampshire Avenue. Additional mid-rise buildings would also be placed at the eastern end of the commons, and the plaza would be extended to facilitate a walkable campus. Alternative C would also consist of the following:

ALTERNATIVE C SUMMARY

1,9220,624 of new gsf

Four new office buildings

Office buildings up to 16-stories tall

Three new parking garages

Communication Center on eastern end of campus under the Plaza

Conference center at front of campus

- 1,920,624 of new gsf of office buildings, shared use pace, and special use space;
- Four new office buildings up to 14-stories tall;
- Three new parking garages;
- A Communications Center would be placed with the new buildings on the eastern end of the campus under the Plaza; and
- A Conference Center would be placed on the northwest quadrant and existing main campus.

IMPACTS FROM THE ALTERNATIVES

GSA analyzed potential direct, indirect, short-term, long-term, and cumulative impacts associated with each of the alternatives under consideration. The conclusions of this analysis are summarized below. Detailed analysis can be found in Chapter 3.

IMPACTS ON SOILS, TOPOGRAPHY, AND GEOLOGY

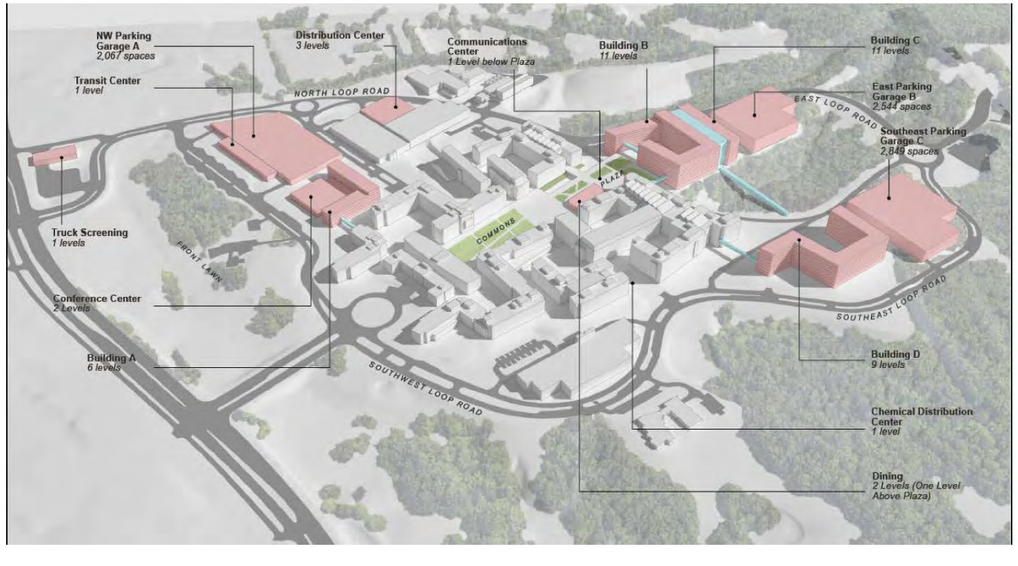
No-Action Alternative

The No-Action Alternative would not result in construction of new buildings; therefore, no changes to topography would occur, and soils would not be impacted.

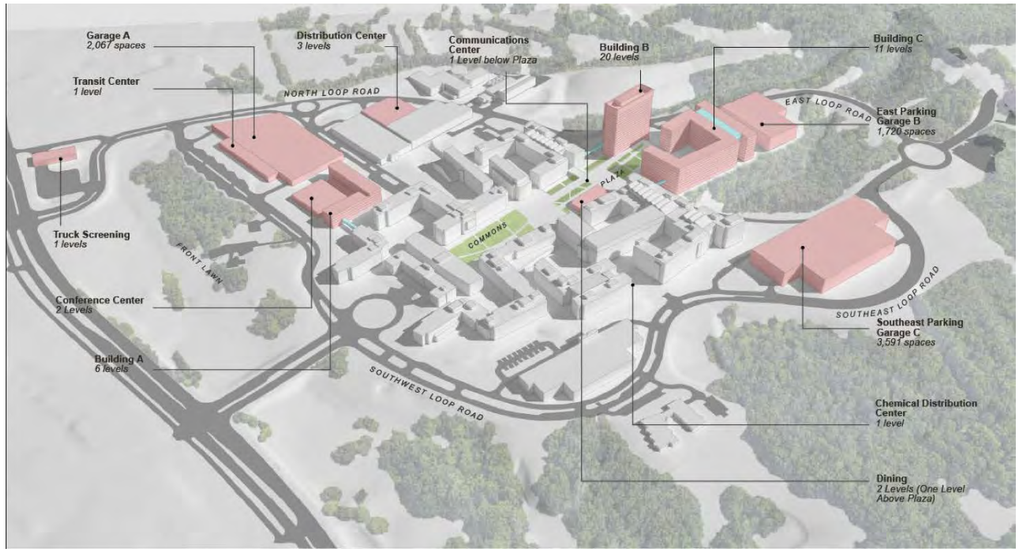
Action Alternatives

Alternative A would result in major, long-term, direct, adverse impacts from the clearing, grading, and excavation of 20.3 acres for new building areas and disturbance of 0.44 acre of steep slopes would occur. Alternatives B and C would result in major, long-term, direct, adverse impacts from the clearing, grading, and excavation of 14.9 and 12.9 acres for new building areas and disturbance of 0.69 acres and 0.62 acres of steep slopes, respectively. All of the Action Alternatives would result in minor, short-term, indirect, adverse impact from soil erosion during construction.

No-Action Alternative



Alternative A



Alternative B

Alternative C

Figure E-1: Development Alternatives

IMPACTS TO SURFACE WATER AND WETLANDS

No-Action Alternative

Under the No-Action Alternative no significant, direct impacts would occur. GSA would provide appropriate stormwater management for non-compliant parking lots resulting in a minor, long-term, beneficial impact to streams and wetlands would occur.

Action Alternatives

Alternative A would result in 472 linear feet of permanent stream impacts; and 0.02 acre of permanent wetland impacts, which would have a major, long-term, adverse impact to streams, stream valley buffers (SVBs), and wetlands. As compared to Alternative A, Alternatives B and C would result in 266 linear feet of permanent stream impacts and would not have permanent impacts to wetlands. The long-term impact under Alternatives B and C would, therefore, be moderate and adverse. Under Alternative A, there would be adverse impacts due to increased runoff from an additional 12.6 acres of impervious cover from proposed buildings, roads, and parking structures, while Alternatives B and C would add an additional 11.22 and 10.22 acres of impervious cover, respectively. Under each of the Action Alternatives the adverse impacts would be minor to moderate, indirect, and long-term. During construction, clearing, grading and road and building construction may result in temporary impacts to streams and wetlands due to increased soil erosion and potential spills of contaminants. The negligible, short-term, adverse impacts would be minimized using best management practices (BMPs).

IMPACTS TO VEGETATION

No-Action Alternative

Under the No-Action Alternative, the FDA Campus would remain unchanged from its current conditions. GSA would provide stormwater treatment facilities for the non-compliant parking lots in accordance with MDE requirements, which may result in impacts to landscaped areas and maintained lawns. Because these areas consist of maintained urban vegetation, the impact to vegetation would be negligible.

Action Alternatives

Moderate, long-term, direct, adverse impacts to vegetation would occur due to clearing of 11.2 acres of forest under Alternative A, 7.3 acres under Alternative B, and 6.7 acres under Alternative C. In addition, approximately than 3.0 acres of maintained lawn would be removed under all of the Action Alternatives. Approximately 0.02 acres of wetland vegetation would be impacted under Alternative A only. Habitat fragmentation would also occur that would expose more forested areas to the potential establishment of invasive species. Removal of forest, wetland vegetation, and maintained lawn would result in long-term, moderate, adverse impacts to vegetation. There would also be minor, long-term, indirect, adverse impacts to vegetation due to increased airborne pollutants. During construction, clearing, grading and road and building construction may result in temporary impacts to vegetation due to the temporary removal of vegetation for staging and laydown areas. The negligible, short-term, adverse impacts would be minimized using best management practices (BMPs).

IMPACTS TO WILDLIFE

No-Action Alternative

Under the No-Action Alternative, the forested portions of the study area, which provide the majority of the habitat for terrestrial wildlife, would not be impacted because there would be no new construction.

Action Alternatives

As with the impacts to vegetation, the removal of forest would result in a loss of habitat for terrestrial wildlife within the study area. Fragmentation of the forest would also affect movement of wildlife and increase potential conflicts with humans. However, no particular species which are currently utilizing the site are likely to be eliminated as a result of any of the Action Alternatives. Increased impervious surface area would increase run-off into the stream habitat of aquatic wildlife, and potential erosion and sedimentation from construction would add to the degradation of the aquatic habitat. Therefore, all Alternative Alternatives would result in long-term, negligible to minor, adverse impacts to wildlife.

IMPACTS TO AIR QUALITY

No-Action Alternative

The central utility plant (CUP) expansion and the traffic that has been generated by the FDA Campus would continue to have minor, long-term, direct, adverse impacts to air quality; however, the FDA Campus is in conformance with the Washington Metropolitan Region State Implementation Plan (SIP).

Action Alternatives

Alternatives A, B, and C would have minor, long-term, direct, adverse impacts from mobile sources due to additional traffic. There would be negligible, long-term, direct, adverse impacts from stationary sources from operation of additional facilities and minor, short-term, indirect, adverse impacts during construction due to fugitive dust and emissions from construction equipment. All Action Alternatives would conform to the Washington Metropolitan Region SIP.

IMPACTS TO GREENHOUSE GAS AND CLIMATE CHANGE

No-Action Alternative

The No-Action Alternative would not contribute significantly to greenhouse gas emissions.

Action Alternatives

Alternatives A, B, and C would have minor, long-term, direct, adverse impacts due to a slight increase in stationary and mobile source greenhouse gas emissions. Minor, short-term, direct, adverse impacts would occur during construction due to greenhouse gas emissions from construction equipment.

IMPACTS TO LAND USE PLANNING AND ZONING

No-Action Alternative

Consistent with the Federal Elements of the Comprehensive Plan, the current consolidation on the FDA Campus encourages efficiency, higher productivity, and collaboration. The current Transportation Management Plan (TMP) encourages employees to use alternative means of transportation to commute to the campus. Additionally, buildings on the FDA Campus operate in an energy efficient and sustainable manner, meeting LEED® Gold certification and net zero energy and water usage. While the No-Action Alternative is consistent with the White Oak Master Plan and the WOSG Master Plan, they are not fully consistent with the related Federal Elements of the Comprehensive Plan because GSA would continue to lease facilities for FDA that are not located in the immediate vicinity of the FDA Campus. As programs are expanded and new employees are hired, additional leased space would be needed. This would not further improve efficiency, alleviate congestion, or improve air quality, which are elements of the Comprehensive Plan. Therefore, there would be a minor, long-term, adverse impact to land use planning.

Action Alternatives

The consolidated expansion of the FDA Campus would encourage efficiency, higher productivity, and collaboration that is consistent with the Federal Elements of the Comprehensive Plan. A Transportation Management Plan (TMP) would be developed that would encourage alternative means of transportation, which is consistent with the Transportation Element and the Action Alternatives would be constructed and operated in an energy efficient manner, which is consistent with the Environmental Element. The Action Alternatives would be consistent with WOSG Master Plan because the expansion would attract and support new businesses to the area. The Action Alternatives would also be consistent with Prince George's County's Subregion 1 Plan's goals for green design, sustainable development and attracting new employment opportunities. Land use within the project area would change which would result in a negligible, long-term, adverse impact to land use planning.

IMPACTS TO COMMUNITY FACILITIES AND SERVICES

No-Action Alternative

Under the No-Action Alternative, there would be no change in community facilities and services. There would not be an increase in employees on the FDA Campus, and, therefore, there would not be an increase in demand for community services, such as schools in Montgomery or Prince George's counties. No parkland would be acquired, and park operations would not be affected.

Action Alternatives

All of the Action Alternatives would have minor, long-term, indirect, adverse impacts to schools due to potential relocations of FDA employees as they moved to the FDA Campus. Minor, long-term, indirect, adverse impacts to parks, recreation, or open space would occur due to increased usage by FDA employees. However, it is expected that the potential increased usage of parks, recreation facilities, or open space would not exceed the availability of resources in the area.

IMPACTS TO ECONOMY AND EMPLOYMENT

No-Action Alternative

The No-Action Alternative would result in minor, short-term, direct, and indirect, beneficial impacts to taxes and revenue from construction personnel patronizing local businesses during construction of a fitness trail and employee express entrance lanes.

Action Alternatives

Under the Action Alternatives, minor, long-term, indirect, beneficial impacts to local economy and employment would occur from increased patronage of local businesses and increased contractor and vendor opportunities. Moderate, long-term, direct, beneficial impacts would occur to Montgomery and Prince George's counties employment due to new hires from outside the county. During construction, minor, short-term, direct, beneficial impacts from employment of construction workers and purchases of materials and equipment would occur. There would be no significant impact to property taxes because the FRC is under federal ownership. FDA employee income and spending would contribute to moderate, long-term, direct and indirect, beneficial impacts to sales and income tax revenues.

IMPACTS TO SAFETY AND SECURITY

No-Action Alternative

Under the No-Action Alternative, no change in the volume of calls for police, fire or EMS are anticipated. Montgomery County Fire and Rescue Service (MCFRS) plans to construct a new fire station northeast of the FRC to address the anticipated increased call load from the planned Viva White Oak development and other area developments. At a minimum, the new station would have a two-person EMS transport unit and a four-person paramedic engine. Under the No-Action Alternative, current security measures and procedures would continue. Access to the FRC would continue to be restricted to Federal employees and approved visitors. The existing truck screening facility would remain at its current location and would not provide adequate space for truck turn-around. The identified security deficiencies near the laboratory buildings loading docks and the CUP would remain unaddressed. This would result in a minor, long-term, adverse impact to the safety and security of visitors and employees on the FDA Campus.

Action Alternatives

Under the Action Alternatives, minor, long-term, direct, adverse impacts would occur to local police, fire, and EMS services due to an estimated increase of 75 fire/rescue/EMS incidents per year and negligible, short-term, direct, adverse impacts would occur during construction due to potential construction site hazards. The proposed MCFRS fire station northeast of the FRC would help to handle any increase in calls for fire and EMS service. A new centralized Visitor and Transit Center would provide a singular point of entry for all visitors and would streamline visitor security screening. A centralized Truck Screening Facility would allow for trucks and delivery vehicles to be screened prior to entering the FDA Campus. These new facilities would result in moderate, long-term, direct, beneficial impacts.

IMPACTS TO CULTURAL RESOURCES

No-Action Alternative

No new construction would take place under the No-Action Alternative. Therefore, there would be no significant adverse impacts to known or potential historic properties, archaeological resources, or other cultural resource.

Action Alternatives

The placement of the Conference Center and the Northwest Parking Garage would not affect the remaining historic resources on the FDA Campus (Building 1 and 100, the flagpole, and the redesigned circle in front of Building 1). The mid-rise buildings proposed under Alternative A would be of similar scale to the existing buildings at the FDA Campus. However, the high-rise buildings under Alternatives B and C would be taller than the existing buildings at the FDA Campus. Because the high-rises are not consistent with the height and massing of the historic buildings and subsequent FDA campus development under the compatibility standards established in the 2002 amended MOA, their construction would result in an adverse effect to the visual setting of the façade of Building 1 in the primary APE under Section 106 of the National Historic Preservation Act (NHPA).

The Action Alternatives would result in negligible, long-term impacts due to construction of the East Parking Garage, which would adversely impact an ineligible archaeological site (18MO738).

IMPACTS TO TRAFFIC AND TRANSPORTATION

No-Action Alternative

Under the No-Action Alternative, planned development in the area would add additional delay and queuing to multiple study-area intersection approaches. Twelve intersections would operate at an overall level of service E or F in one or more peak hours, resulting in a moderate, long-term, adverse impact to local area roadways. There would be no significant impacts to transit, bike, or pedestrian services.

Action Alternatives

The increase in employees under the Action Alternatives would have moderate, long-term, direct, adverse impacts to traffic volumes, which would cause additional delays and queuing at multiple study-area intersections. Fifteen intersections would operate at an overall level of service E or F in one or more peak hours, requiring improvements to several intersections. There would be no significant impacts to existing transit services and moderate, long-term, direct, beneficial impacts to bicycle access would result from the addition of sidewalks, bicycle lanes and paths, secure bike parking, locker room and shower facilities, and bike repair stations.

IMPACTS TO UTILITIES

No-Action Alternative

There would be no significant impacts to utilities under the No-Action Alternative.

Action Alternatives

The Action Alternatives would have minor, long-term, direct, adverse impacts to water service due to increased demand. The additional sewer flow expected under the proposed Master Plan, combined with the existing sewer flow, future flow from other large developments in the area, and peak rainwater infiltration flows during a 10-year storm event, would likely exacerbate existing sewer overflows downstream in the Paint Branch Sewer Basin. The potential to contribute to offsite sewer overflows represents a long-term, indirect, major, adverse impact to sanitary sewer service and major, long-term, indirect, adverse impacts to sanitary sewer service due to the potential to contribute to offsite sewer overflows. However, by implementing mitigation, the major impact to sanitary sewer service would be minimized, resulting in a long-term, indirect, minor, adverse impact. There would also be a minor, long-term, direct, adverse impact to electrical and HVAC service because of an increased demand on the power grid.

IMPACTS TO WASTE MANAGEMENT

No-Action Alternative

No changes would be made to waste generation or existing handling; therefore, the No-Action Alternative would have no significant short- or long-term impacts to waste management on the FDA Campus.

Action Alternatives

The Action Alternatives would have minor, short-term, direct, adverse impacts to waste management due to temporary increase in construction waste and minor, long-term, direct, adverse impact to waste management because of the increase in the amount of solid waste, food waste, and recyclables handled at waste-receiving facilities. A consolidated Distribution Center would consolidate the waste streams of most of the existing and proposed campus buildings, which would provide a centralized, efficient system for trash and recycling sorting, storage, and removal resulting in long-term, beneficial impacts.

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ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
BFEs	Base Flood Elevations
BMPs	Best Management Practice
BPCA	Best Pharmaceuticals for Children Act
BRAC	Base Realignment and Closure Act
BRT	Bus Rapid Transit
CAA	Federal Clean Air Act
CBER	Center for Biologics Evaluation and Research
CCTV	Closed-circuit television
CDER	Center for Drug Evaluation and Research
CDRH	Center for Devices and Radiological Health
CEQ	Council on Environmental Quality
CERCLA	U.S. Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CFSAN	Center for Food Safety and Applied Nutrition
CTP	Center for Tobacco Products
CUP	Central Utility Plan
CVM	Center for Veterinary Medicine
CWA	Federal Clean Water Act
dbA	Decibel ('A'-weighted)
DEP	Department of Environmental Protection
DMS	Dynamic Message Signs
DOT	U.S. Department of Transportation
DV	Design Verification
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EMS	Emergency Medical Services
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPSCs	Energy Savings Performance Contracts
ESD/LID	Environmentally Site Design/Low Impact Development
FDA	U.S. Food and Drug Administration
FDARA	FDA Reauthorization Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FPS	Federal Protective Service
FRC	Federal Research Center
FS	Feasibility Study
FY	Fiscal Year
GHGs	Greenhouse gases
GIS	Geographic Information System.

GSA	U.S. General Services Administration
Gsf	Gross square feet
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HCS	Hazardous Communication Standard
HPA	Hydraulic Planning Analysis
HVAC	Heating, ventilation, and air conditioning
IAS	Initial Assessment Study
IPAC	Information for Planning and Consultation
IR	Installation Restoration
ISC	Interagency Security Council
IWTP	Industrial Wastewater Treatment Plant
LOS	Level of service
M-NCPPC	Maryland-National Capital Park & Planning Commission
MARC	Maryland Area Regional Commuter
MCFRS	Montgomery County Fire and Rescue Service
MCPS	Montgomery County Public Schools
MDE	Maryland Department of Environment
MDNR	Maryland Department of Natural Resources
MDOT	Maryland Department of Transportation
MDSPGP-5	Maryland State Programmatic General Permit 5
MDUFMA	Medical Device User Fee Modernization Act
MHT	Maryland Historical Trust
MMT	Million metric tons
MOA	Memorandum of Agreement
MS4	Municipal Separate Storm Sewer Systems
MSAT	Mobile Source Air Toxic
Msl	Mean Sea Level
MWCOG	Metropolitan Washington Council of Governments
NAAQS	National Ambient Air Quality Standards
NCPC	National Capital Planning Commission
NCR	National Capital Region
NCTR	National Center for Toxicological Research
NEC	Northeast Consortium
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NOL	Naval Ordnance Laboratory
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRHP	National Register of Historic Places
NSWC	Naval Surface Warfare Center
OC	Office of the Commissioner

O&M	Operation and Maintenance
OMB	Office of Management and Budget
ORA	Office of Regulatory Affairs
PA	Programmatic Agreement
PBS	Public Buildings Service
PCBs	Polychlorinated Biphenyls
PDUFA	Prescription Drug User Fee Act
PEM	Palustrine Emergent
PEPCO	Potomac Electric Power Company
PGCPS	Prince George's County Public Schools
Ppb	Parts per billion
Ppm	Parts per million
PREA	Pediatric Research Equity Act
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RFIS	Remedial Investigation and Feasibility Study
ROD	Record of Decision
SHA	Maryland State Highway Administration
SIP	State Implementation Plan
SPF	System Planning Forecast
SSR	Site Screening Report
STP	Shovel test pit
SVBs	Stream Valley Buffers
SWM	Stormwater Management
SITES	Sustainable Sites Initiative
TDM	Transportation Demand Management
TMP	Transportation Management Plan
US EPA	U.S. Environmental Protection Agency
USACE	U.S. Army Corps of Engineer
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	Volatile Organic Compounds
VPH	Volatile Petroleum Hydrocarbons
WMATA	Washington Metropolitan Transportation Authority
WOLAA	White Oak Laboratory Alumni Association
WOSG	White Oak Science Gateway
WSSC	Washington Suburban Sanitary Commission

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INTRODUCTION

This Environmental Impact Statement (EIS) has been prepared by the U.S. General Services Administration (GSA) to assess and report potential impacts that would result from the implementation of a Master Plan for the U.S. Food and Drug Administration (FDA) for the continued consolidation of FDA's headquarters facilities at the Federal Research Center at White Oak (FRC) located in Silver Spring, Maryland.

The National Environmental Policy Act (NEPA) requires federal agencies to prepare an EIS for actions that may significantly affect the quality of the human environment, which is defined as "the natural and physical environment, and the relations of people to that environment" (GSA Desk Guide). GSA has prepared this EIS to explain to the public the impacts on the environment, including natural resources, such as soils, topography, and geology, water resources such as surface waters and wetlands, vegetation, wildlife, air quality and greenhouse gasses and climate change; social resources such as land use planning and zoning, community services and facilities, economy and employment, safety and security, traffic and transportation, utilities, and waste management; and cultural resources such as historic structures and landscapes and archeological resources.

This EIS provides information on impacts to cultural resources as required by Section 106 of the National Historic Preservation Act (NHPA). GSA is using this EIS to provide information on cultural resources affected by the proposed Master Plan, including cultural resources outside of the FRC that could be affected by views of the new buildings, noise, or traffic. More information on other laws and regulations with which GSA must comply is located at the end of Chapter 1, Purpose and Need.

The public is encouraged to review this document to learn more about the Master Plan and its potential impacts. The public is also encouraged to provide comments on the Final EIS and the Master Plan.

Written comments on the Final EIS may be sent to:

Attention: Mr. Paul Gyamfi
Office of Planning and Design Quality
Public Building Service – National Capital Region
U.S. General Services Administration
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Comments on the Final EIS must be postmarked by October 15, 2018.

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1.0 PURPOSE AND NEED OF THE MASTER PLAN

1.1 WHAT IS THE PURPOSE AND THE NEED FOR A NEW FDA HEADQUARTERS MASTER PLAN?

1.1.1 PURPOSE OF THE PROJECT

The purpose of the proposed action is to provide a Master Plan for the FDA Campus at FRC to support further consolidation of FDA employees and projected growth. Since the 2006 Master Plan was completed, additional authorities have been added to, and original authorities have expanded, the FDA's mission. The result is a significant increase in the personnel projected for the FDA Headquarters. Currently FDA has 10,987 assigned personnel to the FDA Campus with a peak daily population of 7,793. The projected growth for FDA is approximately 6,546 additional employees, which includes funded staff vacancies, existing employees currently in leased space in suburban Maryland, FDA support staff, and future growth. The Master Plan is being prepared to guide the development to accommodate a total of approximately 18,000 people at the FRC. The Master Plan will steer the planning, design, and construction of new buildings; improvements to roadways, utilities, and other infrastructure; and the protection of natural areas.

WHAT IS THE DIFFERENCE BETWEEN THE FRC AND THE FDA CAMPUS?

The FRC at White Oak is comprised of 662 acres of the former Naval Surface Warfare Center. The NSWC was transferred to GSA in 1996 and was renamed the Federal Research Center at White Oak.

The FDA Campus comprises the approximate 130-acre parcel within the FRC that Congress mandated that FDA/GSA use to construct a new FDA Headquarters (see Figure 1).

In this EIS, use of the term "FRC" refers to the entire 662-acre parcel and "FDA Campus" refers to the part of the FRC being used for the FDA Headquarters.

1.1.2 NEED FOR THE PROJECT

A Master Plan is needed to continue to support the FDA Headquarters consolidation at the FRC and to provide the necessary office space to conduct the complex and comprehensive reviews mandated by Congress. To accommodate an increase in personnel, office space at the FRC needs to be expanded. Infrastructure improvements are also needed to serve the increase in office space and campus population.

In fiscal year 2016, Congress provided funding "for FDA to complete a feasibility study and Master Plan for land inside and contiguous to the White Oak campus to address its expanded workforce and the facilities needed to accommodate them." On August 3, 2017, Congress passed the FDA Reauthorization Act (FDARA) of 2017.

This new legislation reauthorized the user fee programs necessary for continued support of the agency's pre-market evaluation of prescription drugs, medical devices, generic drugs, and biosimilar products. Due to these Congressional mandates, FDA is projecting that there would need to be an increase in employees and campus support staff at the FDA Campus. Therefore, GSA is proposing a Master Plan to accommodate future growth and further consolidate FDA operations. The Master Plan would provide a framework for development at the FRC to accommodate up to approximately 18,000 FDA employees and support staff. This would include the development of approximately 1,604,393 of additional gsf of office space and up to 377,382 gsf of special use/shared space to support FDA's mission for a total of up to 9,285,176 gsf at the FDA Campus. This EIS assesses the impacts of the population increase and additional growth on the FRC.

1.2 WHAT ROLE DOES FDA PLAY IN PROJECT DEVELOPMENT?

FDA is a cooperating agency for this project. A cooperating agency is a federal agency other than the lead agency (GSA) which has jurisdiction by law or special expertise with respect to any environmental impact involved in a project (or a reasonable alternative) (40 CFR 1508.5). FDA occupies the FDA Campus at the FRC as a tenant to GSA. FDA is also responsible for implementing the FDA Headquarters Transportation Management Plan (TMP) and ensuring transportation management strategies outlined in the TMP are carried out.

1.3 WHERE IS THE FEDERAL RESEARCH CENTER AT WHITE OAK LOCATED?

The FRC is located at 10903 New Hampshire Avenue, Silver Spring, Maryland (**Figure 1).** The FRC is located east of New Hampshire Avenue (MD 650) and west of Cherry Hill Road in Montgomery and Prince George's counties. The site is bounded to the north by commercial and residential properties, the Paint Branch Stream Valley Park, and the Percontee Quarry. To the south of the FRC lie the U.S. Army's Adelphi Laboratory, residential properties, and the Powder Mill Community Park. The 130-acre FDA Campus is located at the west end of the FRC. **Figure 2** shows the location of the FDA Campus in relation to the FRC.

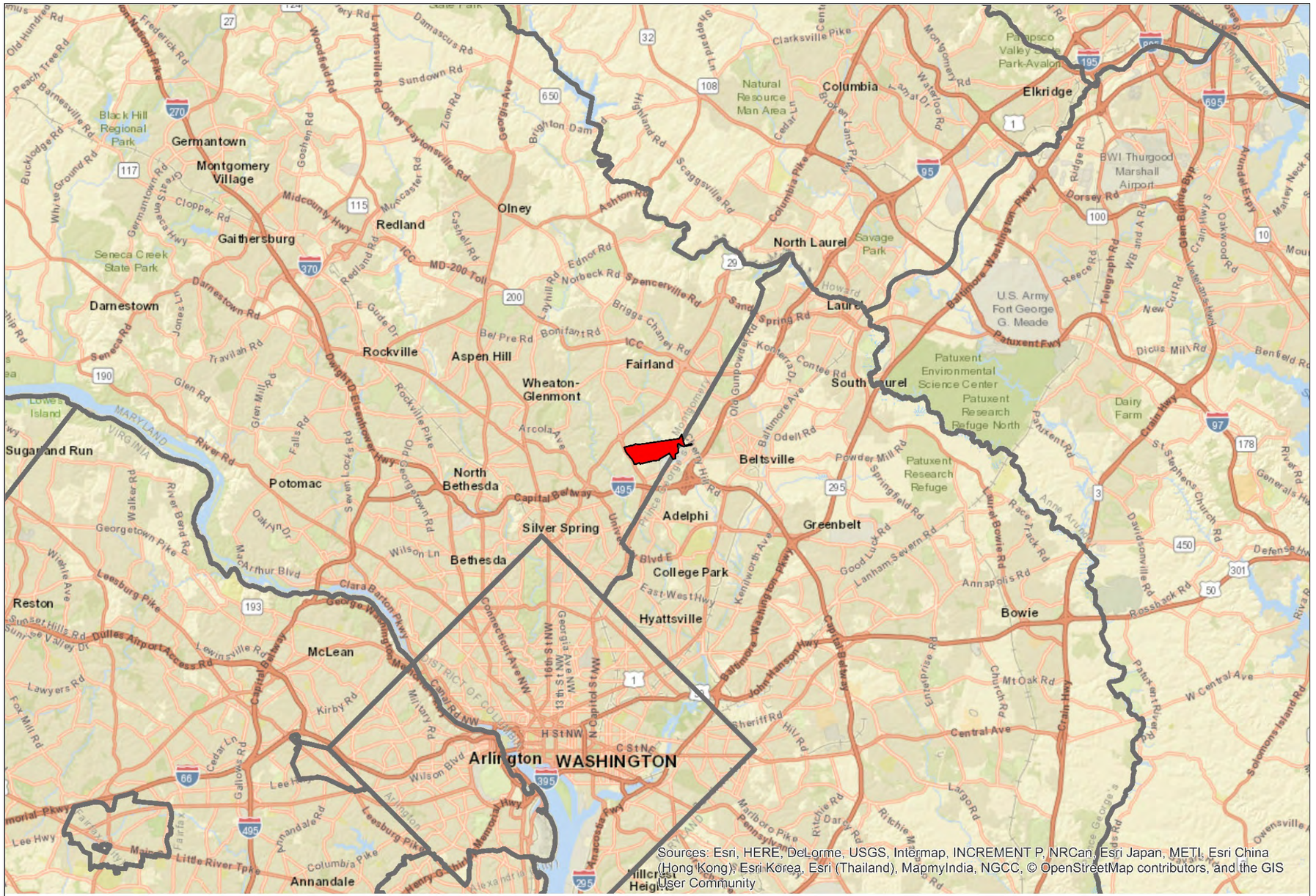

Figure 1. Regional Map

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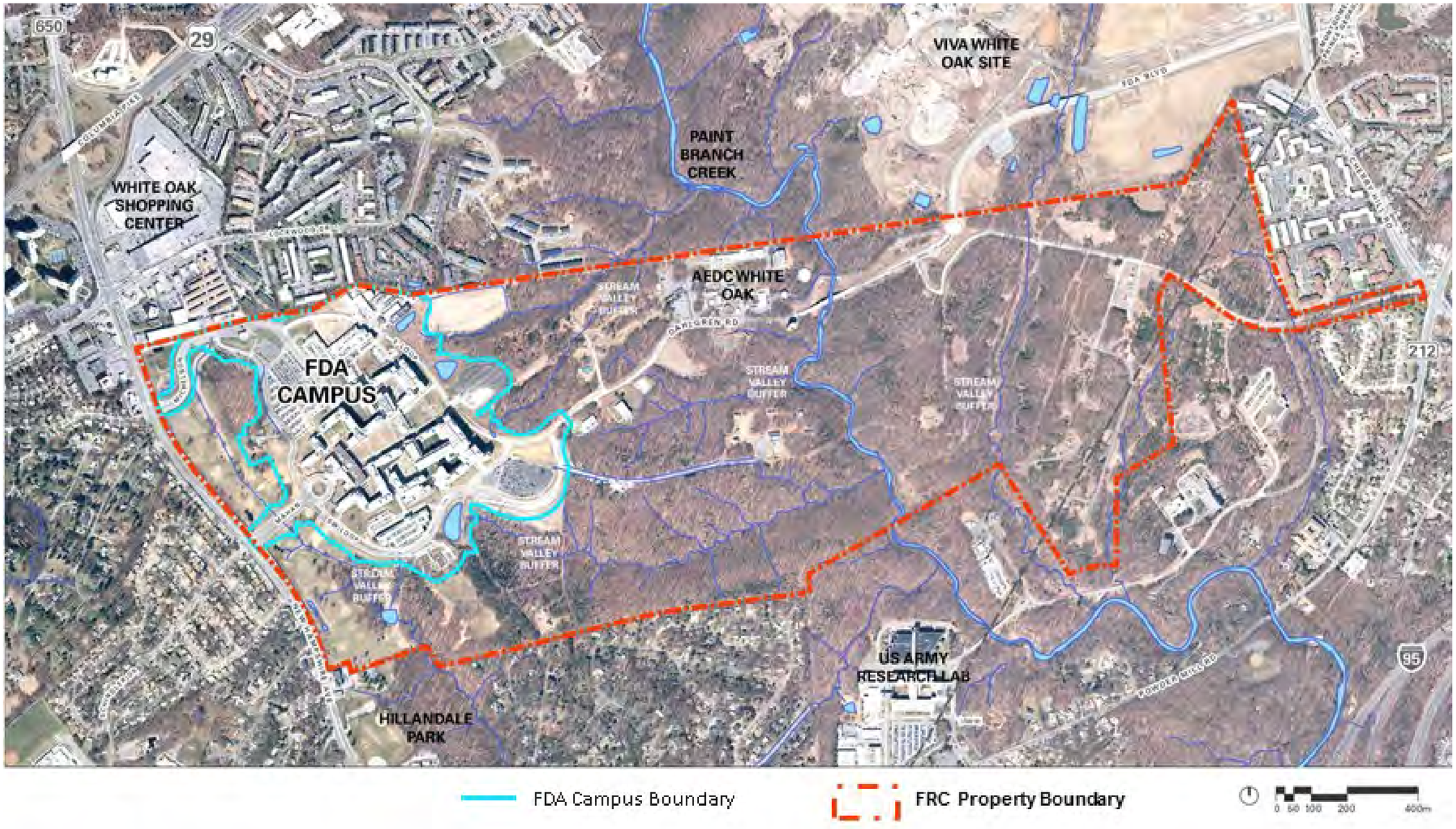

Figure 2. Site Location Map

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1.4 WHAT IS THE HISTORY OF THE FDA HEADQUARTERS AT THE FRC?

GSA is the development manager for Federal facilities. In this role, GSA acts as the landlord and maintains the upkeep of Federal facilities under its purview. As the development manager for Federal facilities, GSA has been consolidating the FDA Headquarters at the FRC at White Oak since 1997. The FDA Headquarters at the FRC currently consists of the following components:

- Office of the Commissioner (OC)
- Center for Biologics Evaluation and Research (CBER)
- Center for Drug Evaluation and Research (CDER)
- Center for Devices and Radiological Health (CDRH)
- Center for Tobacco Products (CTP)

In 1995, Congress directed GSA to examine the recently available Federal property at the White Oak Naval Surface Warfare Center (NSWC) for the FDA Headquarters consolidation. In 1997, GSA completed its first study to relocate approximately 5,947 employees from various locations in the local area to the property designated as the FRC at White Oak. The project included construction of approximately 2.1 million gross square feet (gsf) of new, state-of-the-art laboratory and office space and supporting facilities on a portion of the FRC, now called the FDA Campus. GSA issued a Record of Decision (ROD) in July 1997, to document the decision to consolidate the FDA Headquarters at the White Oak site, and construction began in Fiscal Year 2001.

In July 2002, legislation was passed that expanded FDA's mandate to support the Prescription Drug User Fee Act (PDUFA) and the Medical Device User Fee Modernization Act (MDUFMA). This legislation and the growth of other programs resulted in an increase of FDA employees needed at the FDA Campus to 7,720. In order to accommodate this increase in employees, an eastern access road was necessary. In 2005, GSA completed an updated Master Plan, and a Supplemental EIS analyzed the potential impacts of the proposed growth and

HISTORY OF FDA CONSOLIDATION AT THE FRC

***1944**: White Oak property acquired by Federal Government and used by Department of Defense through 1995*

***1995**: Naval Surface Warfare Center closed on June 22, 1995 as a result of the 1993 Base Closure and Realignment Act*

***1997**: GSA obtains 662 acres of the former Naval Surface Warfare Center from the U.S. Navy, and site renamed the Federal Research Center at White Oak*

***1997**: EIS prepared to analyze impacts from the consolidation of for 5,947 FDA employees at the FRC*

***2002**: FDA increases total number of employees by 309*

***2003**: FDA proposes increase in total employees to 7,720*

***2005**: Supplemental EIS prepared to analyze impacts from the addition of new employees and other program expansions*

***2007**: FDA proposes an increase in total employees of 1,170 in support of new legislative laws expanding previous programs*

***2009**: Second Supplemental EIS prepared to assess the impacts of the addition of new employees and other program expansions*

the new eastern access road. This analysis included changing the location of the Child Care Center and expanding buildings to accommodate the increase in employees to a total of 4,735,012 gsf.

In 2009, GSA completed a second Supplemental EIS that analyzed the impacts of increasing the number of FDA employees from 7,720 to 8,889 to conduct the complex and comprehensive reviews mandated by new legislation: the Food and Drug Administration Amendments Act of 2007, signed by President Bush in 2007, the reauthorization of the Best Pharmaceuticals for Children Act (BPCA), and the Pediatric Research Equity Act (PREA). To accommodate this growth, GSA assessed the development of 1,254,922 additional gsf of office and laboratory space, construction of a fitness center, and expansion of the Central Utility Plant to serve the FDA Campus. In addition, this Supplemental EIS analyzed the impacts of relocating the Child Care Center and the Broadcast Studio from the locations previously proposed in the 2006 FDA Headquarters Master Plan.

FDA in coordination with GSA have developed the following goals and objectives for this Master Plan:

Image & Mission – create new buildings that are architecturally compatible, iconic, and enduring by

- Creating a compact walkable campus
- Adding places for creative interchange & collaboration
- Creating architecture that is both compatible and iconic
- Reinforcing and extending the campus/courtyard concept
- Creating state-of-art-work spaces

Economics – create a more efficient and cost effective agency by

- Maximizing onsite population
- Reducing dependencies on leased facilities
- Utilization of shared facilities

FDA AUTHORITIES

Pure Food and Drugs Act, 1906

Federal Food, Drug, and Cosmetic Act, 1938

Public Health Service Act, 1944

Kefauver-Harris Drug Amendments, 1962

Fair Packaging and Labeling Act, 1967

Medical Device Amendments, 1976

Orphan Drug Act, 1983

National Childhood Vaccine Injury Act, 1986

Food and Drug Administration Revitalization Act, 1990

Prescription Drug User Fee Act, 1992

Food and Drug Administration Modernization Act, 1997

Public Health, Security, and Bioterrorism Preparedness and Response Act, 2002

Pediatric Research Equity Act, 2003

Food and Drug Administration Amendments Act, 2007

Family Smoking Prevention and Tobacco Control Act, 2009

Food Safety Modernization Act, 2011

FDA Safety and Innovation Act, 2012

21st Century Cures Act, 2016

FDA Reauthorization Act, 2017

- Reducing travel times to and from meetings and conferences

Environmental Stewardship - to project the site's tree canopy, maintain bio-diversity, minimize runoff, and create sustainable campus

- Maintain the historic green buffer along New Hampshire Avenue
- Minimize land coverage
- Convert surface parking lots into building pads
- Create both zero net energy & zero net water facilities
- Utilize innovative storm water practices

Transportation – to reinforce the innovative existing policies and respond to potential benefits of Rapid Transit Buses and autonomous vehicles

- Welcome BRT on-site
- Create an onsite transit hub
- Continue to subsidize van and car pools
- Phase future parking based on the impact of autonomous vehicles

1.5 HOW DOES THIS DOCUMENT RELATE TO THE OTHER EISs THAT HAVE BEEN DEVELOPED FOR THE FDA HEADQUARTERS CONSOLIDATION?

GSA has prepared this EIS to ensure environmental issues associated with these improvements are identified and potential impacts are assessed. As previously mentioned, three previous EISs have been completed for the consolidation of the FDA Headquarters; the U.S. Food and Drug Administration Consolidation, Montgomery County, Final Environmental Impact Statement, April 1997 (GSA, 1997); the U.S. Food and Drug Administration Headquarters Consolidation, Final Supplemental Environmental Impact Statement, March 2005 (GSA, 2005); and the U.S. Food and Drug Administration Headquarters Consolidation, Final Supplemental Environmental Impact Statement, (GSA, 2009). The analyses presented in the three previous EISs are incorporated by reference in this EIS, as appropriate. The format of this EIS is intended to be reader-friendly and, therefore, is different than the standard format prescribed in the Council on Environmental Quality (CEQ) Regulations (40 CFR 1500). However, all the elements of an EIS, as required by CEQ Regulations (40 CFR 1500), are included in this EIS. **Table 1** provides a comparison of the required EIS components, as set

CEQ regulations state that: "Environmental impact statements shall be written in plain language and may use appropriate graphics so that decisionmakers and the public can readily understand them" (40CFR 1502.8), and "Agencies shall use a format for environmental impact statements which will encourage good analysis and clear presentation of the alternatives including the proposed action" (40 CFR Part 1502.10).

forth by CEQ Regulations, and indicates the section where each of these required elements are addressed in this EIS.

Table 1. Comparison of Required EIS Components Versus the FDA Master Plan EIS

Council on Environmental Quality Regulations Required EIS Components	FDA Master Plan EIS
Purpose of and Need for the Action (40 CFR 1502.13)	Chapter 1, Introduction: pages 3-12
Alternatives Considered and Dismissed (40 CFR 1502.14)	Chapter 2, Alternatives Development: pages 29-32
Alternatives Considered (40 CFR 1502.14)	Chapter 2, Alternatives Development: pages 20-29
Affected Environment [Existing Conditions] (40 CFR 1502.15)	Chapter 3, Affected Environment and Environmental Consequences: pages 43-170
Environmental Consequences [Impacts] (40 CFR 1502.16)	Chapter 3, Affected Environment and Impacts to the Human Environment: pages 43-170
Response to Comments	Chapter 4, Responses to Comments on the Draft EIS
List of Preparers (40 CFR 1502.17)	Chapter 5, List of Preparers
Circulation of EIS (40 CFR 1502.19)	Chapter 6, EIS Distribution List
Appendices	Volume 2

1.6 RELEVANT LAWS AND REGULATIONS

1.6.1 WHAT IS NEPA AND THE NEPA PROCESS?

The National Environmental Policy Act of 1969, commonly referred to as NEPA, is the nation's legislative charter for protection of the environment. NEPA requires Federal agencies to consider environmental impacts of their projects during Federal agency planning and decision-making. NEPA requires Federal agencies to prepare an EIS for actions, such as the consolidation of the FDA Headquarters that may significantly affect the quality of the human environment.

Public involvement is an important part in the NEPA process. By involving citizens, stakeholder groups, and local, state, and Federal agencies, the Federal Government can make better informed decisions.

Through the NEPA process, the public has had, and will continue to have, opportunities to comment on the expansion of the FDA Headquarters at the FRC at White Oak. From August 21, 2017 through September 25, 2017, the public was given an opportunity to participate in the scoping process. "Scoping" is a tool for identifying the issues that should be addressed in the EIS and Section 106 process (see page 2.1.3). Scoping

allows the public to help define priorities and express stakeholder and community issues to the agency through oral and written comments. A critical element of the scoping process is the public meeting during which comments and concerns are officially documented. A public scoping meeting was held on September 12, 2017 at the CHI Center Multipurpose Room on New Hampshire Avenue i n Silver Spring, Maryland. GSA and FDA also met with numerous groups and government agencies to solicit input on the proposed project. GSA and FDA have continued to meet with the public, area neighborhood groups, special interest groups, and government agencies throughout the Master Plan process and preparation of this EIS. Key issues identified during scoping and meetings with the public and agencies include:

NEPA PUBLIC INVOLVEMENT:

Scoping
August 2 – September 25, 2017

Public Scoping Meeting
September 12, 2017

Publication of Draft EIS
March 2, 2018

Public Review of Draft EIS
March 2 – April 16, 2018
(45-day review)

Public Hearing
March 22, 2018

Publication of Final EIS
September 14, 2018

Record of Decision
November 2018

- Impacts of traffic and access to mass transit
- Viewshed from New Hampshire Avenue
- Community partnerships
- Stormwater management
- Preservation of trees and other natural features
- Community amenities

GSA has considered impacts to these and other resources in this Final EIS and is now asking for public and government agencies to comment on the analysis. Impacts to resources are discussed in Chapter 3 of this EIS. Under NEPA, individuals and agencies have 30 days to review the Final EIS.

Finally, GSA will make a decision whether or not to expand the FDA Headquarters at the FRC to accommodate a total of approximately 18,000 employees and support staff. Comments received on the Draft and Final EIS and through consultation with Federal, state, and county agencies will help to inform the GSA decision. This decision will be documented in a Record of Decision (ROD). The ROD will outline the selected alternative for the Master Plan and describe measures the government will take to reduce impacts from construction and operation of the FDA Headquarters at the FRC.

1.6.2 WHAT IS SECTION 106 OF THE NHPA?

As with NEPA, Section 106 of the NHPA of 1966 requires that Federal agencies consider the effects of their actions on historic resources. Under the NHPA, GSA must evaluate impacts to any district, site, building, structure, or object listed in or eligible for listing in the National Register of Historic Places (NRHP). The Naval Surface Warfare Center, formerly the Naval Ordnance Laboratory, was determined eligible for listing in the NRHP in 1997. Chapter 3, Affected Environment and Impacts to the Human Environment, describes the impacts the Master Plan will have on historic resources including the NSWC.

*The **National Register of Historic Places** is the nation's official list of cultural resources worthy of preservation. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.*

Section 106 review encourages preservation of historic properties; however, there are times when impacts to historic resources cannot be avoided. When the government must impact historic resources, they are required to consult with local and Federal agencies responsible for historic preservation, local citizens, and groups with an interest in historic preservation. While GSA completed the Section 106 process for the FDA Consolidation in 2000 (details provided below), various aspects of the proposed alternative under the Master Plan may have the potential to impact historic resources and views. For this reason, GSA is required to conduct additional consultations with the Maryland Historical Trust (MHT) and other interested parties.

In 2002, GSA completed a Memorandum of Agreement (MOA) with the MHT and the Advisory Council on Historic Preservation (ACHP), which provides requirements for how historic resources are to be managed on the FRC. The MOA provides for the retention of contributing resources, including Building 1, the fire station portion of Building 100, and the flagpole with a redesigned circle to be located in front of Building 1. In addition, the MOA provided for recordation requirements for historic structures throughout the FRC. Recordation requirements include meeting the standards for Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) through written, graphic, and photographic documentation of all contributing buildings. The photographic documentation was accepted on January 31, 2001. The completed graphics and written documentation were completed and sent to the National Park Service (NPS) in October 2002.

In 2003, a separate MOA was established with MHT for demolition of structures in the 300 and 600 areas of the FRC.

For the proposed Master Plan, GSA initiated consultation with the MHT under Section 106 of the NHPA on August 18, 2017. Throughout the project planning for the Master Plan, GSA has been seeking input on the impacts to historic resources and ways to avoid and minimize these impacts. GSA has asked for input from:

- Advisory County on Historic Preservation
- Air Force Arnold Engineering Development Center
- Greater Colesville Citizens Association

- Hillandale Citizens Association
- Labquest
- Maryland Commission on Indian Affairs
- Maryland Historical Trust
- Montgomery County Planning Department
- Montgomery County Historic Preservation Office
- North White Oak Civic Association
- National Capital Planning Commission
- U.S. Army Research Laboratory
- White Oak Laboratory Alumni Association

In addition, opportunities for public comment on historic preservation issues were provided during scoping for the EIS and during additional consulting party meetings. The public can also comment on historic preservation issues during the public review period of this Final EIS.

1.6.3 WHAT OTHER ENVIRONMENTAL LAWS AND REGULATIONS ARE RELEVANT FOR THIS PROJECT?

GSA must also comply with many statutes, regulations, plans, and Executive Orders (EOs) (see text box on the following page) when developing a Federal property such as the FDA Headquarters. GSA is incorporating compliance with these laws and regulations into their project planning and NEPA compliance.

STATUES, REGULATIONS, PLANS, AND EXECUTIVE ORDERS

Statutes

Clean Air Act of 1970 as amended (42 U.S.C. § 7401, et seq.)

Clean Water Act of 1977 as amended (33 U.S.C. § 1251, et seq.)

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. § 9601, et seq.)

Archaeological Resources Protection Act of 1979 (16 U.S.C. §470aa-mm)

Endangered Species Act of 1973 (16 U.S.C. §1531-1544)

Section 5 of the National Capital Planning Act of 1952 (82 P.L. 592; 66 Stat. 781, et seq.); (codified as amended at 40 U.S.C. §8722(b)(1))

Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901, et seq.)

National Energy Conservation Policy Act (42 U.S.C. §8231, et seq.)

Energy Independence and Security Act (42 U.S.C. §17001, et seq.)

National Historic Preservation Act of 1966 (16 U.S.C. § 470, et seq.) (89 P.L. 665 (1966)); (referred to herein as "Section 106")

Regulations

Council on Environmental Quality Regulations (40 Code of Federal Regulations Parts 1500-1508)

36 CFR Part 800 – Protection of Historic Properties

32 CFR Part 229 – Protection of Archaeological Resources: Uniform Regulations

40 CFR 6, 51, and 93 – Conformity of General Federal Actions to State or Federal Implementation Plans

33 CFR 320-332 – U.S. Army Corps of Engineers Regulations

40 CFR Parts 300 through 399 – Hazardous Substance Regulations

Secretary of the Interior Standards and Guidelines for Archaeology and Historic Preservation (48 Federal Register 44716)

Executive Orders

Executive Order 11593 – Protection and Enhancement of the Cultural Environment

Executive Order 11988 – Floodplain Management

Executive Order 11990 – Protection of Wetlands

Executive Order 12072 – Federal Space Management

Executive Order 12699 – Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction

Executive Order 12898 – Environmental Justice

Executive Order 13287 – Preserve America

Executive Order 13327 – Federal Real Property Asset Management

Executive Order 13693 – Planning for Federal Sustainability in the Next Decade

Presidential Memo Creating Federal Strategy to Promote Honeybees and other Polinators

2.0 ALTERNATIVES DEVELOPMENT

2.1 HOW WERE THE FDA CAMPUS MASTER PLAN ALTERNATIVES DEVELOPED?

To create alternatives for the FDA Master Plan, GSA used a project team of urban planners, architects, architectural historians, environmental scientists, engineers, and economists. The project team studied existing resources at the FRC to determine:

- the availability of developable land to support new office buildings to accommodate the increased population;
- the ability of the highway network to support the increased traffic demands;
- the capability of the internal roads to support the increased population, and if not, what improvement would be necessary;
- the availability of sufficient parking,
- the availability of utilities sufficient to handle the additional capacity, and
- the ability of the central utility plant to support the proposed development.
- The project team then determined there were four development strategies at the FRC:
- Development adjacent to the existing FDA Campus,
- Development in the center of the FRC,
- Development in the eastern portion of the FRC, and
- Parking to reach existing capacity (no build strategy) (see Section 2.3 Alternatives Dismissed from Further Analysis for additional information).

The project team then considered different ways to place new buildings on the FRC, to increase the amount of office space for FDA, while avoiding impacts and minimizing harm caused by the alternatives.

2.1.1 HOW WAS THE PUBLIC INVOLVED DURING THE PREPERATION OF THE EIS?

GSA issued a Notice of Intent (NOI) to prepare an EIS on August 18, 2017. The NOI was published in the Federal Register, as well as *The Washington Post, the Montgomery Sentinel,* and the *Prince George's Sentinel*. NOI letters were mailed to approximately 125 federal, state, and local agencies, public officials, community groups, special interest groups, and area residents. The letters included information on the public scoping meeting and asked for the public's comments on the proposed FDA Master Plan.

GSA held a public scoping period on the EIS from August 21, 2017 through September 25, 2017. GSA also held an Open House for the public on September 12, 2017 from 6:30 to 8:30 pm. Approximately 50 people attended the public meeting, including FDA employees and staff from the following offices:

- Senator Van Hollen and Congressman Sarbanes' offices,
- Montgomery and Prince George's County Councils,
- Maryland Department of Commerce,
- Montgomery and Prince George's County governments,
- Prince George's County Police Department, and
- Maryland Park Police.

In addition, several organizations (Strengthen FDA, Labquest, North White Oak Civic Association, Percontee, Inc., Eyes of Paint Branch, Greater Colesville Civic Association, Whitehall Square Homeowner's Association, and the Alliance for a Stronger FDA) and members of the local communities were in attendance.

Poster boards were displayed showing the site plan; a history of the FDA consolidation; the EIS and NHPA processes; the Area of Potential Effect (APE); preliminary alternatives; and environmental features to be addressed in the EIS. In addition, a continuously running slide presentation was shown. The public was invited to comment on the proposed project and 24 comments were received from organizations, government agencies, and individuals.

GSA and FDA have also held scoping meetings with the National Capital Planning Commission (NCPC), Maryland-National Capital Planning Commission (M-NCPPC), Prince George's and Montgomery County governments, ACHP, MHT, Labquest, and the Hillandale Civic and North White Oak Citizens Associations.

A public comment period on the Draft EIS was held from March 2, 2018 through April 16, 2018. A total of 27 comments were received, which includes letters from several Federal agencies, state agencies, local governments, and the general public (see **Chapter 4)**. GSA also held a public hearing on the Draft EIS during the public comment period on March 22, 2018 from approximately 6:30 pm to 8:30 pm. Approximately seven people attended the hearing. A presentation was shown, providing details regarding the impacts of the proposed action, on the natural, cultural, and socio-economic environment for all proposed alternatives. Comment forms were available for attendees to complete. One speaker provided comments and no written comments were received. A transcript of the public hearing can be found in Chapter 4 of this document.

2.1.2 HOW WERE OTHER GOVERNMENT AGENCIES INVOLVED?

Consultation with federal, state, and local agencies has been conducted throughout the preparation of the Master Plan and EIS. **Table 2** provides a list of the meetings held with federal, state, and local agencies during the development of the Master Plan and EIS.

Table 2. Public Outreach/Coordination Meetings

Meeting Date	Organization
February 15, 2017	Early coordination meeting with NCPC
February 27, 2017	Informational Scoping meeting with M-NCPPC – Montgomery & Prince George's counties
July 27, 2017	Informational Meeting/Tour of FRC with NCPC
August 28, 2017	Informational Meeting/Tour of FRC with NCPC, M-NCPPC – Montgomery & Prince George's counties, MHT, ACHP
September 1, 2017	Informational Meeting with Labquest
September 12, 2017	Scoping Meeting
September 21, 2017	Master Plan Briefing Meeting with Montgomery County Executive staff
October 5, 2017	Informational Briefing – NCPC
October 11, 2017	Informational Meeting with Hillandale & North White Oak Citizens Associations
October 14, 2017	Consulting Party Meeting 1
December 7, 2017	Master Plan update meeting with NCPC
January 22,2018	Master plan update meeting with M-NCPPC – Montgomery County
January 23, 2018	Meeting with Montgomery County – BRT/Purple Line update
February 21, 2018	Meeting MD DOT SHA
February 22, 2018	Public Hearing presentation wo Montgomery County on Draft Master Plan
March 22, 2018	Public Hearing on EIS
April 4, 2018	Consulting Party Meeting 2
May 16, 2018	Public Hearing Presentation to Montgomery & Prince George's counties on Draft MP
May 21, 2018	Consulting Party 3
June 7, 2018	NCPC Draft Master Plan Approval Hearing

Consultation has also taken place with the:

- U.S. Fish and Wildlife Service (USFWS),
- Maryland Department of Natural Resources (MDNR),
- Maryland Department of Environment (MDE),
- Prince George's County Department of Public Works and Transportation,
- Montgomery County Department of Transportation,
- Montgomery County Department of Economic Development,
- Montgomery County Department of General Services,
- Montgomery County Ride-On, and
- Washington Metropolitan Transportation Authority (WMATA).

2.1.3 WHAT MAJOR ISSUES WERE RAISED BY THE PUBLIC AND OTHER GOVERNMENT AGENCIES?

The environmental issues identified through the initial scoping efforts for this EIS and through interdisciplinary team process are listed below (see **Table 3**). The indicators listed under each of the impact areas (such as transportation) are measures used in the impact analysis in Chapter 3 of this EIS to determine if there would be an impact from the alternative and the severity of the impact.

Table 3. Summary of Scoping Comments

Area of Concern	Comment	Where addressed in the EIS
Proposed Action	Not in favor of the proposed action as it is a waste of tax dollars	The need for the proposed action is included in Section 1.1.2
	In favor of the proposed action as it will concentrate development at White Oak.	Comment noted.
Alternatives	Not in favor of tallest building alternative	Impacts to viewsheds are assessed in Section 3.12.2.4.
Natural Resources	Concerned with the impact on the Paint Branch tributary	Paint Branch would not be directly impacted by the action alternatives. Impacts to surface waters are assessed in Section 3.3.3.
	Look at stormwater facilities underground – similar to ones designed in Cheverly and for the ICC	Stormwater management is assessed in Section 3.3.5.
	Concerns with increased air pollution	Air quality impacts are assessed in Section 3.6.

Area of Concern	Comment	Where addressed in the EIS
	Concerns with additional erosion and water pollution	Impacts from erosion and stormwater runoff are assessed in Sections 3.2.4 and 3.3.5.
	Would like wooded buffer zone next to Hillandale neighborhood remain intact	The Action Alternatives avoid impacts to the wooded buffer along the Hillandale neighborhood
	Concerned with loss of habitat	Impacts to wildlife and habitat are discussed in Sections 3.4 and 3.5.
	Would like to see the incorporation of green roofs and LEED architectural features and maximize the retention of trees	New buildings on the FDA Campus would be constructed to LEED® Gold certification and net zero energy and water usage would be achieved. Green roofs would be used if practicable. Impacts to forested areas are discussed in Section 3.4.
Community Services/Amenities	Is there an agreement with the CHI Center to provide backup childcare or to provide shelter in the event of an emergency?	Children would be relocated via the former golf cart path. Plans are being prepared to extend the path to the fire station.
	Hillandale Volunteer Fire Department Station/12 expansion	GSA through its Urban Planning and Good Neighbor Program is committed to exploring ways to provide public access to government lands. GSA is working with the M-NCPPC to review the inputs collected during scoping and collaborate to identify possible uses. Additionally, there are specific guidelines that must be followed in order for non-federal entities to acquire Federal land; the property must first be declared excess by the Federal government and in order for excess property to be made available for other uses, it must then be declared surplus. Once it is declared surplus it can be made available for use through public benefit conveyances.
	Hillandale Local Park – athletic fields (i.e.- Soccer.) Requesting land along the MNCPPC Southern fence. The park is also undergoing renovation scheduled to be completed 2020-21.	
	Would like to see officer's houses that border Hillandale neighborhood sold so that the land could be developed with houses that would fit with the neighborhood. This would include moving the FRC fence line back. This area was previously open to the public.	
	Provide public access to trails on the FRC for hiking, walking, bicycling, etc. and access to Paint Branch Creek from Hillandale and Viva White Oak. Some neighbors want public access to proposed Fitness (walking and exercise) Trail on FRC/FDA campus.	GSA through its Urban Planning and Good Neighbor Program is committed to exploring ways to provide public access to government lands. GSA is working with the M-NCPPC to review the inputs collected during scoping and collaborate to identify possible uses. Possible opportunities will also have to be explored and reviewed for consistency
	Make FRC/FDA Campus more accessible to White Oak community	

Area of Concern	Comment	Where addressed in the EIS
	Move security fence 50'-100' on Northern portion of FDA and repave Perimeter Road in order to provide E/W access	with and compatibility with the Level IV Security Requirements of the FDA Campus which restrict access of public vehicles and pedestrian access beyond security checkpoints.
	Fitness trail should be completed as use of the old road along the perimeter fence by pedestrians has led to an increase in noise impacts to local residents	A fitness trail for Federal employees is currently in progress. The impacts of this trail are assessed in Section 3.16.
Economic Impacts	The proposed action should provide an incentive for eateries and restaurants to locate in the area	Economic impacts are assessed in Section 3.10.
	The proposed action is a driver for economic development in eastern Montgomery County	Comment noted. Economic impacts are assessed in Section 3.10.
Transportation	Cumulative traffic impacts would occur with the expansion of FDA and VIVA White Oak	Traffic generated by area development has been included in the transportation analysis in Section 3.13.
	Would like to see employees charged for parking as an incentive to carpool and/or use mass transit	FDA employees are provided many incentives to carpool and/or use mass transit. See Section 3.14.
	Impact on traffic would be increasingly worse and intersections are already failing	Traffic impacts are assessed in Section 3.13.
	Need to provide greater east/west access from the White Oak Science Gateway Community to New Hampshire Avenue	GSA through its Urban Planning and Good Neighbor Program is committed to exploring ways to provide public access to government lands. GSA is working with the M-NCPPC to review the inputs collected during scoping and collaborate to identify possible uses. Possible opportunities will also have to be explored and reviewed for consistency with and compatibility with the Level IV Security Requirements of the FDA Campus which restrict access of public vehicles and pedestrian access beyond security checkpoints.

2.2 WHAT ALTERNATIVES HAVE BEEN CONSIDERED IN THIS EIS?

This EIS considers the No-Action Alternative and three Action Alternatives. The Draft EIS assumed that a portion of the proposed population growth would be housed in existing buildings on the FDA Campus. Since

the submission of the Draft EIS in March 2018, further evaluation indicated that additional building area would be needed to accommodate those people. Therefore, all three Action Alternatives have been adjusted to reflect the additional building area. The alternatives would require approximately 335,000 gsf of additional office space bringing the total area required between 1,910,906 to 1,952,627 GSF. The approximate 335,000 additional square footage does not include special spaces. The additional square footage does not affect either traffic or the number of parking spaces as the overall campus population of 18,000 has not changed.

2.2.1 WHAT IS THE NO-ACTION ALTERNATIVE AND WHY IS IT CONSIDERED?

The No-Action Alternative represents the existing land use present on the FDA Campus. NEPA requires GSA to consider the No-Action Alternative because it provides a baseline for evaluating the environmental impacts of the Master Plan alternatives. The No-Action Alternative provides a comparison of each of the Master Plan alternatives in relation to current operations.

2.2.2 HOW WOULD THE SITE BE DEVELOPED UNDER THE NO-ACTION ALTERNATIVE?

NO-ACTION ALTERNATIVE SUMMARY

7,793 current peak daily population

10,987 assigned employees to the FDA Campus

3,766,605 total gsf

6,817 parking spaces provided in 3 garages and 4 surface parking lots

Child Care Center on the south side of the FDA Campus

The No-Action Alternative represents the implementation of the 2006 and 2009 Master Plans that were approved by NCPC (see **Figure 3**). Under the No-Action Alternative, FDA would continue its current operations at the FRC, and the actions proposed in this EIS would not be taken. Specifically, under the No-Action Alternative the number of employees and support staff would not increase and would remain at approximately 10,987 personnel assigned to the FDA Campus with a current peak daily population of 7,793. The additional employees needed to conduct the complex and comprehensive reviews mandated by Congress would need to be located in other government-owned or leased space in the Washington, DC metropolitan area. Locating these employees outside the FDA Campus would result in inefficiencies in coordination of work products and in use of administrative, management, and technical support functions.

At present, the campus includes:

- 10,987 assigned personnel to the FDA Campus with a current peak daily population of 7,793;
- 3,766,605 gsf of office, lab, and central shared/other special spaces with 60,438 gsf of bridges and tunnels and 996,975 gsf parking garages for a total of 4,824,018 gsf;
- 6,817 parking spaces (including visitor parking); and
- Child Care Center located on the south side of the FDA Campus.

As noted, these conditions would not change under the No-Action Alternatives.

2.2.3 WHAT DEVELOPMENT ACTION ALTERNATIVES IS GSA EVALUATING IN THIS EIS?

Under the Action Alternatives, the number of FDA employees and support staff at the FDA Campus would increase to approximately 18,000. The proposed action would add up to an additional 1,604,393 gsf of office space and 377,382 gsf of special/shared use space to support FDA's mission for a total of up to 9,285,176 gsf at the FDA Campus (see **Table 4**). Parking would be provided at ratio of 1 space for every 1.8 employees (1:1.8) for a total of 10,000 parking spaces for FDA employees and campus support staff; and visitor parking would be increased from 1,000 to 1,615 parking spaces. Thus, the total number of parking spaces provided on the FDA Campus would be 11,615, which would include the additional 7,342 new additional parking spaces for FDA and its employees. The additional new parking spaces include replacement of 2,544 existing surface parking spaces that would be displaced by the new buildings. The East Loop Road would be reconfigured to allow for ease of circulation and access into and out of the FDA Campus. The reconfigured East Loop Road would circle around the new office buildings proposed on the east side of the FDA Campus and would connect with Blandy Road. At Blandy Road and FDA Boulevard, a new traffic circle would be constructed that would connect it with the Southeast Loop Road. The Southeast Loop Road would circle around the Southeast Parking Garage and connect to the existing Southeast Loop Road that would be reconfigured for the connection. Under each of the Action Alternatives, a distribution center would be constructed adjacent to the Northeast Parking Garage. A Truck Screening Facility would be constructed at the entrance to the FDA Campus on Michelson Road and a new Transit Center would be located on the existing northwest surface lots. A free-standing dining facility would be contructed on the Plaza near the new builidings.

MASTER PLAN ALTERNATIVES SUMMARY

Approximately 18,000 total employees and support staff

Approximately 9,285,266 gsf

Parking ratio 1:1.8

10,000 total parking spaces for FDA employees and support staff

1,615 visitor parking spaces

Reconfigured East Loop Road

Distribution Center located either under the new plaza connecting the new development with the existing Campus or adjacent to the Northeast parking garage

Truck Screening Facility located at the entrance to the FDA Campus on Michelson Road

Transit Center located on existing northwest surface lots

Free-standing dining facility

GSA has proposed three alternatives for accommodating the additional FDA employees and campus support staff on the FDA Campus. Alternatives are compared in **Table 5**.

Figure 3. No-Action Alternative

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Table 4. Proposed Build-Out of the FDA Headquarters

	1997 Final EIS (gross square feet)	2002 Revised Master Plan (gross square feet)	2006 Supplemental Final EIS/Master Plan (gross square feet)	2009 Supplement Final EIS (gross square feet)	2017 Existing Conditions (gross square feet)	2018 EIS/Master Plan (gross square feet)
Office	1,373,000	1,348,574	2,093,042	2,461,694	2,877,791	4,411,315 – 4,482,184
Lab	491,000	590,098	540,093	679,000	636,670	636,760
Central Shared Use* & Other (Special) Uses**	247,421	328,851	402,338	473,000	239,464	557,627 – 616,846
Vivarium	--	--	75,000	75,000	73,118	73,118
Structured Parking	--	832,000	1,624,539	2,301,240	996,975	3,493,255 – 3,533,375
Total	2,111,421	3,099,523	4,735,012	5,989,934	4,824,018	9,240,922 – 9,285,176

*Shared use is also integrated into other buildings on the FDA Campus.

**Other includes: Distribution Center, Communication Center, Fitness Center, Child Care Center, and tunnels/bridges.

Table 5. Comparison of Master Plan Alternatives

	No-Action Alternative (Existing Conditions)	Alternative A: Mid-Rise Buildings	Alternative B: One Large Tower Office Building	Alternative C: Two Large Tower Office Buildings
Building Heights	1 to 7 stories	up 11 stories	up to 20 stories	up to 16 Stories
Number of Buildings	14	4 new	3 new	4 new
Number of Parking Garages	3	3 new	3 new	3 new
Number of Surface Lots	4	0	0	0
New Gross Square Footage (Office/Shared/Special Spaces)*	3,766,605	1,910,906	1,952,627	1,920,624
Acres Disturbed over Preconstruction Conditions	66	78.6	77.22	76.22

*without bridges/tunnels

2.2.4 ALTERNATIVE A: MID-RISE BUILDINGS

With Alternative A, building heights would be in the range of existing buildings and the planning principle of buildings defining a series of courtyard spaces in the tradition of great university campuses is maintained. The buildings would not be visible from New Hampshire Avenue. New buildings would be placed at the eastern end of the plaza would be extended to facilitate a walkable campus.

ALTERNATIVE A SUMMARY

1,910,906 of new gsf

Four new office buildings

Office buildings up to 11-stories tall

Three new parking garages

Communication Center on eastern end of campus

Conference center at front of campus

Alternative A would also include the following:

- 1,910,906 of new gsf of office buildings, shared use space, and special use space;
- Four new office buildings up to 11-stories tall;
- Three new parking garages;
- A pedestrian bridge to connect the Southeast parking garage and office building with the new office buildings on the east side of the FDA Campus;
- A Communications Center would be placed with the new buildings on the eastern end of the campus; and
- A Conference Center would be placed on the northwest quadrant and existing main campus. (see **Figure 4**).

2.2.5 ALTERNATIVE B: ONE LARGE TOWER OFFICE BUILDING

With Alternative B, a 20-story office building would be placed on the eastern end of the FDA Campus. The high-rise office buildings would be visible from New Hampshire Avenue, Route 29, and the Capital Beltway. Additional mid-rise buildings would also be placed at the eastern end of the commons, and the plaza would be extended to facilitate a walkable campus. Alternative B would also consist of the following:

ALTERNATIVE B SUMMARY

1,952,627 of new gsf

Four new office buildings

Office buildings up to 20-stories tall

Three new parking garages

Communication Center on eastern end of campus

Conference center in front of campus

- 1,952,627 of new gsf of office space, shared use space, and special space;
- Four new office buildings up to 20-stories tall;
- Three new parking garages;
- A Communications Center would be placed with the new buildings on the eastern end of the campus; and
- A Conference Center would be placed on the northwest quadrant and existing main campus (see **Figure 5).**

2.2.6 ALTERNATIVE C: TWO LARGE TOWER OFFICE BUILDINGS

With Alternative C, a 16-story and a 14-story office building would be placed on the eastern end of the FDA Campus; framing the view down the axis of the main campus. The high-rise office buildings would be visible from New Hampshire Avenue. Additional mid-rise buildings would also be placed at the eastern end of the commons, and the plaza would be extended to facilitate a walkable campus. Alternative C would also consist of the following:

ALTERNATIVE C SUMMARY

1,920,624 of new gsf

Four new office buildings

Office buildings up to 16-stories tall

Three new parking garages

Communication Center on eastern end of campus

Conference center at front of campus

- 1,920,624 of new gsf of office space, shared use space, and special space;
- Four new office buildings up to 16-stories tall;
- Three new parking garages;
- A Communications Center would be placed with the new buildings on the eastern end of the campus; and
- A Conference Center would be placed on the northwest quadrant and existing main campus (see **Figure 6**).

2.2.7 WHAT IS GSA'S PREFERRED ALTERNATIVE?

In accordance with 40 CFR 1502.14, which requires that a preferred alternative be identified in the Final EIS, GSA has identified Alternative C: Two Large Office Tower Buildings as the preferred alternative for the 2018 Master Plan for the Consolidation of the U.S. FDA Headquarters at the Federal Research Center at White Oak located in Silver Spring, Maryland. The "preferred alternative" is the alternative GSA believes would best meet the purpose and need by providing a Master Plan that will guide future long-term development of the FRC. Alternative C will continue to create a compact walkable campus; and it will provide the necessary office space to conduct the complex and comprehensive reviews mandated by Congress. The configuration of buildings under Alternative C reinforces and extends the campus/courtyard concept, adds places for creative exchange and collaboration to spur administrative and scientific innovation, creates state-of-the-art work spaces that attract world-class scientists and stimulate public confidence in FDA's operations, and provides barrier-free accessibility to campus facilities to persons with disabilities. Alternative C would have less impervious surfaces and minimize development in the stream valley buffer than would be provided with the other alternatives. Alternative C also locates the Distribution Center on the northwest side of the campus closer to the proposed location of the Truck Screening Facility with direct access to the already-developed tunnel system. However, it is important to understand that the selection of a preferred alternative is not a final alternative selection. A recommendation will be made to the GSA Regional Administrator, who will have final approval on alternative selection. This decision will be documented in the ROD.

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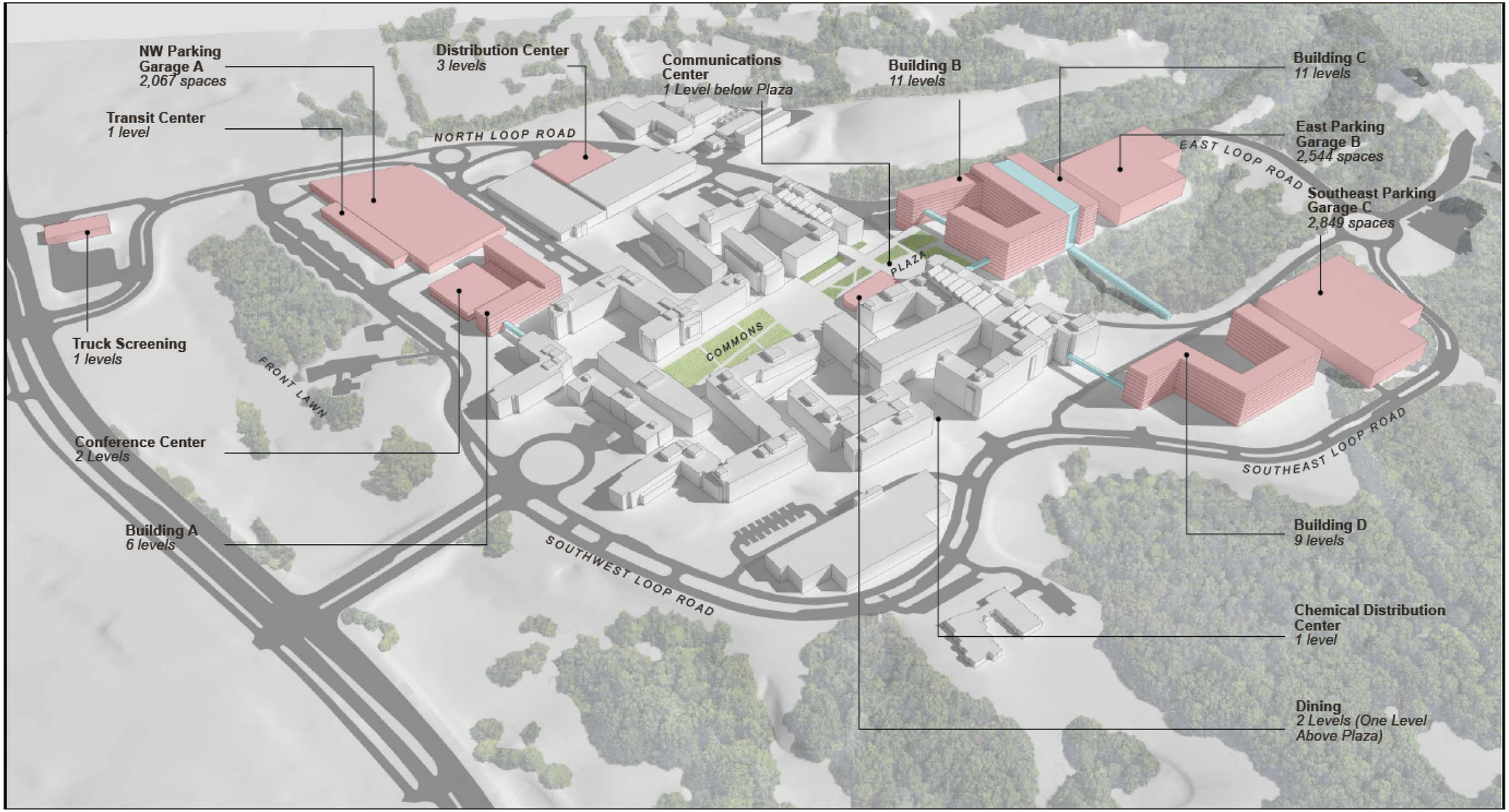

Figure 4. Alternative A – Mid-Rise Buildings

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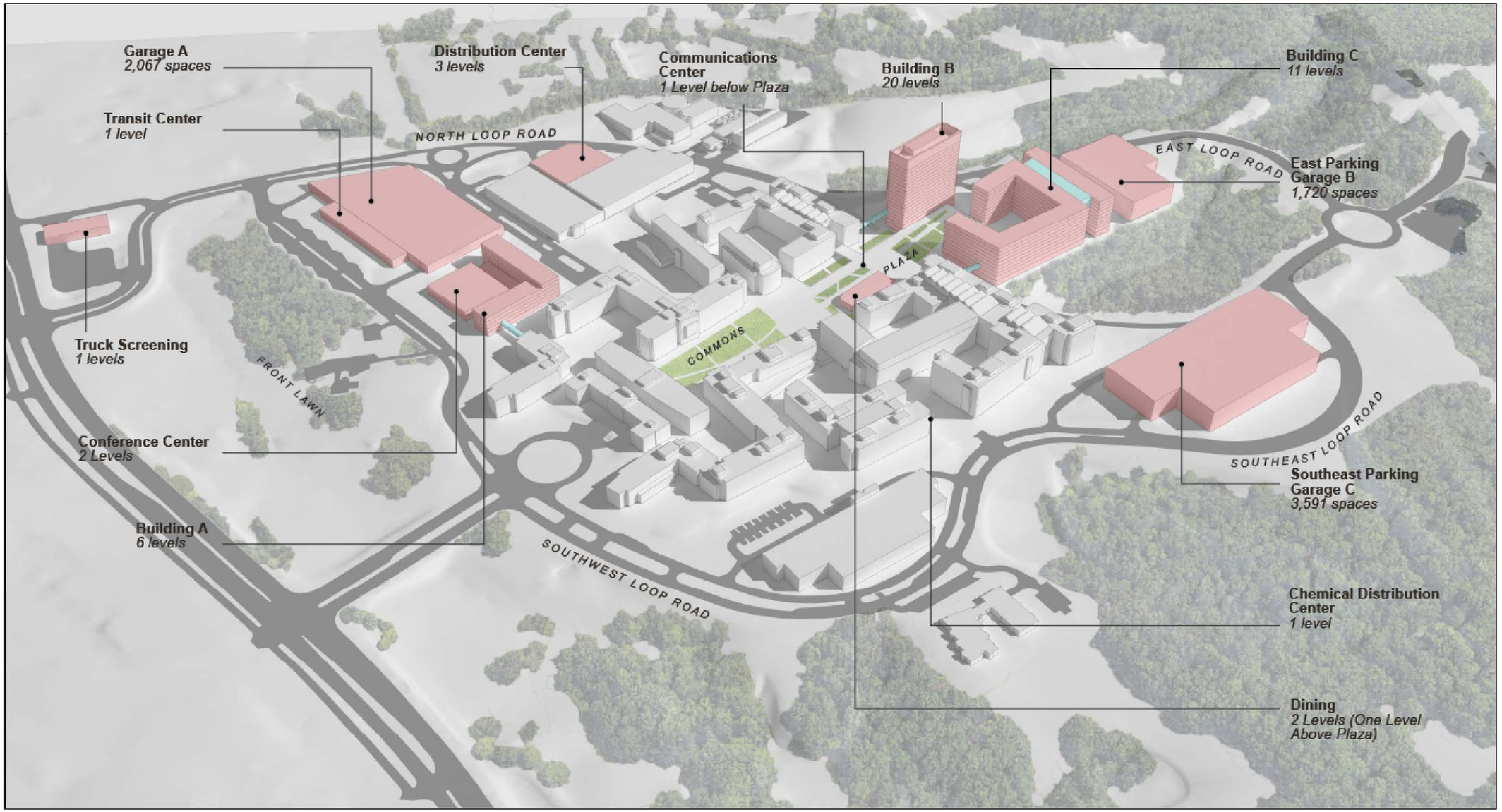

Figure 5. Alternative B - One Large Tower Office Building

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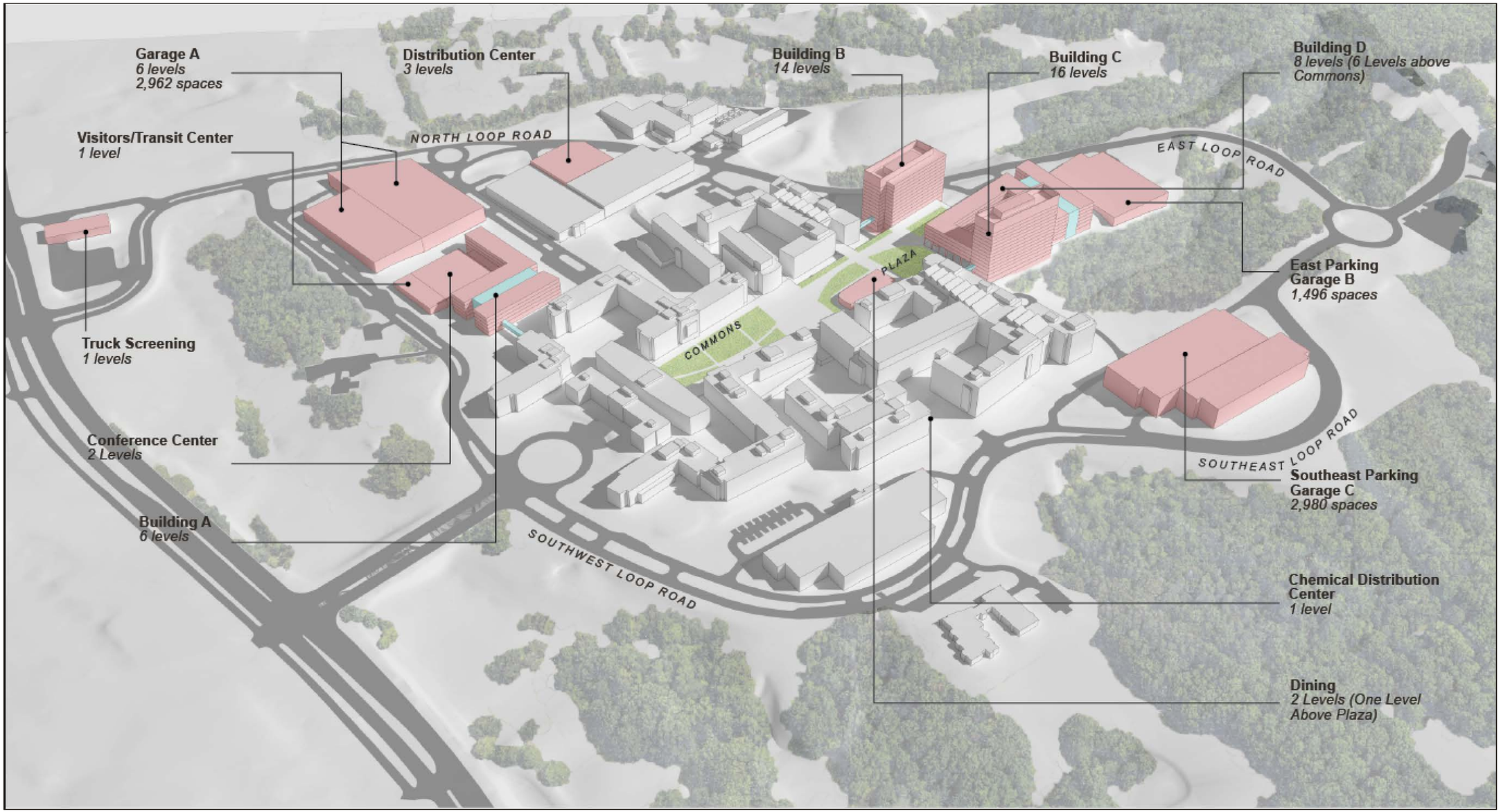

Figure 6. Alternative C - Two Large Tower Office Buildings

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2.3 WHAT OTHER ALTERNATIVES DID GSA CONSIDER, BUT NOT STUDY IN DETAIL?

As previously discussed in Section 2.1, in order to meet the purpose of the proposed project, the GSA Master Plan team conducted a Land Use Feasibility Study to evaluate the feasibility of accommodating up to 18,000 FDA employees and campus support staff at the FRC. In addition, to providing for new development adjacent to the existing FDA Campus, three additional development strategies were examined in order to determine the suitability of the FRC to handle the additional employees. These three strategies were dismissed from further analysis because they did not fully meet the purpose and need for a Master Plan and do not fully meet the goals and aspirations of the FDA Master Plan. Specifically, they do not

- Create a collegial environment to foster scientific interaction due to the distance of the new buildings from the existing FDA Campus;
- Create opportunities for constant, creative interchange and collaboration; and
- Create efficiencies through shared use.

The dismissed options and alternative locations are discussed below.

LAND USE STRATEGY 2: DEVELOPMENT IN THE CENTER OF THE FRC

This strategy provides for most of the additional program to be constructed in the center of the property, but east of the existing campus, connected by a large road (See **Figure 7**). The road would help create a large loop road on the property, thereby easing traffic. This option would have less construction disruption to the main campus, it would provide a large new parking area near Southeast Quad, have the opportunity for an iconic building at the end of the commons, extend the campus to the center of the site, create a new loop road to take pressure of Dahlgren Road, and preserve the eastern portion of the property for

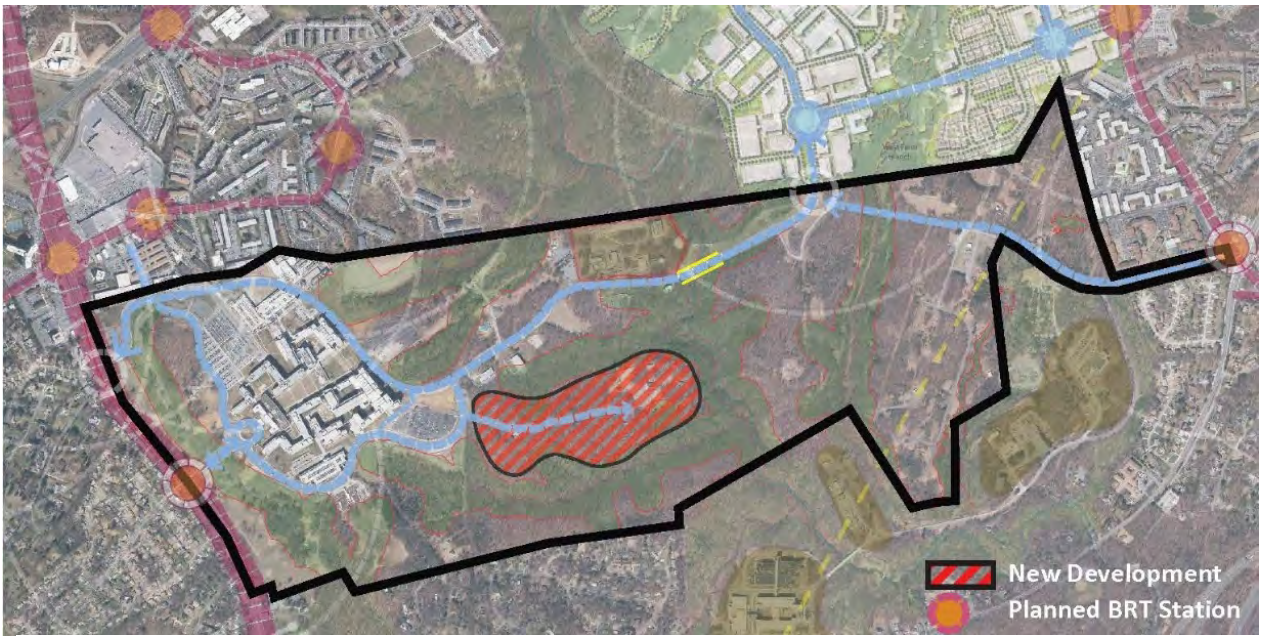

Figure 7. Land Use Strategy 2

growth/flexibility. However, this option would require an additional roadway and bridge for traffic circulation, and placing the buildings in the center of the campus would not promote a collaborative work environment.

LAND USE STRATEGY 3: DEVELOPMENT IN THE EASTERN PORTION OF THE FRC

This strategy provides for almost all additional programs to be constructed in the far east side of the FRC, connected by an additional loop road (see **Figure 8**). This road would help create large loop road to mitigate increased traffic. This option would create a strong relationship to the Viva White Oak development, provide a more balanced distribution of traffic between east and west, would minimize disruption to the main campus, have the potential to create a cohesive new and independent campus environment, and preserve the central portion of the FRC for growth/flexibility. However, under this option the new development would be remote from the existing campus and have greater impacts on natural resources.

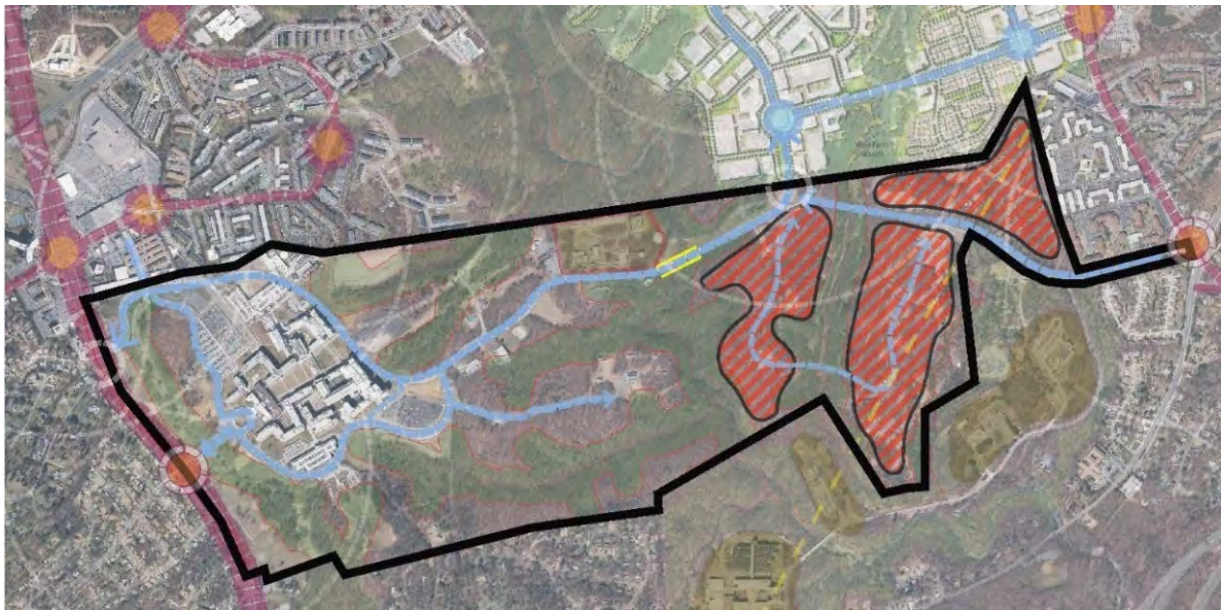

Figure 8. Land Use Strategy 3

LAND USE STRATEGY 4: PARKING TO REACH EXISTING CAPACITY

This strategy provides for additional remote parking allowing the existing FDA Campus to reach capacity, but it does not propose new buildings (see **Figure 9**). This strategy could offset the loss of parking in the event the existing surface lots surrounding the campus are developed, takes advantage of large land areas on the eastern portion of the FRC, has the potential to integrate with the VIVA White Oak Development in the future, and could potentially distribute traffic between the east and west sides of the FRC. However, this strategy would not propose any new buildings, and the parking structures would be remote from the existing FDA Campus that would impede pedestrian connectivity and create additional travel time from parking to offices.

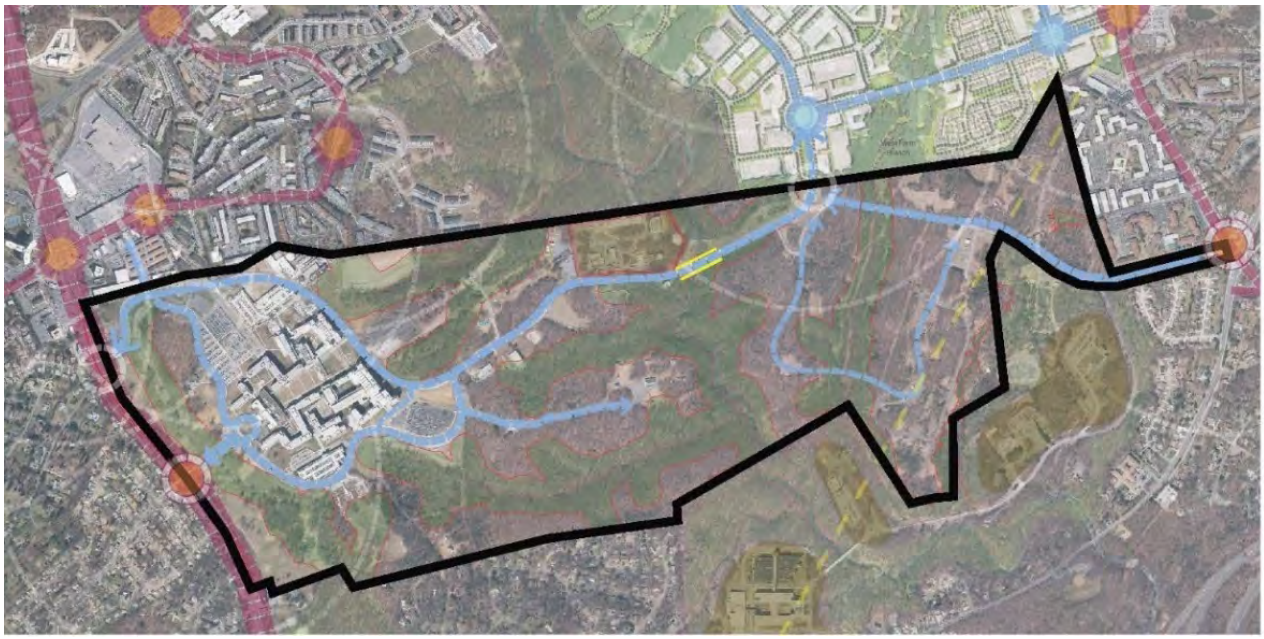

Figure 9. Land Use Strategy 4

2.4 HOW DO THE ALTERNATIVES COMPARE WITH EACH OTHER?

Table 6 presents, for comparison purposes a concise summary of each alternative's potential impacts by resource topic, including the No-Action Alternative.

Table 6. Comparison of Impacts

	No-Action Alternative (Existing Conditions)	Action Alternatives
Soils, Topography, and Geology	The No-Action Alternative would not result in construction of new buildings; therefore, no changes to topography would occur, and soils would not be impacted.	**Alternative A** would result in major, long-term, direct, adverse impacts from the clearing, grading, and excavation of 35.5 acres for new building areas and disturbance of 0.44 acre of steep slopes would occur. **Alternatives B and C** would result in major, long-term, direct, adverse impacts from the clearing, grading, and excavation of 36.6 acres for new building areas and disturbance of 0.68 acres and 0.61 acres of steep slopes, respectively. **All of the Action Alternatives** would result in minor, short-term, indirect, adverse impact from soil erosion during construction.

	No-Action Alternative (Existing Conditions)	Action Alternatives
Surface Water and Wetlands	Under the No-Action Alternative no significant, direct impacts would occur. GSA would provide appropriate stormwater management for non-compliant parking lots resulting in a minor, long-term, beneficial impact to streams and wetlands would occur.	**Alternative A** would result in from 472 linear feet of permanent stream impacts; and 0.02 acre of permanent wetland impacts, which would have a major, long-term, adverse impact to streams, stream valley buffers (SVBs), and wetlands. As compared to Alternative A, **Alternatives B and C** would result in 266 linear feet of permanent stream impacts and would not have permanent impacts to wetlands. The long-term impact under Alternatives B and C would, therefore, be moderate and adverse. Under **Alternative A**, there would be adverse impacts due to increased runoff from an additional 12.6 acres of impervious cover from proposed buildings, roads, and parking structures, while **Alternatives B and C** would add an additional 11.22 and 10.22 acres of impervious cover, respectively. Under **each of the Action Alternatives** the adverse impacts would be minor to moderate, indirect, and long-term. During construction, clearing, grading and road and building construction may result in temporary impacts to streams and wetlands due to increased soil erosion and potential spills of contaminants. The negligible, short-term, adverse impacts would be minimized using best management practices (BMPs).

	No-Action Alternative (Existing Conditions)	Action Alternatives
Vegetation	Under the No-Action Alternative, the FDA Campus would remain unchanged from its current conditions. GSA would provide stormwater treatment facilities for the non-compliant parking lots in accordance with MDE requirements, which may result in impacts to landscaped areas and maintained lawns. Because these areas consist of maintained urban vegetation, the impact to vegetation would be negligible.	Moderate, long-term, direct, adverse impacts to vegetation would occur due to clearing of 11.2 acres of forest under **Alternative A**, 7.3 acres under **Alternative B**, and 6.7 acres under **Alternative C**. In addition, approximately than 3.0 acres of maintained lawn would be removed under **all of the Action Alternatives**. Approximately 0.02 acres of wetland vegetation would be impacted under **Alternative A** only. With **all of the alternatives**, habitat fragmentation would also occur that would allow expose more forested areas to the potential establishment of invasive species. Removal of forest, wetland vegetation, and maintained lawn would result in long-term, moderate, adverse impacts to vegetation. There would also be minor, long-term, indirect, adverse impacts to vegetation due to increased airborne pollutants. During construction, clearing, grading and road and building construction may result in temporary impacts to vegetation due to the temporary removal of vegetation for staging and laydown areas. The negligible, short-term, adverse impacts would be minimized using best management practices (BMPs).
Wildlife	Under the No-Action Alternative, the forested portions of the study area, which provide the majority of the habitat for terrestrial wildlife, would not be impacted because there would be no new construction.	As with the impacts to vegetation, the removal of forest would result in a loss of habitat for terrestrial wildlife within the study area. Fragmentation of the forest would also affect movement of wildlife and increase potential conflicts with humans. However, no particular species which are currently utilizing the site are likely to be eliminated as a result of **any of the Action Alternatives**. Increased impervious surface area would increase run-off into the stream habitat of aquatic wildlife, and potential erosion and sedimentation from construction would add to the degradation of the aquatic habitat. Therefore, all **Action Alternatives** would result in long-term, negligible to minor, adverse impacts to wildlife.
Air Quality	The central utility plant (CUP) expansion and the traffic that has been generated by the FDA Campus would continue to have minor, long-term, direct, adverse impacts to air quality; however, the FDA Campus is in conformance with the	**Alternatives A, B, and C** would have minor, long-term, direct, adverse impacts from mobile sources due to additional traffic. There would be negligible, long-term, direct, adverse impacts from stationary sources from operation of additional facilities and minor,

	No-Action Alternative (Existing Conditions)	Action Alternatives
	Washington Metropolitan Region State Implementation Plan (SIP).	short-term, indirect, adverse impacts during construction due to fugitive dust and emissions from construction equipment. **All Action Alternatives** would conform to the Washington Metropolitan Region SIP.
Greenhouse Gas and Climate Change	The No-Action Alternative would not contribute significantly to greenhouse gas emissions.	**Alternatives A, B, and C** would have minor, long-term, direct, adverse impacts due to a slight increase in stationary and mobile source greenhouse gas emissions. Minor, short-term, direct, adverse impacts would occur during construction due to greenhouse gas emissions from construction equipment.
Land Use Planning and Zoning	Consistent with the Federal Elements of the Comprehensive Plan, the current consolidation on the FDA Campus encourages efficiency, higher productivity, and collaboration. The current Transportation Management Plan (TMP) encourages employees to use alternative means of transportation to commute to the campus. Additionally, buildings on the FDA Campus operate in an energy efficient and sustainable manner, meeting LEED® Gold certification and net zero energy and water usage. While the No-Action Alternative is consistent with the White Oak Master Plan and the WOSG Master Plan, they are not fully consistent with the related Federal Elements of the Comprehensive Plan because GSA would continue to lease facilities for FDA that are not located in the immediate vicinity of the FDA Campus. As programs are expanded and new employees are hired, additional leased space would be needed. This would not further improve efficiency, alleviate congestion, or improve air quality, which are elements of the Comprehensive Plan. Therefore, there would be a minor, long-term, adverse impact to land use planning.	Under **all of the Action Alternatives**, the consolidated expansion of the FDA Campus would encourage efficiency, higher productivity, and collaboration that is consistent with the Federal Elements of the Comprehensive Plan. A Transportation Management Plan (TMP) would be developed that would encourage alternative means of transportation, which is consistent with the Transportation Element and the Action Alternatives would be constructed and operated in an energy efficient manner, which is consistent with the Environmental Element. The **Action Alternatives** would be consistent with WOSG Master Plan because the expansion would attract and support new businesses to the area. The **Action Alternatives** would also be consistent with Price George's County's Subregion 1 Plan's goals for green design, sustainable development and attracting new employment opportunities. Land use within the project area would change which would result in a negligible, long-term, adverse impact to land use planning.
Community Facilities and Services	Under the No-Action Alternative, there would be no change in community facilities and services. There would not be an increase in employees on the FDA Campus, and, therefore, there would not be an increase in demand for community	All of the **Action Alternatives** would have minor, long-term, indirect, adverse impacts to schools due to potential relocations of FDA employees as they moved to the FDA Campus. Minor, long-term, indirect, adverse impacts to parks, recreation, or open space would occur due

	No-Action Alternative (Existing Conditions)	Action Alternatives
	services, such as schools in Montgomery or Prince George's counties. No parkland would be acquired and park operations would not be affected.	to increased usage by FDA employees. However, it is expected that the potential increased usage of parks, recreation facilities, or open space would not exceed the availability of resources in the area.
Economy and Employment	The No-Action Alternative would result in minor, short-term, direct, and indirect, beneficial impacts to taxes and revenue from construction personnel patronizing local businesses during construction of a fitness trail and employee express entrance lanes.	Under the **Action Alternatives**, minor, long-term, indirect, beneficial impacts to local economy and employment would occur from increased patronage of local businesses and increased contractor and vendor opportunities. Moderate, long-term, direct, beneficial impacts would occur to Montgomery and Prince George's counties employment due to new hires from outside the county. During construction, minor, short-term, direct, beneficial impacts from employment of construction workers and purchases of materials and equipment would occur. There would be no significant impact to property taxes because the FRC is under federal ownership. FDA employee income and spending would contribute to moderate, long-term, direct and indirect, beneficial impacts to sales and income tax revenues.
Safety and Security	Under the No-Action Alternative, no change in the volume of calls for police, fire or EMS are anticipated. Montgomery County Fire and Rescue Service (MCFRS) plans to construct a new fire station northeast of the FRC to address the anticipated increased call load from the planned Viva White Oak development and other area developments. At a minimum, the new station would have a two-person EMS transport unit and a four-person paramedic engine. Under the No-Action Alternative, current security measures and procedures would continue. Access to the FRC would continue to be restricted to Federal employees and approved visitors. The existing truck screening facility would remain at its current location and would not provide adequate space for truck turn-around. The identified security deficiencies near the laboratory buildings loading docks and the CUP would remain unaddressed. This would result in a minor, long-term, adverse impact to the safety and security	Under the **Action Alternatives**, minor, long-term, direct, adverse impacts would occur to local police, fire, and EMS stations due to an estimated increase of 75 fire/rescue/EMS incidents per year and negligible, short-term, direct, adverse impacts would occur during construction due to potential construction site hazards. The proposed MCFRS fire station northeast of the FRC would help to handle any increase in calls for fire and EMS service. A new centralized Visitor and Transit Center would provide a singular point of entry for all visitors and would streamline visitor security screening. A centralized Truck Screening Facility would allow for trucks and delivery vehicles to be screened prior to entering the FDA Campus. These new facilities would result in moderate, long-term, direct, beneficial impacts.

	No-Action Alternative (Existing Conditions)	Action Alternatives
	of visitors and employees on the FDA Campus.	
Cultural Resources	No new construction would take place under the No-Action Alternative. Therefore, there would be no significant adverse impacts to known or potential historic properties, archaeological resources, or other cultural resource.	The placement of the Conference Center and the Northwest Parking Garage would not affect the remaining historic resources on the FDA Campus (Building 1 and 100, the flagpole, and the redesigned circle in front of Building 1). The mid-rise buildings proposed under **Alternative A** would be of similar scale to the existing buildings at the FDA Campus. The high-rise buildings under **Alternatives B and C** would be taller than the existing buildings at the FDA Campus and would be visible from New Hampshire Avenue. Because the high-rises are not consistent with the height and massing of the historic buildings and subsequent FDA campus development under the compatibility standards established in the 2002 amended MOA, their construction would result in an adverse effect to the visual setting of the façade of Building 1 in the primary APE under Section 106 of the National Historic Preservation Act (NHPA). The **Action Alternatives** would result in negligible, long-term impacts due to construction of the East Parking Garage, which would adversely impact an ineligible archaeological site (18MO738).
Traffic and Transportation	Under the No-Action Alternative, planned developments would add additional delay and queuing on multiple intersection approaches. Thirteen intersections would operate at an overall level of service E or F resulting in a moderate, long-term, adverse impact to local area roadways. There would be no significant impacts to transit, bike, or pedestrian services.	The increase in employees under the **Action Alternatives** would have moderate, long-term, direct, adverse impacts to traffic volumes, which would cause additional delays and queuing at multiple intersections. Sixteen intersections would operate at an overall level of service E or F. This would require improvements to several intersections. There would be no significant impacts to existing transit services and moderate, long-term, direct, beneficial impacts to bicycle access would result from the addition of sidewalks, secure bike parking, locker room and shower facilities, and bike repair stations.

	No-Action Alternative (Existing Conditions)	Action Alternatives
Utilities	There would be no significant impacts to utilities under the No-Action Alternative.	The **Action Alternatives** would have minor, long-term, direct, adverse impacts to water service due to increased demand. The additional sewer flow expected under the proposed Master Plan, combined with the existing sewer flow, future flow from other large developments in the area, and peak rainwater infiltration flows during a 10-year storm event, would likely exacerbate existing sewer overflows downstream in the Paint Branch Sewer Basin. The potential to contribute to offsite sewer overflows represents a long-term, indirect, major, adverse impact to sanitary sewer service and major, long-term, indirect, adverse impacts to sanitary sewer service due to the potential to contribute to offsite sewer overflows. However, by implementing mitigation, the major impact to sanitary sewer service would be minimized, resulting in a long-term, indirect, minor, adverse impact. There would also be a minor, long-term, direct, adverse impact to electrical and HVAC service because of an increased demand on the power grid.
Waste Management	No changes would be made to waste generation or existing handling; therefore, the No-Action Alternative would have no significant short- or long-term impacts to waste management on the FDA Campus.	The **Action Alternatives** would have minor, short-term, direct, adverse impacts to waste management due to temporary increase in construction waste and minor, long-term, direct, adverse impact to waste management because of the increase in the amount of solid waste, food waste, and recyclables handled at waste-receiving facilities. A consolidated Distribution Center would consolidate the waste streams of most of the existing and proposed campus buildings, which would provide a centralized, efficient system for trash and recycling sorting, storage, and removal resulting in long-term, beneficial impacts.

2.5 WHAT MITIGATION MEASURES WOULD BE IMPLEMENTED UNDER EACH OF THE ALTERNATIVES?

The following mitigation measures would be implemented under this EIS. (These are described in detail in Chapter 3).

Noise

Construction would take place during normal daytime hours and would be in accordance with the Montgomery County Noise Ordinance.

Soils, Topography, and Geology

During construction, BMPs such as silt fence, erosion matting, inlet protection, sediment traps, sediment basins, and revegetation of exposed sediment would be implemented to minimize soil erosion and sedimentation. Erosion and sediment control plans would be prepared and submitted to MDE for review and approval prior to construction. All disturbed areas would be permanently revegetated and stabilized following construction.

Construction in areas with steep slopes would be avoided if possible. Detailed subsurface engineering studies would be undertaken prior to design and construction to ensure that sound building practices are followed. Soil suitability would be determined, and appropriate building foundation specifications would be developed.

Surface Water and Wetlands

Construction would be authorized under the NPDES General Permit for Stormwater Associated with Construction Activity. During construction, BMPs such as silt fence, erosion matting, inlet protection, sediment traps, sediment basins, and revegetation of exposed sediment would be implemented to minimize soil erosion and stormwater pollution. Stormwater management plans and erosion and sediment control plans would be prepared and submitted to MDE for review and approval prior to construction. All disturbed areas would be permanently revegetated and stabilized following construction. Temporary impacts to streams and wetlands would be restored to pre-construction conditions to the maximum extent practicable following construction, including contour and elevation restoration, revegetation with native species, streambank stabilization, and stream substrate replacement.

MITIGATION INCLUDES:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

(e) Compensating for the impact by replacing or providing substitute resources or environments.

(40 CFR 1508.20)

GSA would obtain authorization under Maryland State Programmatic General Permit – 5 (MDSPGP-5). Compensatory mitigation would be provided at a minimum 1:1 ratio for stream impacts exceeding 200 linear feet.

All proposed encroachments to stream valley buffers (SVBs) would be designed in accordance with the M-NCPPC Environmental Guidelines to the maximum extent practicable. M-NCPPC would be consulted prior to final design to determine appropriate compensatory mitigation for impacts to SVBs, which could include buffer averaging, enhanced forestation, bioengineering practices, and other environmentally beneficial techniques.

As a GSA facility, the FDA Campus would be covered under Maryland's NPDES General Permit for Discharges from State and Federal Small Municipal Separate Storm Sewer Systems (MS4s). The increase in impervious surface would be mitigated through the implementation of environmental site design/low impact design (ESD/LID) strategies, including: micro-bioretention (Structural walled micro-bioretention may be used in lieu of graded micro-bioretention where space limitations dictate); bioswales along roadsides; rooftop rainwater harvesting; green roofs; pervious pavements; Submerged Gravel Wetlands; tree planting; and stream restoration Once ESD measures have been implemented to the maximum extent practicable, then structural and other non-ESD type BMP facilities could be utilized. Stormwater management pond #3 would be removed and replaced via a re-design and expansion of existing SWM Pond #1 (adjacent to the Central Utility Plant). The existing SWM pond (SHA Pond #2) located north of Michelson Road, and adjacent to New Hampshire Avenue (MD 650) would be removed and replaced by a submerged gravel wetland located south of Michelson Road. The other existing stormwater facilities on the FDA Campus may be retrofitted, relocated, or replaced as necessary. Storm pipe systems may be replaced throughout the FDA Campus and would convey treated stormwater to the existing tributaries of Paint Branch.

Vegetation

Construction activities would be limited to areas that are to be cleared for structural components. Areas that are not to be developed would not be used for equipment parking and other construction related activities unless no other alternatives are feasible. BMPs for tree protection, including tree protection fencing and root pruning for trees with critical root zones, would be implemented. A Forest Management Plan / Tree Conservation Plan would be developed that would focus on removal of nonnative, invasive species on the3 site, improving the quality of the remaining habitat, and increasing pollinator habitat.

Wildlife

Areas of forest would be maintained to provide habitat and movement corridors for wildlife. Signage for deer crossing would be placed along the roadway through the FRC to mitigate for the risk of deer being struck by vehicles. Time-of-year restrictions of construction activities may be used to protect species most sensitive to human activities.

Erosion and sediment control plans would be prepared and submitted to MDE for review and approval prior to construction. To protect aquatic species in Use III waters, no instream work would be conducted between October 1st through April 30th.

Air Quality

Short-term construction impacts would be mitigated using control measures such as minimizing areas of surface disturbance, covering/wetting exposed soils to reduce fugitive dust, stabilizing areas of loose soil as soon as possible after disturbance, and maintaining emission controls on all construction equipment.

Carpool, vanpool, and bicycle-to-work would be encouraged for FDA employees. Alternative "clean" fuels and non-polluting sources of energy, green building materials, construction methods, and building designs would be used to the maximum extent practicable. In response to Air Quality Action Days, measures to temporarily reduce the generation of emissions that contribute to O_3 formation would be taken.

Long-term impacts from mobile sources would be offset by the advancement in automobile technology and federal emission regulations and controls.

If It is determined at a later time, during implementation of the Master Plan, that the CUP would need to be expanded to provide electricity to the additional buildings, as opposed to tying into the PEPCO electrical grid, a new air quality analysis would have to be undertaken at that time.

Climate Change and Energy Consumption

Short-term construction impacts would be mitigated using BMPs for emission controls on all construction equipment.

Carpool, vanpool, bicycle-to-work would be encouraged for FDA employees. Alternative "clean" fuels and non-polluting sources of energy, green building materials, construction methods, and building designs would be used to the maximum extent practicable. GSA would continue to implement is annual sustainability goals, including GHG reduction through improving building energy efficiency, and installing advanced and renewable energy technologies.

Land Use Planning and Zoning

No mitigation required.

Community Facilities and Services

No mitigation required.

Economy and Employment

No mitigation required.

Safety and Security

During construction, a health and safety plan would be implemented to protect construction workers from construction site hazards and contamination. Employees and visitors would not have access to construction zones.

Campus security would respond first to incidents on the FDA Campus. Additional security staff would be hired as needed.

Cultural Resources

GSA has initiated consultation under Section 106 of the NHPA to prepare a Memorandum of Agreement (MOA) to mitigate any adverse effects to historic resources.

Traffic and Transportation

Recommended mitigation measures include:

- Work with MDOT SHA to install Intelligent Transportation System (ITS) technology on the Columbia Pike (US 29), New Hampshire Avenue (MD 650), and Cherry Hill Road corridors to maximize existing capacity and provide driver information. This may include traffic adaptive/demand responsive signal systems, traffic monitoring stations and Dynamic Message Signs (DMS).
- Enhance the existing transportation demand management (TDM) program to encourage more employees to commute via modes other than driving alone. A Final Transportation Management Plan (TMP) is provided in Appendix H.
- Expand the commuter shuttle system to include direct shuttle service to and from transit facilities in areas with higher concentrations of employee residences.
- Work with Montgomery County and MDOT SHA to identify the potential for new park-and-ride facilities near major interchanges.
- Work with SHA, Montgomery County, and Prince George's County to implement intersection recommendations to increase roadway capacity.
- Provide a 10-foot wide multi-use and/or five-foot, protected, directional bike lanes along the campus loop roads that connect pedestrian and bicycle facilities on the external roadway network to the on-campus facilities (Figure 33).
- Ensure that sidewalks are a minimum of five feet. Wider sidewalks are recommended in areas with higher pedestrian volumes.
- Install pedestrian/bicycle-accessible security gates.
- Provide pedestrian crosswalks at all intersections, as well as mid-block where needed to connect origins and destinations (i.e. parking garage to building). Rectangular rapid flashing beacons should be considered at all crosswalks.
- Enhance lighting for sidewalks and shared-use paths. Utilize attractive but security-conscious landscaping and provide emergency call boxes throughout campus, as well as along Dahlgren Drive.
- Provide secure, covered bicycle parking near building entrances and/or U-racks if such facilities are infeasible. FDA currently provides locker room and shower facilities as well as bicycle repair stations throughout the campus.

- Provide bikeshare docks adjacent to Building 1 as well as the transit center. Work with Montgomery County to determine how many bikeshare docks should be provided.
- Construct a new transit hub as close to Building 1 as possible. Incorporate features including, but not limited to:
    - A climate-controlled waiting area with amenities, such as benches, wi-fi, and real-time transit information;
    - Defined boarding and alighting areas for bus, BRT, and shuttle services;
    - A taxi/ridesharing waiting area that could be converted for use by automated vehicles in the future; and,
    - Public bike share stations.
- Consider a pedestrian and bicycle connection to Lockwood Drive and the White Oak Transit Center.
- Upgrade the bikeway on the FDA side of New Hampshire Avenue to a ten-foot-wide shared-use path with a minimum five-foot-wide buffer to the travel lanes.
- Work with Montgomery County, SHA, and Prince George's County to enhance pedestrian and bicycle connections to nearby residential and commercial centers, as well as to regional pedestrian/bicycle path networks, including:
    - Enhance existing pedestrian crossings at signalized intersections within ½ miles of the campus, including lead pedestrian intervals and countdown signal heads.
    - Improved/shorter connection to the Northwest Branch Trail.
    - Expand the shared-use path to the north and south along New Hampshire Avenue.

Utilities

The project has the potential to exacerbate sewer overflows in the Paint Branch Sewer Basin. In accordance with WSSC requirements, one of the following options would be implemented to offset this impact:

- Replacement of approximately 4,850 feet of downstream sewer trunk lines to accommodate the additional flow; or
- In lieu of replacing downstream pipe, GSA and FDA would develop a mitigation plan with WSSC to rehabilitate existing manholes and pipes on the Paint Branch sewer system (on and off the FRC) to remove excess inflow/infiltration (Clearwater) from the downstream system in order to mitigate for the increased wastewater flows from the proposed FDA development. The exact number of manholes and pipes to be replaced would be determined during the development of the mitigation plan.
- The project would exceed the CUP's capacity for electrical and HVAC services. One of the following options would be implemented to offset this impact:
- Power for the proposed new buildings could be provided by new feeder lines from the existing PEPCO substation.
- Each new building would have its own individual power supply and dedicated mechanical space for HVAC.

The existing CUP and utility distribution system could potentially be expanded by Honeywell and extended to the areas of new development to provide electrical power as well as and chilled and heated water for HVAC.

The following water and energy conservation strategies would be used: water-efficient landscaping, low-flow plumbing fixtures, rooftop rainwater harvesting, rooftop solar panels, active and passive solar techniques, high-efficiency lighting and occupancy sensors, modern and efficient heating and cooling equipment, natural ventilation systems, and ENERGY STAR® appliances. LEED® Gold certification and net zero energy and water usage would be achieved for all new buildings.

Waste Management

At least 50 percent of construction and demolition waste would be diverted from landfills during construction. Building materials, products, and supplies would be reused or recycled to the maximum extent practicable. Following construction, waste collection, recycling, and composting programs implemented by GSA would continue. At least 50 percent of non-hazardous waste would be diverted from landfills through reuse, recycling, and composting. To promote waste minimization and pollution prevention, the FDA Campus would follow GSA's Green Purchasing Plan, which requires the purchase of products and materials that are bio-based, non-ozone depleting, energy efficient, water efficient, contain recycled content, and are non-toxic or less toxic alternatives.

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3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter of the EIS describes the affected environmental (existing conditions) of the human environment in the western portion of the FRC, which encompasses the FDA Campus that may be affected and presents the impacts that may occur if the proposed FDA Master Plan were implemented. The affected environment for this EIS includes:

- The western part of the FRC that includes the FDA Campus (the study area) (see **Figure 10**);
- The National Capital Region, as defined by the Metropolitan Washington Council of Governments (MWCOG). The jurisdictions of the MWCOG NCR include:
    - The District of Columbia
    - In the state of Maryland, the counties of Frederick, Montgomery, and Prince George's
    - In the Commonwealth of Virginia, the counties of Arlington, Fairfax, Loudoun, and Prince Williams.

For any one type of impact, the extent of the impact may be the study area, the region, or some combination thereof. For some impacts (such as natural resources), the principal affected environment is mostly the study area; for others (such as transportation), the affected environment extends to the area surrounding the study area; for still others (such as air quality), it is broader and encompasses the entire region.

IMPACTS INCLUDE:

***Direct impacts**, which are caused by the action and occur at the same time and place.*

***Indirect impacts**, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.*

***Cumulative impacts,** which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

(40 CFR 1508.7 and 1508.8)

Each of the Action Alternatives described in Chapter 2 would have varying impacts to natural resources, the social and economic environment, historic resources, and infrastructure (the transportation network and utilities). Pursuant to NEPA, impacts from the No-Action Alternative are also considered. Impacts can occur from construction as well as operation of the FDA Campus once it is complete. Cumulative impacts from these updates to the FDA Master Plan, when added to other past and future projects, are described at the end of this chapter.

Potential impacts are described in terms of:

- Intensity – are the effects negligible, minor, moderate, or major;
- Type – are the effects beneficial or adverse;
- Duration - are the effects short-term, lasting through construction or less than one year; or long-term, lasting more than one year; and
- Context – are the effects site-specific, local, or even regional.

The thresholds of change for the intensity of impacts are defined as follows:

- *Negligible*, when the impact is localized and not measurable at the lowest level of detection;
- *Minor*, when the impact is localized and slight, but detectable;
- *Moderate*, when the impact is readily apparent and appreciable; or
- *Major*, when the impact is severely adverse, significant, and highly noticeable.

The effects on the human environment were assessed using best available scientific studies, guidance documents, and information. Resources used to analyze the impacts were obtained from federal, state, and local agencies. These include, but are not limited to, the following:

- USEPA analyses and reports
- USGS Soil Surveys
- MDE soil erosion and stormwater design manuals
- USACE wetland manuals
- FEMA Floodplain Maps
- USFWS threatened and endangered species lists
- MDNR threatened and endangered species lists
- Hazardous materials studies
- FHWA traffic guidance
- MWCOG reports
- Montgomery County and Prince George's County guidelines

A complete list of references is included at the end of this EIS. For those resources that required more rigorous analysis, methodologies are summarized later in Chapter 3 and detailed in the Appendices.

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Figure 10. Project Study Area

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3.1 WHAT IMPACT TOPICS ARE BEING DISMISSED FROM FURTHER REVIEW IN THIS EIS?

As with any environmental analysis, there are topics that are dismissed from further analysis because the proposed action would cause a negligible or no significant impact on these resources. Negligible impacts are effects that are localized and immeasurable at the lowest level of detection. Therefore, these topics are briefly discussed and then dismissed from further consideration or analysis.

3.1.1 GROUNDWATER HYDROLOGY AND QUALITY

The FRC is located along the fall line between the Piedmont and Coastal Plain physiographic regions. Groundwater is available from two principal aquifer systems, the Northern Atlantic Coastal Plain aquifer system, and the Piedmont crystalline-rock aquifer. The Northern Atlantic Coastal Plain aquifer is primarily underlain by semi-consolidated to unconsolidated sediments consisting of silt, clay, and sand and is primarily fed by surface water infiltration. The sediments form a wedge shape, beginning at the Fall Line as a thin layer and becoming thicker as it nears the coast. Groundwater in the aquifer is found in pore spaces between sediments and is unconfined near the surface becoming confined deeper below a clay layer. The Piedmont aquifer is underlain by dense bedrock and is primarily fed through the infiltration of surface water. Groundwater occurs in rock fractures under unconfined conditions (USGS, 1997).

Water for nearly all residential and commercial consumers in Montgomery and Prince George's counties, including the FRC, is provided by the Washington Suburban Sanitary Commission (WSSC) from either the Potomac or Patuxent Rivers (WSSC, 2017). Only nine actively producing groundwater wells are registered in the State of Maryland within a 2-mile radius of the FRC. Groundwater is not used for either potable or industrial purposes at the FRC.

Due to previous uses, 49 contaminated sites have been identified at the FRC. Of the 49 sites, all have been remediated, seven are still under long-term monitoring plans, and one has been recommended for close-out. Two of the seven active sites are located near the FDA Campus (see **Figure 11**): OU 2 and OU 07 (located within Site 11), a. Sampling at OU 2 in 2014 revealed continued minimal groundwater contamination from polychlorinated biphenyls (PCBs) and other liquid wastes. Contaminated soils containing industrial waste were removed from site OU 07 in 1996, and sampling in 2014 revealed slightly elevated levels of volatile organic compounds (VOCs). Long-term monitoring is continuing at both sites. Since groundwater is not used for potable or industrial purposes at the FRC and would not be used for those purposes after implementation of the Master Plan, Groundwater Hydrology and Quality has been dismissed from further analysis in this EIS. Safety measures related to contamination is discussed further in the Safety and Security section.

3.1.2 COASTAL ZONE MANAGMENT

The FRC is partially located within Maryland's Coastal Zone. Maryland's Coastal Zone begins 3 miles into the Atlantic Ocean to the boundaries of the 16 counties that border the ocean, one of which is Prince George's County. The study area and the FDA Campus are outside of the coastal zone. Implementation of the Master Plan would not directly affect coastal waters, and stormwater management would minimize impacts to tributaries of coastal waters. Implementation of the FDA Master Plan would comply with all applicable Federal, state, and county laws and regulations that affect the Coastal Zone. Therefore, Coastal Zone Management was not studied in further detail (MD DNR, 2017b).

3.1.3 FLOODPLAINS

Floodplains are mapped by the Federal Emergency Management Agency (FEMA) to identify flood hazards, assess flood risks, and guide mitigation actions. Floodplain mapping involves delineation of the 1-percent-annual-chance (100-year) flood; a flood that has a 1-percent chance of being equaled or exceeded in any given year.

Based on a review of FEMA Flood Insurance Rate Maps (FIRM), floodplains for Paint Branch and several tributaries to Paint Branch are found on portions of the FRC and within the study area (see **Figure 12**). The FRC is mapped on FIRM Panel 24031C0390D, effective September 29, 2006 (FEMA, 2006). These floodplains have been designated Zone AE which indicates a detailed study was performed to map the floodplain and Base Flood Elevations (BFEs), the elevation to which the flood is expected to rise during the 100-year storm, have been calculated. The floodplains on the FRC are primarily confined to the narrow channels of the streams and do not span large areas. None of the proposed alternatives involve development within the 100-year floodplain. The implementation of the proposed alternatives complies with Executive Order 11988 and the PBS GSA Floodplain Management Desk Guide, 2016. There would be no significant impacts to floodplains under any of the proposed Action Alternatives. Therefore, Floodplains have been dismissed from further analysis in this EIS.

3.1.4 PROTECTED SPECIES

In accordance with the Endangered Species Act of 1973, coordination was conducted with U.S. Fish and Wildlife Service (USFWS) and the Maryland Department of Natural Resources (MD DNR). A review of the USFWS' Information for Planning and Consultation (IPaC) website determined that there are no federally listed threatened or endangered within the study area. In a letter dated September 8, 2017, MD DNR responded that there are no official state or federal records for listed plant or animal species within the study area (See Appendix A). Therefore, protected species has been dismissed from further analysis.

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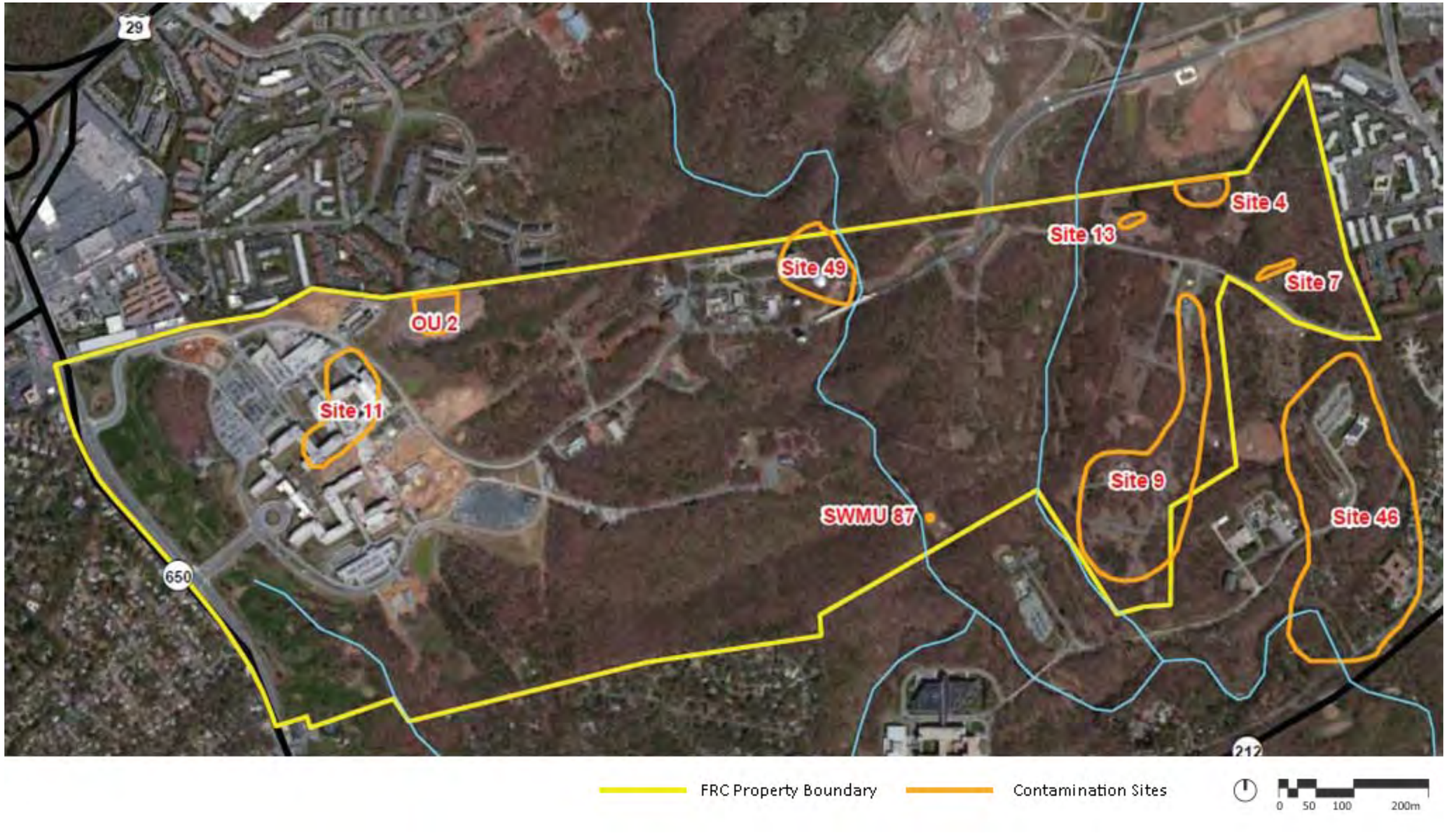

Figure 11. Contaminated Sites at the FRC

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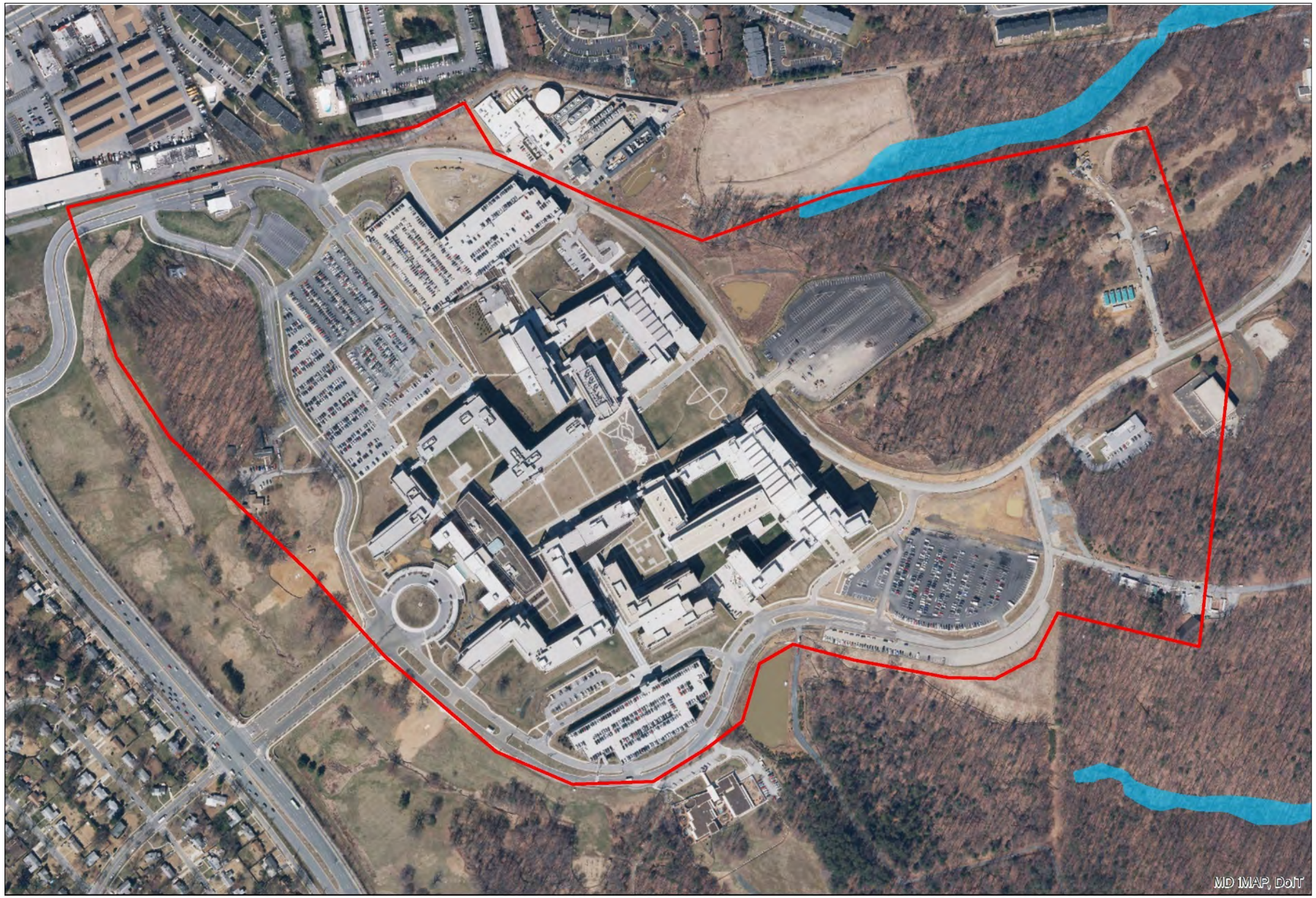

Project Study Area

Floodplains

0 50100 200 300 400 500 600ft

Figure 12. Floodplain Map

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3.1.5 NOISE

Noise, defined by the EPA as "any unwanted or disturbing sound", is regulated under the Noise Control Act of 1972. Noise is measured in decibels on the 'A'-weighted scale (dbA) which represents the range of sounds that can be heard by the human ear. Montgomery County has adopted a noise ordinance as part of the County Code. The maximum allowable noise level for non-residential areas is 67 dbA in the daytime and 62 dbA at night. The maximum allowable noise level for residential areas is 65 dbA in the daytime and 55 dbA at night (Montgomery County, 2017a)

COMMON SOUND LEVELS

Source	*Sound Level (dB(A))*
Near large jet at takeoff	*140*
Air-raid siren	*130*
Threshold of pain	*120*
Thunder or sonic boom	*110*
Garbage or trailer truck at roadside	*100*
Power lawnmower at 5 feet	*90*
Alarm clock or vacuum cleaner	*80*
Freeway traffic at 50 feet	*70*
Conversational speech	*60*
Average residence	*50*
*Bedroom**	*40*
Soft whisper at 15 feet	*30*
Rustle of leaves	*20*
Breathing	*10*
Threshold of hearing	*0*

*includes HVAC system, conversation, walking, doors opening and closing

Common sources of noise occurring in the vicinity of the study area include those regularly experienced in a suburban residential area. Common noises include airplanes, barking dogs, playgrounds, traffic, and human conversation. Additionally, industrial noise from the Central Utility Plan (CUP) is common on the FDA Campus. The FDA Campus is located in the vicinity of heavily-traveled arterial roadways such as US 29 and New Hampshire Avenue which generate a substantial amount of ambient noise in the area. Receptors in the vicinity of the project area that are sensitive to noise include the Hillandale Local Park, Francis Scott Key Middle School, Cresthaven Elementary School, CHI Center, and the many residential neighborhoods that surround the property. Although sensitive noise receptors exist in the vicinity of the project area, none of the proposed actions under the Master Plan would result in a new, permanent source of noise. Additional traffic to the site would not result in a perceptible increase in noise levels. Construction activities would temporarily generate noise that could potentially impact sensitive noise receptors. Construction would take place during normal daytime hours and would be in accordance with the Montgomery County Noise Ordinance. Since these impacts would be minor and temporary, noise has been dismissed from further analysis in this EIS.

3.1.6 ENVIRONMENTAL CONTAMINATION

From 1944 to 1995, the FRC was owned by the U.S. Navy and served as the Naval Surface Warfare Center at White Oak since 1944. The Naval Surface Warfare Center provided research, development, testing, and evaluation functions in support of naval weapons and strategic systems which involved the use and storage of hazardous materials. These uses resulted in contamination of soils and groundwater on the FRC.

The environmental cleanup at the FRC is governed by Section 7003 of the Resource Conservation and Recovery Act (RCRA). The U.S. Navy is responsible for cleanup of prior contamination at the FRC, with EPA oversight. The site is not listed on the National Priorities List (NPL). Since 1998, a number of hazardous materials and environmental contamination studies have been conducted.

These ongoing investigations have been conducted in accordance with the U.S. Navy's Installation Restoration (IR) Program, which provides compliance with the EPA's Superfund program under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended. These programs required the U.S. Navy to thoroughly investigate and remediate as needed any environmental contamination associated with past activities.

The U.S. Navy conducted an Initial Assessment Study (IAS) in 1984 to identify and assess sites where previous hazardous waste disposal practices may have impacted the environment and created a threat to human health. Of the nearly 50 sites where hazardous materials were disposed of or stored on the base, 14 sites were identified as potential threats to the environment. In 1987, a confirmation study of seven of the 14 sites found varying concentrations of contaminants and recommended further investigation to characterize the contaminants and define the extent of the pollution.

Five years later, in 1992, a Remedial Investigation (RI) which included a hydrogeological investigation, contaminant characterization, and risk assessment determined that contaminants at the FRC had adversely impacted the soil and groundwater conditions (Malcolm Pirnie, 1992). Since then, a Feasibility Study (FS) and a Design Verification (DV) study have been implemented to further investigate the nature of the contamination and formulate methodologies for remediation.

As of April 2018, of the 49 contaminated sites located at the FRC, seven are still under long-term monitoring plans of which three are going through the close-out process, and one has been closed-out. The third Five-Year Review was reported to MDE and signed in June 2017. The purpose of a Five-Year Review is to ensure that clean-up actions are continuing to protect human health and the environment. **Figure 11** and **Table 7** provide a summary of the 7 sites and an update on the remedial actions taken (NAVAC, 2018). Operating Unit (OU) 2 is located near the FDA Campus and Site 11 is located in the Commons area of the FDA Campus. Sampling at OU 2 in 2016 revealed continued minimal groundwater contamination from PCBs and other liquid wastes and there were no issues with the landfill cap. The next round of sampling occurred in February 2018. The results are not available at this time. Long-term monitoring of groundwater, surface water, and the landfill cap at OU 2 will continue. Contaminated soils containing industrial waste were removed from Site 11 in 1996. Sampling in 2017 revealed all concentrations were below clean-up levels Site 11 data has shown the site is ready for a close-out round of sampling, which will be conducted in November 2018, followed by a human health risk screening (NAVAC, 2018).

During construction, a health and safety plan would be put in place to protect construction workers from any remaining potential contamination. Vapor intrusion barriers would be installed in new buildings to prevent any remaining contamination from impacting employees. Since all contamination sites on the FRC and within the project area have been remediated and are currently under monitoring plans, and because the health and safety of construction workers and employees would be protected by the measures described above, environmental contamination has been dismissed from further analysis in this EIS.

Table 7. FRC Contaminated Sites

Installation Restoration (IR) Program Number	CERLIS Operable Unit (OU)	Name	Hazardous Material	Action	Status
2	OU 2	Apple Orchard Landfill	Contaminated and non-containerized liquids, PCB	Landfill cap constructed 2001	Long-term monitoring plan 2002, Last sampling sampling February 2018 – minimal groundwater contamination
4	OU 13 and OU 1	Chemical Burial Area	TCE, vinyl chloride, low levels of metals	Removal of contaminated soils	Long-term monitoring plan, last sampling November 2017– significant reduction of contamination since baseline in 2007, reduction of VOC concentrations has occurred
7	OU 04 and OU 1	Ordinance Burn Area	Nitroaromatic and VOCs	Removal of contaminated soils, prevent further downward contaminant migration, prevent contaminants from reaching groundwater	Closeout completed
9	OU 06	Building 318	Liquid wastes including explosive compounds	Removal started in 1996, 18-20 feet to groundwater, soil contaminants	Close-out sampling was conducted in November 2017 and human health risk screening performed. No unacceptable risks were identified and site will move towards close-out

Installation Restoration (IR) Program Number	CERLIS Operable Unit (OU)	Name	Hazardous Material	Action	Status
11	OU 07	Industrial Wastewater Disposal Area 100	Various liquid wastes from 14 leaching wells	1996 Removal of contaminated soils	ROD 2004, last sampling November 2017 – all concentrations were below clean-up goals, data shows site is ready for close-out sampling which will occur in November 2018 and a human health risk screening will be performed
13		Former Oil Sludge Disposal Area (SWMU 8)	Sludge containing No. 6 fuel oil	Site Screening Report (SSR) 1998; investigated further as part of OU-1 in 2002; RCRA Facility Inv. with Site 5 (TtNUS May 2003)	Long-term monitoring plan, last sampling November 2017 - significant contaminate reduction observed, but VOC and iron concentrations remain above cleanup levels at some sampling locations
49	OU16	TCE Plume/Groundwater Contamination Area 400	TEC, cis-DCE, and VC	Feasibility Study Final for Site 49 (CH2MHILL, 6/2004)	Remedial action complete (2007), Long-term monitoring plan, last sampling November 2017– VOCs remain above cleanup levels
SWMU 87		Building 611 Storage Area	VOCs	Removal of contaminated soils	ROD 2005; Long-term monitoring plan, last sampling sampling occurred February 2018 – VOC concentrations continue to decrease, one well slightly above cleanup goals

3.1.7 POPULATION AND HOUSING

Currently, 10,337 FDA employees are assigned to the FDA Campus and 700 support staff personnel are employed on the campus, with an average of 7,793 employees present on the FDA Campus at any given time. The Master Plan proposes to relocate existing employees from various leased office locations in suburban Maryland and hire new employees to conduct the complex and comprehensive reviews mandated by Congress, which would result in up to approximately 18,000 FDA employees and support staff employed on the FDA Campus. This represents an increase in daytime population in the White Oak area.

The proposed Master Plan would not require employees to relocate their residences. Over time, some new or existing FDA employees may elect to move closer to the FDA Campus, but it is not possible to quantify the number of employees that would make this transition. Based upon an employee survey conducted in Fall 2017, the percentage of employees who would relocate is likely to be minimal (See Appendix G for the employee survey). Employees would be encouraged to telework or to use public transportation, such as Metrorail and the proposed Bus Rapid Transit (BRT) line along New Hampshire Avenue, which would further decrease the need for any new or existing employees to relocate. Any impacts to population and housing would be negligible and handled by available housing in the area. There are several residential and mixed-use development projects approved and underway in Montgomery County, including the Viva White Oak development; however, none of these developments were triggered by the FDA Headquarters consolidation. Properties immediately north of the FDA Campus are designated for multi-unit residential or mixed uses. To the south and across New Hampshire Avenue to the west, the campus is surrounded by established residential neighborhoods consisting mostly of single-family homes. The proposed Master Plan does not include construction or demolition of any residences. Because the proposed action would not induce new development, population and housing was dismissed from further analysis within this EIS.

3.1.8 ENVIRONMENTAL JUSTICE

Executive Order (EO) 12898 directs Federal agencies to identify and address, as appropriate, disproportionately high, and adverse human health impacts or environmental effects of their programs, policies, and activities on minority and low-income populations. A low-income individual is defined as any individual receiving a total family income below the applicable poverty threshold, as derived from the Office of Management and Budget's (OMB) Statistical Policy Directive 14. Information regarding poverty status of individuals is available from the U.S. Census Bureau at the census tract level. A low-income population is defined as any census tract with a higher percentage of low-income individuals than the county population as a whole. A minority individual is defined as any individual that is nonwhite or identifies as Hispanic or Latino. A minority population is defined as any group of people living in geographic proximity that is 50 percent minority or greater (CEQ, 1997).

The FDA Campus is located within Montgomery County Census Tract 7015.09 and is surrounded by ten other census tracts in Montgomery and Prince George's counties. Minority and poverty statistics for the census tracts surrounding the FDA Campus, Montgomery and Prince George's counties, the State of Maryland and the U.S. are shown below in **Table 8** and **Figure 13**.

During project scoping and alternatives development, GSA actively solicited public participation and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors. While there are minority and low-income populations in the vicinity of the FDA Campus, the implementation of the Master Plan would not result in disproportionate adverse effects on these groups and individuals. Any adverse impacts experienced by low-income and minority populations would be the same as those experienced by the overall population. Therefore, environmental justice has not been studied in detail in this EIS

Table 8. Percentage of Minority and Low-Income Populations

Census Tract	Total Population	Minority Population (%)	% Living Below Poverty Level
Montgomery County	1,017,859	44.4	6.7
7014.21	2,078	94.4	6.1
7015.03	6,492	62.5	4.1
7015.05	6,688	56.4	6.1
7015.06	5,236	57.2	7.2
7015.08	3,774	91.8	19.6
7015.09	6,285	78.0	12.4
7016.01	2,386	93.9	20.2
7016.02	7,357	86.6	12.9
Prince George's County	892,816	79.6	9.6
8073.04	1,968	60.4	4.9
8073.05	3,503	82.0	6.7
8073.09	7,063	79.5	19.6
State	5,930,538	42.4	10.0
National	316,515,021	26.4	15.5

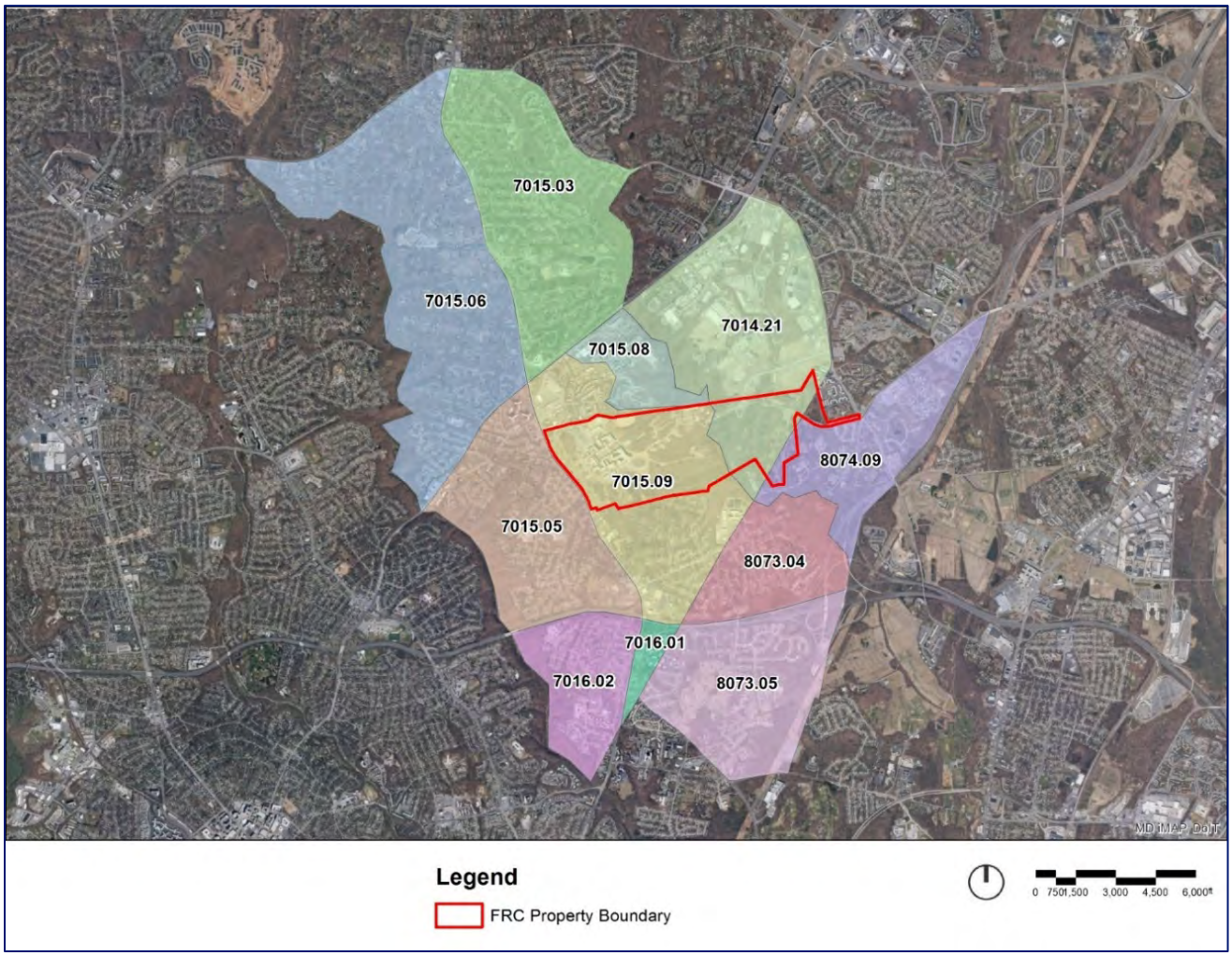

Figure 13. Census Tract Locations

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3.2 SOILS, TOPOGRAPHY, AND GEOLOGY

3.2.1 WHAT ARE THE SOILS CONDITIONS AT THE SITE?

There are eight soil unit types within the study area (see **Table 9** and **Figure 14**). The most abundant soil type within the study area is Croom gravelly loam which accounts for over 70 percent of the soils. The next most abundant soil type is classified as Urban Land where 75 percent of the surface is covered by asphalt, buildings, or other structures. Approximately 9 acres in the FDA Campus contains Croom gravelly loam and Blocktown channery silt loam (USDA, 2017); the slope associated with these soils may have a severe hazard of erosion (USDA, 1995).

Table 9. Soil Map Units Within the Study Areas (USDA, 2017)

Soil Unit	Soil Type	Slopes
2C	Glenelg silt loam	8 to 15 percent slopes
58B	Sassafras loam	2 to 5 percent slopes
58C	Sassafras loam	8 to 15 percent slopes
61B	Croom gravelly loam	3 to 8 percent slopes
61C	Croom gravelly loam	8 to 15 percent slopes
61 D	Croom gravelly loam	15 to 25 percent slopes
116E	Blocktown channery silt loam	25 to 45 percent slopes
400	Urban Land	

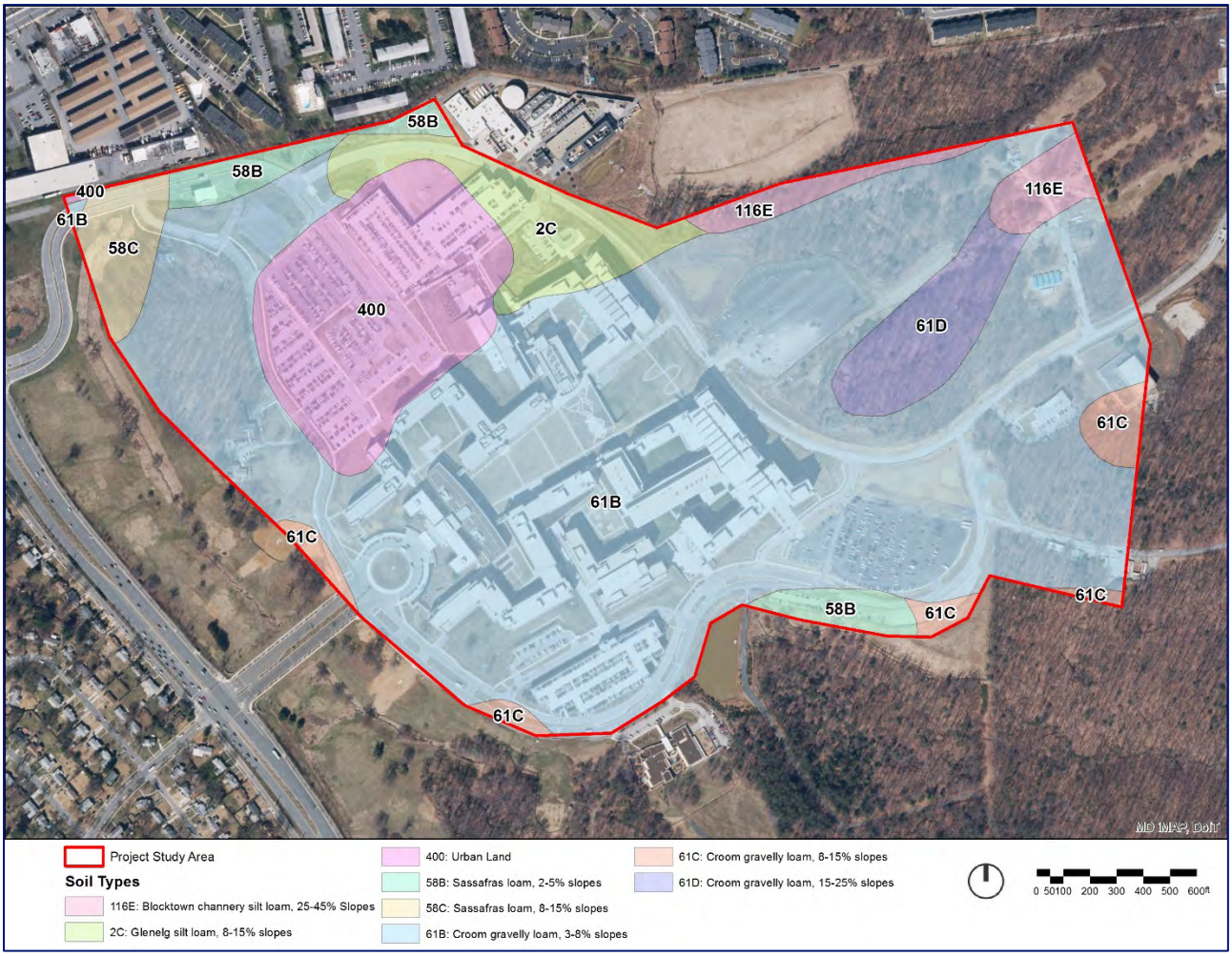

Figure 14. Soils within the Project Study Area

Prime farmland soils are soils that have the best combination of characteristics for producing crops such as food, feed, forage, fiber, and oilseed crops. Sassafras loam with 2 to 5 percent slopes (58B) is considered prime farmland soils in all areas. Soil map unit 58B comprises approximately 3 percent of the soil within the FDA Campus. Glenelg silt loam with 8 to 15 percent slopes (2C) and Croom gravelly loam with 3 to 8 percent slopes (61B) and with 8 to 15 percent slopes (61C) are classified as farmland soils of statewide importance and account for the majority of the soils within the project area (USDA, 2017). Although there a prime farmland soils within the FDA Campus, the land is classified as urban or built-up and therefore exempt from the Farm Protection Act.

Generally speaking, the topography (**Figure 15**) of the FRC is generally rolling with elevations ranging from approximately 160 to 400 feet above mean sea level (msl). Within the FDA Campus, the topography is relatively flat due to grading and existing construction, ranging from approximately 350 to 390 feet msl. Towards the west end of the FRC, elevation is approximately 290 feet msl with steep slopes along the unnamed tributaries to Paint Branch. Slopes of greater than 15 percent are considered to have severe erosion potential (**Figure 16**).

3.2.2 WHAT ARE THE SUBSURFACE CONDITIONS AT THE SITE?

The FRC is located within the Piedmont Plateau physiographic province near the fall line of the Atlantic Coastal Plain. The Piedmont Plateau is composed of hard, crystalline igneous and metamorphic rocks. Bedrock consists of schist, gneiss, gabbro, and other highly metamorphosed rocks (MGS, 2017). Specifically, the study area is within the Piedmont Upland Section of the Fall Zone Region within the Piedmont Plateau. The Fall Zone Region is the transition area between the crystalline Piedmont and unconsolidated Coastal Plain. The Perry Hall Upland District is defined by hilltops of sediment and Cretaceous gravels and steep-valleyed rivers incised into the crystalline rock. The easternmost portion of the FRC enters into the Glen Burnie Rolling District of the Western Shore Uplands Region of the Atlantic Coastal Plain; the Glen Burnie Rolling Upland District is an undulating upland with slopes lest than eight degrees (Reger and Cleaves, 2008).

The eastern portion of the study area is largely comprised of boulder gneiss from the Palezoic era of the Cambrian or Ordovician period. The subsurface at this section is comprised of metamorphic rocks, predominantly gneiss with schist, diamictite, metagraywacke, and ultramafics. The western end of the study and portions of the FRC in the east are composed of undifferentiated Mesozoic and crystalline rocks from the Cretaceous period (Cleaves et al., 1968).

3.2.3 HOW WOULD SOIL AND SUBSURFACE CONDITIONS CHANGE AT THE SITE?

No-Action Alternative

The No-Action Alternative would not result in construction of new buildings; therefore, no changes to topography would occur, and soils would not be impacted.

Action Alternative

Under each of the Action Alternatives, construction, clearing, and grading activities would impact soils and topography. A construction plan would be developed prior to any construction work that would outline

construction staging and laydown areas. Construction activities may lead to erosion of soils and sedimentation in local streams. Construction activities would be limited to the extent possible in areas of steep slopes, and an erosion and sediment control plan would be implemented. Impacts from soil erosion would be short-term, minor, and adverse.

For a comparison of acres impacted by each alternative please refer to **Table 10**. Excavation for the construction of the buildings would permanently remove soils from the FDA Campus. Furthermore, grading for the new facilities would require leveling the existing rolling topography. Construction of new facilities and roads would impact steep slopes. These slopes are considered to have a very severe erosion potential. As design progresses, the project would be designed to avoid steep slopes to the extent possible. The Action Alternatives would result in long-term, major, adverse impacts to soils and topography.

Table 10. Acreage and Steep Slopes Impacted by Action Alternatives

Alternative	Additional Acres Impacted	Acres of Steep Slopes Impacted	Total Acres Impacted
A	20.3	0.44	151.4
B	14.9	0.69	146.0
C	12.9	0.62	144.0

3.2.4 WHAT MEASURES WILL BE TAKEN TO ENSURE THAT EROSION AND SEDIMENTATION ARE CONTROLLED?

Under any of the Action Alternatives, construction in areas with steep slopes would be avoided to the extent possible. Detailed subsurface engineering studies would be undertaken prior to design and construction to ensure that sound building practices are followed. Soil suitability would be determined, and appropriate building foundation specifications would be developed. Under the Action Alternatives, an erosion and sediment control plan would be followed to minimize soil loss due to erosion. Best Management Practices (BMP), such as silt fencing, construction sequencing, and seeding exposed soil areas with grass seed, would be used to control and minimize sedimentation, which is the transportation and deposition of sediments from land into water.

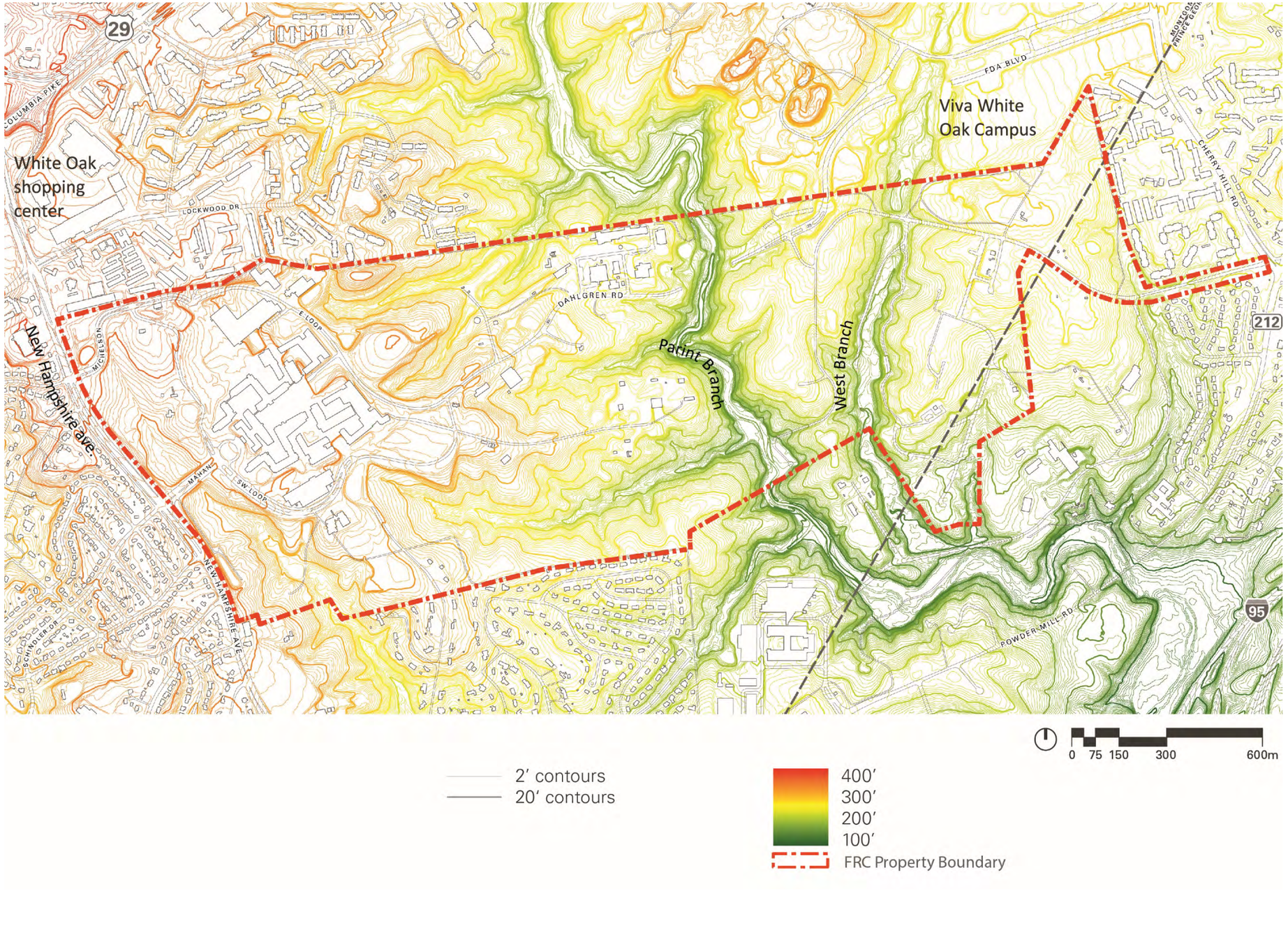

Figure 15. Topography

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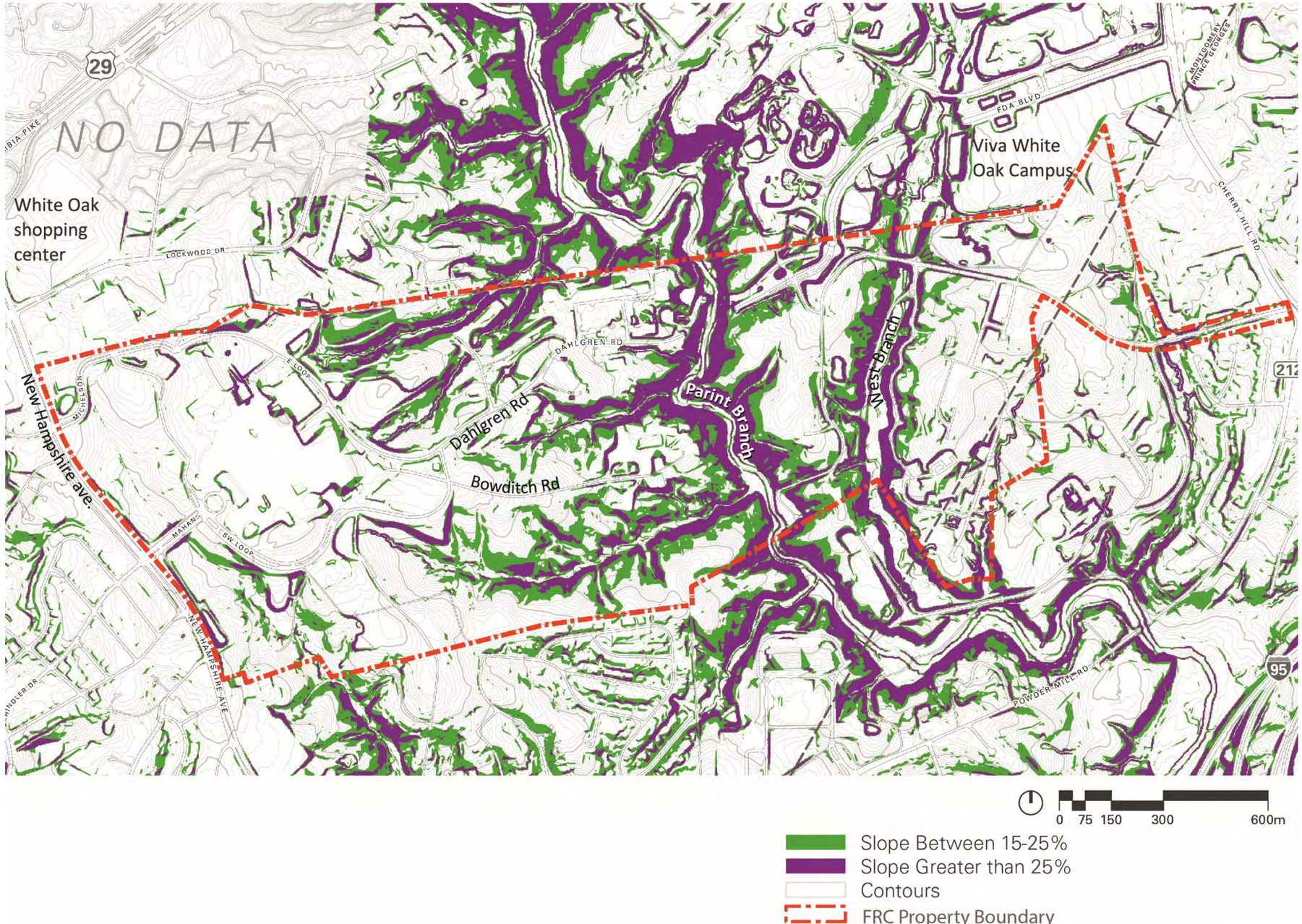

Figure 16. Steep Slopes at the FRC

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3.3 WATER RESOURCES

3.3.1 SURFACE WATER AND WETLANDS

Impacts to waters of the U.S., including wetlands, are regulated under Section 404 of the Clean Water Act (CWA) by the U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA). The Maryland Department of the Environment (MDE) regulates waters of the U.S. as well as waters of the State, which includes the 100-year floodplain, wetlands (including isolated wetlands), wetland and stream buffers, and intermittent and perennial streams. The State of Maryland mandates a minimum 25-foot buffer around all wetlands, with expansion up to 100 feet where adjacent areas contain steep slopes or highly erodible soils, or for wetlands of special state concern.

All waterways on the FRC are unnamed tributaries of Paint Branch, located within the Anacostia River watershed (MDE 02-14-02-05). Paint Branch and its tributaries upstream of the Capital Beltway (I-495) are designated as Use III (Nontidal Cold Water) waterways by the State of Maryland. Perennial and intermittent streams on the FDA site are subject to Montgomery County Stream Valley Buffers (SVBs) in accordance with the Guidelines for Environmental Management of Development in Montgomery County (M-NCPPC, 2000). According to the County Environmental Guidelines, Use III streams require a 150-foot minimum buffer, which may be expanded up to 200 feet to include steep slopes equal to or greater than 25 percent, 100-year floodplains, wetlands, and wetland buffers. No buildings, structures, impervious surfaces, or activities requiring clearing or grading are permitted within SVBs, except for unavoidable road, trail, or utility crossings. Permanent stormwater management facilities are generally discouraged within SVBs, but are considered on a case-by-case basis.

3.3.2 WHAT STREAMS AND WETLANDS ARE LOCATED ON THE FDA CAMPUS?

Field investigations were conducted on July 17, August 1, and August 2, 2017, to determine the presence, extent, location, and classification of any waters of the U.S., including wetlands, or waters of the State located within or adjacent to the FDA Campus. Wetlands were investigated following the procedures detailed in the Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987), the Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region Version 2.0 (USACE, 2010), and all subsequent guidance and clarifications. A total of eight waterways (WUS 1 through 6, WUS12, and WUS13) and two wetlands (WET2 and WET4) were identified. The locations of the waterways and wetlands identified in the field and their associated buffers are described below and shown in **Figure 17**. Additional details, including photographs and wetland delineation data sheets, are provided in the Wetland Investigation Report included in Appendix B. **Table 11** provides a summary of the wetlands delineated in the field. **Table 12** provides a summary of the wetlands delineated in the field.

Table 11. Summary of Waters of the U.S. on the FDA Campus

Stream ID	Classification	Delineated Length (lf)	Delineated Area (sf)	Delineated Area (Acres)	Location
WUS1	Perennial	1,456	16,106	0.37	Originates outside of study area at the outfall of SWM 1
WUS2	Intermittent	40	73	<0.00	Originates outside of study area near Perimeter Road
WUS3	Intermittent	130	464	0.01	Originates within the study area near East Loop Road/Edison Road
WUS4	Perennial	1,424	10,102	0.23	Originates at an outfall along East Loop Road near Southwest Loop Road
WUS5	Ephemeral	33	26	<0.00	Between WUS4 and SWM pond to the north
WUS6	Intermittent	1,078	3,124	0.07	Culvert outfall immediately south of Michelson Road/Northwest Loop Road
WUS12	Intermittent	517	1,737	0.04	Near parking area for Building 130 o Dahlgren Road
WUS13	Ephemeral	58	57	<0.00	Near Building 130

Table 12. Summary of Wetlands on the FDA Campus

Wetland ID	Classification	Area (SF)	Area (Acres)
WET2	Palustrine Emergent (PEM)	1,894	0.04
WET4	Palustrine Emergent (PEM)	1,002	0.02

In addition to the streams identified during the 2017 delineation, offsite streams from previous investigations are protected by SVBs that may intersect the proposed Master Plan area. Additional investigations outside the immediate study area may be required prior to site plan review to verify the locations of offsite streams and their associated SVBs that could potentially be impacted.

In addition to the streams identified during the 2017 delineation, offsite streams from previous investigations are protected by SVBs that may intersect the proposed Master Plan area. Additional

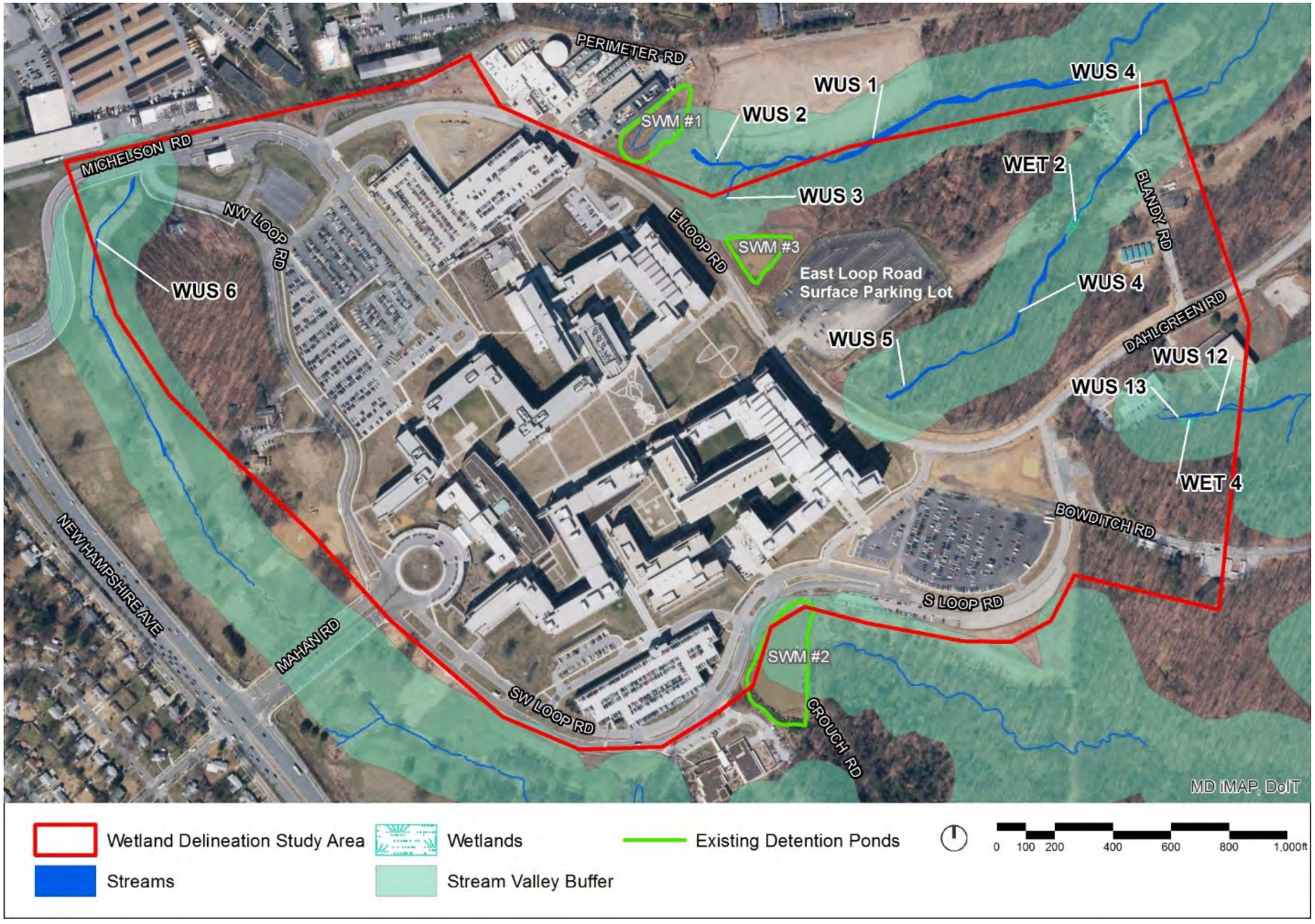

Figure 17. Existing Waterways, Wetlands, and Stormwater Management Facilities

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investigations outside the immediate study area may be required prior to site plan review to verify the locations of offsite streams and their associated SVBs that could potentially be impacted.

Currently, the FDA Campus consists of approximately 44 percent impervious land cover, including buildings, parking lots, and roadways. There are three existing detention ponds on the campus that provide storm water quantity control. There are also numerous bio-retention areas, grass channels, green roofs, rooftop disconnects, and sand filters scattered around the campus that provide water quality treatment for specific buildings and roadways (see **Figure 18**). These existing stormwater management facilities on campus do not have available additional capacity to serve new development. Additionally, seven existing parking lots on the FDA Campus currently do not have MDE-approved stormwater treatment facilities. GSA is currently working with MDE to resolve this issue prior to any future development.

3.3.3 HOW WOULD STREAMS AND WETLANDS BE AFFECTED BY THE PROJECT?

No-Action Alternative

Under the No-Action Alternative, no wetlands or stream systems in the vicinity of the FDA Campus would be directly affected (see **Table 13**). GSA would provide stormwater treatment facilities for the non-compliant parking lots in accordance with MDE requirements. The remaining stormwater runoff from existing impervious areas on the FDA Campus would continue to be managed by the existing stormwater facilities. Because appropriate stormwater management would be provided for non-compliant parking lots, a minor, long-term, beneficial impact to streams and wetlands would occur.

Table 13. Comparison of Impact for Streams, Wetlands, and Stream Valley Buffers

	No-Action Alternative	Alternative A	Alternative B	Alternative C
Permanent Stream Impacts (LF)	0	472	266	266
Permanent Wetland Impacts (Ac)	0	0.02	0	0
Permanent SVB Impacts (Ac)	0	6.40	4.25	4.66

Actions Common to All Action Alternatives

Under all Action Alternatives, a roadway connection between East Loop Road and Blandy Road; and FDA Boulevard and Southeast Loop Road is proposed. The new roadway would run parallel to WUS1 for approximately 2,700 feet before connecting to Blandy Road. Blandy Road would be widened and resurfaced, and a 10-foot wide multiuse path would be provided along the entire new roadway. The proposed new roadway would not directly impact WUS1, but would be within the SVB associated with WUS1, WUS3, and WUS4. Due to the proposed improvements, the existing 140-foot long culvert under Blandy Road would likely be replaced or modified, resulting in 140 linear feet of direct, permanent impacts to WUS4 for the length of the culvert.

In addition to the proposed roadway connection, SWM Pond #3 would be removed and replaced via a re-design and expansion of existing SWM Pond #1 (adjacent to the Central Utility Plant). The exact location of the proposed stormwater facility expansion is to be determined, but may result in some direct, permanent,

and/or temporary construction impacts to WUS1, WUS2, and WUS3. The facility expansion would be located and designed to avoid and minimize impacts to these streams as much as possible. The relocation of SWM #3 would also likely alter or remove the source of water for WUS3, resulting in a permanent indirect stream impact of 126 feet.

The proposed location of the stormwater facility expansion is within the SVB associated with WUS1, WUS 2, and WUS3. M-NCPPC generally discourages the placement of stormwater management facilities within SVBs, but it may be allowed on a case-by-case basis. The proposed facility would be designed in accordance with Chapter 5 of the County Environmental Guidelines to the extent practicable.

Under all Action Alternatives, Northwest Loop Road would be realigned and improvements would be made to the intersection of Michelson Road and Northwest Loop Road. These improvements may result in temporary impacts to the culvert and upstream portions of WUS6 during construction. No permanent impacts to WUS6 itself are anticipated; however, the realignment of Northwest Loop Road would result in a permanent impact to the SVB associated with WUS6.

Because all Action Alternatives would result in at least 266 feet of permanent impacts to streams, additional temporary impacts, and permanent modifications to SVBs, all Action Alternatives would have a long-term, direct, major, adverse impact to streams and SVBs. All Action Alternatives would require authorization under the Maryland State Programmatic General Permit 5 (MDSPGP-5), which is co-administered by USACE and MDE. By providing compensatory mitigation and complying with the terms and conditions of the MDSPGP-5 as described in Section 3.3.4, the impacts to streams, wetlands, and SVBs would be reduced.

In addition to the direct, temporary impacts that would occur to WUS1, WUS2, WUS3, and WUS6, construction activities such as clearing, grading, and road and building construction may result in indirect, temporary impacts to streams and wetlands due to increased soil erosion and potential spills of contaminants. During storm events, exposed sediments and contaminants could run off into streams and surface waters both on and offsite. These impacts would be temporary and would be minimized as much as possible by implementing BMPs during construction, as described in Section 3.3.4. Because the impacts are temporary and would be effectively minimized as much as possible with BMPs during construction, all Action Alternatives would have a negligible, short-term, indirect, adverse impact to streams, wetlands, and SVBs.

Alternative A (Action Alternative)

Alternative A includes the 266 feet of permanent impacts to streams and SVBs and the short-term impacts to streams and wetlands discussed under all Action Alternatives. In addition, Alternative A would result in permanent impacts to WUS12, WUS13, and WET4 due to the construction of the proposed parking structure south of Dahlgren Road and the extension of Southwest Loop Road (see Error! Reference source not found.). A minimum of 154 linear feet of WUS12 would be permanently impacted. WUS13 would likely be eliminated due to the construction of the road and the removal of its source water from the existing parking lot drainage, resulting in 52 additional feet of permanent impacts to streams. WET4 would be eliminated, resulting in a total of 0.02 acre (1,002 square feet) of permanent impacts to wetlands. In addition, some temporary impacts may occur to WUS12 due to construction access, grading, and compaction (see **Figure 19**).

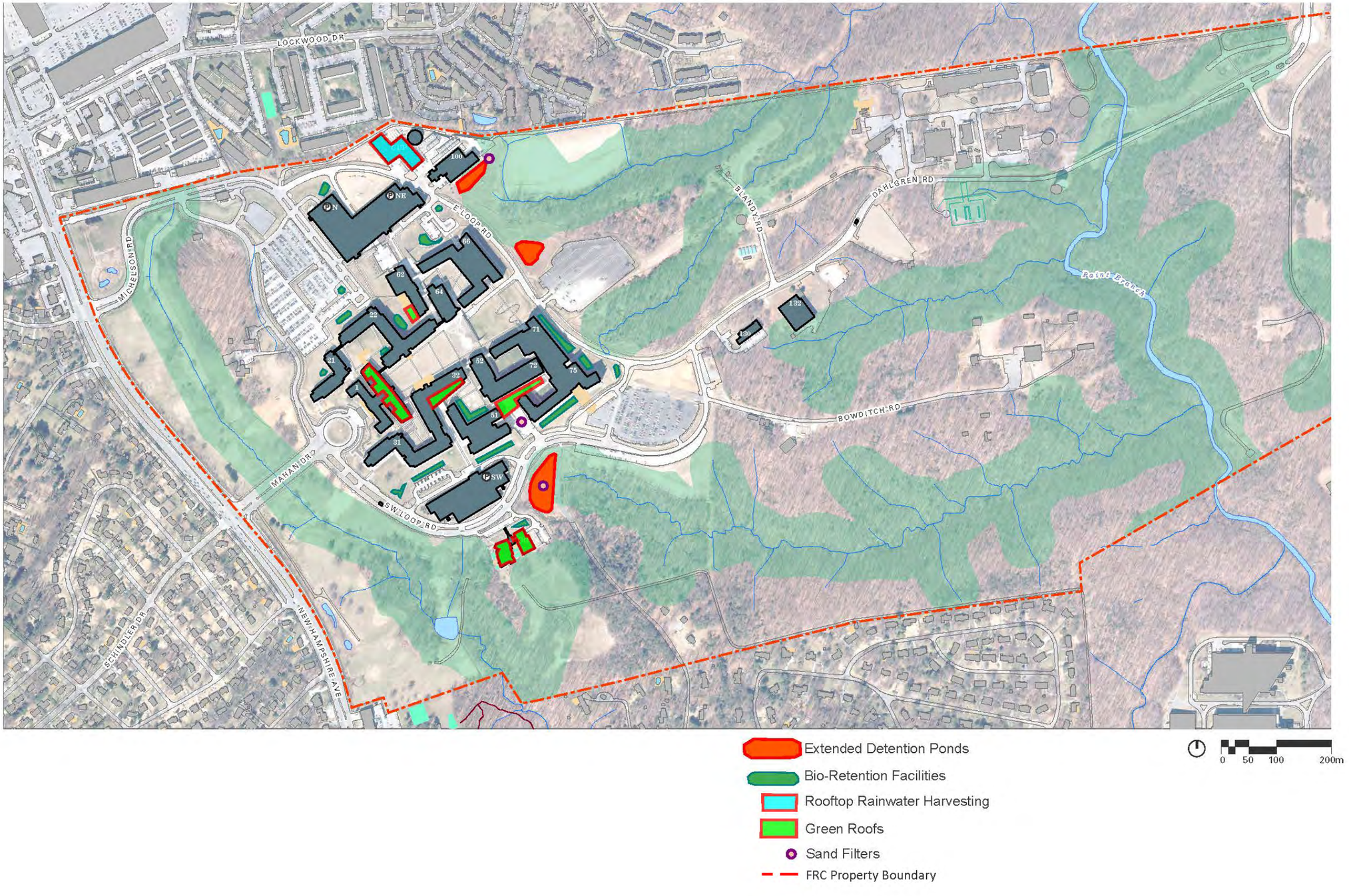

Figure 18. Existing Stormwater Management Practices

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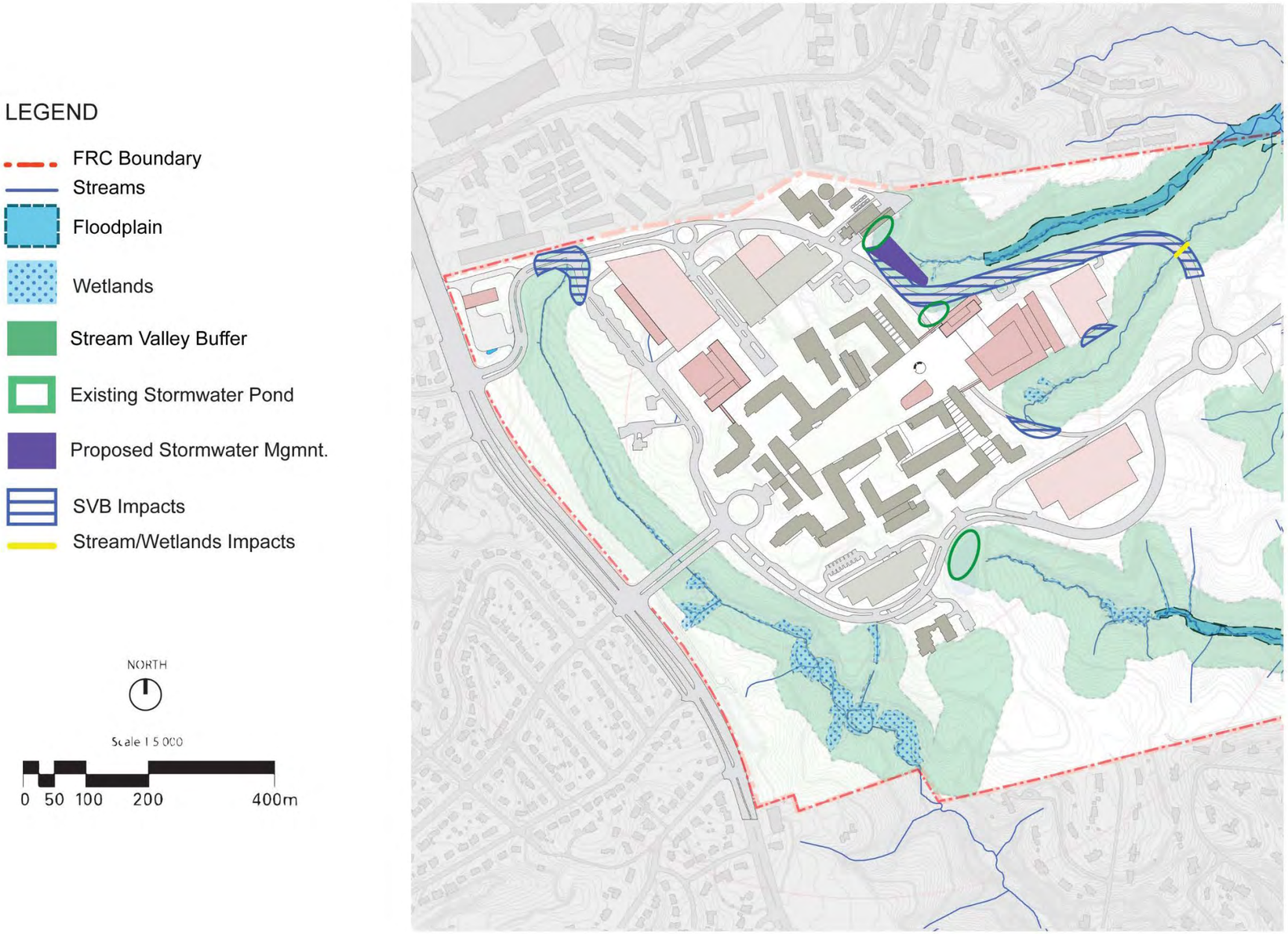

Figure 19. Stream and Stream Valley Buffer Impacts Under Alternative A

The construction of the parking structure north of WUS4 would encroach on the SVB associated with WUS4.

The proposed pedestrian bridge over WUS4 would not directly impact the stream in this location, but may be considered an indirect permanent impact due to the above-grade crossing of the stream. By increasing impervious surface within the SVB associated with WUS4, the bridge would also be considered an additional permanent impact to the SVB. Temporary construction impacts to WUS4 may occur during construction of the pedestrian bridge, including grading and vegetation clearing.

Including the 266 feet of permanent impacts to streams discussed under all Action Alternatives and the additional 206 feet of permanent impacts to WUS12 and WUS13, Alternative A would result in a total of approximately 472 linear feet of permanent stream impacts. Alternative A would also result in additional impacts to the SVBs associated with WUS12 and WUS4, and an additional 0.02 acre of impact to WET4. Therefore, Alternative A would add to the long-term, direct, major, adverse impacts to streams, wetlands, and SVBs that would occur under all Action Alternatives. By providing compensatory mitigation and complying with the terms and conditions of the MDSPGP-5 as described in Section 3.3.5, the impacts to streams, wetlands, and SVBs would be reduced.

Alternative A would add an additional 16.62 acres of impervious surface from the additional proposed buildings, roads, and parking structures. However, Alternative A would also remove 5.32 acres of existing impervious surface in other areas, mainly through the reduction of surface parking, resulting in a net increase of 12.6 acres of impervious cover (see **Table 14**). This represents a 8 percent increase in impervious surface on the FDA Campus, for a total of 52 percent total impervious cover. This increase in impervious surface could result in an increase in the amount and temperature of stormwater runoff, which could increase peak discharges, temperatures, and pollutant load in the receiving stream(s) or wetland(s); thereby reducing water quality and degrading the biological integrity of streams and wetlands both on and offsite. Because permanent BMPs and ESD/LID strategies would be installed to reduce the amount of stormwater, sediments, and pollutants entering streams and wetlands as described in Section 3.3.5, the increase in impervious surface that would occur under Alternative A would have a minor to moderate, long-term, indirect, adverse impact to streams and wetlands.

Table 14. Comparison of Impervious Surface

	No-Action Alternative	Alternative A	Alternative B	Alternative C
Additional Impervious Cover (Ac)	0	12.6	11.22	10.22
Total Impervious Cover (Ac)	66	78.6	77.22	76.22
Percentage Increase	0	8	7	6
Total Percentage Impervious Surface	44	52	51	50

Alternative B (Action Alternative)

Alternative B includes the 266 feet of permanent impacts to streams and SVBs and the short-term impacts to streams and wetlands discussed under all Action Alternatives. Under Alternative B, the construction of the parking structure north of WUS4 would slightly encroach on the SVB associated with WUS4, resulting in

a permanent impact to the SVB (see **Figure 20**). However, due to the proposed location and size of the parking structure, the impact to the SVB would be less than the impact proposed under Alternative A.

Under Alternative B, no pedestrian bridge would be constructed over WUS4. The parking structure south of Dahlgren Road and the extension of Southwest Loop Road would not be constructed, so no impacts to WUS12, WUS13, or WET4 would occur. Alternative B would result in a total of approximately 266 linear feet of permanent stream impacts, similar to the stream impacts that would occur under all Action Alternatives. No direct impacts to wetlands would occur. However, due to the additional impact to the SVB associated with WUS4, Alternative B would add to the long-term, direct, major, adverse impacts to SVBs that would occur under all Alternatives. By providing compensatory mitigation and complying with the terms and conditions of the MDSPGP-5 as described in Section 3.3.5, the impacts to streams, wetlands, and SVBs would be reduced.

Alternative B would add an additional 13.46 acres of impervious surface due to the additional proposed buildings, roads, and parking structures. However, Alternative B would also remove 3.84 acres of existing impervious surface in other areas, mainly through the reduction of surface parking, resulting in a net increase of 11.22 acres of impervious cover. This represents a 7 percent increase in impervious surface on the FDA Campus, for a total of 51 percent impervious cover. This increase in impervious surface could result in an increase in the amount and temperature of stormwater runoff, which could increase peak discharges, temperatures, and pollutant loads in the receiving stream(s) or wetland(s); thereby reducing water quality and degrading the biological integrity of streams and wetlands both on and offsite. Because permanent BMPs and ESD/LID strategies would be installed to reduce the amount of stormwater, sediments, and pollutants entering streams and wetlands as described in Section 3.3.5, the increase in impervious surface that would occur under Alternative B would have a minor to moderate, long-term, indirect, adverse impact to streams and wetlands.

Alternative C (Action Alternative)

Alternative C includes the 266 feet of permanent impacts to streams and SVBs and the short-term impacts to streams and wetlands discussed under all Action Alternatives. Under Alternative C, the parking structure north of WUS4 would slightly encroach on SVB associated with WUS4, resulting in permanent impacts to the SVB. No pedestrian bridge would be constructed over WUS4. Therefore, no additional impacts to the SVB associated with WUS4 would occur. The improvements to East Loop Road south of the proposed office building within the East Loop Road surface parking lot would encroach on the SVB associated with WUS5 and result in permanent impacts to the SVB. The parking structure south of Dahlgren Road and the extension of Southwest Loop Road would not be constructed, so no impacts to WUS12, WUS13, or WET4 would occur. Therefore, Alternative C would result in a total of approximately 266 linear feet of permanent stream impacts, similar to the stream impacts that would occur under all Alternatives (see **Figure 21**). Alternative C would not add to the long-term, direct, major, adverse impacts to streams that would occur under all Alternatives; however, Alternative C would add to the long-term, direct, major, adverse impacts to SVBs that would occur under all Alternatives . By providing compensatory mitigation and complying with the terms and conditions of the MDSPGP-5 as described in Section 3.3.5, the impacts to streams, wetlands, and SVBs would be reduced.

Alternative C would add an additional 13.46 acres of impervious surface due to the additional proposed buildings, roads, and parking structures. However, Alternative C would also remove 3.84 acres of existing impervious surface in other areas, mainly through the reduction of surface parking, resulting in a net increase of 10.22 acres of impervious cover. This represents a 6 percent increase in impervious surface on the FDA Campus, for a total of 50 percent impervious cover. This increase in impervious surface could result in an increase in the amount and temperature of stormwater runoff, which could increase peak discharges, temperatures, and pollutants in the receiving stream(s) or wetland(s); thereby reducing water quality and degrading the biological integrity of streams and wetlands both on and offsite. Because permanent BMPs and ESD/LID strategies would be installed to reduce the amount of stormwater, sediments, and pollutants entering streams and wetlands, the increase in impervious surface that would occur under Alternative C would have a minor to moderate, long-term, indirect, adverse impact to streams and wetlands.

3.3.4 WHAT MEASURES WOULD BE TAKEN TO PROTECT STREAMS AND WETLANDS?

During construction, BMPs such as silt fence, erosion matting, inlet protection, sediment traps, sediment basins, and revegetation of exposed sediment would be implemented to minimize soil erosion and stormwater pollution. Stormwater management plans and erosion and sediment control plans would be prepared and submitted to MDE for review and approval prior to construction. All disturbed areas would be permanently revegetated and stabilized following construction. Temporary impacts to streams and wetlands would be restored to pre-construction conditions to the extent practicable following construction, including contour and elevation restoration, revegetation with native species, streambank stabilization, and stream substrate replacement.

All Alternatives would require authorization under the Maryland State Programmatic General Permit 5 (MDSPGP-5), co-administered by USACE and MDE, which authorizes projects that would result in less than 2,000 linear feet of stream impacts and less than 1 acre of wetland impacts. The MDSPGP-5 requires compensatory mitigation for stream impacts exceeding 200 linear feet and wetland impacts exceeding 5,000 square feet. By providing compensatory mitigation in accordance with the MDSPGP-5 and complying with the permit terms and conditions, the impacts to streams and wetlands would be reduced.

Encroachments within SVBs would be subject to M-NCPPC review. All proposed encroachments to SVBs would be designed in accordance with Chapter 5 of the M-NCPPC Environmental Guidelines to the maximum extent practicable. M-NCPPC would be consulted prior to final design to determine additional avoidance, minimization, and appropriate compensatory mitigation for impacts to SVBs. Compensation for losses of SVB function could include buffer averaging, enhanced forestation, bioengineering practices, and other environmentally beneficial techniques as described in the environmental guidelines.

3.3.5 WHAT TYPES OF STORMWATER QUANTITY AND QUALITY CONTROL MEASURES WOULD BE IMPLEMENTED?

Stormwater quantity and quality control measures would be designed and implemented in accordance with the following regulations, permits and guidance documents:

- COMAR 26.17.01 Erosion and Sediment Control
- COMAR 26.17.02 Stormwater Management
- Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 2011)
- Maryland Stormwater Management and Erosion & Sediment Control Guidelines for State and Federal Projects (MDE, 2015)
- Maryland Stormwater Design Manual, Volumes I & II (MDE, 2000) and Supplement 1 (MDE, 2009)
- Section 438 of the Energy Independence and Security Act of 2007 (EISA)
- Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under EISA 438 (EPA, 2009)
- Guidelines for Environmental Management of Development in Montgomery County (M-NCPPC, 2000)
- NPDES General Permit for Stormwater Associated with Construction Activity, administered by MDE
- NPDES General Permit for Discharges from State and Federal Small Municipal Separate Storm Sewer Systems (MS4s), administered by MDE
- Maryland State Programmatic General Permit 5 (MDSPGP-5), co-administered by USACE and MDE

The State of Maryland ESD strategies would be implemented to the maximum extent practicable. LEED and the Sustainabile Sites Initiate™ (SITES™) points for stormwater management would be pursued for each building. Low Impact Development (LID) strategies would be employed in accordance with the Technical Guidance on Implementing the Storm Water Runoff requirements for Federal Projects under Section 438 of the Energy Independence and Security Act (EISA 438). Strategies to incorporate SWM facilities into the site as amenities and spatial drivers would be pursued, as well as exploring the potential to integrate the design into the natural systems of the White Oak Campus.

Potential types of LID/BMP facilities for the expanded FDA Campus are: Micro-bioretention (Structural walled micro-bioretention may be used in lieu of graded micro-bioretention where space limitations dictate), Bio-swales (on road sides), Rooftop Rainwater Harvesting (Typical reuse methods are toilet flushing and cooling tower makeup water), Green Roof/Partial Green Roof (Green roof with 4-inch media provides 38 percent of the required MDE Environmental Site Design Volume (ESDv)), Pervious Pavements (The best opportunities on the campus are likely to be fire lanes, sidewalks, paths, and other hardscape areas), Submerged Gravel Wetlands (MDE will generally accept these if alternative ESD BMPs are not feasible), Tree Planting, and Stream Restorations (Tree planting and stream restoration can at times be credited toward meeting water quality requirements).

Roadways would maximize use of bio swales. Office buildings would maximize the use of rooftop rainwater harvesting as well as green roofs. Any untreated storm runoff from roads, buildings, and parking structures would be conveyed to new non-structural ESD/BMP facilities such as bio-retention areas. Once ESD measures have been implemented to the maximum extent practicable, then structural and other non-ESD type BMP facilities could be utilized. An existing SWM pond (Pond #3) located at the east end of the central commons would be removed and replaced via a re-design and expansion of existing SWM Pond #1 (adjacent to the CUP). The existing SWM pond (SHA Pond #2) located north of Michelson Road, and adjacent to New

Hampshire Avenue (MD 650) would be removed and replaced by a submerged gravel wetland located south of Michelson Road. The other existing stormwater facilities on the FDA Campus may be retrofitted, relocated, or replaced as necessary. These areas would drain to new storm pipe systems that would in turn outfall to existing tributaries of Paint Branch. Outfalls would be required to be non-erosive.

Construction would be authorized under the NPDES General Permit for Stormwater Associated with Construction Activity. Notices of Intent (NOI) would be filed and NPDES General Permits for Construction would be obtained for all new work. During construction, BMPs such as silt fence, erosion matting, inlet protection, sediment traps, sediment basins, and revegetation of exposed sediment would be implemented to minimize soil erosion and stormwater pollution. Stormwater management plans and erosion and sediment control plans would be prepared and submitted to MDE for review and approval prior to construction. MDE enforces a maximum limit of 20 acres of disturbed ground at any time. All disturbed areas would be permanently revegetated and stabilized following construction. Temporary impacts to streams and wetlands would be restored to pre-construction conditions to the maximum extent practicable following construction, including contour and elevation restoration, revegetation with native species, streambank stabilization, and stream substrate replacement.

Figure 22 through **Figure 24** show the proposed Stormwater management plans for each Action Alternative.

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Figure 20. Stream and Stream Valley Buffer Impacts Under Alternative B

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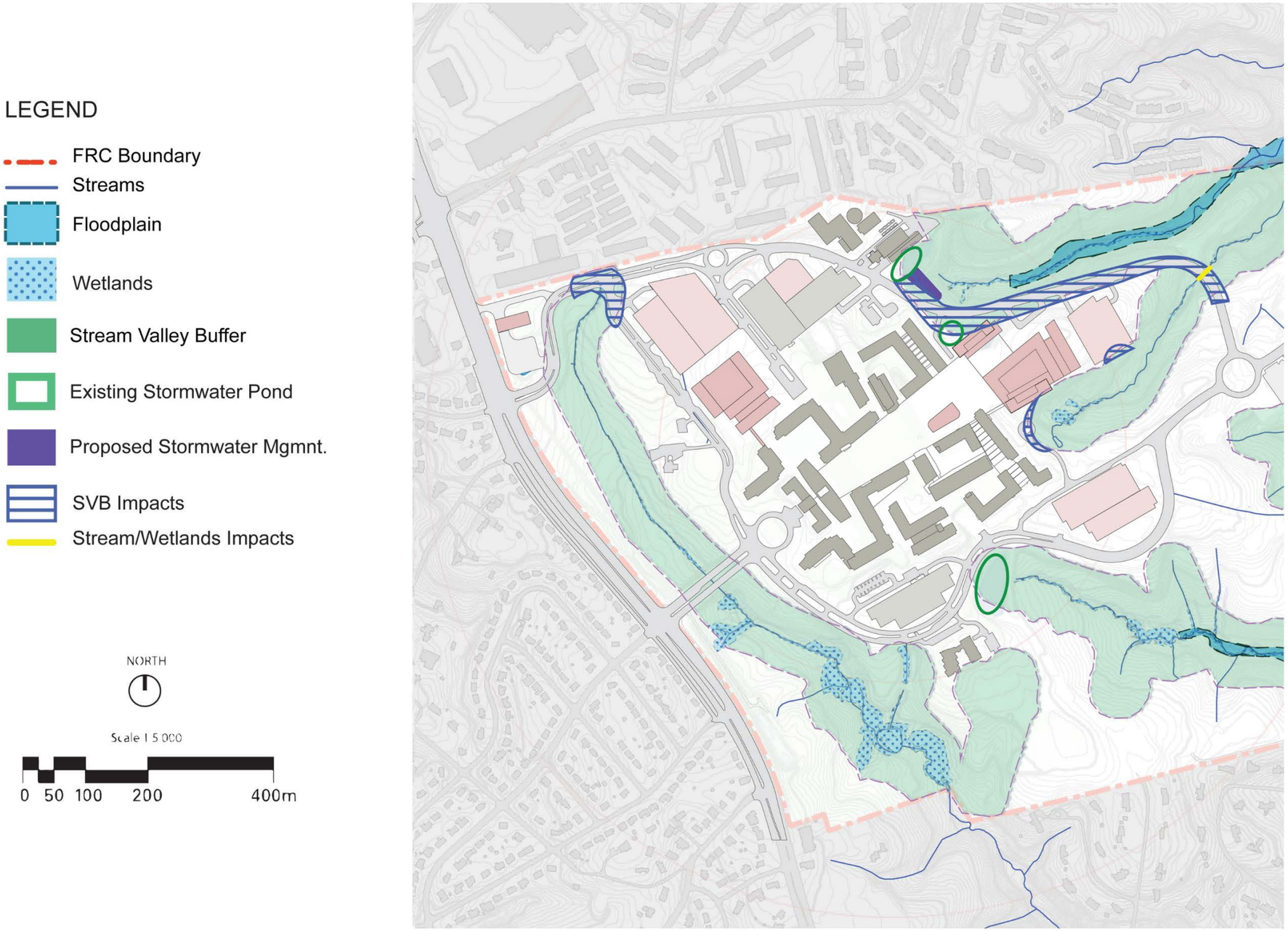

Figure 21. Stream and Stream Valley Buffer Impacts Under Alternative C

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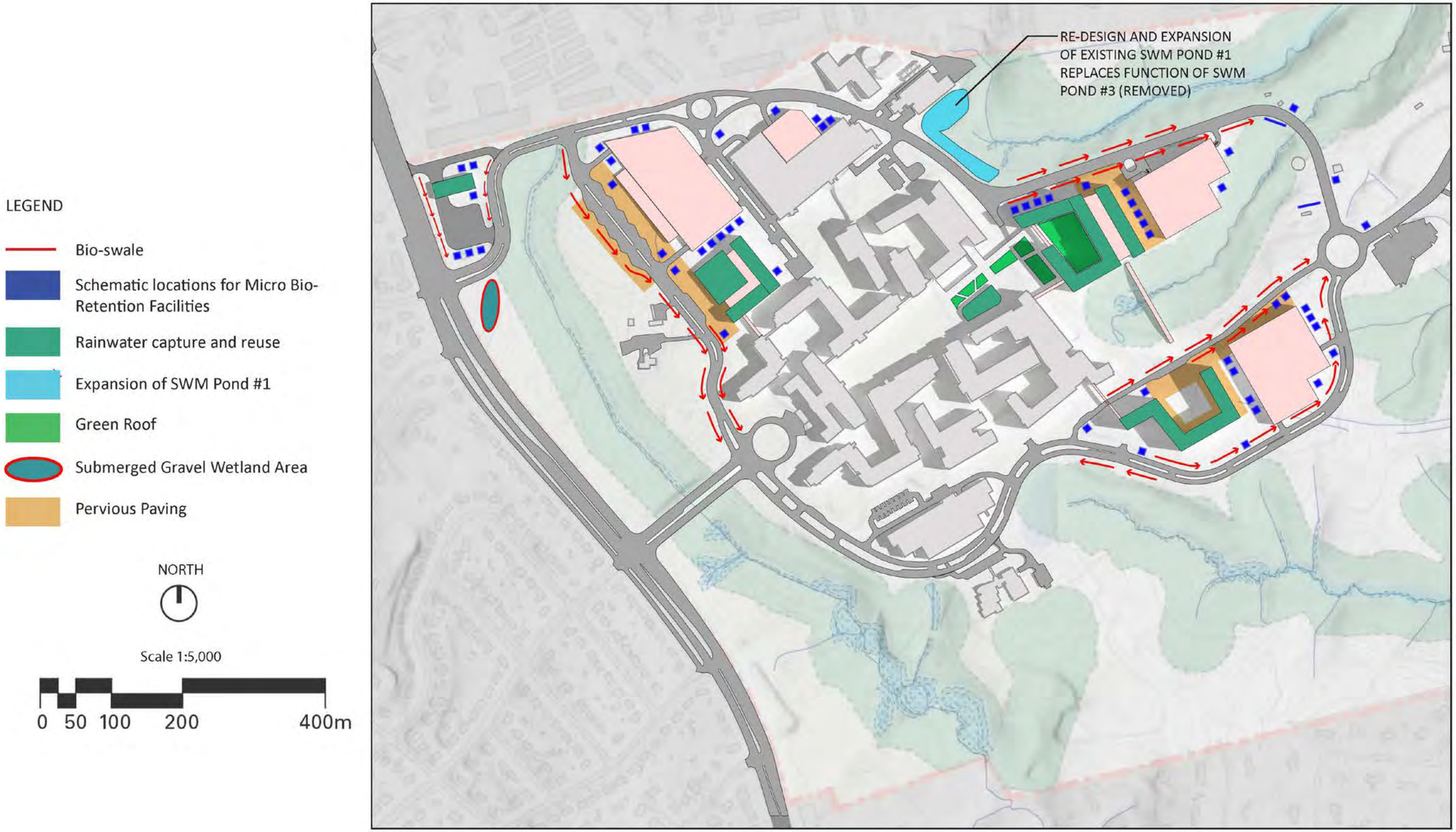

Figure 22. Stormwater Management Plan for Alternative A

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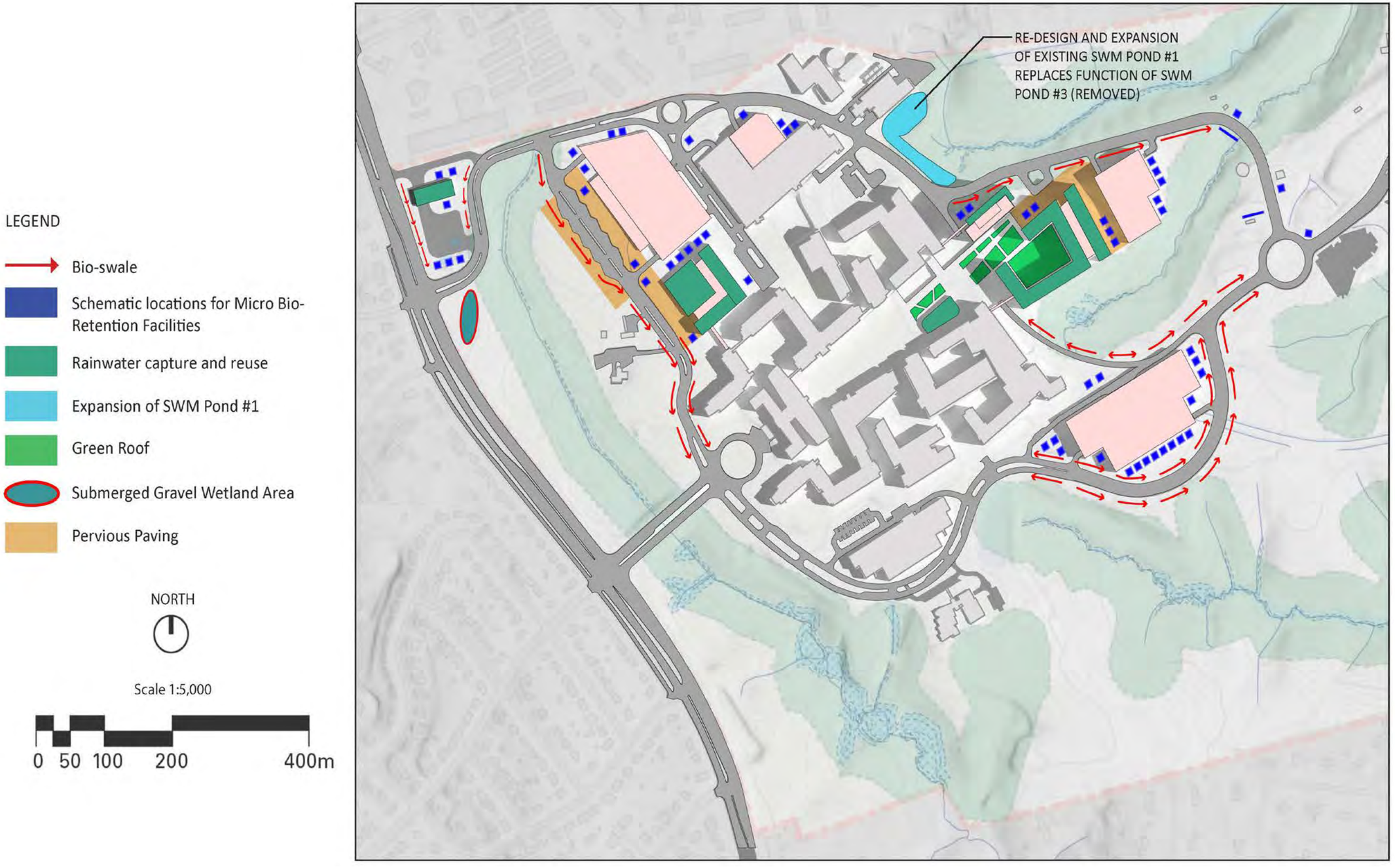

Figure 23. Stormwater Management Plan for Alternative B

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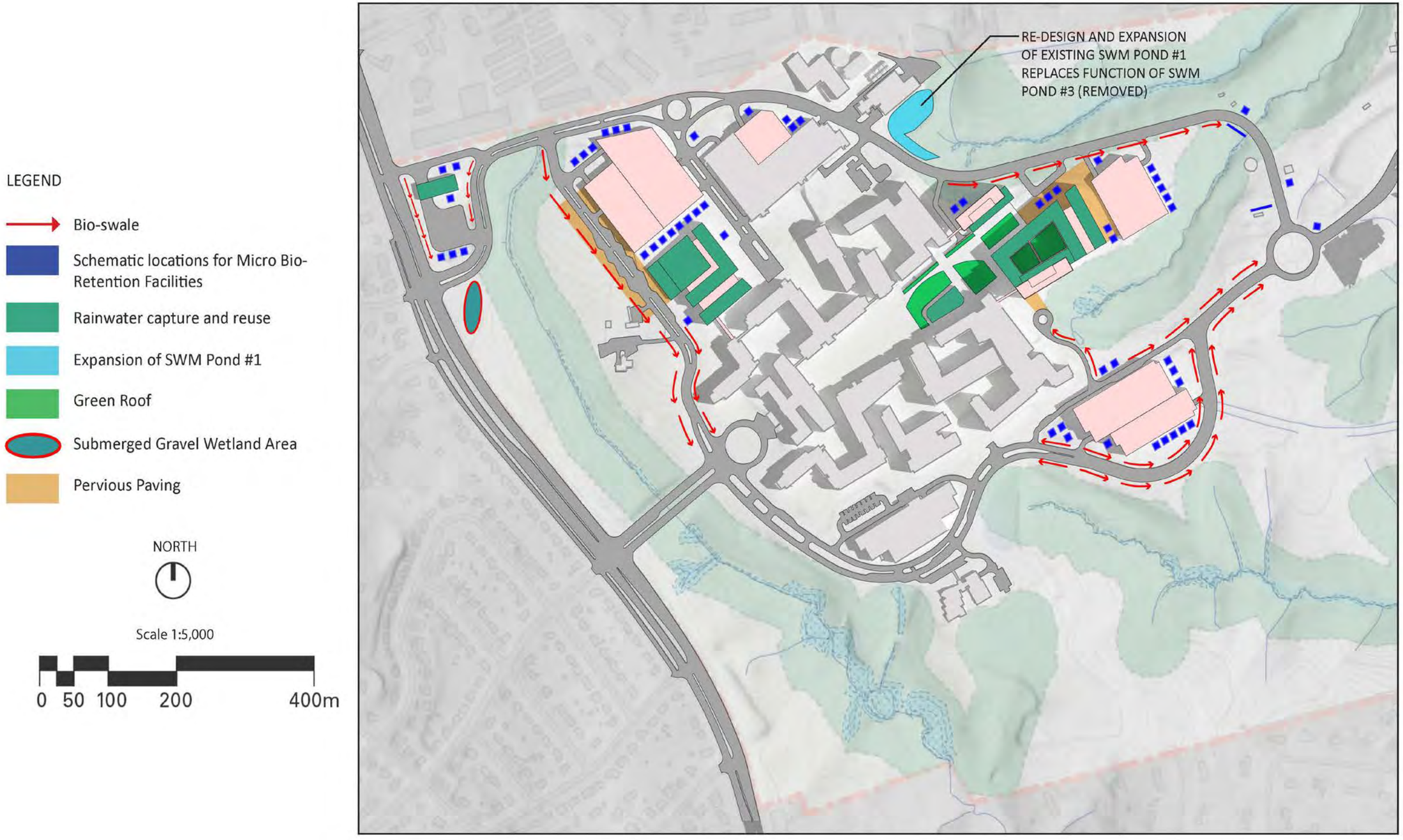

Figure 24. Stormwater Management Plan for Alternative C

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3.4 VEGETATION

3.4.1 WHAT TYPES OF VEGETATION ARE LOCATED ON THE FRC?

Plant communities were classified using the Anderson land-use classification system (Anderson et al. 1976). Land use classifications found within the FRC and the FDA Campus include:

Urban or Built-up Land – Land comprised of area of intensive use with much of the land covered by structures, including cities, towns, villages, strip-developments, transportation, power, communication facilities, and areas such as those occupied by mills, shopping centers, industrial and commercial complexes, and institutions that may be isolated from urban areas. Urban land within the FDA Campus includes a green buffer zone, the FDA development, road, and parking lots. Landscaped areas comprise most of the vegetation within the urban and developed land of the FDA Campus.

Deciduous Forest Land – All forested areas having a predominance of trees that lose their leaves at the end of the frost-free season or at the beginning of the dry season. There are approximately 26.8 acres of forest within the study area and delineated into seven forest stands. Forests within the study area are defined as mid-successional. A mid-successional forest is a transitional stage between a young and mature forest.

Table 15 identifies plant species that were identified within the forested areas and along wetlands within the study area.

Table 15. Plant Species Observed During 2017 Field Visits

	Common Name	Scientific Name
Overstory	White oak	*Quercus alba*
	Northern red oak	*Quercus rubra*
	Chestnut oak	*Quercus montana*
	Black gum	*Nyssa sylvatica*
	Tulip poplar	*Liriodendron tulipifera*
	Virginia pine	*Pinus virginiana*
	Red maple	*Acer rubrum*
	Pignut hickory	*Carya glabra*
Understory	Black cherry	*Prunus serotine*
	American holly	*Ilex opaca*
	Mountain laurel	*Kalmia latifolia*
	Sassafras	*Sassafras albidum*
	Dogwood	*Cornus florida*
	American beech	*Fagus grandifolia*
	Greenbrier	*Smilax rotundifolia*

	Common Name	Scientific Name
	Serviceberry	*Amelanchier arborea*
	Deertongue	*Dichanthelium clandestinum*
	Sallow sedge	*Carex lurida*
	Fox sedge	*Carex vulpinoida*
	Green bulrush	*Scirpus atrovirens*
	Rice cutgrass	*Leersia oryzoides*
	Soft rush	*Juncus effuses*
	Pennsylvania smartweed	*Persicaria pensylvanica*
	Japanese honeysuckle	*Lonicera japonica*
	Japanese barberry	*Berberis thunbegii*
	Japanese stiltgrass	*Microstegium vimineum*

3.4.2 HOW WOULD THE VEGETATION BE AFFECTED BY THE PROJECT?

No-Action Alternative

Under the No-Action Alternative, the FDA Campus would remain unchanged from its current conditions. GSA would provide stormwater treatment facilities for the non-compliant parking lots in accordance with MDE requirements, which may result in impacts to landscaped areas and maintained lawns (see **Table 16** and **Figure 25** through **Figure 27**). Because these areas consist of maintained urban vegetation, the impact to vegetation would be negligible.

Table 16. Comparison of Vegetation Impacts

Alternative	Forest Impacts (ac)	Maintained Lawn Impacts (ac)	Wetland Vegetation Impacts (ac)
No-Action	0	Negligible	0
Common to All	3.1	3.0	0
A	11.2	>3.0	0.02
B	7.3	>3.0	0
C	6.7	>3.0	0

Figure 25. Impacts to Vegetation Under Alternative A

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Figure 26. Impacts to Vegetation Under Alternative B

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Figure 27. Impacts to Vegetation Under Atlernative C

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Actions Common to All Action Alternatives

Under all Action Alternatives, a roadway connection between East Loop Road and Blandy Road; and FDA Boulevard and South Loop Road is proposed. The new roadway would run northeast from East Loop Road for approximately 1,500 feet before connecting to Blandy Road. Blandy Road would be widened and resurfaced, and a 10-foot wide multiuse path would be provided along the entire new roadway. Although the proposed new roadway would vary slightly between the Action Alternatives, all Action Alternatives would at leastrequire the permanent removal of approximately 1.7 acres of forest, approximately 0.4 acres of which would be within a SVB, and 1.1 acres of maintained lawn.

SWM #3 would be removed and replaced via a re-design and expansion of existing SWM Pond #1 (adjacent to the Central Utility Plant). The existing SWM pond (SHA Pond #2) located north of Michelson Road, and adjacent to New Hampshire Avenue (MD 650) would be removed and replaced by a submerged gravel wetland located south of Michelson Road. (see Error! Reference source not found. through Error! Reference source not found.). The exact location of the proposed stormwater facility is to be determined, but would result in approximately 0.6 acres of direct, permanent impacts to vegetation, including mostly maintained lawn and potentially some forest vegetation, within a SVB.

Under all Action Alternatives, Northwest Loop Road would be realigned and improvements would be made to the intersection of Michelson Road and Northwest Loop Road. These improvements would require the permanent clearing of approximately 1.4 acres of forest vegetation and minor amounts of maintained lawn.

Under all Action Alternatives, the construction of the four-level parking structure and transit center south of Michelson Road would require the permanent removal of approximately 1.3 acres of maintained lawn.

Overall, the actions common to all Action Alternatives would require the permanent removal of approximately 3.1 acres of forest and 3 acres of maintained lawn, resulting in long-term, moderate, direct, adverse impacts to vegetation.

In addition to the direct impacts related to clearing and grading of vegetated areas, temporary construction impacts may require additional clearing, although it is not possible to quantify these temporary impacts at this time. Construction activities would be located within areas that are to be cleared for structural components to the maximum extent practicable. If any additional clearing or grading is required for temporary construction impacts, affected areas would be restored to preconstruction conditions to the extent practicable, including replanting of trees in accordance with local and state requirements and revegetation with appropriate seed mixes. Construction activities may also result in indirect, temporary impacts to wetland vegetation due to increased soil erosion and potential spills of contaminants. During storm events, exposed sediments and contaminants could run off into surface waters both on and offsite. These impacts would be temporary and would be minimized as much as possible by implementing BMPs during construction, as described in Section 3.3.4. Because the impacts are temporary and would be effectively minimized as much as possible with BMPs during construction, all Action Alternatives would have a negligible, short-term, indirect, adverse impact to wetland vegetation.

Alternative A (Action Alternative)

Alternative A includes the impacts to approximately 3.1 acres of forest, 3 acres of maintained lawn, and the short-term impacts to forest, lawn, and wetland vegetation discussed under all Action Alternatives. In addition, under Alternative A, construction of the new facilities, roads, and pedestrian bridge would require the permanent removal of approximately 8.1 acres of forest, for a total of 11.2 acres (see **Table 15**). Although most of the impacts would occur at the forest edge, portions of the forest would be fragmented by construction of the East Parking Garage, creating additional areas of edge habitat. Fragmentation would allow more forested areas to be exposed to the establishment of invasive species. Under Alternative A, the construction of the Southeast Parking Garage would impact 0.02 acres of wetlands and associated wetland vegetation species. Additional areas of the maintained turf within the campus may also be removed during construction, although it is not practicable to quantify these impacts at this time. Removal of the forest, wetland vegetation, and maintained lawn would result in long-term, moderate, adverse impacts to vegetation.

Alternative B (Action Alternative)

Alternative B includes the impacts to approximately 3.1 acres of forest, 3 acres of maintained lawn, and the short-term impacts to forest, lawn, and wetland vegetation discussed under all Action Alternatives. In addition, under Alternative B, construction of the new facilities and roads would require the permanent removal of approximately 4.2 acres of forest, for a total of 7.3 acres (see **Table 16**). Although most of the impacts would occur at the forest edge, portions of the forest would be fragmented by construction of the East Parking Garage, creating additional areas of edge habitat. Fragmentation would allow more forested areas to be exposed to the establishment of invasive species. Additional areas of the maintained turf within the campus may also be removed during construction, although it is not practicable to quantify these impacts at this time. No permanent impacts to wetlands and associated wetland vegetation would occur. Removal of the forest and maintained lawn would result in long-term, moderate, adverse impacts to vegetation.

Alternative C (Action Alternative)

Alternative C includes the impacts to approximately 3.1 acres of forest, 3 acres of maintained lawn, and the short-term impacts to forest, lawn, and wetland vegetation discussed under all Action Alternatives. In addition, under Alternative C, construction of the new facilities and roads would require the permanent removal of approximately 3.6 acres of forest, for a total of 6.7 acres (see **Table 16**). Although most of the impacts would occur at the forest edge, portions of the forest would be fragmented by construction of the East Parking Garage, creating additional areas of edge habitat. Fragmentation would allow more forested areas to be exposed to the establishment invasive species. Additional areas of the maintained turf within the campus may also be removed during construction, although it is not practicable to quantify these impacts at this time. No permanent impacts to wetlands and associated wetland vegetation would occur. Removal of the forest and maintained lawn would result in long-term, moderate, adverse impacts to vegetation.

3.4.3 WHAT EFFORTS WOULD BE MADE TO PROTECT THE VEGETATION?

Minimization of impacts to vegetation under the alternatives can be accomplished by ensuring that construction activities impact only areas that are to be cleared for structural components. Areas that are not to be developed should not be used for equipment parking and other construction related activities unless no other alternatives are feasible.

Mitigation would also be accomplished by developing and maintaining a Forest Conservation Plan for the alternatives which would be developed to be in compliance with Montgomery County's Forest Conservation Law (Mont. Co. Code Chapter 22A), and the MD State Forest Conservation Act (COMAR 8.19) . Such a plan would focus on removal of nonnative, invasive species on the site, improving the quality of the remaining habitat and increasing pollinator habitat. BMPs for tree protection would be used to help preserve trees in the forested areas; these include tree protection fencing and root pruning for trees with critical root zones within the construction area. The plan would also outline compensatory mitigation, if needed, to offset the loss of vegetation.

3.5 WILDLIFE

3.5.1 WHAT WILDLIFE ARE LOCATED AT THE FDA CAMPUS?

The large wooded land areas on the FRC support numerous wildlife species. **Table 17** shows the animal species, amphibians, and avian species which are potentially in the FRC (MD DNR, 2017a).

Table 17. Species Potentially within the Study Area

Species	Common Name	Scientific Name
Animal Species	White-tailed deer	*Odocoileus virginianus*
	Raccoon	*Procyon lotor*
	Gray fox	*Urocyon cinereoargenteus*
	Red fox	*Vulpes*
	Eastern cottontail	*Sylvilagus floridanus*
	Groundhog	*Marmota monax*
	Virginia opossum	*Didelphis virginiana*
	Striped skunk	*Mephitis*
	Gray squirrel	*Sciurius carolinensis*
	Eastern chipmunk	*Tamias striatus*
	Eastern mole	*Scalopus aquaticus*
	Northern short-tailed shrew	*Blarina brevicauda*
Amphibian & Reptile Species	Eastern gartersnake	*Thamnophis sirtalis*
	Eastern box turtle	*Terrapene carolina*
	Fowler's toad	*Anaxyrus fowleri*

Species	Common Name	Scientific Name
Avian Species	American robin	*Turdus migratorius*
	Northern mockingbird	*Mimus polyglottus*
	Pileated woodpecker	*Dryocopus pileatus*
	Mourning dove	*Zenaida macroura*
	European starling	*Sturnus vulgaris*
	Canada geese	*Branta canadensis*
Aquatic Species	Brown trout	*Salmo trutta*
	Bluegill sunfish	*Lepomis macrochirus*
	Redbreast sunfish	*Lepomis auritus*
	Largemouth bass	*Micropterus salmoides*
	American eel	*Anguilla rostrata*
	Cutlips minnow	*Exoglossum maxillingua*
	Rosyside dace	*Clinostomus funduloides*
	Swallowtail shiner	*Notropis procne*
	Common shiner	*Luxilus cornutus*
	Blacknose dace	*Rhinichthys atratulus*
	Northern creek chub	*Semotilus atromaulatus*
	White sucker	*Catostomus commersonii*
	Margined madtom	*Noturus insignis*
	Longear sunfish	*Lepomis megalotis*
	Tessellated darter	*Etheostoma olmstedii*
	Fallfish	*Semotilus corporalis*

Beginning in 2003, GSA implemented a deer management program involving culling and immunocontraception. The management program was needed to prevent the deer population's damaging of landscape and vegetation as well as to reduce the risk of deer-vehicle collisions. Additionally, in 2008, GSA completed an Environmental Assessment to analyze Canada goose management within the FRC. The population of geese had been in conflicts with humans and caused damage to the landscape and property. A program was developed to control and manage the resident Canada goose population (GSA, 2008). Both programs are ongoing.

The Paint Branch bisects the FRC and several of its unnamed tributaries are within the study area. The Paint Branch and its tributaries are designated as Use III waters and are home to aquatic wildlife. Use III waters are designated Nontidal Cold Water by the State of Maryland and are suitable for the growth and propagation of trout populations, as well as other cold water obligate species.

3.5.2 HOW WOULD WILDLIFE BE AFFECTED BY THE PROJECT?

No-Action Alternative

Under the No-Action Alternative, the forested portions of the study area, which provide the majority of the habitat for terrestrial wildlife, would not be impacted because there would be no new construction.

Alternatives A, B, and C (Action Alternatives)

The forest removal from the construction of the proposed roads as described in Section 3.4.2, and facilities would mean a loss of habitat for terrestrial wildlife within the study area. Fragmentation of the forest would also affect movement of wildlife and increase conflicts with humans. However, no particular species which are currently utilizing the site are likely to be eliminated as a result of any of the Action Alternatives. Increased impervious surface area would increase run-off into the stream habitat of aquatic wildlife; potential erosion and sedimentation from construction would add to the degradation of the aquatic habitat. Additionally, proposed in-stream work would further impact the aquatic habitat. Therefore, all Alternative Alternatives would result in long-term, negligible to minor, adverse impacts to wildlife.

3.5.3 WHAT EFFORTS WOULD BE MADE TO PROTECT WILDLIFE?

Minimization of impacts to wildlife would be obtained by maintaining areas of forest that provide habitat and movement corridors for wildlife. Signage for deer crossing would be placed along the roadway through the FRC to mitigate for the risk of deer being struck by vehicles. Time-of-year restrictions of construction activities may be used to protect species most sensitive to human activities.

Compliance with the approved erosion and sediment control plan would minimize impacts to aquatic biota by controlling sedimentation. To protect aquatic species in the Use III waters, no instream work would be conducted between October 1st and April 30th.

3.6 AIR QUALITY

3.6.1 ARE THERE ANY AIR QUALITY ISSUES IN THE DC-METROPOLITAN AREA?

The Clean Air Act (CAA) authorizes the U.S. Environmental Protection Agency (EPA) to develop National Ambient Air Quality Standards (NAAQS) for certain air pollutants (criteria pollutants) deemed harmful to public health and the environment. These criteria pollutants include nitrogen dioxide (NO2), sulfur dioxide (SO2), carbon monoxide (CO), ozone (O_3), particulate matter (particulate matter with aerodynamic diameter less than or equal to 2.5 microns [PM2.5]/particulate matter with aerodynamic diameter less than or equal to 10 microns [PM10]), and lead (Pb). The NAAQs are presented in **Table 18**.

Each state (or regional government) is required by EPA to develop a State Implementation Plan (SIP) that identifies the NAAQS attainment status for each criteria pollutant and accounts for planned projects within the region that have the potential to increase pollutant emissions. Areas where a criteria pollutant concentration is below the NAAQS are designated by EPA as being in “attainment” for that pollutant and areas where a criteria pollutant level exceeds the NAAQS are designated as being in “nonattainment” for that pollutant. O_3 nonattainment areas are further categorized based on the severity of pollution: marginal,

moderate, serious, severe, or extreme. CO and PM10 nonattainment areas are further categorized as moderate or serious. The FDA White Oak Campus is in the Washington DC-MD-VA Region, which is designated as a marginal non-attainment area for O_3 under the 2008 8-hour standard (MWCOG 2007). The Washington DC-MD-VA Region is designated as an attainment area for all other criteria pollutants.

The closest air monitoring station to the FDA White Oak Campus is located 5.75 miles away in Beltsville, Maryland. This monitoring site measures ground-level concentrations of criteria pollutants. No exceedances of the NAAQS were reported for CO, $PM_{2.5}$, PM_{10}, NO_2, SO_2, or Pb during 2014, 2015, or 2016. However, exceedances of the O_3 8-hour standard were reported during each year – once in 2014, five times in 2015, and four times in 2016.

In November 1993, the EPA promulgated the General Conformity Regulations (58 FR 63214) to assure that Federal actions conform to the SIP. As noted previously, the Washington DC-MD-VA Region is classified as marginal nonattainment for the 8-hour O_3 NAAQS. Specifically, Section 51.853 (b)(1) of the General Conformity Regulations stipulates that a general conformity determination is required for marginal O_3 nonattainment areas if Volatile Organic Compound (VOC) potential emissions exceed 50 tons per year and NO_x potential emissions exceed 100 tons per year.

Table 18. National Ambient Air Quality Standards

Pollutant		Primary/Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 µg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Matter (PM)	$PM_{2.5}$	primary	1 year	12.0 µg/m^3	Annual Mean, averaged over 3 years
		secondary	1 year	15.0 µg/m^3	Annual Mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years

Pollutant	Primary/Secondary	Averaging Time	Level	Form
Sulfur Dioxide (SO_2)	primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m^3 as a calendar quarter average) also remain in effect.

(2) The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

3.6.2 WILL THIS PROJECT IMPACT AIR QUALITY IN THE AREA?

No-Action Alternative

Air quality analyses for both mobile and stationary sources were conducted for the 2009 Final Supplemental EIS. It was determined that the CUP expansion that has already occurred and the additional traffic that has been generated would result in minor, long-term, direct adverse impacts to air quality. The No-Action Alternative would not add to the impacts assessed in the 2009 Supplemental EIS and would conform to the Washington Metropolitan Region SIP.

Alternatives A, B, and C (Action Alternatives)

Under the Action Alternatives, the additional facilities proposed would affect emissions from stationary sources. The additional traffic generated by the additional employees would have the potential to increase mobile source emissions of air pollutants. These impacts would be minor, long-term, direct, and adverse.

The stationary and mobile source air quality analyses (described in detail below) indicate that the Action Alternatives would result in negligible to minor increases in air pollutant emissions associated with construction and operation of the proposed development. However, the conformity analysis indicates that each alternative would conform with the SIP.

Air quality may be temporarily impacted by construction activities. Fugitive dust would be generated during site grading, construction, wind erosion, and vehicular activities. Emissions from construction equipment, including earth moving equipment, demolition equipment, and paving equipment would generate emissions of CO, NOx, PM, SO_2, and VOCs. Construction would extend over a multi-year period. The intensity,

duration, location, and type of construction activity would vary over time. These impacts could be considered significant, even on a temporary basis, if local regulations and BMP control measures are not implemented. With implementation of control measures, construction activities would be expected to have minor, indirect, short-term, adverse impacts to air quality.

The air quality technical report in Appendix D provides additional technical information on the air quality analyses.

3.6.2.1 Stationary source analysis

The analyses for stationary source air quality impacts considered emissions from point sources on the FDA Campus. These include the stacks associated with boilers, turbines, and generators located within the CUP; five generators located outside of the CUP on the east side of the FDA White Oak Campus; and two boilers and five generators operated by the Air Force/Arnold Engineering Development Complex. The stationary source analyses considered whether the facility would be considered a new major source of emissions, whether its ambient impacts would create a potential violation of the NAAQS, and whether it would conform to the SIP, for each Action Alternative. The Action Alternatives propose similar increases in employees and square footage of new buildings to be constructed on the FDA Campus, and therefore have similar impacts.

Stationary source emissions related to operation of the CUP on the FDA Campus are not anticipated to exceed the major source new source review thresholds for New Source Review-regulated pollutants because there would be no construction of new emissions sources or modification of existing sources. Based upon discussions with Honeywell, the operators for the CUP, the existing CUP sources were designed to accommodate future development. Furthermore, the facility conforms to the SIP under each Action Alternative.

The ambient impacts of each Action Alternative were assessed using the AERMOD air dispersion model to determine whether operations of the facility associated would result in a violation of the NAAQS. The stacks associated with the CUP were modeled as point sources, and buildings, terrain, meteorological data, and receptors associated with each Action Alternative were input into the model to predict the concentrations of criteria pollutants in locations surrounding the FDA Campus.

3.6.2.2 Mobile source analysis

In accordance with EPA guidance on CO Hot Spot Analysis (EPA 1992), the potential for mobile source emissions associated with implementation of each of the Action Alternatives to violate the NAAQS was evaluated by analyzing mobile CO emissions at four intersections considered to be the worst-case scenarios for potential emissions on nearby air quality sensitive receptors. The worst-case intersections were determined to be:

- US 29 at Industrial Parkway,
- US 29 at Tech Road,
- US 29 at Musgrove Road, and
- US 29 at Fairland Road.

Of the intersections that were the focus of the traffic analysis for the 2018 Master Plan, these four intersections were predicted to have the highest levels of congestion and traffic volumes, and are the closest proximity to air quality sensitive areas, such as public sidewalks. These intersections are anticipated to emit the highest CO concentrations for each of the Action Alternatives. Geometry, predicted traffic counts, and operational characteristics of these intersections were input into EPA's CAL3QHC pollutant dispersion model to estimate the worst-case, localized CO concentrations near air quality sensitive receptors. The mobile source analyses indicated that future traffic conditions at the four intersections would not exceed the 1-hour or 8-hour NAAQS for CO under any of the three Action Alternatives.

In accordance with the Federal Highway Administration's Updated Interim Guidance on Mobile Source Air Toxic (MSAT) Analysis in NEPA Documents (2016), a qualitative project level MSAT analysis was conducted for the Action Alternatives. The proposed action qualifies as a project that facilitates new development and may generate MSAT emissions from activities including new trips, truck deliveries, and parked idling vehicles. However, these are activities that are attracted from elsewhere in the Washington DC metropolitan region. Thus, on a regional scale, there would be no net change in emissions. EPA regulations for vehicle engines and fuels would cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES2014 model forecasts a combined reduction of over 90 percent in the total annual emissions rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 45 percent. This would both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

During construction activities, air quality may be temporarily impacted. Fugitive dust would be generated during the modification of existing structures, site grading, construction, wind erosion, and vehicular activities. Emissions from construction equipment including earth moving equipment, demolition equipment, and paving equipment would generate VOCs and NOx. Construction at the FDA Campus could extend over a multi-year period. The intensity, duration, location, and type of construction activity would vary over time. These impacts could be considered significant, even on a temporary basis, if the local regulations and BMP control measures are not implemented. With the implementation of control measures, construction activities would be expected to have minor, direct, short-term, adverse impacts on air quality.

Short-term construction impacts can be mitigated using control measures such as minimizing areas of surface disturbance, covering/wetting exposed soils to reduce fugitive dust, stabilizing areas of loose soil as soon as possible after disturbance, and` maintenance of emission controls on all construction equipment. A construction plan would be implemented that would outline the minimization control measures.

3.6.3 WHAT MEASURES WOULD BE TAKEN TO REDUCE IMPACTS TO AIR QUALITY?

Under all Action Alternatives, any long-term impacts within the region from the mobile sources would be offset by the advancement in automobile technology and Federal emission regulations and controls. For example, GSA expanded the CUP at the FDA Campus in 2014 to heat, cool, and provide power the campus.

With cogeneration, the heat generated by the burning of natural gas is used to produce electricity. The result is a slower rate of fossil fuel consumption and the use of nearly 70 percent of the energy created.

Employees would be encouraged to use public transportation (see also the Transportation Management Plan located in Appendix H for additional ways GSA/FDA is encouraging use of public transit). Carpool, vanpool, bicycle-to-work; the use of alternative "clean" fuels and non-polluting sources of energy would be used whenever possible; minimizing power generation requirements; and using green building materials, construction methods, and building designs would be used to the maximum extent practicable. In addition, in response to Air Quality Action Days, measures to temporarily reduce the generation of emissions that contribute to O_3 formation would be taken.

If It is determined at a later time, during implementation of the Master Plan, that the CUP would need to be expanded to provide electricity to the additional buildings, as opposed to tying into the PEPCO electrical grid, a new air quality analysis would have to be undertaken at that time.

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

3.7.1 HOW HAVE GREENHOUSE GAS EMMISSIONS AFFECTED THE DC METROPOLITAN AREA?

Greenhouse gases (GHGs) include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorinated gases that trap heat in the atmosphere and contribute to global warming and climate change. The largest source of greenhouse gas emissions in the United States is the burning of fossil fuels. GHGs are emitted by both mobile and stationary sources, and global warming is anticipated to result in increasing variability in weather, more severe storms, increasing sea level rise and storm surges, and public health effects ranging from heat stroke to respiratory problems and increased risk of Lyme Disease.

The Maryland Department of the Environment (MDE) published an inventory of GHG emissions in the State of Maryland for the year 2014, which stated that Maryland activities accounted for approximately 93.42 million metric tons (MMT) of gross carbon dioxide equivalent (CO2e) emissions, with net emissions of approximately 81.77 MMTCO2e once carbon sinks such as forest lands and agricultural soils were taken into account (MDE 2016). The three principal sources of GHG emissions in Maryland are electricity consumption; transportation; and residential, commercial, and industrial fossil fuel use.

GHGs are regulated at the state and Federal levels. The State of Maryland passed the Greenhouse Gas Emission Reduction Act in 2009. The regulation, administered by MDE, requires the state to develop and implement a plan to reduce GHG emissions by 25 percent from a 2006 baseline by 2020. The plan, released in 2012 and updated in 2015, encourages reductions in GHGs through a variety of incentive programs targeting the public and private sector. These programs focus on increasing energy efficiency using existing technologies, identifying ways to transition to new energy sources, and stimulating further technological development to reduce GHGs.

EPA enforces two GHG regulations. The Mandatory Reporting of Greenhouse Gases Rule (40 CFR Part 98, 2009) requires fossil fuel and industrial gas suppliers, direct GHG emitters and manufacturers of heavy-duty

and off-road vehicles and engines to report GHG emissions. The GHG Tailoring Rule (2010) established a carbon dioxide equivalent (CO2e) threshold for permitting (inclusive of construction and operation) of 75,000 tons per year for new stationary sources. Subsequent court orders have established that GHGs must be considered in Prevention of Significant Deterioration (PSD) or Title V permits only if the source exceeds the PSD or Title V threshold for a pollutant other than GHGs. EPA would conduct future rulemaking to revise the PSD and Title V operating permit regulations.

The White House Council on Environmental Quality (CEQ) provides guidance for Federal agencies on consideration of GHG emissions in National Environmental Policy Act (NEPA) reviews. CEQ provides a reference point of 25,000 metric tons of CO2-equivalent (MTCO2e) emissions on an annual basis (CEQ 2014). Below this number, GHG emissions quantitative analysis is generally not warranted unless quantification below that reference point is easily accomplished. The CEQ guidance was rescinded on March 28, 2017 by Executive Order, "Presidential Executive Order on Promoting Energy Independence and Economic Growth." However, the GSA hasn't yet promulgated new regulations to guide the consideration of GHG emissions.

3.7.2 HOW DOES GSA CURRENTLY ADDRESS GREENHOUSE GAS EMISSIONS?

GSA has a sustainability performance plan, FY 2016 Strategic Sustainability Performance Plan, which it updates on an annual basis. GHG reduction is one of GSA's ten sustainability goals. For GSA-owned buildings, the sustainability plan focuses on improving building energy efficiency, and installing advanced and renewable energy technologies. GSA has also worked to reduce GHG emissions resulting from employee business travel, commuting, electrical transmission and distribution, and waste-related emissions, including from solid waste and wastewater management (GSA 2016). GSA exceeded its goal of a 40-percent reduction of GHG emissions by the end of 2013, and seeks to reduce GHG emissions by 73 percent from 2008 levels by 2025.

3.7.3 WHAT TYPES OF ENERGY CONSUMPTION MEASURES DOES GSA CURRENTLY USE AT THE FRC?

GSA's 2014 CUP expansion was accomplished using Energy Savings Performance Contracts (ESPCs) and incorporated energy efficiencies including 20 megawatts of cogeneration, integrated plant controls, building automation systems, and 2,100 sf of solar photovoltaic arrays (Honeywell 2012).

3.7.4 WOULD THE IMPLEMENTATION OF THE MASTER PLAN CONTRIBUTE TO GREENHOUSE GAS EMISSIONS?

Under the No-Action Alternative, the facility's stationary emissions sources, including the CUP and the boilers and generators on the Air Force/AEDC property, emit approximately 141,507 MTCO2e of GHGs. Although there would be an increase in the amount of space and personnel, no new stationary emissions sources such as boilers, turbines, or generators, would be constructed to support any of the Action Alternatives. The power output of the CUP would increase minimally. The GHG emissions under each Action Alternative would be similar to those of the existing conditions. The increases in GHG emissions from vehicles traveling on the roads around the FDA Campus are anticipated to be minimal under each Action

Alternative. Therefore, the implementation of the Master Plan would result in minor, direct, long-term, adverse impacts resulting from the slight increase in stationary and mobile source GHG emissions.

A slight increase in stationary source GHG emissions would result in minor, direct, short-term, adverse impacts during construction. GSA would comply with Maryland's air quality regulations specific to construction, which require the implementation of best management practices (BMPs) to minimize GHG emissions associated with construction equipment.

3.7.5 WHAT MEASURES WOULD BE TAKEN TO REDUCE THE CONTRIBUTION TO CLIMATE CHANGE?

As noted above, GHG emissions associated with the Action Alternatives would result in minor impacts and no mitigation for GHG emissions would be required. GSA would comply with BMPs outlined in Maryland regulations during construction, ensuring that there would be minimal temporary construction-related GHG impacts. GSA would continue with ongoing programs outlined in Section 3.14 that provide incentives for employees to take public transportation; use alternative "clean" fuels and non-polluting sources of energy whenever possible; minimize power generation requirements; and use green building materials, construction methods, and building designs to the maximum extent practicable. GSA would continue to implement is annual sustainability goals, including GHG reduction through improving building energy efficiency, and installing advanced and renewable energy technologies. By 2025, GSA has a goal to reduce GHG emissions by 73 percent from 2008 levels.

3.8 LAND USE PLANNING & ZONING

3.8.1 WHAT ARE THE LOCAL AND FEDERAL PLANNING AND ZONING ORDINANCES?

Federal Land Use Planning

Since the FRC is owned by the Federal Government and is located within the National Capital Region (NCR), the Master Plan for the FDA Campus is subject to review by the National Capital Planning Commission (NCPC) to ensure the Plan is consistent with the Federal Elements of the Comprehensive Plan for the National Capital (Comprehensive Plan). The Federal Elements, which include Urban Design, Federal Workplace, Foreign Missions and International Organizations, Transportation, Parks and Open Space, Federal Environment, Historic Preservation, and Visitors and Commemoration, are guided by three principals:

- Accommodate Federal and National Capital Activities
- Reinforce Smart Growth and Sustainable Development Planning Principals
- Support Local and Regional Planning and Development Objectives

The Federal Elements related to the FDA Master Plan include:

Urban Design – The Urban Design Element's primary goal is to promote quality design and development in the NCR. The policies outlined in this element aim to inspire design for federal buildings and campuses and integrate them into the surrounding community.

Federal Workplace – The Federal Workplace Element aims to strategically locate the Federal workforce in a consolidated, efficient manner that encourages higher productivity and collaboration while emphasizing the NCR's importance in the Federal workforce.

Transportation – The Transportation Element promotes a diverse transportation network that meets the needs of commuters while protecting and preventing environmental degradation. The element encourages the use of public transit and other alternative modes of transportation to improve traffic and air quality conditions in the region.

Federal Environment – The Federal Environment Element encourages the Federal Government to be a leader in environmental stewardship and sustainability.

Historic Preservation – The Historic Preservation Element's goal is to preserve, protect, and rehabilitate historic properties in the NCR and promote design and development that is respectful of the historic character of the NCR (NCPC, 2016).

Montgomery County Land Use Planning and Zoning

The FRC is primarily located within Montgomery County's White Oak Master Plan area. The White Oak Master Plan, adopted in 1997, was developed to guide future growth of the area. The White Oak Master Plan area is bordered by the Capital Beltway (I-495) to the south, the Northwest Branch Anacostia River to the west, the Paint Branch to the east, and the ICC (MD 200) to the north. Development zones in Montgomery County are single-family residential, multi-family residential, commercial-retail, and industrial. Current land use within the planning area is predominately residential (Montgomery County, 2017b).

In July 2014, M-NCPPC adopted the White Oak Science Gateway (WOSG) Master Plan which amends portions of the 1997 White Oak Master Plan in the area immediately adjacent to and including the FRC. The WOSG Master Plan area spans nearly 3,000 acres and is bordered by I-495 to the south, Northwest Branch Anacostia River to the west, US 29 and Cherry Hill Road to the north and the Montgomery County/Prince George's County boundary to the east. The FDA Campus is the centerpiece of the WOSG Master Plan, viewed as a gateway and opportunity to attract employers in the health care, pharmaceuticals, life sciences, and other advanced technology fields. Existing land use within the WOSG Master Plan area include single and multi-family residential, commercial, parkland, and industrial. The FRC is owned by the Federal Government and therefore is not subject to zoning requirements however, the Planning Act states the Federal Government must comply with local planning zoning requirements to the extent possible. The portion of the FRC that lies within Montgomery County has been designated as Single-Family Residential in the event that the property is transferred out of Federal ownership. Areas adjacent to the FRC are zoned residential (R-90, R-20), commercial residential (CR), and commercial residential town (CRT) (**Figure 28**). The WOSG Master Plan generally proposes to re-zone other single-use commercial and industrial portions of the

area to mixed-use commercial residential. Building height restrictions for surrounding properties range from 25 feet up to 300 feet (Montgomery County, 2014).

Currently, a 300-acre parcel of land located northeast of the FRC is in the planning phase of being developed (see **Figure 29**). The development, named Viva White Oak, would consist of mixed uses featuring office space, residences, and retail businesses. Developers of this property would like to attract life science businesses that would benefit from close proximity to the FDA Campus. Also in the planning phase are several bus rapid transit (BRT) routes along U.S. Route 29 and New Hampshire Avenue which would improve public transit connections to the FDA Campus and the surrounding area. The WOSG Master Plan has also identified the White Oak Shopping Center as a location for potential redevelopment.

Prince George's County Land Use Planning and Zoning

Approximately 40 acres of the FRC lies within Prince George's County Planning Area 61, which is located in the southwestern corner of Subregion 1, and mainly covers the areas of Beltsville and North Beltsville. The Master Plan for Subregion 1 was adopted in 1990 and revised in 2010. The Planning Area is bordered by the Montgomery County Line to the west, the MARC and CSX railway tracts to the east, Paint Branch and I-495/95 to the south, and Indian Creek and the ICC to the north. Much of Planning Area 61 is characterized by residential and commercial uses (Prince George's County, 2017).

The portion of the FRC that is located within Prince George's County is surrounded by residential development. The Master Plan for Subregion 1 of Prince George's County does not identify the FRC or these neighborhoods as a specific area for strategic development (Prince George's County, 2017). The 40-acre parcel is zoned Residential Reserved Open Space. This zoning designation encourages the preservation of the property as open space or low density residential development in the event that the property is transferred out of Federal ownership (PG Atlas, 2017).

3.8.2 IS THIS PROJECT CONSISTENT WITH FEDERAL AND LOCAL PLANNING AND ZONING ORDINANCE?

No-Action Alternative

Under the No-Action Alternative, the Master Plan would not be implemented. Some FDA employees would continue to be housed in leased facilities and further consolidation at White Oak would not occur. Consistent with the Federal Elements of the Comprehensive Plan, the current consolidation on the FDA Campus encourages efficiency, higher productivity, and collaboration. The current Transportation Management Plan (TMP) encourages employees to use alternative means of transportation to commute to the campus such as car-pooling or public transit which helps alleviates congestion on area roadways and improves air quality**.** Additionally, buildings on the FDA Campus operate in an energy efficient and sustainable manner, meeting LEED® Gold certification and net zero energy and water usage. While these items are consistent with the White Oak Master Plan and the WOSG Master Plan, they are not fully consistent with the related Federal Elements of the Comprehensive Plan because GSA would continue to lease facilities for FDA that are not located in the immediate vicinity of the FDA Campus. As programs are expanded and new employees are hired, additional leased space would be needed. This would not further improve efficiency, alleviate congestion, or improve air quality and therefore there would be a minor, long-term, adverse impact to land use planning.

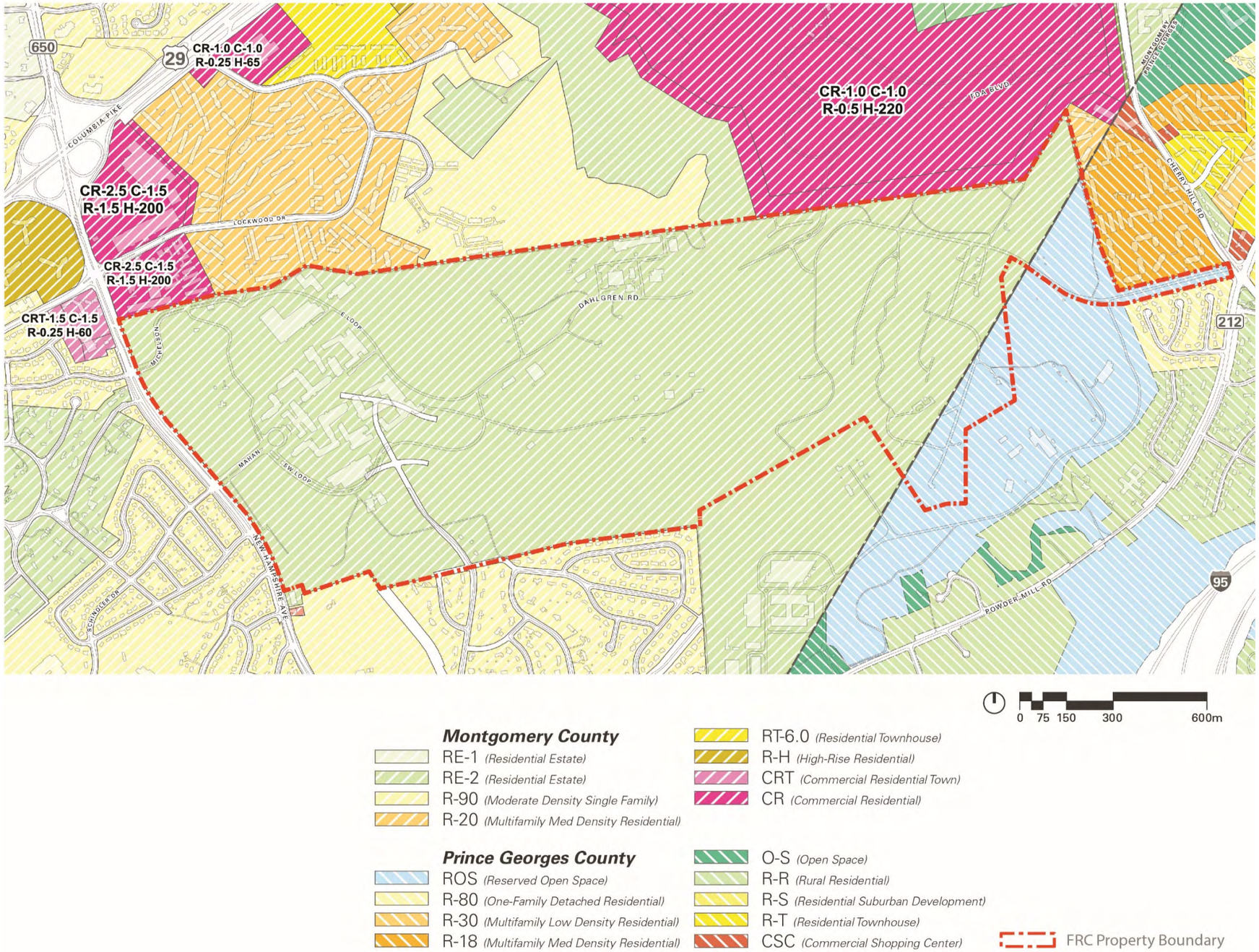

Figure 28. Zoning

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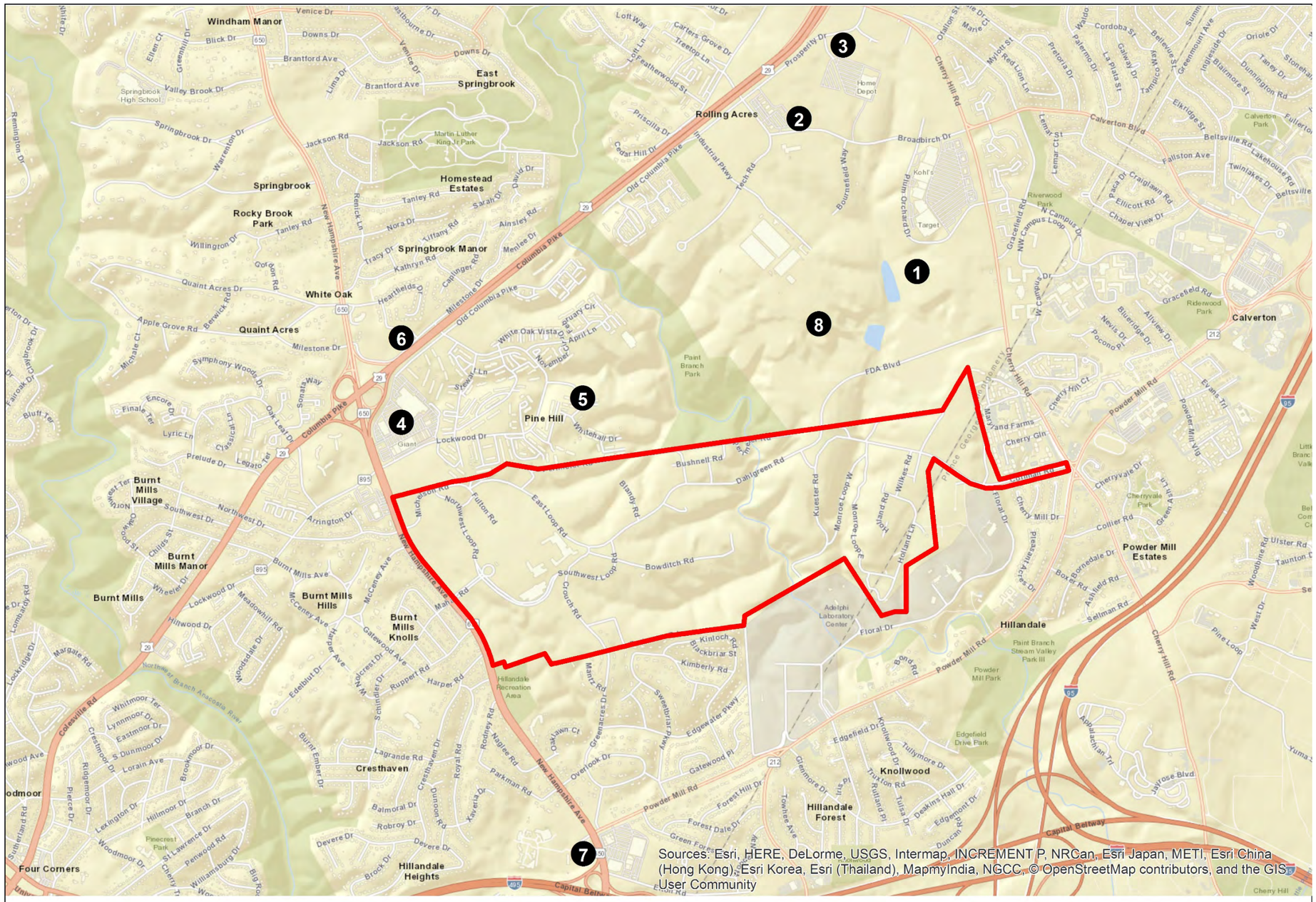

Figure 29. Planned Developments Near the FRC

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Alternatives A, B, and C (Action Alternatives)

All Action Alternatives would be consistent with the most of the guiding principles of the Federal Elements of the Comprehensive Plan. The consolidated expansion of the campus would encourage efficiency, higher productivity, and collaboration, which is consistent with the goals outlined in the Federal Workplace Federal Element. As part of the expansion, a Transportation Management Plan (TMP) would be developed and would encourage employees to use alternative means of transportation to commute to the campus such as car-pooling or public transit. This would help alleviate congestion on area roadways and improve air quality which is consistent with both the Transportation and Federal Environment Federal Elements. All Action Alternatives would be constructed and operated in an energy efficient and sustainable manner, meeting LEED® Gold certification and net zero energy and water usage, which is consistent with the Federal Environment Element. All Action Alternatives are also consistent with the Urban Design Element which encourages a "campus-like" development, and would be consistent with the security recommendations outlined under this Element. While none of the Action Alternatives result in any physical impacts to historic properties, all Action Alternatives would result in adverse impacts to historic properties and landscapes due to the construction of new buildings. These impacts are not consistent with the recommendations made by the Historic Preservation Element and are futher described in Section 3.12.

Under all Action Alternatives, the population at the FDA Campus would increase to approximately 18,000. This growth would be consistent with the goals outlined in the WOSG Master Plan. In the WOSG Master Plan, it is anticipated that the expansion would attract supporting businesses in the health care, pharmaceuticals, life sciences, and other advanced technology fields which would create employment opportunities within the community. The WOSG Master Plan anticipates the continued expansion at the FDA Campus and includes plans for mixed-use redevelopment and an interconnected community to encourage new FDA employees to "live where they work".

Although the Subregion 1 Plan of Prince George's County does not identify the FRC or surrounding neighborhoods as a specific area for strategic development, the Action Alternatives are consistent with the overall goals outlined in the plan. All Action Alternatives support the Subregion 1 Plan's goals for green design, sustainable development, and attracting new employment opportunities. The planned Viva White Oak development and BRT routes would support the expansion at the FDA Campus. Viva White Oak would include new residences which could address potential new demand for housing as a result of the expansion. The BRT Route will provide more reliable public transit to the FDA Campus and will support FDA's TMP.

Overall, the consolidated expansion of the FDA Campus would be consistent with goals set forth in the related Federal Elements of the Comprehensive Plan, the WOSG Master Plan, the Subregion 1 Plan, and the proposed new developments in the area.

Within the project area, land use would change. All Action Alternatives propose new construction on currently undeveloped land. However, this change is consistent with the local and regional planning documents and therefore would result in a negligible, adverse impact to land use planning. Although development on federal properties are not subject to local zoning ordinances, all building heights proposed under the Action Alternatives would be consistent with surrounding building height restrictions.

3.8.3 ARE THERE ANY MEASURES GSA NEEDS TO TAKE TO MINIMIZE IMPACTS ON FEDERAL AND LOCAL PLANNING AND ZONING ORDINANCES?

Because the Action Alternatives would be consistent with federal and local planning and zoning ordinances, no additional efforts would need to be taken.

3.9 COMMUNITY FACILITIES AND SERVICES

3.9.1 WHAT COMMUNITY SERVICES ARE IN THE VICINITY OF PROJECT AREA OR WOULD SERVE THE FDA CAMPUS?

Community facilities located near the FRC are shown in **Figure 30**.

Parks, Recreation, and Open Space

LEGACY OPEN SPACE

Legacy Open Space is an initiative in Montgomery County, Maryland, that creates a $100 million, 10-year commitment to provide a framework for protection of open space, watershed lands, and historic properties with the purchase of easements (Montgomery County Parks, 2016).

The Montgomery County park system boasts 419 parks comprised of 36,641 acres (M-NCPPC, 2017a). Two parks are within close proximity to the study area in Montgomery County: Hillandale Local Park and Paint Branch Stream Valley Unit 4. Acquired by Maryland-National Capital Park and Planning Commission (M-NCPPC) in 1943, Hillandale Local Park is a 24.2-acre park that offers a playground, baseball field, softball field, basketball courts, and tennis courts. Also, located at the park is a small activity center that was built as a prototype for future recreation facilities and is not connected to the sewer system (M-NCPPC, 2016). The activity building is approved for demolition due to its poor condition; the M-NCPPC Planning Board is in the process of determining how to best redesign the park to meet community needs (M-NCPPC, 2014). The Paint Branch Stream Valley Park is an approximately 1,000-acre park that is divided into multiple park units; Unit 4 comprises 168 acres of the park (M-NCPPC, 2017b), which includes the White Oak Community Center, with multipurpose fields, playgrounds, and skate park (Montgomery County Maryland, 2017b). In the 2014 White Oak Science Gateway Master Plan, M-NCPPC calls for the designation of 130 acres of forested area along the Paint Branch main stem through the FRC as Legacy Open Space; this would allow acquisition of the land as a parkland should it become available through a surplus process (M-NCPPC, 2014). Other parks in the region include Martin Luther King Jr. Recreational Park, Northwest Branch Stream Valley Park, and Stonehedge Local Park.

There are over 27,000 acres of parkland in Prince George's County, including parks, picnic areas, fields, and recreation centers. There are two parks close to the FRC: Powder Mill Community Park and Little Paint Branch Park (PG Parks, 2017a). Powder Mill Community Park is located at 3101 Powder Mill Road in Beltsville and provides a softball field and general use recreational field. Little Paint Branch Park is home to the Beltsville Community Center. The Beltsville Community Center provides members with a gym and indoor space for classes and activities, as well as access to a baseball field, picnic areas, a soccer field, and a tennis court (PG Parks, 2017b).

According to the Formula 2040 Functional Master Plan for Parks, Recreation, and Open Space, the region of Prince George's County within the study area will not need an abundance of additional park space to meet the needs of the projected increase in population. The plan outlines an increase in square footage to the Fairland Sports/Aquatics Center, located approximately 4.6 miles away (Formula 2040). The Fairland Sports/Aquatics Center is located within the Fairland recreational park and features gymnastic facilities, a weight training room, a fitness center, and an indoor pool (PG Parks, 2017c).

Schools

As of the 2016-2017 school year, the Montgomery County Public Schools (MCPS) system served 159,010 students and is the largest school system in the state. Montgomery County has 204 schools; this includes 133 elementary schools, 39 middle schools, 25 high schools, five special schools, one alternative education program, and one career and technology center.

Montgomery County is divided into 19 school clusters that serve as attendance areas. The study area is located within the Northeast Consortium (NEC) school cluster comprised of three high schools and their associated feeder middle and elementary schools. Students entering the cluster's high schools participate in a lottery to be assigned to one of the three schools based on numerous factors including student ranking, available seats, and sibling links (MCPS, 2017d). As of 2017, high schools and middle schools in the NEC were both operating at 92 percent capacity. Elementary schools were operating at 108 percent capacity (MCPS, 2017b). The 2014 White Oak Science Gateway Master Plan recommends that a future public elementary school be dedicated on a property northwest of the study area along Cherry Hill Road if MCPS deems it necessary from enrollment projections (M-NCPPC, 2014). The study area is specifically in the Springbrook High School service area, which includes Roscoe E. Nix Elementary, Cresthaven Elementary, and Francis Scott Key Middle School, with the latter two being the most proximal (MCPS, 2017c).

Prince George's County Public Schools (PGCPS) serves over 130,000 students and is the second largest school district in Maryland. There are 209 schools and centers in the Prince George's County school system; this includes 123 elementary schools, 24 middle schools, 23 high schools, 12 academies, 9 special centers, two vocational centers, three alternative schools, and eight public charter schools. The area of the FRC is served by District 1 of the PGCPS. The schools that would serve the areas closest to the FRC include Cherokee Lane Elementary, Calverton Elementary, Buck Lodge Middle School, Martin Luther King, Jr. Middle School, and High Point High School (PGCPS, 2017a).

As of 2017, all schools that service the area around the FRC in Prince George's County were over capacity, with the exception of Martin Luther King, Jr. Middle School. To address these capacity issues, PGCPS Approved FY 2017 Educational Facilities Master Plan proposes a new high school and a new middle school for the northern area of Prince George's County. Additionally, overcapacity at Calverton Elementary and Cherokee Lane Elementary will be met by a planned renovation and addition to the James E. Duckworth School by FY 19 (PGCPS, 2017b).

3.9.2 WOULD THE IMPLEMENTATION OF THE MASTER PLAN HAVE AN EFFECT ON LOCAL COMMUNITY FACILITIES?

No-Action Alternative

Under the No-Action Alternative, there would be no change in community facilities and services. There would not be an increase in employees on the FDA Campus, and, therefore, there would not be an increase in demand for community services, such as schools in Montgomery or Prince George's counties. No parkland would be acquired, and park operations would not be affected.

Alternatives A, B, and C (Action Alternatives)

Under the Action Alternatives, the total amount of personnel at the FDA Campus is anticipated to increase to up to approximately 18,000 employees.

As new buildings are constructed on the FDA Campus and the employee population increases in accordance with the Master Plan, employees may decide to relocate closer to the FRC; however, an exact number is not known. If employees decide to relocate closer to the FRC, the school system in the vicinity of the FRC may need to accept additional students if new personnel at the FDA Campus have children of school age. The elementary schools in the study area are currently over capacity; however, a new elementary school proposed by MCPS should be able to provide the capacity for any additional students. The school system in the northern region of Prince George's County is currently overcapacity, but new or renovated schools in the area are planned to address capacity needs. Therefore, the Action Alternatives would have a minor to moderate, long-term, indirect, adverse impact on the local school systems.

Local parks, recreation, and open spaces would see a slight rise in use as the new employees at the FDA Campus become familiar with the area and begin to use park facilities. Additionally, if new personnel at the FDA Campus seek to live in the vicinity, local parks and recreation facilities would see an increase in use. However, it is expected that the potential increased usage of parks, recreation facilities, or open space would not exceed the availability of resources in the area. Therefore, the Action Alternatives would result in minor, long-term, indirect adverse impacts to parks, recreation, or open space.

3.9.3 ARE THERE MEASURES THAT WOULD BE TAKEN TO REDUCE IMPACTS ON LOCAL COMMUNITY FACILITIES?

Because the proposed alternatives would not require additional community facilities, no mitigation is required.

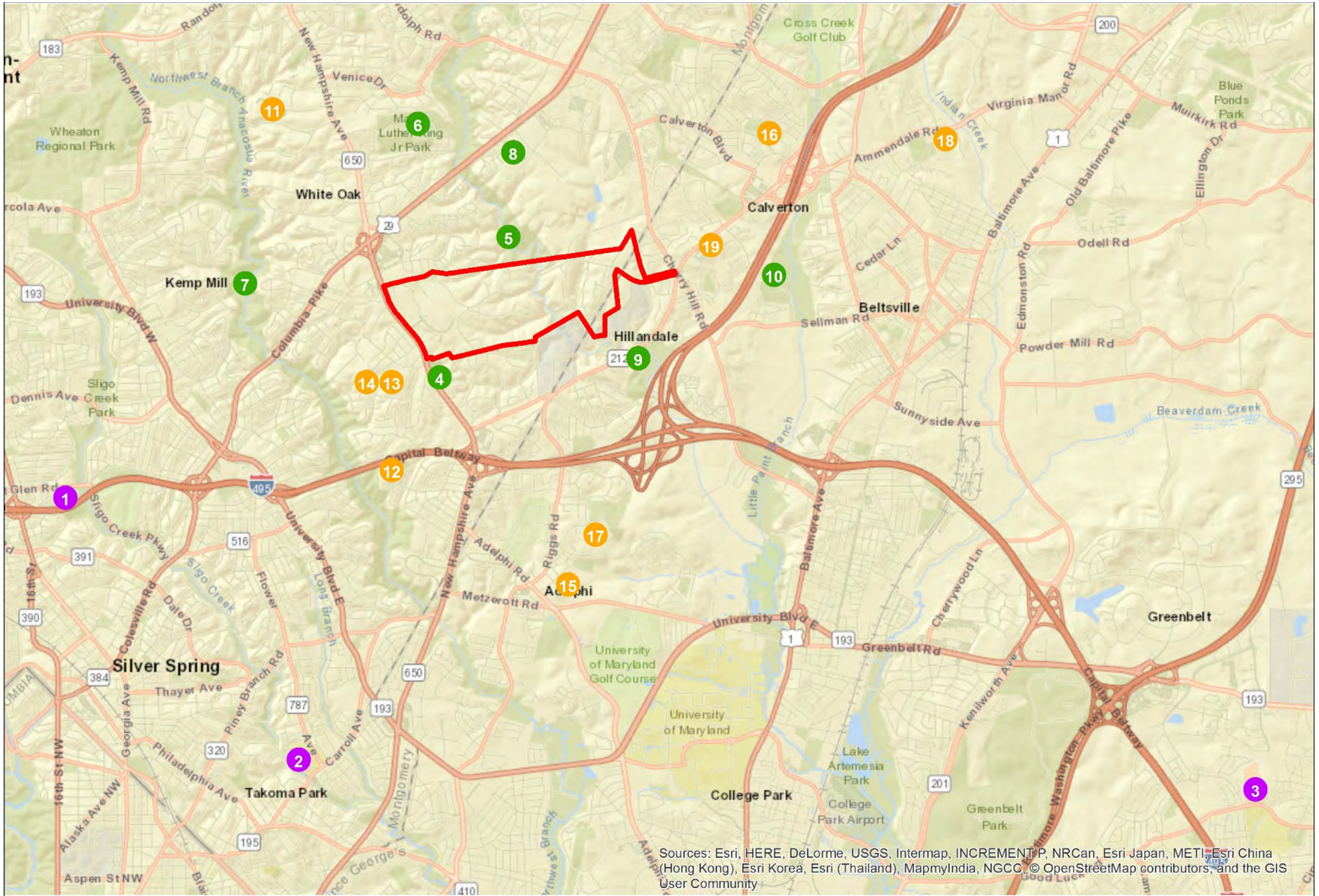

Figure 30. Community Facilities Near the FRC

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3.10 ECONOMY AND EMPLOYMENT

3.10.1 WHAT IS THE ECONOMIC MAKE-UP OF THE PROJECT AREA?

The economic make-up of Montgomery County is depicted in **Figure 31** and the economic make-up for Prince George's County is depicted in **Figure 32**.

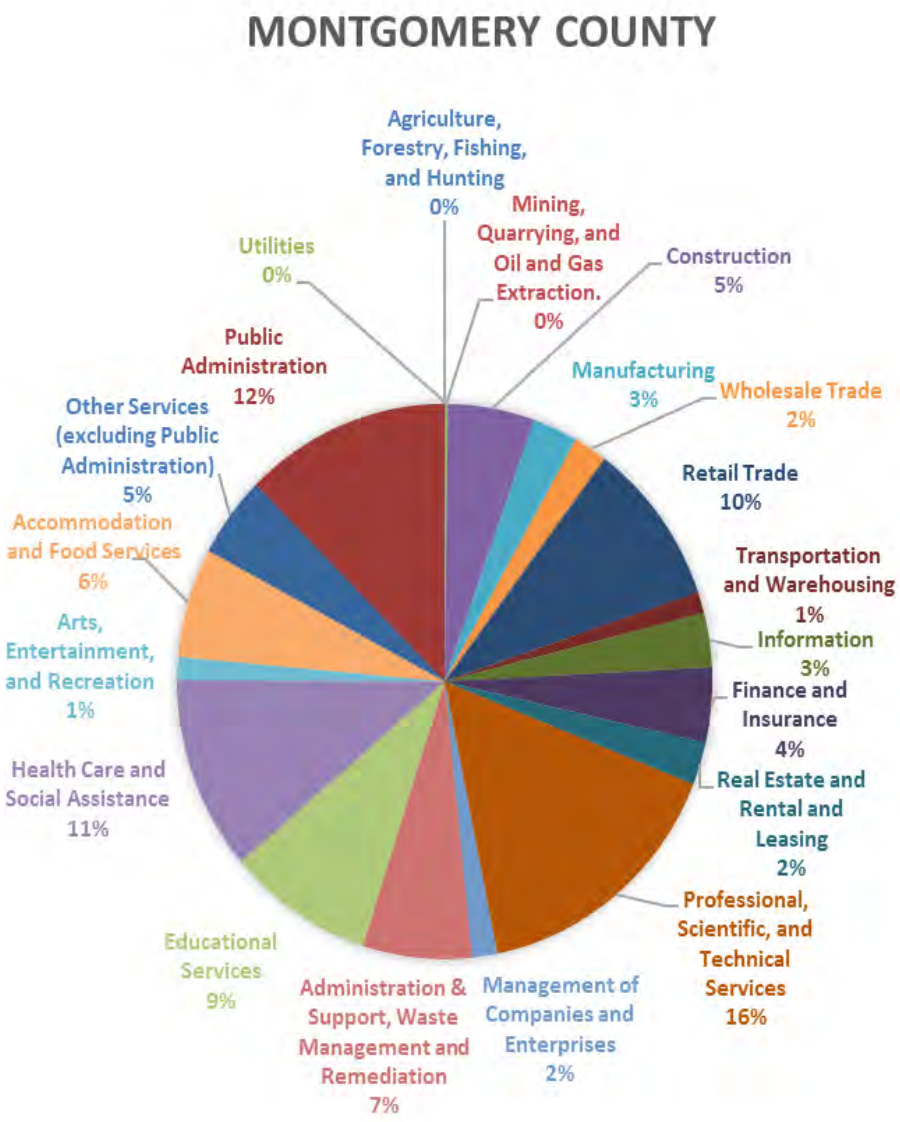

Figure 31. Economic Make-Up of Montgomery County

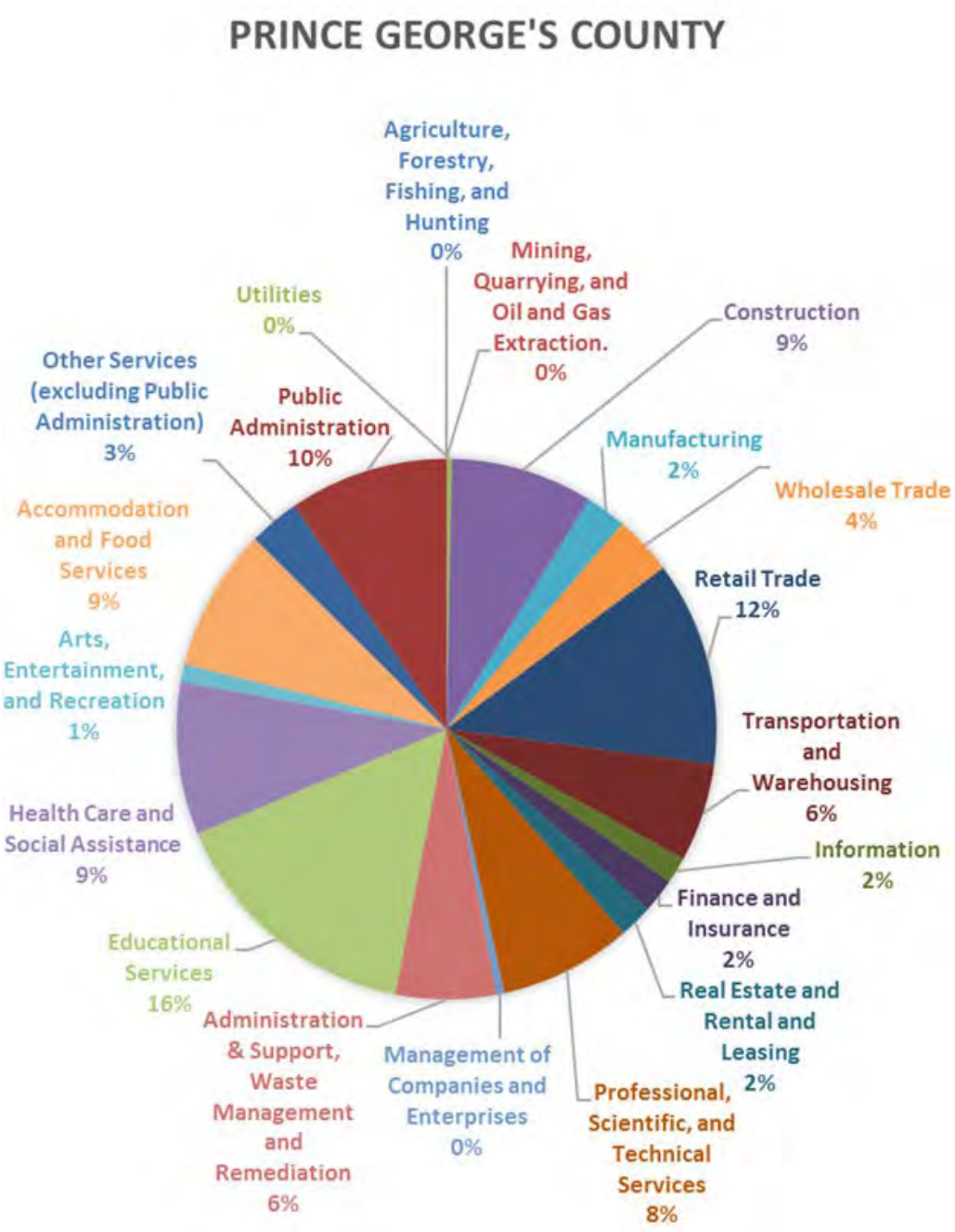

Figure 32. Economic Make-Up of Prince George's County

Montgomery County's proximity to Washington, DC, provides numerous employment opportunities with nineteen federal facilities in the county. The largest employer in the county is the National Institutes of Health, which employs 17,500 individuals. FDA is the second largest employer in the county with 12,855 employees (MDOC 2017a). Montgomery County also boasts over 300 biotech companies (MDOC 2017a). In

2017, 13.7 percent of the office space in Montgomery County is vacant; 3.4 percent of retail space is vacant (MCPD 2017).

Prince George's County also has many Federal facilities employing residents due to the county's proximity to Washington, DC. The largest employer in the county is University System of Maryland, with 18,780 employees. Another large employer in Prince George's County is the Joint Base Andrews Naval Air Facility Washington, which employs 17,500 individuals (MDOC 2017b).

Aside from the FDA, the largest employers in the proximity of the study area include Choice Hotels International and Seventh Day Adventist Church. Other major employers include Kaiser Permanente is also a major employer in the area. Retail centers close to the study area include the White Oak Shopping center, the Hillandale Shopping Center, the Orchard Shopping Center, and West Tech Village (PES, 2011).

As of 2015, the professional, scientific, and technical services industries employ 15.8 percent of the working population in Montgomery County. Public administration jobs account for 12.5 percent of the working population. 11.3 percent of the workforce is employed by the healthcare and social assistance industries. Retail jobs account for 9.6 percent of the workforce. Other prominent industries in Montgomery County include educational services; administration and support, waste management and remediation; accommodation and food services; construction; and other services excluding public administration (U.S. Census Bureau, 2017a).

Educational services employ 15.6 percent of working individuals in Prince George's County. The retail trade employs 12.2 percent of the workforce. The public administration, healthcare and social assistance, construction, and accommodation and food services industries employ 9.5 percent, 9.1 percent, 8.5 percent, and 8.6 percent of the working population, respectively (U.S. Census Bureau, 2017a).

Preliminary results for the 2017 unemployment rate in Montgomery County is 3.1 percent and 4.2 percent in Prince George's County. The statewide 2017 unemployment rate for Maryland is 4 percent according to preliminary results (U.S. Department of Labor, 2017). Montgomery County has a median household income of $99,435, which is higher than the state average of $74,551; the median household income in Prince George's County is slightly below than the state average at $74,260. Ten percent of Maryland's population is at or below the poverty level. The poverty rates of Montgomery County and Prince George's County are 6.7 percent and 9.6 percent, respectively (U.S. Census Bureau, 2017b) (see **Table 19**).

Table 19. Economic Characteristics

	Montgomery County	Prince George's County	Maryland
Unemployment Rate (2017)	3.1%	4.2%	4%
Median Household Income	$99,435	$74,260	$74,551
Population Below Poverty Level	6.7%	9.6%	10%

3.10.2 WHAT WILL THE IMPLEMENTATION OF THE MASTER PLAN DO TO THE LOCAL AND REGIONAL ECONOMY?

No-Action Alternative

Under the No-Action Alternative, the number of employees and support staff at the FDA Campus would not increase. Additional employees would need to be located in other government-owned or leased space in the Washington, D.C. metropolitan area. Employees would continue to spend a portion of their incomes in the regional economy, increasing activity at local businesses. Therefore, the No-Action Alternative would provide short-term, minor, beneficial impacts to the regional economy.

Alternatives A, B, and C (Action Alternatives)

Businesses in the vicinity of the FRC would likely see increased patronage from the increased staff at the FDA Campus. FDA employees would likely visit local businesses in the FRC, such as gas stations, automobile services, restaurants, and retail stores. Additional new business and retail services may result to serve additional employees with the implementation of the Master Plan. Beneficial economic effects may also occur from contractual obligations with vendors to support the new FDA operations and facilities. Contractors and vendors may include: maintenance and repair contractors such as HVAC, plumbing, or electrical work; chemical and allied product producers; manufacturers of scientific instruments; printing and publishing; equipment rental; and business service providers. Therefore, the Action Alternatives would result in long-term, moderate, beneficial impact to the local economy.

Regional economic activity would increase as a result of the construction activities under the Action Alternatives. The purchase of material and equipment as well as services rendered to construction workers would add income to the economy during the duration of construction. Construction workers would spend a portion of their incomes in the regional economy, increasing activity at local businesses. Construction activities would provide short-term, minor, beneficial impacts to the economy.

The additional new employees proposed under the Master Plan would have direct and indirect effect on the economy. These new hires could come from anywhere in the U.S. This would beneficially impact the economic makeup of Montgomery and Prince George's Counties as this would add to their overall permanent employment. In addition, there would be an economic benefit from payroll spending by FDA employees at local businesses. These impacts would be long-term, moderate, and beneficial.

3.10.3 WOULD THE IMPLEMENTATION OF THE MASTER PLAN AFFECT EMPLOYMENT WITHIN THE AREA?

No-Action Alternative

The No-Action Alternative would not see an increased population of employees at the FDA Campus; therefore, there would be no significant impact on employment within the area.

Alternatives A, B, and C (Action Alternatives)

All Action Alternatives would provide increase employees at the FDA Campus to approximately 18,000. The increase in personnel would be from the consolidation of existing leased spaces in Montgomery and Prince

George's Counties and new employment to handle Congressional mandates. Personnel from the consolidation of existing leased spaces would be relocated to the FDA Campus, and, as such, would not impact the overall employment within the area. However, new employees needed to meet congressional mandates would increase employment in the area. The impact to overall employment would be moderate, long-term, direct and beneficial.

Local retail and business would likely employ additional labor to meet the demand of the increased FDA work force. Therefore, the Action Alternatives would result in long-term, minor, indirect, beneficial impact on employment. During construction, temporary employment of construction workers would result in a long-term, minor, beneficial impact on employment.

3.10.4 HOW WILL IMPLEMENTATION OF THE MASTER PLAN IMPACT TAXES AND REVENUE?

No-Action Alternative

Under the No-Action Alternative, no property taxes would be received from the FRC because it is under federal ownership and is not subject to property taxes. Employees would continue to add revenue in the form of sales tax from sales at local businesses and services. Therefore, the No-Action Alternative would result in short-term, minor, beneficial impacts to tax and revenue.

Alternatives A, B, and C (Action Alternatives)

Construction workers employed for the construction period are assumed to be currently employed and residing and paying taxes within the State of Maryland or surrounding states. During construction, workers would add revenue in the form of sales tax from patronizing local businesses and services, providing a short-term, minor, beneficial impact to taxes and revenue.

As with the No-Action Alternative, the improvements on the FDA Campus would not provide additional property tax revenue as the FRC is federally owned and not subject to property taxes. The increased work force may add revenue in the forms of sales tax from the potential increase in sales at local business and retail. All alternatives would therefore lead to long-term, moderate, beneficial impacts to tax revenue.

Secondary jobs related to the increase in economy stimulated by the implementation of the Master Plan may be created. Additionally, retail services and business employment may result from the proposed action through a multiplier effect, yielding additional sales and income tax revenues for the local and state governments. Therefore, there would be short- and long-term, minor, beneficial impacts to tax revenue.

3.10.5 WHAT MEASURES WOULD BE TAKEN TO REDUCE THE IMPACT ON THE LOCAL AND REGIONAL ECONOMY?

The implementation of the Master Plan would be beneficial to the local and regional economy. As such, no mitigation measure would be required.

3.11 SAFETY AND SECURITY

3.11.1 WHAT POLICE, FIRE, AND EMS STATIONS SERVE THE FRC?

The FDA Campus is served by local emergency medical, fire protection, and rescue services in Montgomery County (see **Figure 33**). The MCFRS provides fire protection, EMS, and rescue services in the county, annually handling over 120,000 emergency calls. The MCFRS is staffed by approximately 1,300 uniformed and civilian career personnel, plus approximately 900 volunteers who provide direct emergency services. Montgomery County has 40 fire stations and two rescue stations. (MCFRS, 2017a). The study area is served by the Hillandale Volunteer Fire Department, stationed at Fire Station #12 at 10617 New Hampshire Avenue (Montgomery County Maryland, 2017). According to a response letter from MCFRS dated September 25, 2017, the FRC experiences around 70 fire, rescue, and emergency medical services (EMS) incidents each year (MCFRS, 2017b) Montgomery County Department of Police employs 1,200 officers and 600 support personal serving in six districts.

The FRC is served by the 3rd District; the 3rd District station is located at 1002 Milestone Drive in Silver Spring (MCP, 2017a). The 3rd District serves a population of 158,555 and responded toe 46,785 calls for service in 2016 (MCP, 2017b). Additionally, Montgomery County is served by the Maryland State Police at Barracks N in Rockville.

Montgomery County has nine hospitals and 13 health and human services buildings. The two closest hospitals to the FRC are Holy Cross Hospital and Adventist HealthCare Washington Adventist Hospital. Holy Cross Hospital is approximately 3 miles away from the FRC and has a total of 469 staffed beds. Adventist HealthCare Washington Adventist Hospital is located approximately three and a half miles from the FRC and maintains 217 staffed beds (ADS, 2016). In 2016, Adventist HealthCare broke ground on a new Washington Adventist Hospital located near Plum Orchard Drive and Cherry Hill Road, adjacent to the FRC. The new hospital is scheduled to open in 2019 and will provide 170 inpatient beds (AHC, 2017).

Prince George's County Fire and EMS Department is comprised of 45 stations divided into seven battalions and responded to over 145,000 service calls in 2016. The Prince George's County Fire/Emergency Services that would serve the FRC are part of Battalion 6, which serves all communities within the general vicinity of Laurel, Greenbelt, Beltsville, and Berwyn Heights. The nearest fire station in Prince George's County is the Company 841 Calverton Fire Station, located at 3939 Powder Mill Road in Beltsville (Prince George's County, 2017c).

The Prince George's County Police Department employs over 1,500 police officers and 300 civilians. The FRC is served by the District 6 Station located at 4321 Sellman Road in Beltsville (Prince George's County, 2017d). In Prince George's County, there are seven hospitals. The closest hospital to the FRC is Doctor's Community Hospital which is located 9 miles away in Lanham. Doctor's Community Hospital maintains 139 staffed beds (AHC, 2017).

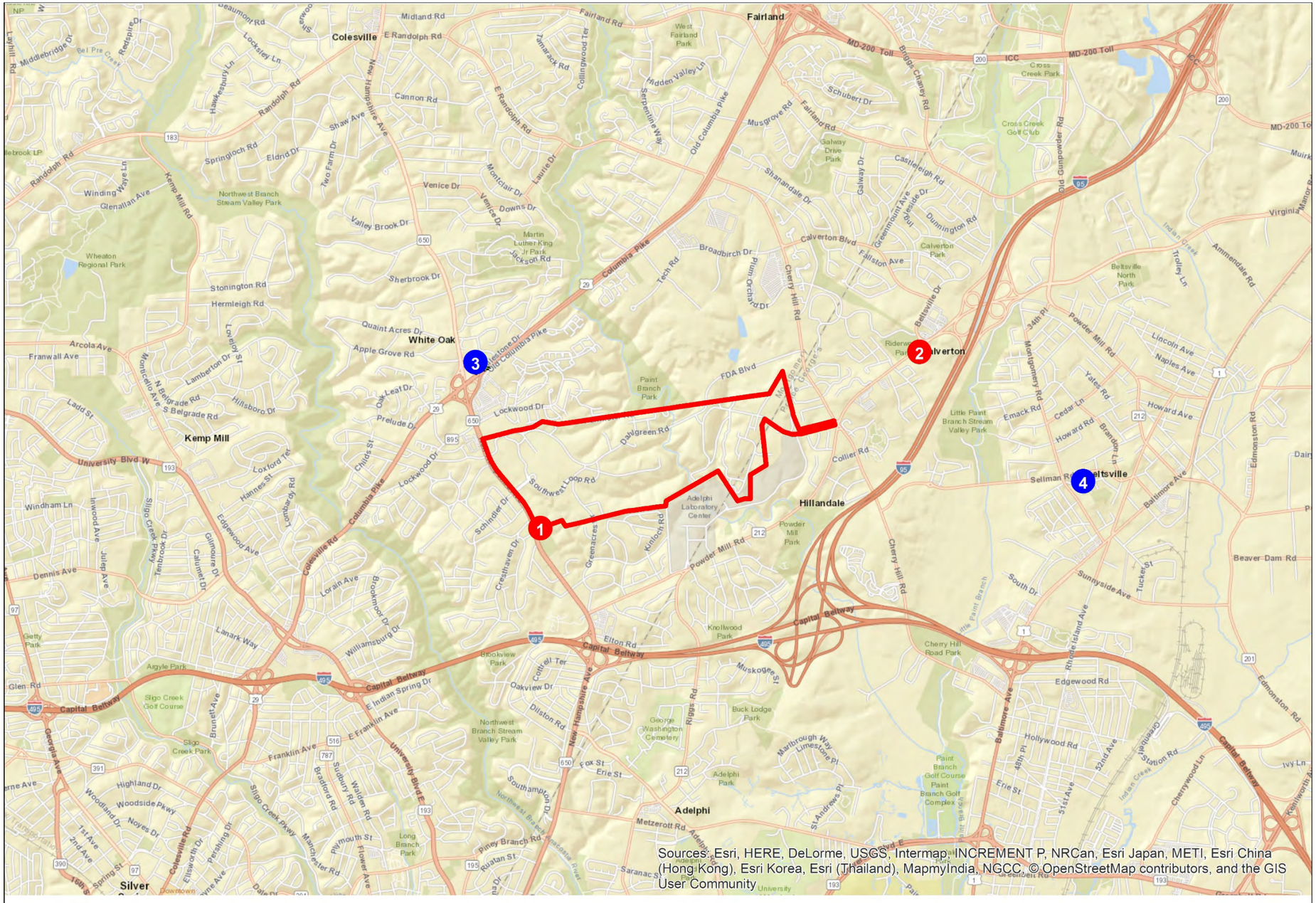

Figure 33. Police, Fire, and EMS Stations that Serve the FRC

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3.11.2 WILL POLICE, FIRE, AND EMS STATIONS THAT SERVE THE FRC BE AFFECTED BY IMPLEMENTATION OF THE MASTER PLAN?

No-Action Alternative

Under the No-Action Alternative, the population at the FDA Campus would not increase and campus security would remain the first emergency personnel to respond to incidents on the FDA Campus. Therefore, no change in the volume of calls for police, fire or EMS is anticipated under the No-Action Alternative. MCFRS plans to construct a new fire station northeast of the FRC to address the anticipated increased call load from the planned Viva White Oak development and other area developments. At a minimum, the new station would have a two-person EMS transport unit and a four-person paramedic engine.

Alternatives A, B, and C (Action Alternatives)

Under all Action Alternatives, the total amount of personnel at the FDA Campus is anticipated to increase to approximately 18,000. MCFRS has stated that the increased population would create an estimated increase of approximately 75 fire/rescue/EMS incidents per year, which would, along with Station 12, double the current annual incident rate on the FDA Campus. A new fire station is planned northeast of the FRC which would address the anticipated call load. At a minimum, the new station would have a two-person EMS transport unit and a four-person paramedic engine (MCFRS, 2017b). As the Master Plan is implemented, GSA would coordinate with local fire and rescue to ensure that design incorporates access for emergency vehicles for new facilities to accommodate tactical positioning during emergency events (MCFRS, 2017b).

Under all Action Alternatives, campus security would remain the first emergency personnel to respond to incidents on the FDA Campus. GSA would hire additional security staff as needed to meet the demands of the growing campus population. The Washington Adventist Hospital is currently being constructed north of FDA Boulevard. This hospital is expected to open in 2019 and would be able to handle incidents from the FDA Campus. Overall the Action Alternatives would result in a long-term, minor, adverse impact to local police, fire, and EMS stations that serve the FDA Campus.

3.11.3 WHAT SECURITY MEASURES ARE CURRENTLY PROVIDED AT THE FRC?

The FRC is currently fenced and monitored 24 hours per day, seven days per week by the Federal Protective Service (FPS). Access to the FDA Campus at the FRC is provided off New Hampshire Avenue via Mahan and Michelson Roads. Access to the eastern portion of FRC is currently restricted to everyone except U.S. Air Force, FDA, and GSA personnel unless visits are scheduled in advance.

Access to the FDA Campus is monitored by the FPS and is restricted to FDA and GSA personnel and visitors. A screening facility for employees, visitors, and delivery trucks is located on the north side of the campus, along Michelson Road by the FPS. An additional security gate is located on the southwest side of the campus along Southwest Loop Road. Employees and visitors entering the campus must go through vehicle screening and provide identification. Once inside the campus, visitors must go through a security checkpoint and a badged employee must escort them to their destination.

The FDA Campus has been designated as a Level IV Facility due to its specific factors related to Mission Criticality (Very High), Symbolism (Very High), Facility Population (>750), and Facility Size (> 250,000 SF). Risk Assessments are required to be updated for the FDA Campus at least every three years by the Federal

Protective Service (FPS). A recent analysis was completed by FPS and is currently being reviewed and finalized by the FDA Security Group. The main security risk identified in the report is criminal threats in the parking areas. These threats are addressed using lighting and closed-circuit television (CCTV) monitoring. Additional security deficiencies have been identified around the loading docks near the laboratory buildings due to vehicle access, and near the CUP due to limited access control and improper stand-off distances. No new risks have been identified for the future campus or specifically related to anticipated construction.

The campus security design is based on establishing multiple tiers of security for both vehicles and pedestrians. Other measures that are being taken to provide a secure campus include:

- Vehicular barrier systems
- Card-activated vehicular access gates
- Minimum 75-foot stand-off distances from all buildings
- Separate visitor parking and screening areas
- Perimeter fencing around the FDA Campus
- CCTV monitoring

3.11.4 WHAT IMPACT WOULD THE MASTER PLAN HAVE ON SAFETY AND SECURITY AT THE FRC?

No-Action Alternative

Under the No-Action Alternative, current security measures and procedures would continue. Access to the FRC would continue to be restricted to Federal employees and approved visitors. The truck screening facility would remain at its current location and would not provide adequate space for truck turn-around. Security deficiencies near the laboratory buildings loading docks and the CUP would remain unaddressed. This would result in a minor, long-term, adverse impact to the safety and security of FDA visitors and employees.

Alternatives A, B, and C (Action Alternatives)

During construction, a health and safety plan would be put in place to protect construction workers from potential construction hazards and any potential environmental contamination. Employees and visitors would not have access to construction zones to ensure their safety. This would ensure only a negligible, short-term, adverse, impact to the safety and security of visitors and employees on the FDA Campus.

Under all Action Alternatives, newly constructed buildings would be designed to achieve ISC Level IV requirements including, but not limited to, building set-backs, building enclosure hardening, and fencing (See **Figure 34** through **Figure 36**). A centralized Visitor and Transit Center would be constructed, which would provide a singular point of entry for all visitors and would streamline visitor security screening. A new centralized Truck Screening Facility would provide a larger area to screen trucks entering the FDA Campus. Because the Truck Screening Facility would be placed on Michelson Road adjacent to New Hampshire Avenue, any trucks that would not be allowed to enter the FDA Campus would be able to leave the Truck Screening Facility prior to entering the FDA Campus. Trucks approved to enter the FDA Campus would then be able to travel to proposed centralized Distribution Center. Having a centralized Distribution Center would allow deliveries to be made at one location and allow security personnel to better monitor deliveries to the campus. The new security measures described above would result in long-term, beneficial impacts to the safety and security of visitors and employees on the FDA Campus.

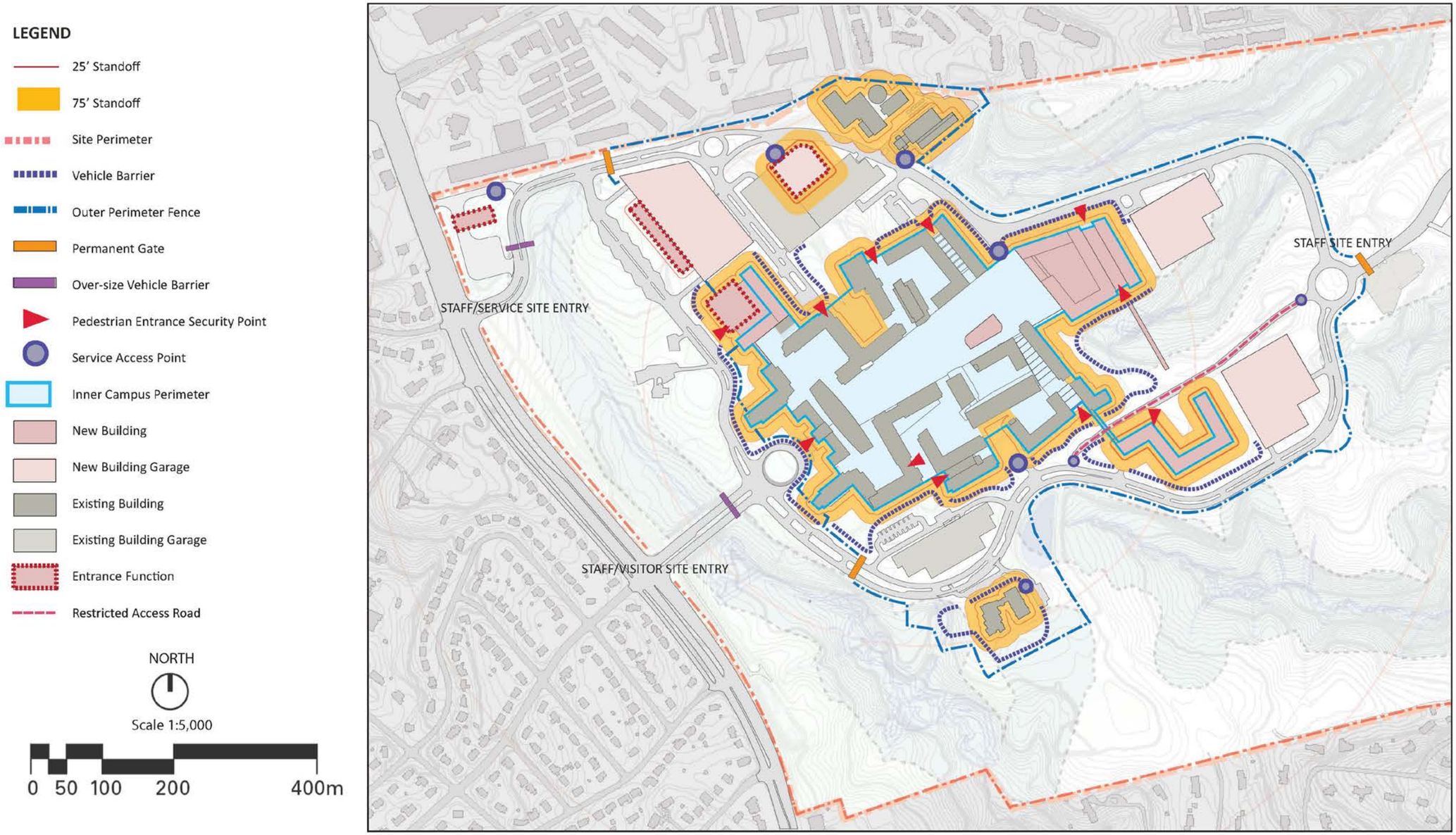

Figure 34. Security Diagram for Alternative A

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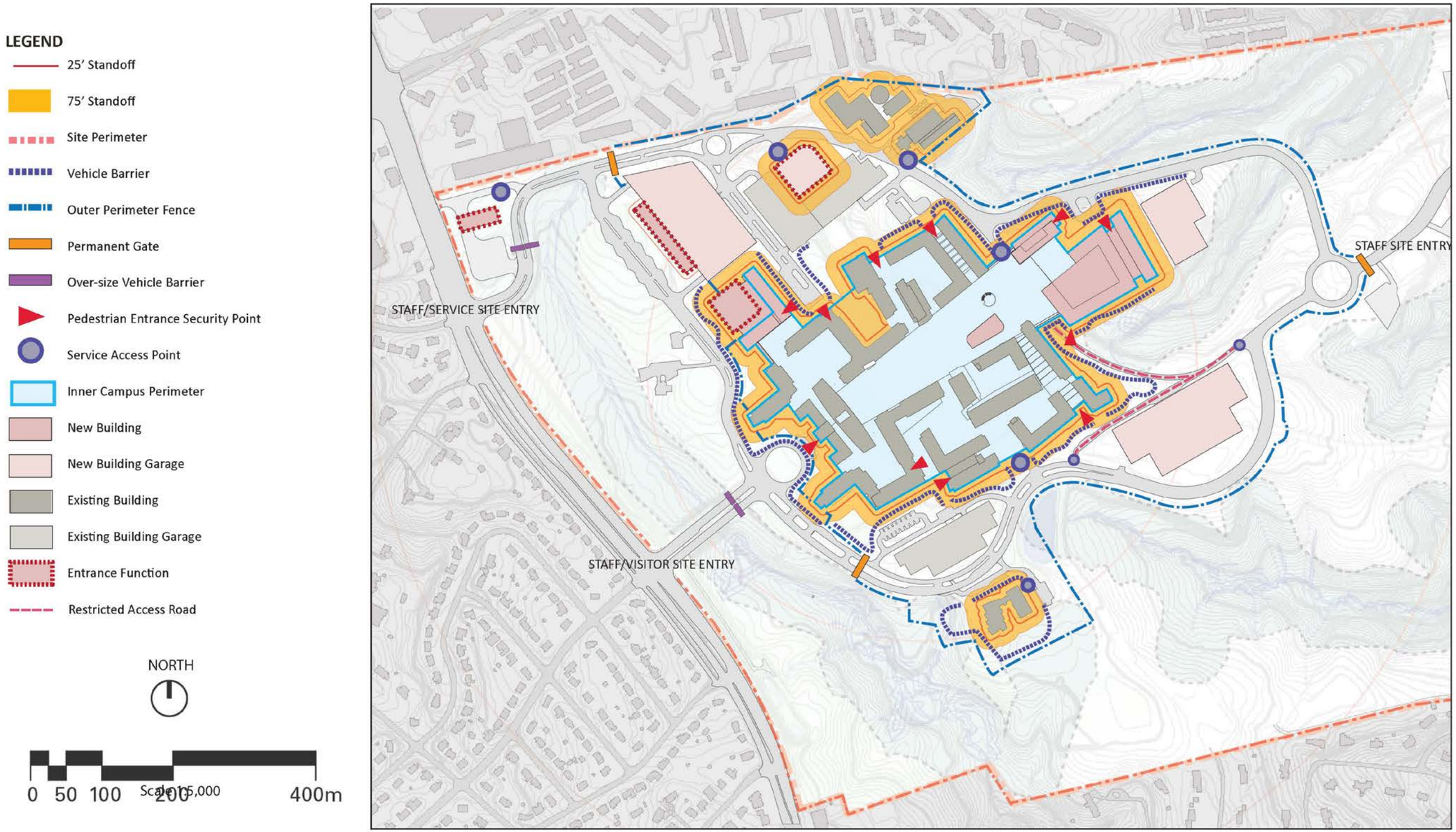

Figure 35. Security Diagram for Alternative B

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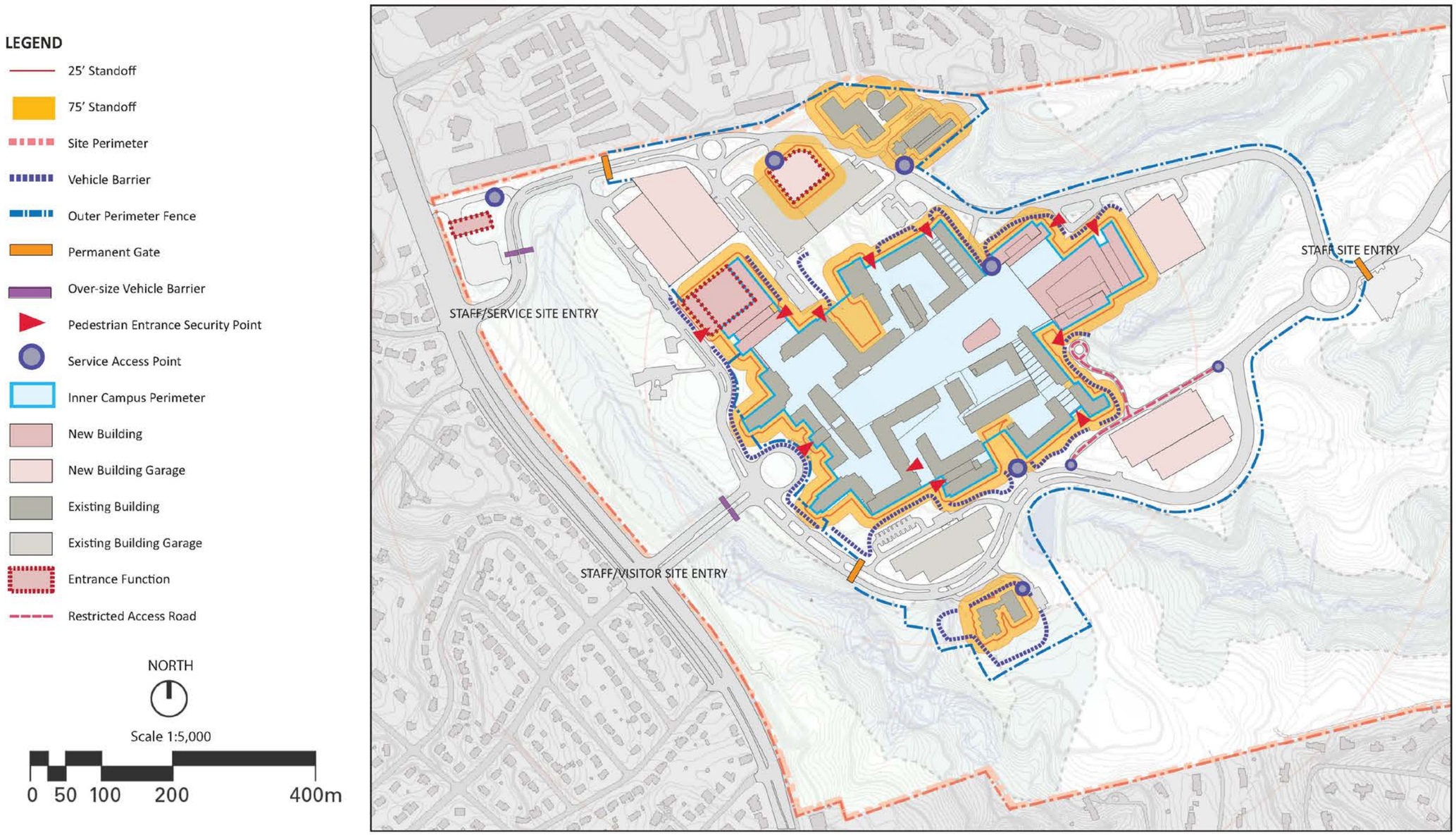

Figure 36. Security Diagram for Alternative C

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3.12 CULTURAL RESOURCES

Section 101(b)(4) of the NEPA requires the Federal Government to coordinate and plan its actions to, among other goals, "preserve important historic, cultural, and natural aspects of our national heritage…." The CEQ implementing regulations require that impacts to historic and cultural resources be included as part of the NEPA process.

Additionally, Section 106 of the National Historic Preservation Act of 1966 requires that Federal agencies take into account the effects of their actions on historic resources. Under the NHPA, GSA must evaluate impacts to any district, site, building, structure, or object listed in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 review encourages preservation of historic properties; however, there are times when impacts to historic resources cannot be avoided. When the government must impact historic resources, they are required to consult with local and Federal agencies responsible for historic preservation, local citizens, and groups with an interest in historic preservation. While GSA completed the Section 106 process for the FDA Consolidation in 2000, various aspects of the proposed alternative under the Master Plan may have the potential to impact historic resources and views. For this reason, GSA is required to conduct additional consultations with the State Historic Preservation Office (MD SHPO, also known as the Maryland Historical Trust (MHT)) and other interested parties.

For the proposed Master Plan, GSA initiated consultation with the MD SHPO under Section 106 of the NHPA on August 18, 2017, and with the Advisory Council on Historic Preservation (ACHP) on June 26, 2018. Throughout the project planning for the Master Plan, GSA sought input on the impacts to historic resources and ways to avoid and minimize these impacts from Consulting Parties (CPs). Consulting Parties meetings were held on November 14, 2017, April 4, 2018, and May 21, 2018. GSA asked for input from:

- Advisory County on Historic Preservation
- Air Force Arnold Engineering Development Center
- Greater Colesville Citizens Association
- Hillandale Citizens Association
- Labquest
- Maryland Commission on Indian Affairs
- Maryland SHPO
- Montgomery County Planning Department
- Montgomery County Historic Preservation Office
- North White Oak Civic Association
- National Capital Planning Commission
- U.S. Army Research Laboratory
- White Oak Laboratory Alumni Association

3.12.1 WHAT IS THE AREA OF POTENTIAL EFFECT?

The Area of Potential Effect (APE) is defined in 36 CFR 880.16 as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking."

AREA OF POTENTIAL EFFECT

Area of Potential Effect (APE) means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. 36 CFR 800.16

The APE contains the resources visually or physically affected by the demolition and construction associated with the expansion of the FDA campus. The APE is contiguous with the boundaries of the historic 100 area of the White Oak Naval Ordnance Laboratory. This geographic area includes the existing FDA campus and the portions of the 100 area outside the boundary of the FDA campus, particularly the historic green buffer zone between the campus and New Hampshire Avenue. Within the APE lie the historic resources of the White Oak Naval Ordnance Laboratory Historic District that were retained under a previous Memorandum of Agreement executed as part of the initial development of the FDA campus. These include the retained portions of the Main Administration Building (Building 1), the flagpole with a redesigned and relocated circle in front of Building 1, and the historic fire station, which is now part of Building 100. The APE includes all historic resources that may be affected by the proposed undertaking (see **Figure 37).**

3.12.2 HISTORIC STRUCTURES AND LANDSCAPES

3.12.2.1 Are there any historic structures or landscapes at the FRC?

In 1944, the United States Department of the Navy acquired land in Silver Spring, Maryland to establish the White Oak campus of the Naval Ordnance Laboratory (NOL), originally located in the Washington Navy Yard in southeast Washington, DC. The major construction phase for the facility took place from 1945 to 1954, with other buildings added up to 1994. The facility was renamed the Naval Surface Warfare Center (NSWC) in the 1970s. Following its decommissioning, 662 acres of the 710-acre site were transferred in 1996 to the General Services Administration (GSA) and renamed the Federal Research Center (FRC) at White Oak, with the remaining acres retained by the Department of Defense. The NOL was determined eligible for the National Register of Historic Places in 1997 as part of the planning for the transfer of the site from the Department of Defense to the GSA. Beginning in 2001, 130 acres of the western portion of the FRC were redeveloped for the U.S. Food and Drug Administration (FDA).

HISTORIC GREEN BUFFER ZONE

Per the July 10, 2002 amended, Memorandum of Agreement (MOA) the historic green buffer zone is determined to be a contributing element within the historic district (See Appendix E). The green buffer zone is the planted buffer (1,200 feet in depth from the center line of New Hampshire Avenue to the front of the closest building from the U.S. NOL Historic District), established in 1945 to protect the Naval Ordnance Laboratory from electronic and other incursion, and to protect the surrounding residential community from what was considered an industrial facility.

The Federal Research Center is surrounded by residential suburbs, with a commercial development located to the northwest. Its landscape is characterized by buildings spatially oriented in clusters around the campus, separated by a variety of pine and hardwood forested areas, wooded stream valleys, and grassy meadow areas. The Navy Department deliberately sited buildings in clusters to provide isolation for testing explosives and magnetic material. With the exception of the administrative (100) area, this heavily wooded character was maintained throughout the campus' history from its initial development beginning in 1945. A buffer zone between New Hampshire Avenue and the front of the administrative complex protected the NOL from electronic and other incursions, and also protected the surrounding community from what was considered an industrial facility. It was later developed as a golf course by NOL employees, and now helps to preserve the historic view of the facility from New Hampshire Avenue.

When the NOL/NSWC was determined eligible for the National Register of Historic Places in 1997, there were 372 documented resources on the site, which included 260 contributing resources and 112 non-contributing resources. The enumerated resources included buildings, structures, and utilities. One contributing landscape was identified, the golf course at the western and southern edges of the property. According to the determination of eligibility, the golf course provided a "physical and natural buffer which preserves the visual character of the main complex" and it was also important as an amenity "conceived, built, and maintained entirely by the employees" of the NOL. Although the overall site was not listed as a contributing resource at that time, the determination of eligibility discussed landscape characteristics such as the grouping of facilities to provide isolation of testing facilities and the wooded stream valleys, chiefly the Paint Branch, as important components of the campus' historic character. Under the 2002 amended Memorandum of Agreement, a number of historic resources within the boundaries of the FDA campus (100 area) were documented and removed during the development of that facility. Historic resources retained in this area include Buildings 1 and 100 and the flagpole. Additionally, following completion of the 2003 Memorandum of Agreement, nearly all the resources in the 300 and 600 Areas were removed. Historic resources remain in the 200 and 400 areas. Please see Appendix F for a description and listing of historic resources within the district.

In 2013, a 10.5-acre environmental setting including Building 1, the flagpole, the traffic circle and axial entrance drive, open spaces on both sides of the drive, and a commermorative installation along the southeast façade of Building 1, was added to the *Location Atlas* and *Index of Historic Sites in Montgomery County, Maryland* and designated on the Montgomery County *Master Plan for Historic Preservation*. Building 1 and the associated evnvironmental setting are identified on **Figure 37**, Area of Potential Effects Map.

3.12.2.2 Will historic structures be affected by the implementation of the Master Plan?

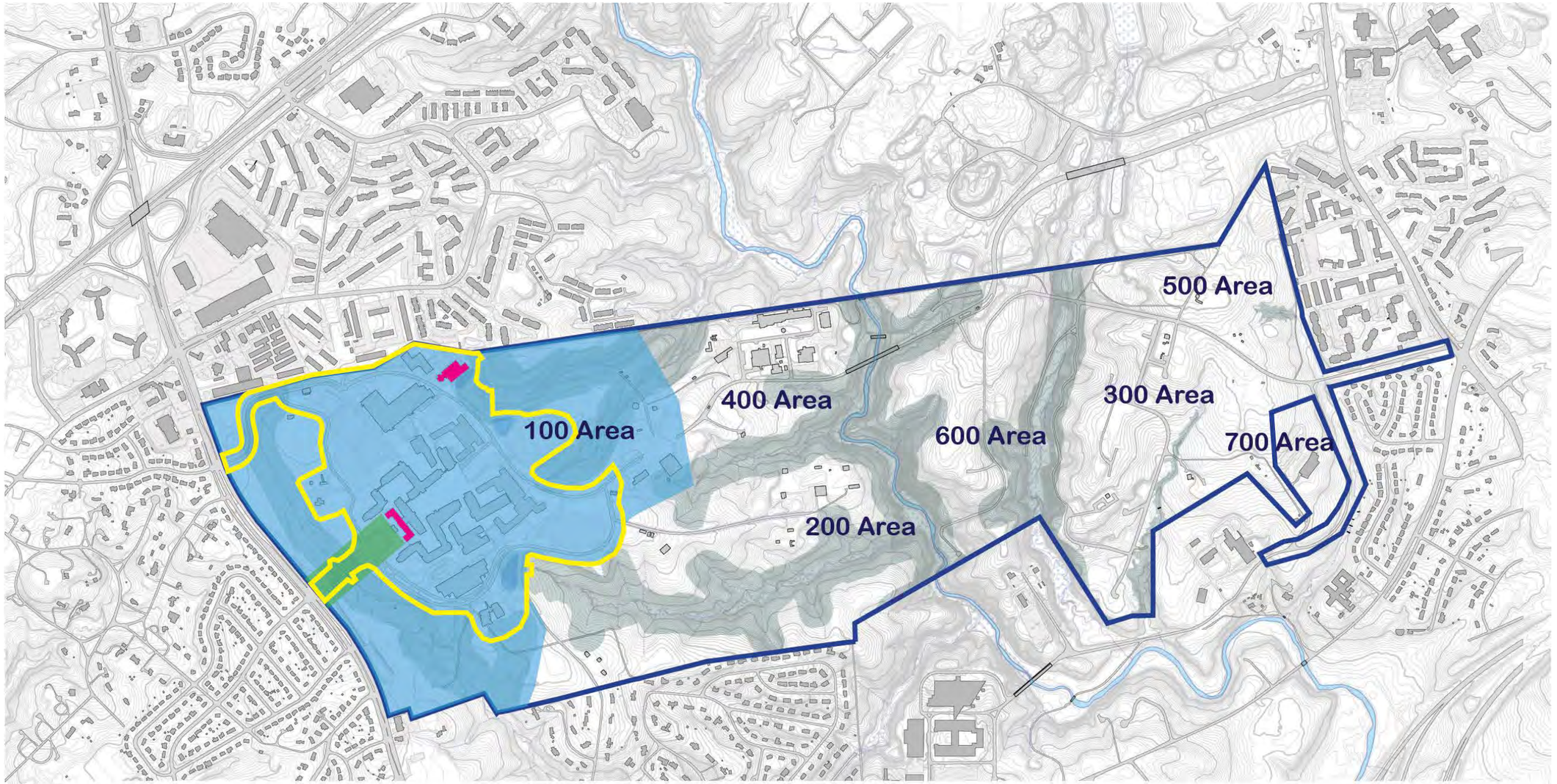
As noted above, the Naval Ordnance Laboratory complex was determined eligible for the National Register of Historic Places in 1997. It was determined to be significant due to its architectural and historical association with important Cold War-era naval weapons research, its association with the researchers who worked at the laboratory and their significant contributions to history, and for noteworthy architectural design.

Following this determination, and the approval of a master plan for redevelopment of the former administrative area for the FDA, in 2000 a Memorandum of Agreement (MOA) was executed between GSA, FDA, the MD SHPO, the ACHP, the White Oak Laboratory Alumni Association (WOLAA), and Labquest. This MOA provided for the retention of contributing resources including the green buffer zone/historic golf course, portions of the Main Administration Building (now Building 1), the flagpole with a redesigned and relocated circle in front of Building 1, and the historic fire station which is now part of Building 100.

In addition, the MOA provided for recordation requirements for historic structures throughout the FRC. Recordation requirements include meeting the standards for Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) through written, graphic, and photographic documentation of all contributing buildings. The photographic documentation was accepted on January 31, 2001. The graphics and written documentation were completed and sent to the National Park Service (NPS) in October 2002.

An amended MOA between the same parties was executed in 2002, following an updated master plan, to permit modification of Building 1 for use by the FDA (under the 2000 MOA, Building 1 was not part of the FDA program, but to be preserved for historic purposes only). The 2002 amended MOA stipulated that “all design elements of the Food and Drug Administration Consolidation at White Oak will conform to the March 2002 revised master plan…with the understanding that specific design elements may be modified and/or refined over time.” It further stipulated that GSA should consult with the MD SHPO on the design plans of proposed buildings that are “compatible with neighboring historic buildings in terms of their height, scale, massing, and materials.” Under the 2002 MOA, GSA, MD SHPO and other signatories established compatibility standards for future development at the FRC that have been adhered to throughout subsequent master plans (2006, 2009) and implementation.

Under the terms of both MOAs, GSA/FDA were permitted to demolish other historic resources within the FDA campus boundaries after documenting them to the standards of the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER). Most of those original buildings and structures were subsequently documented and demolished in accordance with the MOA. Several buildings in the 100


500 Area
400 Area
300 Area
600 Area
700 Area
100 Area
200 Area
LEGEND
Area of Potential Effect
Buildings One and One Hundred
Flagpole Environmental Setting
Existing FDA Campus Boundary
Naval Ordnance Laboratory
National Register-eligible District Boundary
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area determined non-contributing in either the 1997 DOE or in the 1998 Determination Study but not subsequently demolished would be removed under the three action alternatives. These include Buildings T-05, 130, and 132.

In 2003, a separate MOA was excuted with the MD SHPO for demolition of structures in the 300 and 600 areas of the FRC, with similar requirements for recordation to HABS/HAER. Those structures were subsequently removed.

The 2002 MOA encompassed work planned to design and build Phases I and II and to design Phase III of a five phase consolidation of FDA laboratory and office space as well as subsequent phases of the project from 2002 through completion. According to section XV: Sunset of the MOA, "(p)rovisions of this MOA will be carried out from the date of execution of this MOA through completion of the FDA consolidation." It was understood that the 2002 amended MOA was still in effect until it is terminated, or a new MOA was negotiated. Because this is a new Master Plan, GSA closed out the existing MOA. GSA initiated consultation with potential consulting parties under Section 106 of the National Historic Preservation Act (NHPA), which is being carried out in conjunction with this EIS. GSA intends to negotiate a new Memorandum of Agreement (MOA) to govern work carried out under the new master plan.

No-Action Alternative

No new construction would take place as a result of the new master plan, and this would not affect known or potential historic properties or cultural resources.

Alternative A (Action Alternative)

The only historic resources remaining within the FDA campus, Buildings 1, 100, the flagpole and the redesigned circle in front of Building 1, and the historic buffer, would not be physically impacted by the planned construction under this alternative. The conference center and parking garage at the north side would be placed back from the road leading to the main entrance in order to limit their visibility from the flagpole area. Historic buildings within the rest of the APE would also not be physically impacted by the planned construction.

The mid-rise buildings would be of a similar scale to the existing buildings at the FDA complex. Because they would not affect the historic buffer or the view to the façade of Building 1, there is no adverse impact. The new buildings at the east and north ends of the campus would be visible from the historic fire station (Building 100) but given their distance from the building and the already affected visual setting due to past construction, there is also no adverse impact. The truck screening facility would be built north of Michelson Road, which constitutes the north edge of the historic buffer. There would therefore be no adverse impact on the historic buffer due to its construction.

In addition to no adverse impacts to historic buildings under NEPA, there would also be no adverse effects to historic buildings under Section 106 of the National Historic Preservation Act (NHPA) as a result of Alternative A.

Alternative B (Action Alternative)

The historic resources remaining within the FDA campus, Buildings 1, 100, the flagpole and the redesigned circle in front of Building 1, and the historic buffer, would not be physically impacted by the planned construction under this alternative. The conference center, office building, and parking garage at the north side would be placed back from the road leading to the main entrance in order to limit their visibility from the flagpole area. Historic buildings within the rest of the APE would also not be physically impacted by the planned construction.

The construction of a high-rise building within the FDA campus would represent a departure from the compatibility standards established under the 2002 MOA in terms of height and massing. Given the current and future space needs of the FDA, a tall building does provide significant benefits in terms of retaining the open landscape that characterizes the FRC as a whole, and it is not inconsistent with the anticipated development of the surrounding area, including the nearby Viva White Oak development to the northeast.

The 1997 determination of eligibility and 2002 MOA cited the historic buffer and the views from New Hampshire Avenue to the façade of Building 1 as important campus features, but did not define a historic viewshed beyond the façade of Building 1. Because of its relative location and height east of Building 1, the high-rise building would be visible behind Building 1 when viewed from New Hampshire Avenue. This visibility would be mitigated by the relative distance of the high rise (about half a mile) from Building 1. While the tall building would not intrude on the view of the Building 1 façade across the buffer from New Hampshire Avenue, the broader visual setting of Building 1 from New Hampshire Avenue would include a taller building behind and above the historic building. The deviation from the 2002 MOA compatibility standards constitutes an indirect adverse impact.

The new buildings at the east and north ends of the campus would be visible from the historic fire station (Building 100) but given their distance from the building and the already affected visual setting due to past construction, there is no adverse impact. The truck screening facility would be built north of Michelson Road, which constitutes the north edge of the historic buffer. There would therefore be no adverse impact on the historic buffer due to its construction.

Because the high-rise is not consistent with the height and massing of the historic buildings and subsequent FDA campus development under the compatibility standards established under the 2002 MOA, its construction would result in an adverse effect to historic buildings in the APE under Section 106 of the National Historic Preservation Act (NHPA) as a result of Alternative B.

Alternative C (Action Alternative)

The only historic resources remaining within the FDA campus, Buildings 1, 100, the flagpole and redesigned circle in front of Building 1, and the historic buffer, will not be physically impacted by the planned construction. The conference center, office building, and parking garage at the north side would be placed back from the road leading to the main entrance in order to limit their visibility from the flagpole area. Historic buildings within the rest of the APE would also not be physically impacted by the planned construction.

The construction of high-rise buildings within the FDA campus would represent a departure from the compatibility standards established under the 2002 MOA in terms of height and massing. Given the current and future space needs of the FDA, tall buildings do provide significant benefits in terms of retaining the open landscape that characterizes the FRC as a whole, and they are not inconsistent with the anticipated development of the surrounding area, including the nearby Viva White Oak development to the northeast.

The 1997 determination of eligibility and 2002 MOA cited the historic buffer and the views from New Hampshire Avenue to the façade of Building 1 as important campus features, but did not define a historic viewshed beyond the façade of Building 1. Because of their relative location and height east of Building 1, the high-rise buildings would be visible behind Building 1 when viewed from New Hampshire Avenue. This visibility would be mitigated by the relative distance of the high rises (about half a mile) from Building 1. While the tall buildings would not intrude on the view of the Building 1 façade across the buffer from New Hampshire Avenue, the broader visual setting of Building 1 from New Hampshire Avenue would include taller buildings behind and above the historic building. The deviation from the 2002 MOA compatibility standards constitutes an indirect adverse impact.

The new buildings at the east and north ends of the campus would be visible from the historic fire station (Building 100) but given their distance from the building and the already affected visual setting due to past construction, there is no adverse impact. The truck screening facility would be built north of Michelson Road, which constitutes the north edge of the historic buffer. There would therefore be no adverse impact on the historic buffer due to its construction.

Because the high-rises are not consistent with the height and massing of the historic buildings and subsequent FDA campus development under the compatibility standards established under the 2002 MOA, their construction would result in an adverse effect to historic buildings in the primary APE under Section 106 of the National Historic Preservation Act (NHPA) as a result of Alternative C.

3.12.2.3 Would the historic landscape be affected by the implementation of the Master Plan?

The landscape of the FRC is characterized by buildings spatially oriented in clusters around the campus, separated by a variety of pine and hardwood forested areas, wooded stream valleys, and grassy meadow areas. As a result, even the new facilities constructed as part of the development of the FDA Campus were screened from most of the rest of the historic NOL campus to the north, south, and east. The FDA Campus is most visible from New Hampshire Avenue and the adjacent community west of the FDA Campus. This view was framed by the landscape elements of the green buffer zone (historic golf course), located between New Hampshire Avenue and the Main Administration Building (now Building 1). The historic golf course was identified as a contributing landscape in the 1997 Determination of Eligibility. This buffer was “established in 1945 to protect the NOL from electronic and other incursions, and to protect the surrounding residential community from what was considered an industrial facility.” Also, as noted in the 1997 DOE, the 100 area’s “focal point is the façade of the main building, visible from New Hampshire Avenue.” The DOE and the subsequent MOAs did not identify any historic views aside from the golf course/buffer zone up to the façade of Building 1.

No-Action Alternative

No new construction would take place as a result of the new master plan, and this would not impact the historic landscapes of the APE.

Alternative A (Action Alternative)

The historic landscape would be not be impacted by Alternative A. The mid-rise buildings are of a similar scale to the existing campus. Because they would not affect the historic golf course or the view to the front of Building 1, there is no adverse impact.

In addition to no adverse impacts to the historic landscape under NEPA, there would also be no adverse effects to the historic landscape under Section 106 of the National Historic Preservation Act (NHPA) as a result of Alternative A.

Alternatives B and C (Action Alternatives)

As discussed above, the high-rise buildings of Alternatives B and C would be visible from New Hampshire Avenue. In particular, they would be visible behind Building 1 from Mahan Road, and when approaching the FDA Campus from the south along New Hampshire Avenue (see **Figure 38** through **Figure 43**). Because of the topography and intervening trees, they would not be visible when approaching the FDA Campus from the north at Michelson Road. While they would not impact the defined historic landscape of the FRC (i.e., the historic buffer/golf course), the construction of high-rise buildings would alter the visual setting historic of Building 1 by rising behind and above it as seen from New Hampshire Avenue, and would constitute an indirect adverse impact.

In addition to adverse impacts to the historic landscape under NEPA, there would also be an adverse effect to the historic landscape, specifically the historic visual setting from New Hampshire Avenue, under Section 106 of the NHPA as a result of Alternatives B & C.

3.12.2.4 How will historic resources off site of the FDA Campus be affected by the implementation of the Master Plan?

There are no known historic resources off site of the FDA Campus that would be affected under the Master Plan.

3.12.2.5 What efforts are being made to preserve the historic landscape?

GSA has initiated consultation under Section 106 of the National Historic Preservation Act to prepare a MOA for mitigation in the event of any adverse effects to the historic landscape as a result of the preferred alternative.

Figure 38. View of Alternative A from Mahan Road and New Hampshire Avenue

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Figure 39. View of Alternative B from Mahan Road and New Hampshire Avenue

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Figure 40. View of Alternative C from Mahan Road and New Hamphsire Avenue

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Figure 41. View of Alternative A Looking North from New Hampshire Avenue

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Figure 42. View of Alternative B Looking North on New Hampshire Avenue

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Figure 43. View of Alternative C Looking North from New Hampshire Avenue

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3.12.3 ARCHAEOLOGY

3.12.3.1 Are there any archaeological resources at the FRC?

A comprehensive archaeological survey of the FRC has not been completed; however, five archaeological investigations have been conducted within the study area (see **Figure 44**). The first archaeological survey undertaken within the FDA Campus occurred in 1995 when Ecology and Environment, Inc., undertook a Phase I reconnaissance prior to the relocation of the Naval Sea Systems Command to the White Oak Naval Laboratory (Rosenzweig 1995). Testing was conducted around the Administration complex and included pedestrian reconnaissance and shovel test pit (STP) excavation. These investigations revealed only modern debris and indicated significant disturbance was present due to the previous construction of buildings, roadways, and utilities. No further excavations were recommended in this area.

In 1997, Greenhorne & O'Mara conducted a Phase I survey as part of the transfer of the Naval Surface Warfare Center to GSA (Bodor 1997). Although the entire property was approximately 690 acres in size, the investigations were limited to a 28-acre parcel associated with specific demolition and construction activities in the 100 Area. After accounting for prior disturbance and slope, 16.5 non-contiguous acres were surveyed by STP excavation. No Native American or Historic period artifacts or deposits were identified, and no further archaeological investigations were recommended for the areas surveyed.

In 2005, Greenhorne & O'Mara conducted two additional Phase I surveys at the FRC. The first was a pedestrian and STP excavation for the expansion of the golf course (Gill and Barrett 2005a). The survey revealed diffuse lithic scatter associated with 18MO113, a Native American site previously recorded by

an amateur archaeologist located south of the study area. No temporally diagnostic artifacts were recovered. Elsewhere, the project area exhibited extensive disturbance and erosion, and no other archaeological sites were identified. No additional archaeological investigations were recommended. The second survey was conducted for the realignment of Dahlgren Road within the FRC (Gill and Barrett 2005b). Pedestrian reconnaissance and STP excavations revealed only two pieces of Native American lithic debitage. No additional archaeological investigations were recommended.

Most recently, Stantec Consulting Services Inc. conducted a Phase I Archaeological survey for the study area (Kreisa et al. 2017). Approximately 24.5 acres within the FRC were surveyed, with the remaining portion of the campus having been previously surveyed by the above investigations or excluded due to an environmental constraint that precludes construction in the stream valley buffer area (See **Figure 45**). Seven survey areas were systematically tested with the excavation of 138 STPs and resulted in the identification of one archaeological site (18MO738) and three isolated finds (See **Figure 46**). Located east of the SE Quad surface lot near Building 71, the site is a light scatter of late nineteenth- to early twentieth-century artifacts found near the location of the Layton/Giddings farm residence depicted on postbellum maps. No features were identified associated with site 18MO738. The site and isolated finds are recommended as not eligible for listing on the National Register of Historic Places (NRHP).

3.12.3.2 How will archaeological resources be impacted by the implementation of the Master Plan?

Impacts to archaeological resources occur when proposed actions result in complete or partial destruction of the resource, and are equivalent to a loss of integrity, as defined by Section 106 of the National Historic Preservation Act. In order to evaluate potential impacts to archaeological resources, available information on the nature of previously conducted archaeological surveys and the nature and location of previously identified archaeological sites potentially impacted by the proposed action was compiled. Sources include Medusa, Maryland's Cultural Resources Information System, and archaeological site reports on file at the Maryland Historical Trust.

Potential impacts to archaeological resources were evaluated based on the potential impacts from construction of new buildings, parking structures, and roadways. Additionally, the results of the recent archaeological survey conducted for the FDA FRC MP and previous surveys conducted on the FDA Campus were considered.

No-Action Alternative

Under the No-Action Alternative, no new buildings would be constructed. The campus traffic circulation patterns would remain the same and parking would consist of a combination of garage and surface lots. The proposed communications center, distribution center, dining pavilion, and conference center(s) would not be constructed.

The No-Action Alternative would have no impact to archaeological resources because no ground disturbing activities would take place, thus minimizing the potential to damage or disturb site 18MO738 and any unknown intact archaeological sites.

Alternative A (Action Alternative)

Under Alternative A, construction associated with new buildings, parking structures, and transportation infrastructure would overall have negligible impact on archaeological resources within the FDA Campus with the exception of the proposed new parking structure in the eastern portion of the FDA Campus. Ground disturbing activities associated with its construction would adversely impact archaeological site 18MO738, a scatter of late nineteenth- to early twentieth-century artifacts associated with a residence depicted on historic maps of the area. The majority of the site is located in the footprint of the proposed new parking structure and would be impacted by any ground disturbing activities during construction and usage. However, while the impact to the site would be significant, it is recommended as not eligible for listing on the NRHP. As such, the impact to the overall understanding of the history of the county and area would be negligible. All other proposed actions under Alternative A are located in already disturbed areas or surveyed areas with no identified archaeological resources.

Alternative B (Action Alternative)

As with Alternative A, construction activities associated with new buildings, parking structures, and transportation infrastructure would overall have negligible impact on archaeological resources within the FDA Campus with the exception of the proposed new parking structure within the eastern portion of the FDA Campus. Ground disturbing activities associated with its construction would disturb nearly the entirety

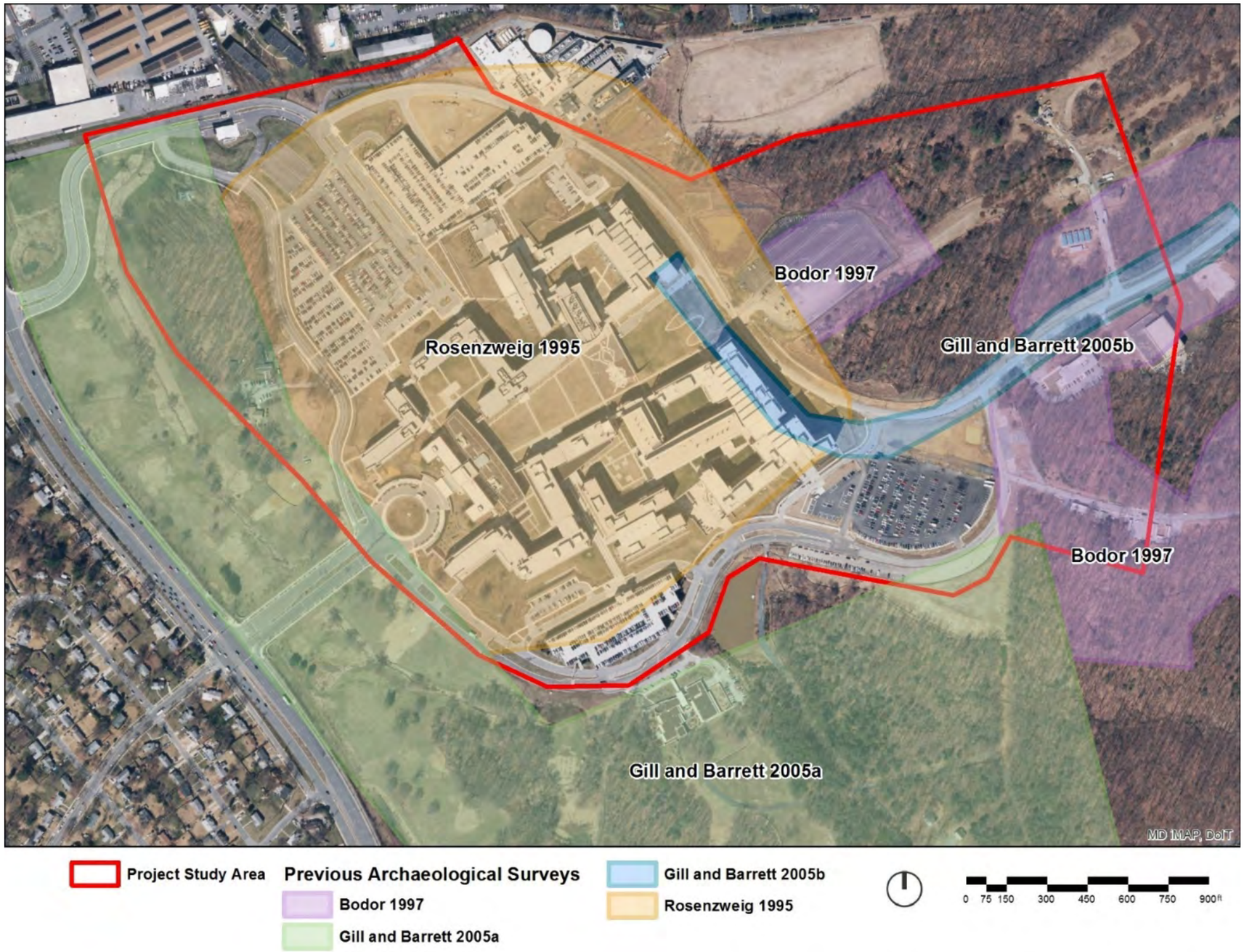

Figure 44. Previous Archaeological Surveys Conducted at the FRC

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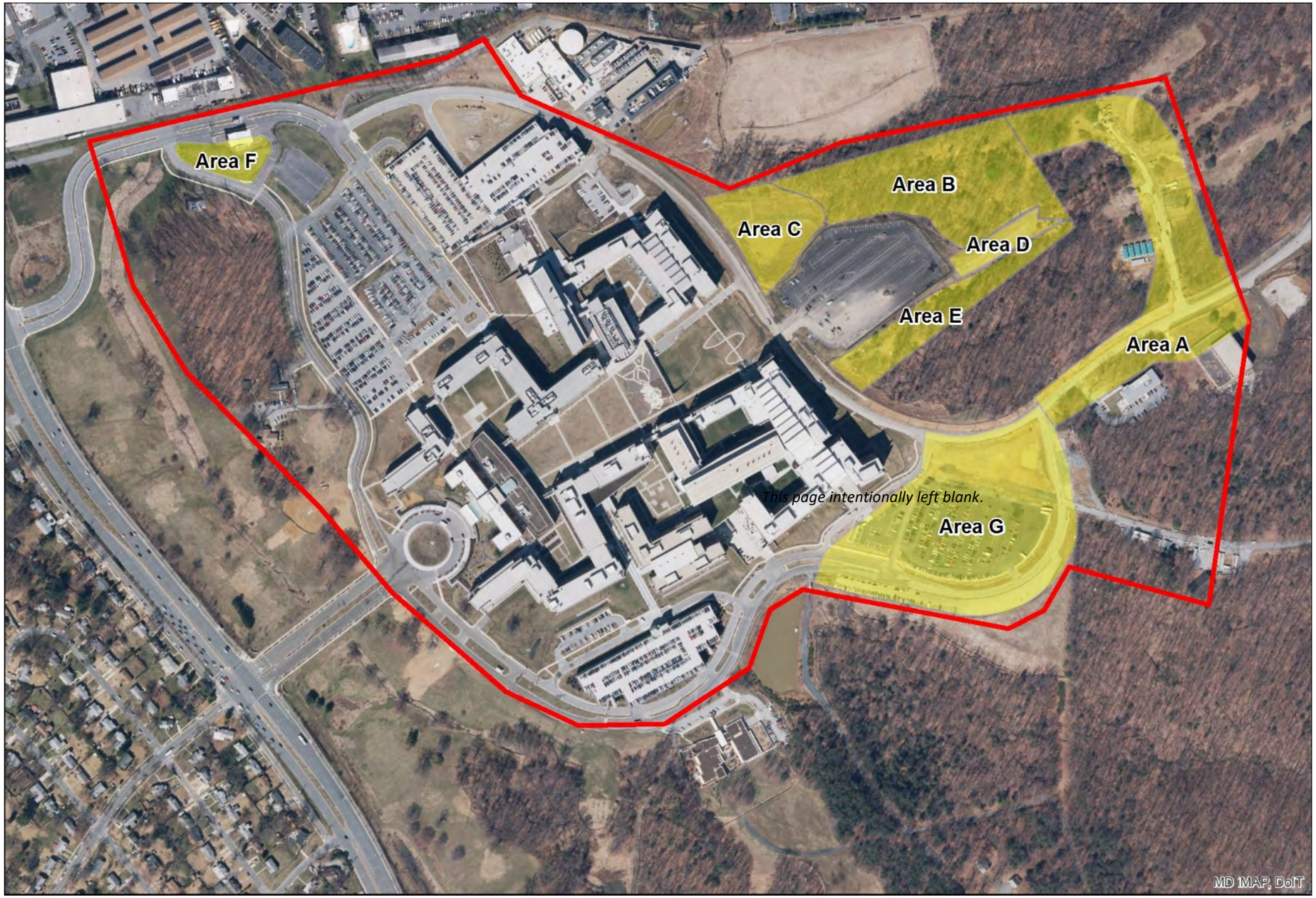

Figure 45. 2017 Archaeological Survey Areas

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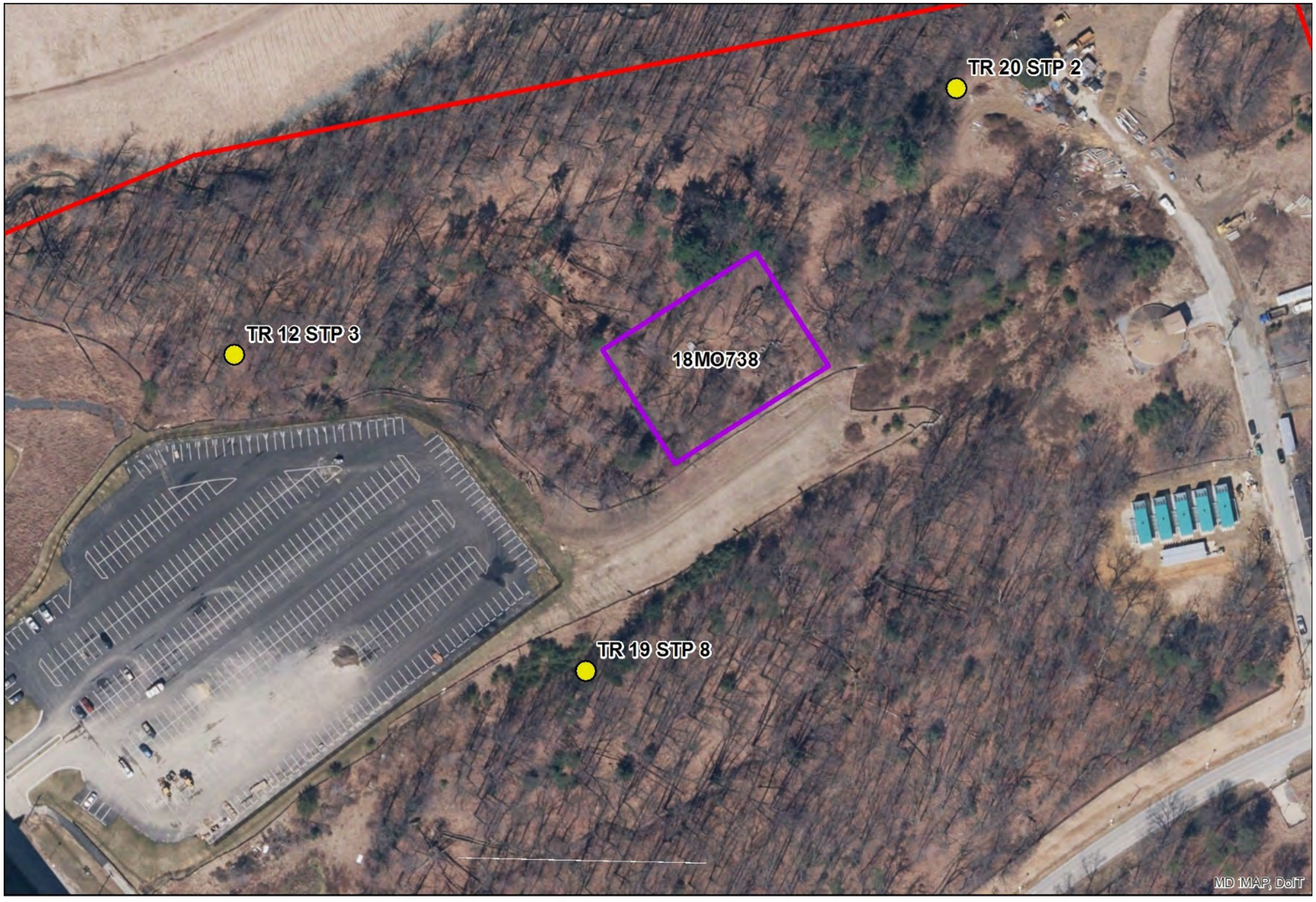

Figure 46. 2017 Archaeological Survey Finds

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of site 18MO738. However, as the site is not eligible for listing on the NRHP, these activities would have negligible impact on the overall understanding of the history of the county and area. All other proposed actions under Alternative B are located in already disturbed areas or surveyed areas with no identified archaeological resources.

Alternative C (Action Alternative)

As with Alternative A, construction activities associated with new buildings, parking structures, and transportation infrastructure would overall have negligible impact on archaeological resources within the FDA Campus with the exception of the proposed new parking structure within the eastern portion of the FDA Campus. Ground disturbing activities associated with its construction would disturb nearly the entirety of site 18MO738. However, as the site is not eligible for listing on the NRHP, these activities would have negligible impact on the overall understanding of the history of the county and area. All other proposed actions under Alternative C are located in already disturbed areas or surveyed areas with no identified archaeological resources.

3.12.3.3 What measures would be taken to preserve archaeological resources that would be impacted by the implementation of the Master Plan?

Ground disturbing activities associated with construction and usage of a new parking structure in the eastern portion of the FDA Campus would impact site 18MO738. However, site 18MO738 is not eligible for listing on the National Register of Historic Places. Preservation of the site would provide little additional information related to the history of the area and the county and no additional excavations are recommended to mitigate the impact of construction to the site.

3.13 TRAFFIC AND TRANSPORTATION

3.13.1 ROADWAY NETWORK

3.13.1.1 What makes up the local roadway network?

Although the FDA complex is officially located in the community of White Oak, Maryland, the limits of the study area encompass all or part of six neighborhoods (White Oak, Hillandale, Calverton, Beltsville, Silver Spring, and Fairland) and two counties (Montgomery County and Prince George's County). As such, both counties were coordinated with to establish the study area limits for this report. The study area is primarily bounded by Columbia Pike (US 29) & Cherry Hill Road/Randolph Road to the north, Powder Mill Road to the south, Columbia Pike (US 29) & New Hampshire Avenue (MD 650) (NW and NE) to the east, and Powder Mill Road (MD 212) & Beltsville Drive

STUDY AREA FOR TRAFFIC ANALYSIS

For the traffic analysis performed as part of this EIS, the study area was defined based upon discussions with Montgomery and Prince George's counties. The study area was defined primarily as the area bounded by Columbia Pike (US 29) & Fairland Road to the north, Columbia Pike (US 29) & Lockwood Drive to the south Powder Mill Road (MD 212) & Beltsville Drive to the east and New Hampshire Avenue (MD 650) and Quaint Acres Drive/Heartfields Drive to the west.

to the west. However, it also extends in three directions to include segments of major corridors that the proposed development would affect:

- Northbound New Hampshire Avenue (MD 650) to the intersection with Heartfields Drive/Quaint Acres Drive,
- Eastbound Columbia Pike (US 29) to the intersection with Lockwood Drive, and
- Westbound Columbia Pike (US 29) to the intersection with Fairland Road.
- Other local roads within the study area include:
- Mahan Road/Schindler Drive,
- Michelson Road/Northwest Drive,
- Industrial Parkway,
- Tech Road,
- Old Columbia Pike/Prosperity Drive,
- Broadbirch Drive, Plum Orchard Drive,
- Musgrove Road,
- Calverton Boulevard, and
- FDA Boulevard.

Table 20 below provides additional information regarding the study area roadway network.

Table 20: Study Area Major Corridor Characteristics

Roadway	Functional Class	2016 AADT (1,000 vpd)	Number of Lanes	Type of Median	Speed Limit (mph)	Primary Truck Route
New Hampshire Avenue (MD 650)	Principal Arterial	54.1/60.5/ 44.6	6-7, Grass/ Concrete	40/35	Yes	Principal Arterial
Powder Mill Road (CR 104)	Minor Arterial	12.4	2, Concrete	35	No	Minor Arterial
Powder Mill Road (MD 212)	Minor Arterial	22.0	2, Concrete	40	Yes	Minor Arterial
Mahan Road/ Schindler Drive	Local Road	N/A	2, None	25	No	Local Road
Michelson Road/ Northwest Drive	Local Road	N/A	2, None	25	No	Local Road
Lockwood Drive	Minor Arterial	12.1	2, None	30	No	Minor Arterial

Roadway	Functional Class	2016 AADT (1,000 vpd)	Number of Lanes	Type of Median	Speed Limit (mph)	Primary Truck Route
Heartfields Drive/ Quaint Acres Drive	Local Road	N/A	2, None	25	No	Local Road
Cherry Hill Road/ Randolph Road	Minor Arterial	20.6/34.0	4, Concrete	40/30	No	Minor Arterial
Columbia Pike (US 29)	Principal Arterial – Freeway Expressway	61.3/64.3/ 67.5/59.6	6, Grass	40/45/ 50	Yes	Principal Arterial – Freeway Expressway
Industrial Parkway	Local	N/A	2, None	30	No	Local
Tech Road	Local	N/A	4, None	30	No	Local
Old Columbia Pike/ Prosperity Drive	Local	N/A	2, None	30	No	Local
Broadbirch Drive	Local	N/A	4, None	30	No	Local
Plum Orchard Drive	Local	N/A	2, None	30	No	Local
Musgrove Road	Major Collector	3.5	2, None	30	No	Major Collector
Fairland Road	Minor Arterial	7.3	4, None	40/30	No	Minor ArterialNo
Calverton Boulevard	Minor Arterial	14.7	4, Striped	30	No	Minor Arterial
FDA Boulevard	Local	N/A	4, Concrete	30	No	Local
Beltsville Drive	Minor Arterial	23.2	4, Concrete	35	No	Minor Arterial

3.13.1.2 How were impacts to the local roadway network assessed?

As part of the transportation analysis, a data collection and analysis program was conducted to establish an "average day" baseline condition for vehicular, transit, pedestrian, and cyclist traffic within the study area. The program consisted of automatic traffic recorder counts and manual turning movement counts. All data were collected on typical weekdays when Montgomery and Prince George's County schools were in session.

Capacity analyses were performed for the signalized and unsignalized intersections in the study area using Synchro 9 traffic analysis software. This software package provides volume-to-capacity ratios (v/c), average control delay, queues, and level of service (LOS) for each lane group and for the overall intersection.

LEVEL OF SERVICE

LOS is a qualitative measure of traffic conditions through a given roadway intersection or segment. Intersection LOS is measured in terms of "A" through "F" with LOS "A" representing little or no delay (less than 10 seconds) and LOS "F" representing extreme congestion with excessive delay and standing queues (greater than 80 seconds or a volume-to-capacity ratio of 1.0 or greater). Level of Service "D" is typically accepted as the minimum threshold limit for peak hour conditions in an urban area such as Montgomery or Prince George's counties.

The v/c ratio relates the demand at a particular intersection (traffic volume, (v)) to the available capacity (c). The available capacity for each movement varies depending on number of lanes, lane width, perception/reaction time, green time, and cycle length, among others. A v/c ratio of 1.0 indicates that the demand for a particular movement is equal to the capacity. A movement with a v/c ratio at or over 1.0 is considered undesirable because the movement volume exceeds the capacity, which results in queuing, indicating unmet demand along that approach.

LOS is an evaluation of the quality of operation of an intersection and is a measure of the average delay a driver experiences while traveling through the intersection. LOS is dependent on a range of defined operating conditions such as traffic demand, lane geometry, and traffic signal timing and phasing.

LOS can range from A to F and is based on the average control delay per vehicle in seconds. For a signalized intersection, LOS A indicates operations with an average control delay less than 10 seconds per vehicle, while LOS F describes operations with an average control delay in excess of 80 seconds per vehicle or a v/c ratio greater than 1.0. For an unsignalized intersection, LOS A indicates operations with an average control delay less than 10 seconds per vehicle, while LOS F describes operations with an average control delay in excess of 50 seconds per vehicle or a v/c ratio greater than 1.0. The delay criteria for signalized and unsignalized intersections are summarized in **Table 21**.

Table 21: LOS Thresholds

Level of Service	Average Control Delay (seconds/vehicle)	
	Signalized	Unsignalized
A	Less than or equal to 10.0	Less than or equal to 10.0
B	>10.0 and ≤20.0	>10.0 and ≤15.0
C	>20.0 and ≤35.0	>15.0 and ≤25.0
D	>35.0 and ≤55.0	>25.0 and ≤35.0
E	>55.0 and ≤80.0	>35.0 and ≤50.0
F	Greater than 80.0 or v/c greater than 1.0	Greater than 50.0 or v/c greater than 1.0

3.13.1.3 How would local roadway networks be affected by implementation of the Master Plan?

The transportation analysis studied the following scenarios:

- the impact to the local roadway network under the existing conditions where 10,987 FDA employees and support staff are at the FRC;
- the existing conditions as well as the future transportation network, where 10,987 FDA employees and support staff would be at the FRC, excluding the 2018 FDA Master Plan growth (for the purposes of this EIS this is the No-Action Alternative); and
- the conditions under the No-Action Alternative as well as traffic that would be generated by the increase of up to approximately 18,000 FDA employees and support proposed under the 2018 FDA Master Plan (Action Alternatives A through C).

The 2017 existing condition volumes for the AM and PM, shown in **Table 22** were modeled in the HCS 2010 and Synchro 9 software to produce capacity analysis results. The results show that most intersections currently operate at an overall LOS D or better, with the exception of the intersections shown in Table 22.

No-Action Alternative

The No-Action Alternative includes traffic growth due to nearby developments, increases in background traffic, and future development and infrastructure enhancements recommended in the *White Oak Science Gateway Local Area Transportation Review* (2016), prepared by Sabra Wang & Associates for Montgomery County. The No-Action traffic volumes and the proposed site-generated traffic volumes were summed to obtain Action Alternative volumes for the AM and PM peak hours. These volumes were modeled in HCS 2010 and Synchro 9 to produce capacity analysis results. The results of the capacity analysis indicate that the proposed site would generate additional delay and queuing on multiple intersection approaches. All intersections would operate at an overall LOS D or better with the exception of the intersections shown in **Table 22,** which would operate at an overall average vehicle delay that corresponds to a LOS of E or F (failing condition).

Table 22. No-Action Alternative Intersections Operating at Overall LOS E or F

Intersection	Level of Service			
	Existing Condition		No Action Alternative	
	AM	PM	AM	PM
New Hampshire Ave (MD 650) and Mahan Road/Schindler Drive	-	F (174.8)	-	F (144.6)
New Hampshire Ave (MD 650) and Powder Mill Road	-	-	F (101.6)	E (75.3)
New Hampshire Ave (MD 650) and Lockwood Drive	E (60.4)	-	F (81.9)	E (70.2)
Columbia Pike (US 29) and Stewart Lane	-	F (97.4)	F (99.2)	F (230.3)
FDA Boulevard and Industrial Parkway	-	-	-	F (221.3)

Intersection	Level of Service			
	Existing Condition		No Action Alternative	
	AM	PM	AM	PM
Columbia Pike (US 29) and Industrial Parkway	-	-	E (67.6)	F (137.2)
Columbia Pike (US 29) and Tech Road	F (111.7)	F (139.3)	F (344.5)	F 565.1
Columbia Pike (US 29) and Cherry Hill Road/Randolph Road	E (75.0)	-	-	-
Old Columbia Pike and Industrial Parkway	-	-	E (74.2)	E (66.7)
Tech Road and & Industrial Parkway	-	-	F (86.0)	-
Cherry Hill Road and Broadbirch Drive/Calverton Boulevard	F (275.8)	F (155.4)	F (126.8)	F (223.9)
Columbia Pike (US 29) and Musgrove Road	-	-	F (201.7)	F (123.9)
Columbia Pike (US 29) and Fairland Road	-	-	F (193.5)	F (145.4)

Alternatives A, B, and C (Action Alternative)

While there are currently three massing alternatives that would provide the additional square footage needed to accommodate up to approximately 18,000 employees and support staff, all the alternatives locate the proposed buildings and parking garages in the same approximate location on the campus. Therefore, one Action Alternative was considered as part of the transportation analysis. The Action Alternative examines future anticipated volumes on the study area roadway network, taking into consideration traffic volumes and infrastructure improvements under the No-Action Alternative as well as traffic that would be generated by the FDA expansion and consolidation on the FDA Campus.

The No-Action Alternative traffic volumes and the proposed future site-generated traffic volumes were summed to obtain the Action Alternative volumes for the AM and PM peak hours. The results of the capacity analysis indicate that the proposed site would generate additional delay and queuing on multiple intersection approaches. All intersections would operate at an overall LOS D or better except for the intersections shown in **Table 23**, which would experience overall average vehicle delays corresponding with LOS E or F (failing condition).

In addition to the capacity analysis results shown in **Table 23**, an evaluation of the percentage increase (influence) of the site generated traffic on the study area intersections was also evaluated. The results shown in **Table 24** indicate that, with the exception of the access points, the proposed Action Alternative would result in an overall average increase in intersection volumes of approximately 5 percent.

Table 23: Action Alternatives Intersections Operating at Overall LOS E or F

Intersection	Level of Service			
	No-Action Alternative		Action Alternative	
	AM	PM	AM	PM
New Hampshire Ave (MD 650) and Mahan Road/Schindler Drive	-	F (144.6)	-	F (172.8)
SW Loop Road/NW Loop Road and Schindler Drive/FDA Circle	-	-	F (116.9)	F (119.4)
NW Loop Road & Michelson Road	-	-	-	F (158.8)
New Hampshire Ave (MD 650) and Powder Mill Road	F (101.6)	E (75.3)	F (118.2)	F (84.6)
New Hampshire Ave (MD 650) and Lockwood Drive	F (81.9)	E (70.2)	F (146.0)	F (109.0)
Columbia Pike (US 29) and Colesville Business Park Driveway/Lockwood Drive	-	-	-	E (56.5)
Columbia Pike (US 29) and Stewart Lane	F (99.2)	F (230.3)	F (98.0)	F (230.3)
FDA Boulevard and Industrial Parkway	-	F (221.3)	-	F (328.1)
Cherry Hill Road and FDA Boulevard	-	-	E (65.0)	-
Columbia Pike (US 29) and Industrial Parkway	E (67.6)	F (137.2)	E (74.4)	F (137.0)
Columbia Pike (US 29) and Tech Road	F (344.5)	F (565.1)	F (354.7)	F (576.0)
Old Columbia Pike and Industrial Parkway	E (74.2)	E (66.7)	F (84.6)	E (71.1)
Tech Road and Industrial Parkway	F (86.0)	-	F (100.9)	E (71.5)
Cherry Hill Road and Broadbirch Drive/Calverton Boulevard	F (126.8)	F (223.9)	F (155.5)	F (234.6)
Columbia Pike (US 29) and Musgrove Road	F (201.7)	F (123.9)	F (224.6)	F (139.4)
Columbia Pike (US 29) and Fairland Road	F (193.5)	F (145.4)	F (210.6)	F (158.1)

Table 24: Action Alternative Influence Area Summary

Intersection	Action Condition Total Future Volumes		Site-Generated Volumes		% Site Generated Traffic	
	AM	PM	AM	PM	AM	PM
New Hampshire Ave (MD 650) & Schindler Drive/Mahan Road	5,999	6,108	645	458	11%	7%
New Hampshire Ave (MD 650) & Powder Mill Road	7,079	6,698	282	159	4%	2%
New Hampshire Ave (MD 650) & Northwest Drive/Michelson Road	5,965	6,343	865	676	15%	11%
New Hampshire Ave (MD 650) & Lockwood Drive	6,900	7,818	725	598	11%	8%
Columbia Pike (US 29) & Colesville Business Park Driveway/Lockwood Drive	8,669	9,931	492	406	6%	4%
New Hampshire Ave (MD 650) & Quaint Acres Drive/Heartfields Drive	4,579	4,598	233	192	5%	4%
Columbia Pike (US 29) & Stewart Lane	7,527	9,464	0	0	0%	0%
FDA Boulevard & Industrial Parkway	3,203	2,948	488	403	15%	14%
FDA Boulevard & Future Roadway B-5	3,364	2,867	390	322	12%	11%
Cherry Hill Road & FDA Boulevard	4,676	4,788	390	322	8%	7%
Cherry Hill Road & Plum Orchard Drive/Clover Patch Drive	4,063	4,344	197	163	5%	4%
Cherry Hill Road & Powder Mill Road (MD 212)	5,441	5,209	193	159	4%	3%
Columbia Pike (US 29) & Industrial Parkway	6,622	8,142	66	54	1%	1%
Columbia Pike (US 29) & Tech Road	8,014	9,435	98	81	1%	1%
Columbia Pike (US 29) & Cherry Hill Road/Randolph Road	10,884	11,149	295	244	3%	2%
Old Columbia Pike/Prosperity Drive & Tech Road	2,648	3,830	32	27	1%	1%
Old Columbia Pike & Industrial Parkway	4,447	5,434	66	54	1%	1%
Old Columbia Pike & Columbia Pike (US 29) Right Turn Lane	2,357	2,889	0	0	0%	0%
Tech Road & Industrial Parkway	5,206	5,460	98	81	2%	1%
Prosperity Drive & Cherry Hill Road	4,915	4,533	197	163	4%	4%
Cherry Hill Road & Broadbirch Drive/Calverton Boulevard	5,802	5,730	197	163	3%	3%
Columbia Pike (US 29) & Musgrove Road	8,861	9,420	295	244	3%	3%
Columbia Pike (US 29) & Fairland Road	9,572	9,721	275	226	3%	2%
Centerpark Driveway/Beltsville Drive & Powder Mill Road (MD 212)	4,535	4,737	179	147	4%	3%
Beltsville Drive & Calverton Boulevard/Calverton Tower Driveway	2,111	2,114	0	0	0%	0%

3.13.1.4 What measures would be taken to reduce impacts to the roadway network?

The results of the study show that the consolidation and expansion at the FDA Campus would have an adverse impact on traffic conditions within the study area. Given the congested nature of the study area corridors, the additional development in the area, combined with trips generated by the proposed consolidation and expansion would require a combination of intelligent transportation technology, transportation demand management programs, additional roadway capacity, and improved transit, pedestrian, and bicycle facilities. Recommended mitigation measures include:

Intelligent Transportation Technology

- Evaluate the installation of traffic adaptive/demand responsive signal systems along Columbia Pike (US 29), New Hampshire Avenue (MD 650), and Cherry Hill Road.
- Install Dynamic Message Signs (DMS) along Columbia Pike (US 29) to provide travel time information that would allow drivers to assess the most efficient travel path through the study area.
- Coordinate all ITS-related improvements with MDOT SHA and Montgomery County.

Transportation Demand Management

- Enhance the existing transportation demand management (TDM) program to encourage more employees to commute via modes other than driving alone. A transportation management plan (TMP) will be developed for the site as a separate document in 2018.
- Expand the commuter shuttle system to include direct shuttle service to and from Park and Ride facilities along the I-270 corridor.
- Work with Montgomery County and the Maryland Department of Transportation State Highway Administration (MDOT SHA) to identify the potential for new park-and-ride facilities near major interchanges to reduce localize impacts.

Additional Roadway Capacity

The following table (**Table 25**) lists the intersections that require mitigation, the recommended mitigation measures, as well as the lead agency that would be needed to implement the recommendations. However, it should be noted that, due to existing and projected No-Action Alternative congestion on the study area roadway network, not all increases in delay and queuing could be mitigated. Several intersections along Columbia Pike (US 29), as well as the intersection of New Hampshire Avenue (MD 650) and Powder Mill Road could not be fully improved given the existing geometry and ROW constraints. Improvements similar to grade separation, which was previously planned by MDOT SHA for signalized intersections along Columbia Pike (US 29), would need to be coordinated through MDOT SHA and Montgomery County. It is assumed that delay and queuing at those intersections would be fully mitigated once they are converted to interchanges.

Table 25. Intersections Requiring Mitigation

Intersection	Description of Mitigation	Responsible Agency
New Hampshire Avenue (MD 650) & Powder Mill Road	Optimize signal phase lengths. Significant modifications are required to address existing and future anticipated capacity deficiencies. Mitigation would require significant ROW acquisitions for additional northbound and southbound left-turn and right-turn lanes and/or grade separation. Potential improvements noted in the White Oak Local Area Transportation Review Intersection Improvement Cost Evaluation prepared by Sabra, Wang & Associates included an additional northbound right-turn lane.	MDOT SHA and Montgomery County.
New Hampshire Ave (MD 650) & Schindler Drive/Mahan Road	Change AM and PM peak period cycle length to 150 seconds and optimize phasing and offsets. Restripe westbound Mahan Road to provide two left-turn lanes, a shared through-right and a right-turn lane. This is required to accommodate the heavier right-turn movement (621 vph) with the reduced cycle length. The anticipated left-turn volume (527 vph) from Mahan Road would be accommodated with two left turn lanes. Utilize a lead-pedestrian interval, and/or permit pedestrian movement only with Schindler Drive. Consider lead pedestrian intervals to accommodate pedestrians in advance of the double right turn.	FDA/GSA
SW Loop Road/NW Loop Road & Mahan Road/FDA Circle	Restripe eastbound Mahan Road to provide one left-turn lane, one shared through/right-turn lane and one free-flow right-turn lane.	FDA/GSA
NW Loop Road & Michelson Road	Add a separate right-turn lane on northbound NW Loop Road.	FDA/GSA
New Hampshire Ave (MD 650) & Northwest Drive/Michelson Road	Change AM and PM peak period cycle length to 150 seconds and optimize phasing and offsets. Provide two right-turn lanes on westbound Michelson Road. This is required to accommodate the heavier right-turn movement (756 vph) with the reduced cycle length. The anticipated left-turn volume (253 vph) from Michelson Road would be accommodated with two left-turn lanes. The right-turn will be overlapped with the southbound left-turn movement and the curb lane will be permitted to turn right on red. To avoid cut-through traffic from the FRC via Northwest Drive, a “No Thru Traffic” sign should be posted. Consider lead pedestrian intervals to accommodate pedestrians in advance of the double right turn.	FDA/GSA

Intersection	Description of Mitigation	Responsible Agency
New Hampshire Ave (MD 650) & Lockwood Drive	Change AM and PM peak period cycle length to 150 seconds and optimize phasing and offsets. Restrict the eastbound Lockwood Drive left-turn movement to northbound New Hampshire Avenue (MD 650). Reroute vehicles wishing to travel northbound on New Hampshire Avenue (MD 650) along westbound Lockwood Drive to Columbia Pike (US 29) and then to the New Hampshire Avenue (MD 650) interchange. The peak period left turn volume is less than 200 vph. Eliminating the left-turn allows for improved operation of the opposing approach, as well as New Hampshire Avenue (MD 650). Restripe westbound Lockwood Drive to provide three left-turn lanes, one through lane, and one right-turn lane.	FDA/GSA Coordinate with Montgomery County as part of planned upgrades currently included in the White Oak LATR/LATIP.
Columbia Pike (US 29) & Lockwood Drive	Change AM and PM peak period cycle length to 150 seconds and optimize phasing and offsets.	MDOT SHA and Montgomery County
Columbia Pike (US 29) and Stewart Lane	Change AM and PM peak period cycle length to 150 seconds and optimize phasing and offsets. Convert to a grade-separated interchange (long-term).	MDOT SHA and Montgomery County
Columbia Pike (US 29) & Tech Road and Industrial Parkway	Change AM and PM peak period cycle length to 150 seconds and optimize phasing and offsets. Provide three left-turn lanes on southbound Columbia Pike (US 29) at Industrial Parkway. Widen Industrial Parkway to three lanes in each direction. Provide three right-turn lanes from northbound Old Columbia Pike to eastbound Industrial Parkway. Convert the at-grade intersection to an interchange (long-term).	Coordinate with Montgomery County. These should be added into planned upgrades currently included in the White Oak LATR/LATIP. MDOT SHA for grade-separation.
Tech Road & Industrial Parkway	Add an additional northbound left-turn lane. Stripe the additional eastbound lane added from the Columbia Pike (US 29) intersection to become a right-turn only lane to Tech Road.	Coordinate with Montgomery County. These should be added into planned upgrades currently included in the White Oak LATR/LATIP.
Columbia Pike (US 29) & Musgrove Road	Change AM and PM peak period cycle length to 150 seconds and optimize phasing and offsets. Convert the at-grade intersection to an interchange (long-term).	MDOT SHA for grade-separation.
Columbia Pike (US 29) & Fairland Road	Change AM and PM peak period cycle length to 150 seconds and optimize phasing and offsets. Remove the Columbia Pike (US 29) northbound left-turn movement and direct vehicles to turn right onto Fairland Road and access westbound Fairland Road via a U-turn at the downstream traffic circle or by turning left at	Coordinate with Montgomery County and MDOT SHA for short-term improvements.

Intersection	Description of Mitigation	Responsible Agency
	Musgrove Road. Provide two eastbound and two westbound left-turn lanes and eliminate split phasing. Provide a separate northbound right-turn lane. Convert the at-grade intersection to an interchange (long-term).	MDOT SHA for grade-separation.
Cherry Hill Road & Broadbirch Drive/ Calverton Boulevard	Optimize signal phase lengths.	Coordinate with Montgomery County as part of planned upgrades currently included in the White Oak LATR/LATIP.
Cherry Hill Road & FDA Boulevard	Provide a second left turn lane for northbound Cherry Hill Road. Provide a free-flow right-turn movement from southbound Cherry Hill Road to westbound FDA Boulevard that ties into the additional lane recommended for the intersection of FDA Boulevard and Future Roadway B-5.	Coordinate with Montgomery County as part of planned upgrades currently included in the White OakLATR/LATIP.
FDA Boulevard & Future Roadway B-5	Widen westbound FDA Blvd to three lanes between Cherry Hill Road and Future Roadway B-5. The additional lane becomes a right-turn only lane at Future Roadway B-5.	Coordinate with Montgomery County as part of planned upgrades currently included in the White Oak LATR/LATIP.
FDA Boulevard & Industrial Parkway	Monitor the operation of the proposed roundabout. Consideration should be given to northbound and westbound right-turn bypasses to minimize volume in the circulating roadway.	Coordinate with Montgomery County as part of planned upgrades currently included in the White Oak LATR/LATIP.
Cherry Hill Road & Powder Mill Road (MD 212)	Optimize signal phase lengths.	Coordinate with Prince George's County

The proposed enhancements would result in intersections that operate at similar, or better, levels of service when compared to the No-Action Alternative. Furthermore, the recommended intelligent transportation technology, transportation demand management, and the continued implementation of a TMP would provide additional benefits to reduce the transportation impacts of the proposed consolidation and expansion. While the benefits cannot be directly tied to the capacity analysis results, it can be assumed that these improvements would further help to mitigate the deficiencies identified in the Action Alternative.

3.13.2 TRANSIT, PEDESTRIAN, AND BICYCLE FACILITIES

3.13.2.1 What transit facilities and services are available at and in the vicinity of the FRC?

Several bus routes serve the FRC with stops along New Hampshire Avenue (MD 650) or internally within the campus (**Figure 47**).

Table 26 provides information regarding each bus route and shows the routes for buses that serve the FRC. The majority of bus routes provide service during typical FDA operating hours at 15 to 30-minute headways.

Table 26. Existing Transit Services

Route	Operation	Frequency	Metrorail Connections	Stops within Campus?
Montgomery County Ride-On Route 10	Weekdays, Saturday, Sunday	Weekday Peak: 30 min Weekday Off-Peak: 30 min Weekend: 30 min	Twinbrook Glenmont	No
Montgomery County Ride-On Route 22	Weekday Peak Hours	Weekday Peak: 30 – 40 min	Silver Spring	Yes
Metrobus Route C8	Weekday, Saturday (Does not enter White Oak Campus after 6:30 PM or on Saturdays)	Weekday Peak: 30 min Weekday Off-Peak: 30 min Weekend: 30 min	White Flint Glenmont College Park	Yes
Metrobus Route K6	Weekdays, Saturday, Sunday	Weekday Peak: 15 min Weekday Off-Peak: 20 min Weekend: 15 - 30 min	Fort Totten Station	No
Metrobus Route K9 (Express Bus)	Weekday Peak Hours	Weekday Peak: 15 min Weekday Off-Peak: 20 min Weekend: 15 - 30 min	Fort Totten Station	Yes
MTA Commuter Bus Route 204	Weekday Peak Hours (5 buses in the AM, 6 buses in the PM)	Weekday Peak: 30 min	College Park	Yes

In addition to the bus services listed above, FDA operates six commuter shuttle routes that serve local Metro stations. These shuttles are intended to fill gaps in the existing public transit network. **Table 27** provides information regarding each shuttle route. FDA operates four distinct internal Circulator shuttle routes to link the buildings and parking lots on the White Oak Campus (see **Figure 48** through **Figure 50**). During the hours when the FDA Campus has fourth Circulator route, the vehicle does a continuous loop around the Campus beginning at Building 1 proceeding clockwise around the FDA Campus (see **Figure 51**).

Table 27: Existing Shuttle Routes (External)

Route	Number of Trips*	Metrorail Connections
White Oak-Hillandale	AM Peak: 4 Midday: 7 PM Peak: 4	None
Twinbrook to White Oak	AM Peak: 4	Twinbrook (All shuttles)

	Midday: 4 PM Peak: 5	Glenmont (4 Departures, 6 Arrivals)
Medical Center to White Oak	AM Peak: 3 Midday: 6 PM Peak: 4	Medical Center (All Shuttles) Silver Spring (4 Departures, 1 Arrival)
College Park to White Oak	AM Peak: 3 Midday: 3 PM Peak: 3	College Park
Shady Grove to White Oak	AM Peak: 3 Midday: 1 PM Peak: 2	Shady Grove
Silver Spring to White Oak**	AM Peak: 1 Midday: 11 PM Peak: 4	Silver Spring

*AM Peak: Before 10:00 AM, Midday 10:00 PM – 4:00 PM, PM Peak: 4:00 PM or Later
**Additional AM, Midday, and PM peak service provided by Ride-On Route 22

3.13.2.2 How would local transit be affected by implementation of the Master Plan?

Existing transit services would not be significantly impacted by the proposed expansion. The results of the FDA employee commuter survey indicate a reliance on driving alone as a commuting mode for most employees. Approximately 75 percent of respondents who work on-campus currently drive alone to work, while only 9 percent use public transit. Given the lack of a high-capacity transit service to the facility, it is anticipated that the percentage of employees utilizing transit would remain approximately the same. The addition of the proposed BRT lines on New Hampshire Avenue,Columbia Pike, and Randolph Road may help to increase the attractiveness of transit and provide higher-capacity and more frequent transit connections. However, the impact of those services may be limited initially as they do not serve areas with higher concentrations of employee residences, such as along the I-270 corridor, and they currently overlap some areas already by transit and/or the shuttle. Long-term benefits are likely as new FDA employees may consider moving to areas with BRT connections. The addition of the Purple Line may also help to enhance transit connections if properly connected to the FDA site. FDA-specific huttle services directed to park-and-ride or other transit facilities in areas with higher concentrations of employee residences, such as along the I-270 corridor, may be more effective at reducing the number of employees that commute via driving alone.

However, approximately 12 percent of respondents participate in the carpool or vanpool program, and there is evidence that additional employees, including those at the leased locations, could be integrated into the program. While some respondents who drive alone indicated that they have difficulty finding other interested colleagues who live close and have similar working hours, it is evident through the survey that there is the ability to coordinate large numbers of employees along the I-270 and Columbia Pike (US 29) corridors.

There are also respondents who live relatively close to White Oak but who feel pressured to drive alone to work. Carpooling or taking public transportation would take significantly longer than their otherwise short commute. Other respondents feel that more frequent shuttle service from more Metro and MARC stations would increase the likelihood of them utilizing public transit. Respondents who live close to the campus also expressed interest in a commuter shuttle transporting workers to and from work locally. Some workers even indicated that a FDA shuttle went by their house locally, but does not stop there.

Some respondents indicated that they lived near a Metrorail or MARC station; however, connecting to a Metrobus to go to the White Oak Campus takes too long. Some respondents requested more bus pickups and a direct FDA shuttle from the Silver Spring Metro station. Respondents also requested more pickups from Metro stations on different lines, along with MARC stations. The completion of the proposed Purple Metro line was also seen as a potential supporter for drivers to commute via train to work.

A transportation management plan (TMP) has been developed to implement strategies that can enhance alternative commute modes (see Appendix H).

3.13.2.3 How do bicycle commuters access the site and how would access be affected by implementation of the Master Plan?

Four- to 5-foot wide sidewalks are provided along most roadways within the study area, providing a network that connects the FDA Campus to nearby residential and retail areas. Sidewalks are provided along northbound and southbound Cherry Hill Road and southbound New Hampshire Avenue (MD 650). An 8-foot wide multi-use pathway is provided along northbound New Hampshire Avenue (MD 650). The FDA Campus is connected to the facilities on New Hampshire Avenue (MD 650) via sidewalks along Michelson Road and Mahan Road. A sidewalk and multi-use path are provided along FDA Boulevard and the multi-use path continues along Dahlgren Road to connect the FDA Campus with the facilities on FDA Boulevard and Cherry Hill Road. However, the distance between Cherry Hill Road and the campus (1.6 miles) makes it unlikely that pedestrians access the existing campus via Cherry Hill Road.

Bicycle facilities are relatively limited within the study area. A narrow, 5-foot wide bicycle lane is provided along northbound New Hampshire Avenue (MD 650) along the FDA site frontage that begins just south of the FDA Campus and continues to an area just north of Columbia Pike (US 29). Given the narrow width of the bicycle lane, its proximity to a heavily traveled roadway, and limited connections, it is not likely to encourage FDA employees to commute via bicycle. As discussed earlier, a multi-use path is provided along the northside of FDA Boulevard that extends to the campus along Dahlgren Road. However, there are limited facilities on Cherry Hill Road, which would not make the multi-use path an attractive bicycle route.

Within the campus, pedestrian sidewalks and walkways are provided between parking areas and buildings, as well as along Northwest Loop Road and Southwest Loop Road. Sheltered bicycle parking is provided within parking garages and adjacent to building entrances. Tool and pump stations are also provided at most bike parking areas, and shower facilities and lockers are provided for bicycle commuters. However, bicycle lanes are not provided on the internal roadway network. **Figure 52** and **Figure 53** show the existing bicycle lanes, shared use paths, and sidewalks both inside and outside the FRC.

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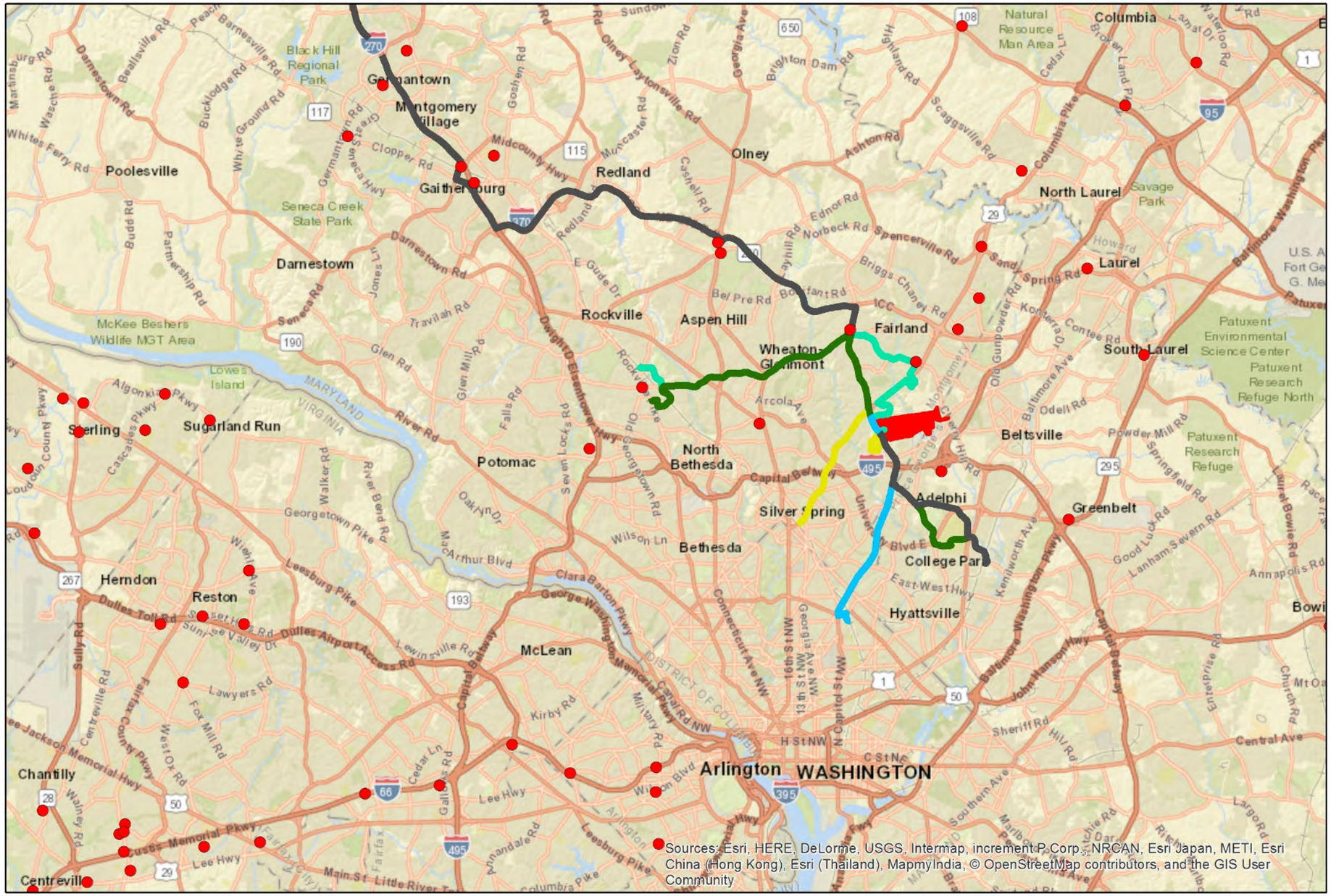

Figure 47. Existing Bus Routes to the FRC

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Figure 48. Southern Circulator Route

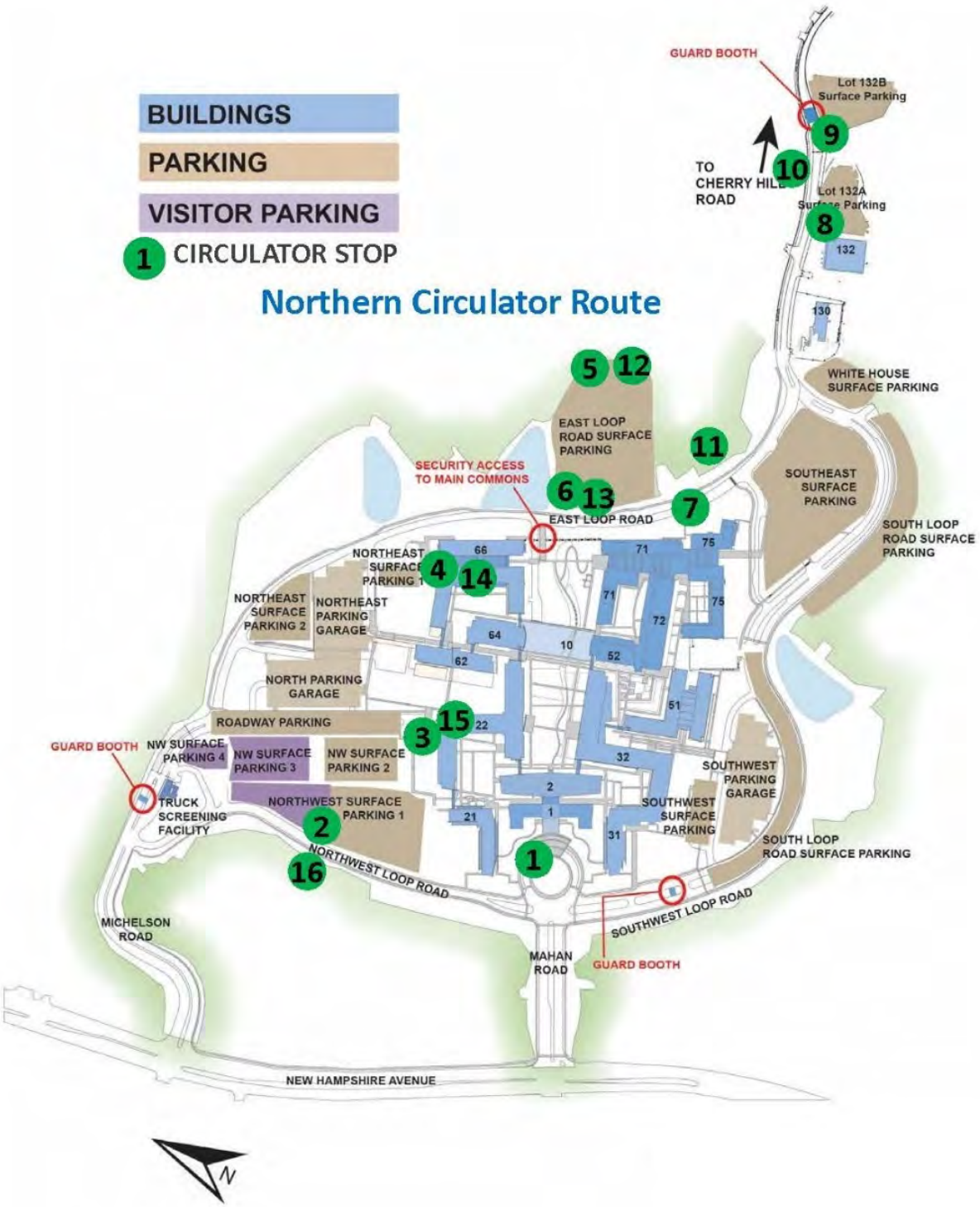

Figure 49. Northern Circulator Route

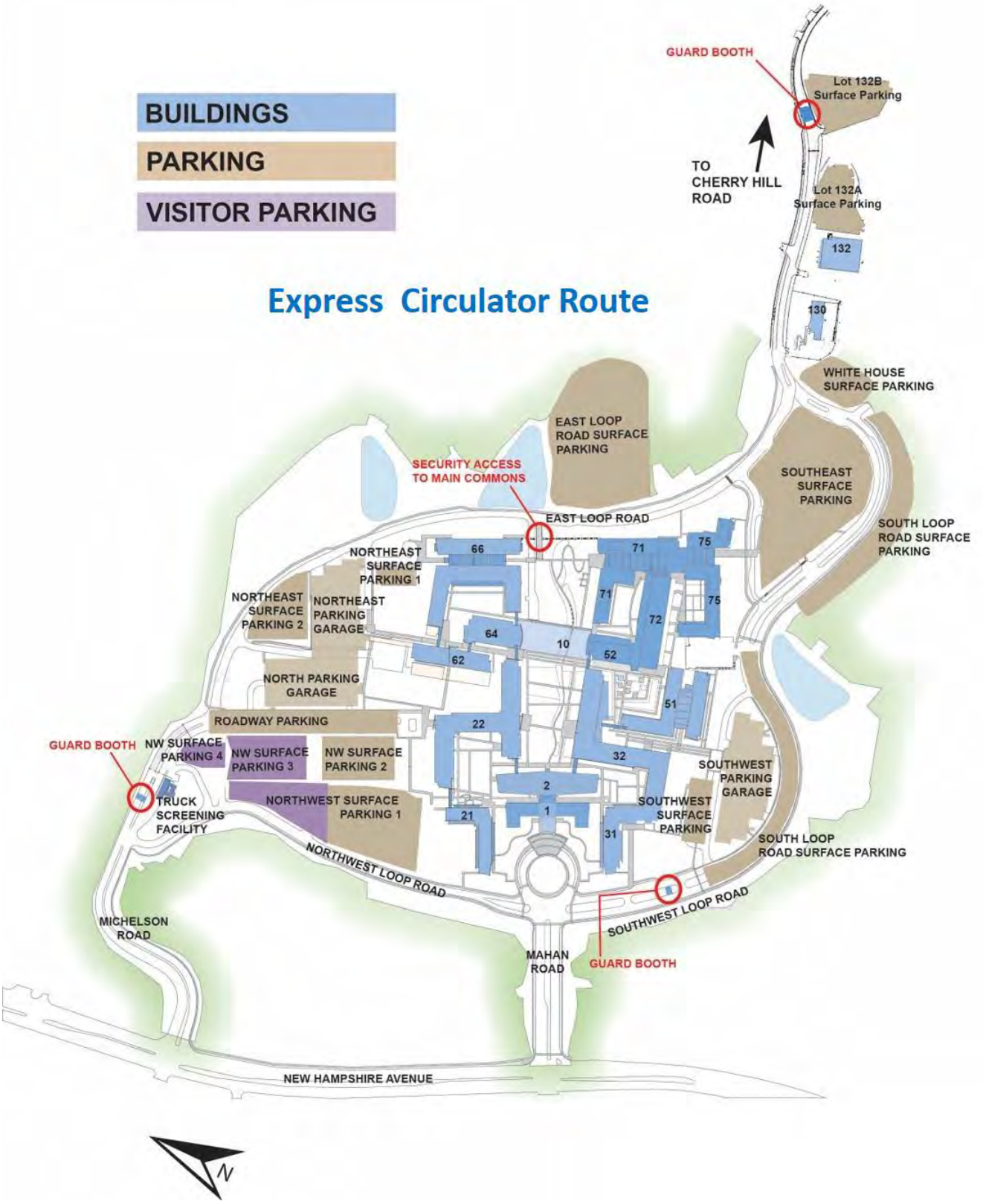

Figure 50. Express Circulator Route

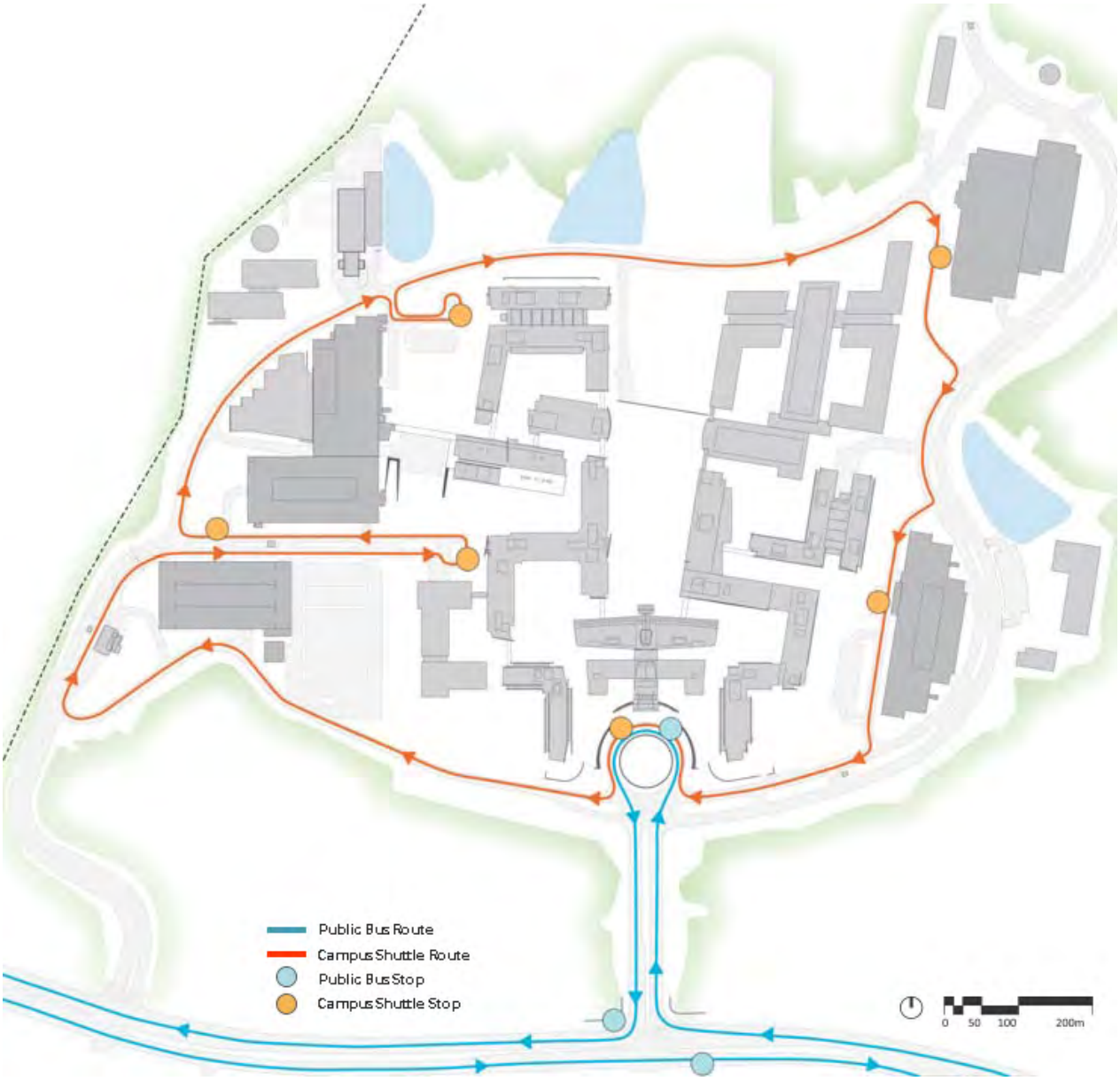

Figure 51. Continuous Loop Circulator Route

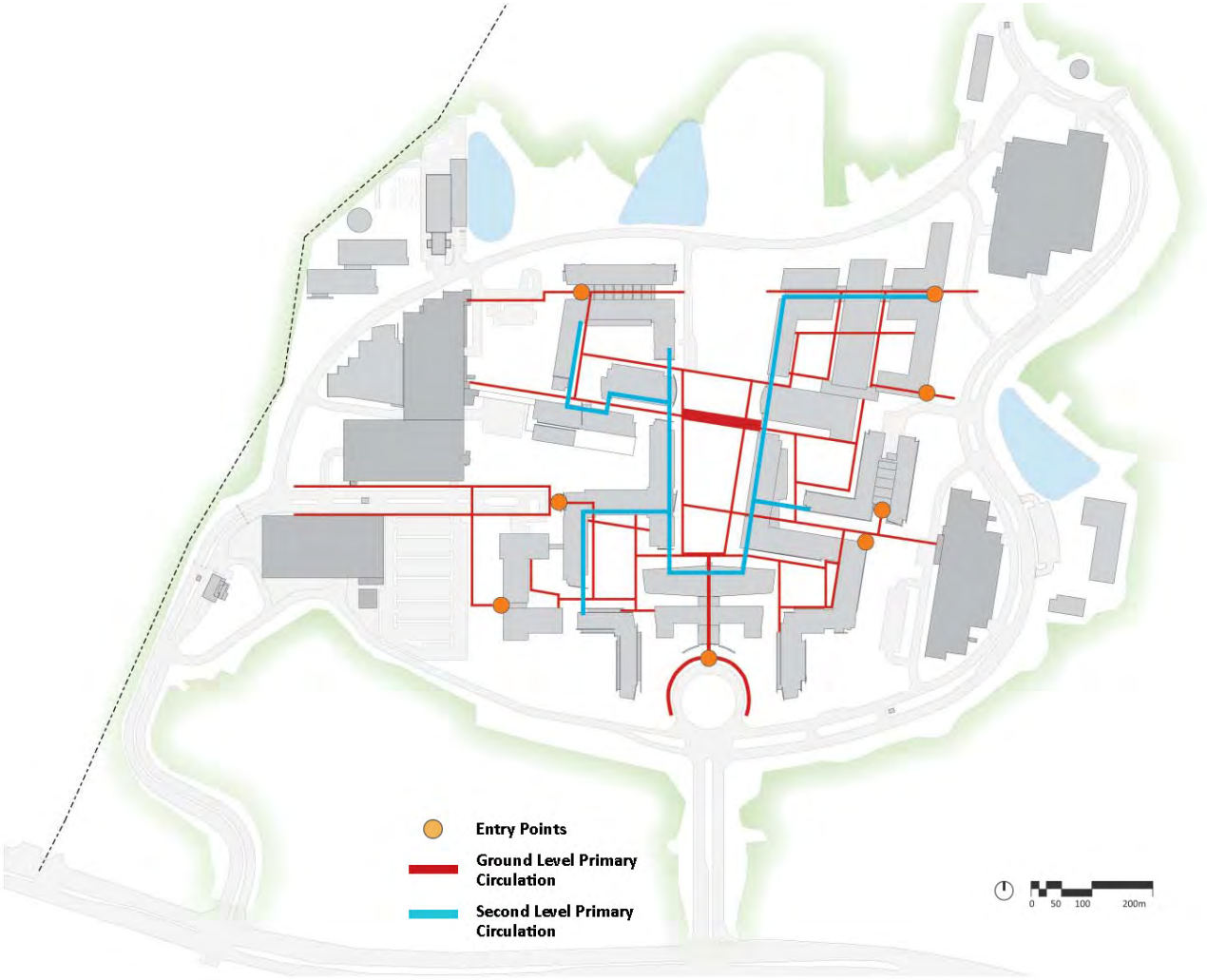

Figure 52. Pedestrian Routes within the FDA Campus

No-Action Alternative

Under the No-Action Alternative, bicycle and pedestrian access would not change over existing conditions and there would be no impact. FDA employees and support staff that walk and/or bike to work would continue to be able to do so. Bike storage facilities are provided for employees and support staff.

Action Alternatives

As part of the Action Alternatives, minimum 6-foot wide sidewalks would be constructed on site. On-site buildings and roadways would be bicycle compatible with either a mutli-use pathway or at-grade protected bike lanes. Sidewalks would connect the FDA buildings to parking lots, New Hampshire Avenue, and FDA Boulevard. This would result in minor, long-term, beneficial impacts.

3.13.2.4 What measures would be taken to reduce impacts to transit facilities and services, and bicycle routes?

Several enhancements are recommended to provide better connections for alternative modes, such as transit, pedestrians, and bicyclists both on and off-site. These enhancements would support FDA efforts to reduce drive-alone commute trips, as well as reduce auto trips during the day by providing needed connections to nearby residential and retail development. Recommendations include:

On-Site

- Provide a 10-foot wide multi-use path and/or five-foot, protected, directional bike lanes along the campus loop roads that connect pedestrian and bicycle facilities on the external roadway network to the on-campus facilities.
- Utilize bicycle lanes or sharrows on minor streets to connect the loop road facilities with bicycle parking near building entrances.
- Ensure that sidewalks are a minimum of six feet. Wider sidewalks are recommended in areas with higher pedestrian volumes.
- Provide a minimum five-foot buffer between the sidewalk/multi-use path and the travel lanes along loop roadways.
- Pedestrian/bicycle-accessible security gates.
- Provide pedestrian crosswalks at all intersections, as well as mid-block where needed to connect origins and destinations (i.e. parking garage to building). Rectangular rapid flashing beacons should be considered at all crosswalks.
- Enhance lighting for sidewalks and shared-use paths. Utilize attractive but security-conscious landscaping and provide emergency call boxes throughout campus, as well as along Dahlgren Drive.
- Provide secure, covered bicycle parking near building entrances and/or U-racks if such facilities are infeasible. FDA currently provides locker room and shower facilities as well as bicycle repair stations throughout the campus.
- Provide bikeshare docks adjacent to Building 1 as well as the transit center. Work with Montgomery County to determine how many bikeshare docks should be provided.
- Construct a new transit hub as close to Building 1 as possible. Incorporate features including, but not limited to:
    - A climate-controlled waiting area with amenities, such as benches, wi-fi, and real-time transit information;
    - Defined boarding and alighting areas for bus, BRT, and shuttle services;
    - A taxi/ridesharing waiting area that could be converted for use by automated vehicles in the future; and,
    - Public bikeshare stations.

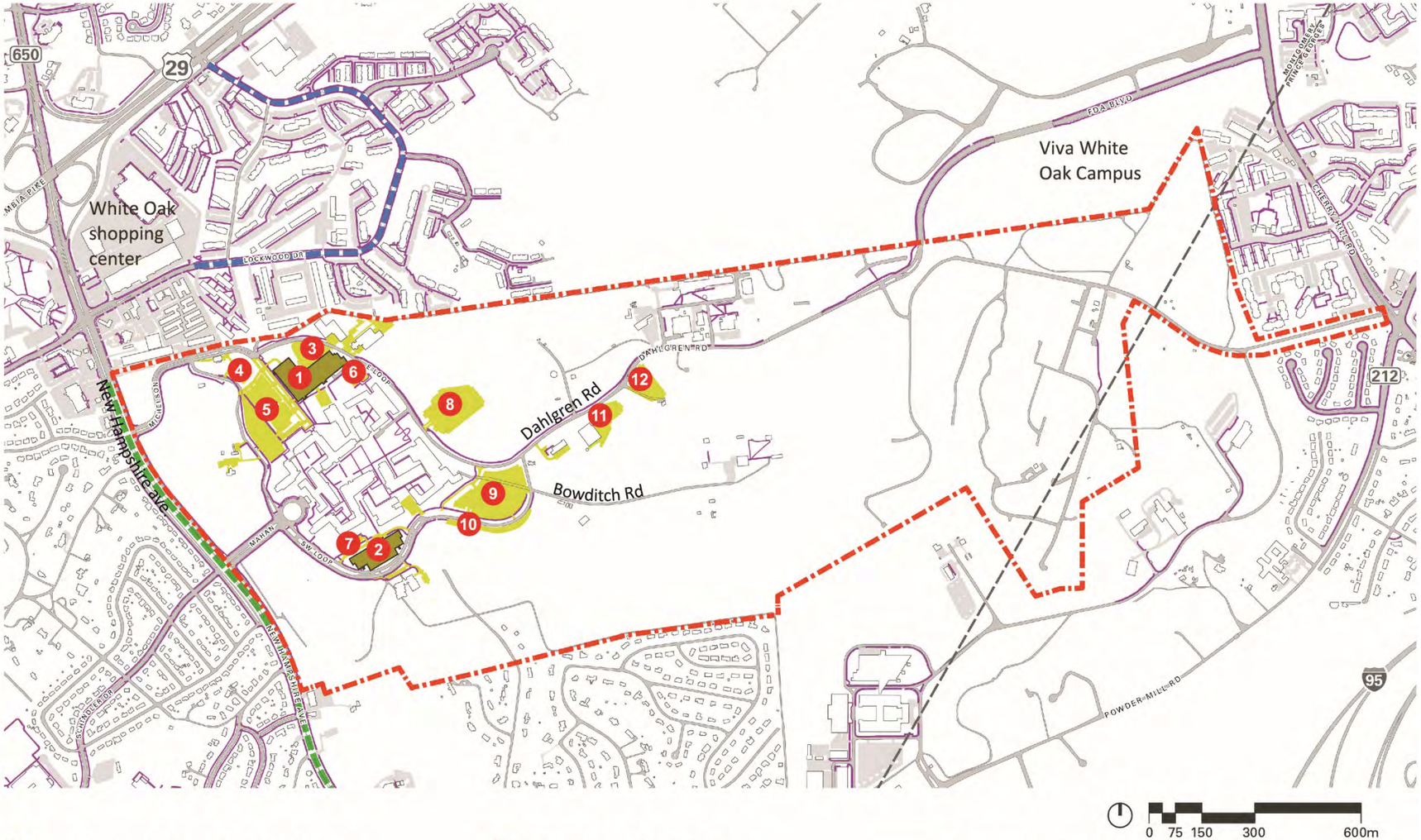

Figure 53. Existing Bicycle Lanes, Shared Use Paths, and Sidewalk Network

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- Enhance transit and shuttle services (see the Transportation Management Plan).
- Consider a pedestrian and bicycle connection to Lockwood Drive and the White Oak Transit Center.

Off-Site

- Work with Montgomery County to provide a connection from the new transit center to Lockwood Drive so that New Hampshire Avenue BRT vehicles can enter the site, utilize the FDA transit center and then connect directly to the White Oak transit center.
- Upgrade the bikeway on the FDA side of New Hampshire Avenue to a ten-foot-wide shared-use path with a minimum five-foot-wide buffer to the travel lanes.
- Work with Montgomery County, SHA, and Prince George's County to enhance pedestrian and bicycle connections to nearby residential and commercial centers, as well as to regional pedestrian/bicycle path networks, including:
    - Enhance existing pedestrian crossings at signalized intersections within ½ miles of the campus, including lead pedestrian intervals and countdown signal heads.
    - Improved/shorter connection to the Northwest Branch Trail.
    - Expand the shared-use path to the north and south along New Hampshire Avenue.

The Transportation Management Plan (TMP) discusses other enhancements to the existing FDA shuttle program. The proposed enhancements would result in intersections that operate at similar, or better, levels of service when compared to the Action Alternative. Furthermore, the recommended intelligent transportation technology, transportation demand management, and additional pedestrian, bicycle, and transit facilities would provide additional benefits to reduce the transportation impacts of the proposed consolidation and expansion. While the benefits cannot be directly tied to the capacity analysis results, it can be assumed that these improvements would further help to mitigate the deficiencies identified in the Action Alternative.

3.14 UTILITIES

3.14.1 WHO PROVIDES UTILITY SERVICE TO THE FDA CAMPUS?

Water

The Washington Suburban Sanitary Commission (WSSC) provides potable water to the FDA Campus via two 12-inch connections to the 16-inch WSSC water main under New Hampshire Avenue. A system of mostly 12-inch water lines, with some 8-inch lines, serves the existing site through redundant loops around the buildings. There is a duplex pump station with a backflow preventer located on each of the two supply lines. These variable speed pumps can boost water pressures as needed on site during peak times, during periods when WSSC's system has low pressure, or during a fire event.

Sewer

WSSC provides sanitary sewer service to the FDA Campus. The campus is within WSSC's Blue Plains Wastewater Treatment Area (Mini-Basins 02-050, 02-014). Sewer lines from the campus drain to a 15-inch outfall pipe running east from the East Loop Road, and ultimately connecting to the existing 27-inch sewer trunk line running along Paint Branch to the east.

Existing water and sewer lines are shown in **Figure 54**.

Electrical and HVAC

Electrical power and HVAC on the existing FDA Campus is provided by Honeywell by way of an on-site Central Utility Plant (CUP). The CUP currently generates electricity, chilled water, and hot water for heating and cooling the FDA Campus. The CUP is a cogeneration facility where natural gas is burned in an engine that turns a generator to produce electricity. Natural gas to power the engine is provided by Washington Gas. A photovoltaic 20 kilowatt array provides additional electricity depending on weather. Three additional photovoltaic tracking arrays are provided onsite, cooling at the CUP is provided by electric centrifugal and absorption chillers. Heating at the CUP is provided by dual-fueled water boilers and heat recovery boilers. Hot and cold water are distributed to each building via an underground hydronic distribution system. Electrical power is distributed to all the buildings on the campus via underground duct banks. Backup electric power to the FDA Campus is provided by Potomac Electric Power Company (PEPCO) via two transmission lines leading to a substation that feeds the FDA Campus and Air Force/AEDC. GSA manages the substation.

3.14.2 HOW WOULD IMPLEMENTATION OF THE MASTER PLAN IMPACT LOCAL UTILITIES?

No-Action Alternative

Under the No-Action Alternative, WSSC and Honeywell would continue to provide water, sanitary sewer, electrical, and HVAC services via the CUP and other existing infrastructure. Washington Gas would continue to provide natural gas to the CUP, and PEPCO would continue to provide backup electricity to the FDA Campus. No additional employees would be consolidated at the FDA Campus, so no changes to utility demands would occur. Therefore, no significant impacts to utilities would occur under the No-Action Alternative.

Alternatives A, B, and C (Action Alternatives)

Under all Action Alternatives, construction of new utility lines both on and off the FDA Campus could result in temporary service disruptions both onsite and at adjacent properties. This impact would be temporary, and relocations and new connections of utility lines would be completed with the least amount of disruption possible to other users. Utility providers would be consulted prior to construction, and any proposed relocations of utility lines would be coordinated with utility providers. Therefore, all Action Alternatives would result in a short-term, direct, and indirect, negligible, adverse impact to utility service on and adjacent to the FDA Campus.

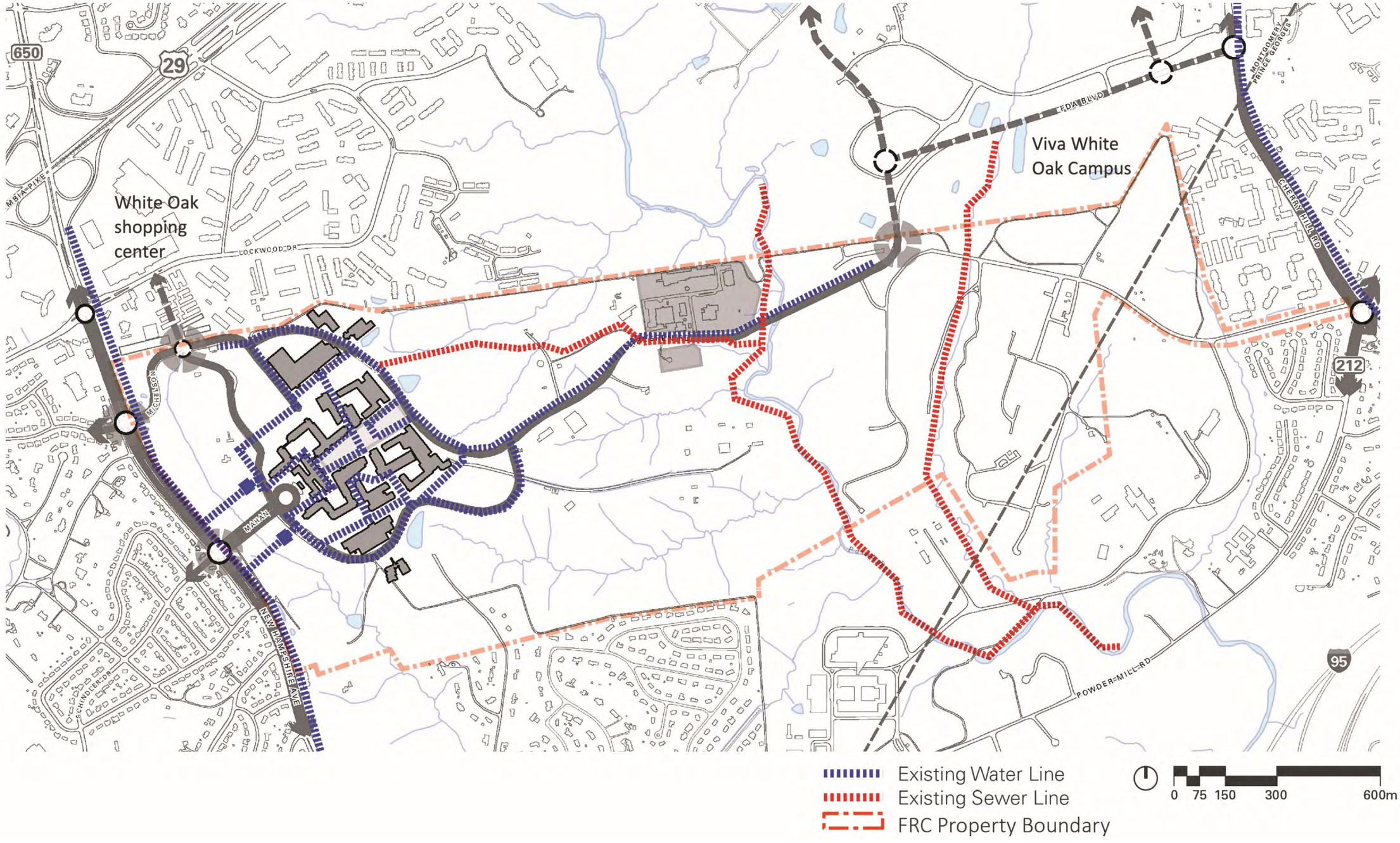

Figure 54. Existing Water and Sewer Service

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Under all Action Alternatives, the proposed addition of up to approximately 18,000 FDA employees and support staff employed on the FDA Campus would result in increased demand for water, sanitary sewer, electrical, and HVAC services, as discussed below.

Water

The proposed addition of up to approximately 18,000 FDA employees and support staff employed on the FDA Campus would result in increased demand for water service. Water supply to the site would use a portion of the existing capacity of the regional water storage and water distribution. WSSC conducted a System Planning Forecast (SPF) to review the water and sewer demands for the proposed Master Plan development. The Letter of Findings for the SPF, issued May 31, 2017, concluded that the existing water service should be adequate for the proposed Master Plan development (WSSC, 2017). While new water service lines would be constructed within the FDA Campus to service new buildings, no additional connections to the New Hampshire Avenue water main would be required. Because the existing water supply would be able to accommodate the increased demand for water service on the FDA Campus, the impact to regional water supply would be long-term, direct, minor, and adverse.

Sewer

The proposed addition of up to approximately 18,000 FDA employees and support staff employed on the FDA Campus would result in increased demand for sanitary sewer service. In the Letter of Findings for the SPF, WSSC concluded that the required sewer service is available for the project and may be obtained through new (or existing) service connections to the Paint Branch trunk line (WSSC, 2017). The proposed Master Plan development would require a new service connection to the existing sewer mains. A new 15-inch sewer line would be constructed along the East Access Road/ Dahlgren Road to connect to the existing sewer main along Paint Branch. The SPF also determined that the additional sewer flow expected under the proposed Master Plan, combined with the existing flow, future flow from other large developments in the area, and peak rainwater infiltration flows during a 10-year storm event, would likely exacerbate existing sewer overflows downstream in the Paint Branch Sewer Basin. The potential to contribute to offsite sewer overflows represents a long-term, indirect, major, adverse impact to sanitary sewer service. However, WSSC has indicated that one of the following options would be required to offset this impact:

- Replacement of approximately 4,850 feet of downstream sewer trunk lines to accommodate the additional flow; or
- In lieu of replacing downstream pipe, GSA and FDA would develop a mitigation plan with WSSC to rehabilitate a number of existing manholes and pipes on the Paint Branch sewer basin system (on and off the FRC) to remove excess inflow/infiltration (clearwater) from the downstream system in order to mitigate for the increased wastewater flows from the proposed FDA development. The number of manholes and pipes to be rehabilitated would be determined with WSSC during the development of the mitigation plan.

By implementing one of these mitigation measures, the major impact to sanitary sewer service would be minimized, resulting in a long-term, indirect, minor, adverse impact. A full Hydraulic Planning Analysis (HPA) Review Request would be prepared and submitted to WSSC for review prior to final design. A study and cost

estimate would be performed for each of the above mitigation options prior to receiving approval for development.

Electrical and HVAC

The proposed addition of up to approximately 18,000 FDA employees and support staff employed on the FDA Campus would place additional demand on the existing systems. However, the Action Alternatives are not expected to exceed the CUP's capacity for electrical and HVAC services because power for the proposed new buildings on the FDA Campus would be provided by new feeder lines from the existing PEPCO substation, which currently only supplies backup power to the FDA Campus. Each new building would have its own individual power supply and dedicated mechanical space for HVAC. PEPCO would become the primary electricity provider for the new Campus buildings. No new buildings would be added to the CUP system. This would result in an increased demand for electricity provided by PEPCO, creating a long-term, direct, minor, adverse impact to electrical service in the region.

Due to the additional demands on the sewer and electrical systems on the FDA Campus, the Action Alternatives would result in long-term, direct and indirect, major, adverse impacts to utilities. However, by implementing the mitigation strategies below, impacts to utilities would be minimized.

3.14.3 HOW WOULD UTILITY IMPACTS BE REDUCED?

The proposed new buildings and parking structures would include water-efficient landscaping and fixtures that would reduce potable water usage. Rooftop rainwater harvesting would be employed when possible, and rainwater would be reused for toilets and cooling towers, reducing the demand for potable water used for irrigation. Other sustainable design measures would include rooftop solar panels, high-efficiency lighting, modern and efficient heating and cooling equipment, and ENERGY STAR® appliances. These water and energy conservation strategies would effectively reduce the overall adverse impact to water, electric, and gas usage and the increased burden on utility providers.

3.14.4 WOULD ENERGY CONSERVATION MEASURES BE INCORPORATED INTO THE REDEVELOPMENT OF THE FRC?

All Action Alternatives would be constructed and operated in accordance with EO 13693 and the EISA of 2007, which require government agencies to:

- Reduce energy consumption per square foot by 2.5 percent annually through 2025, relative to 2015 baseline;
- Improve and monitor the energy optimization, efficiency, and performance of new and existing data centers;
- Ensure that 25 percent of the total amount of building electric and thermal energy should come from clean energy sources by 2025;
- Reduce potable water consumption intensity by 2 percent annually through 2025, relative to 2007 baseline;

- Reduce industrial, landscaping, and agricultural water consumption by 2 percent annually through 2025, relative to 2010 baseline;
- Monitor and collect water balance data to improve water conservation and management;
- Install appropriate green infrastructure features on federal property; and
- Reduce greenhouse gas emissions from agency-owned vehicles by 30 percent by the end of 2025, relative to 2014 baseline.

GSA's goal is to achieve LEED® Gold certification and net zero energy and water usage for all new buildings on the FDA Campus. Energy conservation measures used to meet LEED® Gold requirements generally align with the requirements of sustainability outlined in EO 13693; therefore, Federal facilities that are LEED® Gold Certified are in compliance with the EO. By achieving LEED® Gold certification and net zero energy and water usage, the new buildings proposed under the Master Plan would minimize the adverse impact to utilities. Sustainable design and energy conservation measures would include rooftop solar panels, active and passive solar techniques, high-efficiency lighting and occupancy sensors, modern and efficient heating and cooling equipment, natural ventilation systems, and ENERGY STAR® appliances.

3.15 WASTE MANAGEMENT

3.15.1 HOW IS WASTE MANAGED AT THE FRC?

The FDA Campus generates a substantial amount of solid waste, including non-hazardous trash and recyclable materials; hazardous waste; biomedical, pathological, and chemical waste; low-level radioactive and mixed waste; and animal waste. Chemical waste is packaged and shipped off site by a qualified contractor using FDA's EPA generator ID number. Radiological waste is packaged and shipped off site by a qualified contractor in accordance with FDA's Nuclear Regulatory Commission licenses. Medical pathological waste is packaged and shipped off site by a qualified contractor using FDA's Special Medical Waste ID number issued by MDE. All packaging and transportation is performed by the contractor in accordance with Department of Transportation requirements. GSA is responsible for the collection and disposal of non-hazardous solid waste from the buildings as well as typical recycling. GSA's Operations and Maintenance (O&M) contractor is responsible for any hazardous or universal wastes generated from building O&M activities and from operating the CUP.

There are three loading docks serving the FDA Campus, and an existing service tunnel system connects all campus buildings. Waste storage and materials handling takes place within designated areas of this tunnel system at each individual building. As described in the 2009 Supplemental EIS, this tunnel system was designed in combination with a central distribution center, which would provide space for centralized logistics management for receiving, materials management and distribution, equipment storage, and collection of outgoing waste and recycled materials. However, the distribution center has not yet been constructed, and now that 14 additional buildings proposed in the 2009 Supplemental EIS have been built and occupied, it is apparent that the existing loading docks and tunnel system as designed are not able to accommodate all of these uses. The system is subject to heavy use and congestion, which creates safety hazards and bottlenecks that impede the movement of materials throughout the campus.

3.15.2 HOW WOULD IMPLEMENTATION OF THE MASTER PLAN AFFECT WASTE MANAGEMENT?

No-Action Alternative

No additional employees would be relocated to the FDA Campus. Solid wastes and recyclable materials would continue to be generated at the current rate. The current loading docks and tunnel system would continue to operate at the current level of inefficiency. All waste types would continue to be handled by qualified contractors. Since no changes would be made to waste generation or handling, the No-Action Alternative would have no short- or long-term impacts to waste management on the FDA Campus.

Alternatives A, B, and C (Action Alternatives)

Under all Action Alternatives, solid waste would be generated from construction, demolition, excavation, and land-clearing during construction. Construction waste could include building components and structures, concrete, asphalt, wood, metals, roofing, flooring, and piping. A minimum of 50 percent of construction waste would be reused, salvaged, or recycled in accordance with federal requirements. The remaining construction waste would be disposed at a landfill. The temporary increase in construction waste under all Action Alternatives would result in a short-term, direct, minor, adverse impact to waste management.

Under all Action Alternatives, the consolidation of up to approximately 18,000 FDA employees and support staff employed on the FDA Campus would generate additional solid waste, food waste, and recyclable materials, which would increase the amount of waste handled at waste-receiving facilities. General waste would be transported either to the Montgomery County incinerator, located south of Dickerson, Maryland, or to an out-of-county landfill for proper disposal. Under all Action Alternatives, a central Distribution Center would provide dedicated space for the collection of outgoing waste and recycled materials, including hazardous and biological wastes, in accordance with GSA's waste diversion requirements. The Distribution Center would consolidate the waste streams of most of the existing and proposed campus buildings, which would provide a centralized, efficient system for trash and recycling sorting, storage, and removal, resulting in long-term beneficial impacts. However, due to the increase in solid waste generated at the FDA Campus, all Action Alternatives would result in a long-term, minor, adverse impact to waste management.

3.15.3 WHAT MEASURES WOULD BE IMPLEMENTED TO REDUCE WASTE GENERATED ON THE SITE?

As mandated by EO 13693, the Master Plan would be implemented in accordance with the Council on Environmental Quality's (CEQ) Guiding Principles for Sustainable Federal Buildings (CEQ, 2016). New buildings on the campus would also be at minimum LEED® Gold certified as required by GSA. In accordance with these requirements, at least 50 percent of construction and demolition waste would be diverted from landfills during construction. Building materials, products, and supplies would be reused or recycled to the maximum extent practicable. Following construction, waste collection, recycling, and composting programs implemented by GSA would continue. At least 50 percent of non-hazardous waste would be diverted from landfills through reuse, recycling, and composting. To promote waste minimization and pollution prevention, the FDA Campus would follow GSA's Green Purchasing Plan, which requires the purchase of

products and materials that are bio-based, non-ozone depleting, energy efficient, water efficient, contain recycled content, and are non-toxic or less toxic alternatives.

CUMULATIVE EFFECTS: AN EXAMPLE

There is evidence that the majority of environmental effects may result not from the direct effects of a single action, but from the combination of individually minor effects of multiple actions over time. A hypothetical example of the type of cumulative effects that could result from GSA projects is as follows:

A change in the character of a neighborhood resulting from federal office construction when added to local development.

In other words, a residential neighborhood may become increasingly more commercial as Federal office and other local developments (office or mixed-use retail) are constructed.

3.16 WHAT ARE CUMULATIVE IMPACTS AND WHY ARE THEY EVALUATED?

3.16.1 WHAT ARE CUMULATIVE EFFECTS AND WHY ARE THEY DISCUSSED?

CEQ regulations require federal agencies to assess the cumulative effects of federal projects during the decision-making process. 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 reasonable foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

In other words, would the proposed federal project add to or interact with the environmental impacts of past, present, or future projects, regardless of the agency or group implementing those actions? This section of the EIS provides a description of the cumulative impacts that the proposed action, combined with other projects in the area, may have on the human environment. To help the reader gain a better understanding of cumulative effects, the text box provides further explanation.

3.16.2 WHAT PAST, PRESENT, AND FUTURE ACTIONS WOULD ADD TO THE IMPACTS OF THE PROPOSED ACTION?

Past Actions

Land for the former NOL complex was acquired by the U.S. Navy in 1944 to supplement the tremendous wartime expansion of research and weapons development needs at the original Ordnance Laboratory located at the Washington Navy Yard (Smaldone, 1977). Laboratory and testing facilities were built at the White Oak site during a building campaign lasting primarily between 1944 and 1954, with the transfer of NOL operations from the Navy Yard completed in mid-June 1948 (Rosenzwieg, 1995). Due to the additional facilities and laboratories at the NOL, a resulting housing boom transformed the White Oak area in the decade following World War II. The housing boom was immediately experienced in the Burnt Mills Knolls neighborhood, where it is estimated that 60 percent of the houses around Schindler Drive were purchased by Laboratory employees (M-NCPPC, 1995). Programs at the White Oak Laboratory included analysis, research, design, development, testing, and systems integration supporting the Navy's Surface Forces, as one of the principal Navy research, development, and testing centers. Reflecting its expanded mission, in 1974 the Naval Ordnance Laboratory was consolidated with the Naval Weapons Laboratory at Dahlgren,

Virginia, to become the Naval Surface Weapons Center. The White Oak facility's name was changed to the Naval Surface Warfare Center (NSWC) in 1987. As a result of the 1995 Base Realignment and Closure Act (BRAC), the NSWC was closed and transferred to GSA in 1997. Since the land was transferred to GSA, GSA has developed NSWC for the FDA Headquarters.

Present and Future Actions

Improvements continue to be made on the FRC and FDA Campus to support the FDA employees, enhance access and improve the work environment. These improvements, which are being evaluated in separate NEPA analyses, are shown in **Table 28** and **Figure 55**.

Although major future development projects on the FRC, outside of those discussed in this EIS, are not currently planned, future site modifications or development may occur that could add to cumulative environmental impacts. If the need for additional development were to be identified in the future, additional NEPA compliance would be undertaken.

Table 28. Current Projects at the FDA Campus

	On-Site Improvements
Security	Building 71 Security Pavilion and Entrance
Fitness Trails	Approximately 1/2 -mile Fitness Trail located on the south side of the FDA Campus
	8-foot wide walking trail along Michelson Road from the truck screening facility to New Hampshire Avenue; includes relocation of the existing security fence to accommodate the trail
Site Circulation	Crosswalks at Michelson Rad and North West Loop Road
	Crosswalks at parking lots for Buildings 130, 132A, and 132B
	Surface parking between Buildings 130 and 132
	Enhanced Campus Circulation that includes three express employee entrance lanes at Michelson Road and the Southwest Loop Road
	Road realignment at Building 75 to make facilitate two-way traffic for FDA shuttles and EMS services
	Central bike hub at Building 75
	Bike shelters at Buildings 22, 51, and 66
	Covered Walkways between Building 1 and Buildings 21 and 31
	Accessible Walkway and Vestibule at Building 66

The area surrounding the FRC includes the neighborhoods of White Oak, Burnt Mills Hills, Burnt Mills Knolls, Pine Hill, and Hillandale. White Oak is a residential and commercial area in which the FDA Campus is located. It is a diverse neighborhood occupying an area from Lockwood Drive starting from New Hampshire Avenue towards Stewart Lane crossing Columbia Pike (US 29). White Oak includes commercial centers such as the White Oak Shopping Center. Burnt Mills Hills and Burnt Hills Knolls are adjacent residential neighborhoods located west of the FDA Campus and New Hampshire Avenue. Commercial centers are also located in the Burnt Mills area. Pine Hill is a residential community located north/northeast of the FDA

Campus. Hillandale is a residential community with commercial centers and is located south of the FDA Campus between Powder Mill Road and the FRC property. Hillandale Recreational Center is located just south of the FRC property along the east side of New Hampshire Avenue.

A considerable amount of new development is either occurring or planned in the vicinity of the FRC. A total of 8 developments in both Montgomery and Prince George's Counties have been approved. Development that is planned or under construction as of January 2008 in the area surrounding the FRC are shown in **Table 29** and **Figure 56**.

Table 29. Area Development as of October 2017 in Montgomery County

Development Project	Land Use	Size
Washington Adventist Hospital	Hospital	803,570 sf
West Farm I-1	Office	265,426 sf
Darcars at Montgomery Industrial Park	Automobile Sales	2,505 sf
White Oak Town Center	General Office	90,000 sf
	Mid-Rise Apartments	289 Units
	Supermarket	65,000 SF
White Oak Property	Townhouses	128 Units
Victory Housing	Senior Mid-Rise Apartments	105 Units
Hillandale Gateway	Shopping Center	24,500 sf
	Mid-Rise Apartments	235 Units
	Senior Mid-Rise Apartments	96 Units
Viva White Oak Phase One	Residential Units	1,000 Units
	Commercial Development	300,000 sf

3.16.3 WHAT ARE THE CUMULATIVE EFFECTS OF PAST, PRESENT, AND FUTURE ACTIONS?

Past, present and future development has affected and would continue to affect the natural, cultural, and social environment of the FRC and surrounding areas. Development increases impervious surfaces and reduces land available for stormwater infiltration, which in turn increases stormwater runoff into local waterways. Stormwater runoff from past development on the FRC and in surrounding communities has degraded the water quality of Paint Branch and its tributaries. The ongoing improvements on the FDA Campus (**Table 28**), including the security pavilions, accessible walkways, wthe fitness trails, new surface parking, and road realignments will result in increases in impervious surfaces on-site that will increase stormwater runoff. Off-site development that is planned in the area, including construction of the commercial, office, and residential communities as shown in **Table 29**, will also increase impervious surfaces and stormwater runoff. When the FDA Master Plan development is added to past, present, and future development on and off of the FDA Campus, there would be a long-term, moderate, adverse cumulative

impact to stormwater runoff and water quality in Paint Branch and its tributaries. For almost 40 years, State and County stormwater regulations have required management of runoff to mitigate the water quality impacts to surface waters, and development on the FRC has complied with these regulations. Montgomery and Prince George's Counties currently have programs in place to retrofit stormwater management for older developments in the area. Continued compliance with these regulations by GSA and other developers will help to minimize impacts to water quality.

Past, present, and future development both on the FRC and in the surrounding communities continues to result in a loss of vegetation, putting pressure on natural habitats and adversely affecting wildlife. There would be some loss of vegetation from the ongoing site improvements such as the construction of fitness trails on the FDA Campus. Other commercial, office, and residential development planned off-site will also result in loss of vegetation and wildlife habitats. When the FDA Master Plan development is added to past, present, and future development on and off of the FDA Campus, there would be a long-term, moderate, adverse cumulative impact to vegetation and wildlife habitats.

New development, when added to past development in the area, continues to put pressure on community services and increases demand for utilities, particularly electrical and water supplies. The ongoing improvements on the FDA Campus would not contribute to demands on community services or utilities. However, off-site commercial, office, and residential development will put additional pressures on these resources. When the FDA Master Plan development is added to past, present, and future development, there would be a long-term, moderate, adverse cumulative impact to community services and utilities.

With an increase in development there also comes an increase in roadway congestion, and the LOS on local and regional roadways becomes problematic. Congestion and worsening LOSs contribute to poor air quality. The ongoing site improvements on the FDA campus will have beneficial impacts on traffic and air quality. Express employee entrance lanes will reduce traffic delays and idling at entrances. The bike hub and bike shelters will facilitate non-motorized transportation methods. However, off-site commercial, office, and residential development will result in increased traffic and associated air quality impacts. When the FDA Master Plan development is added to past, present, and future development, there would be a long-term, moderate, adverse cumulative impact to traffic and air quality. As noted in Section 4.13 the FDA Transportation Management Plan would provide mitigation for traffic increases generated by the proposed Master Plan.

Finally, future development projects may present views of a more densely developed environment and could affect historic and archeological resources. Ongoing improvements on the FDA Campus will result in minimal changes to views and not affect historic resources. Archaeological reviews will be undertaken to ensure that projects such as surface parking and fitness trails do not affect archaeological resources. Ground disturbing activities associated with off-site commercial, office and residential developments could affect archaeological resources. When the FDA Master Plan development is added to past, present, and future development, there would be a long-term, minor, adverse cumulative impact to historic and archaeological resources.

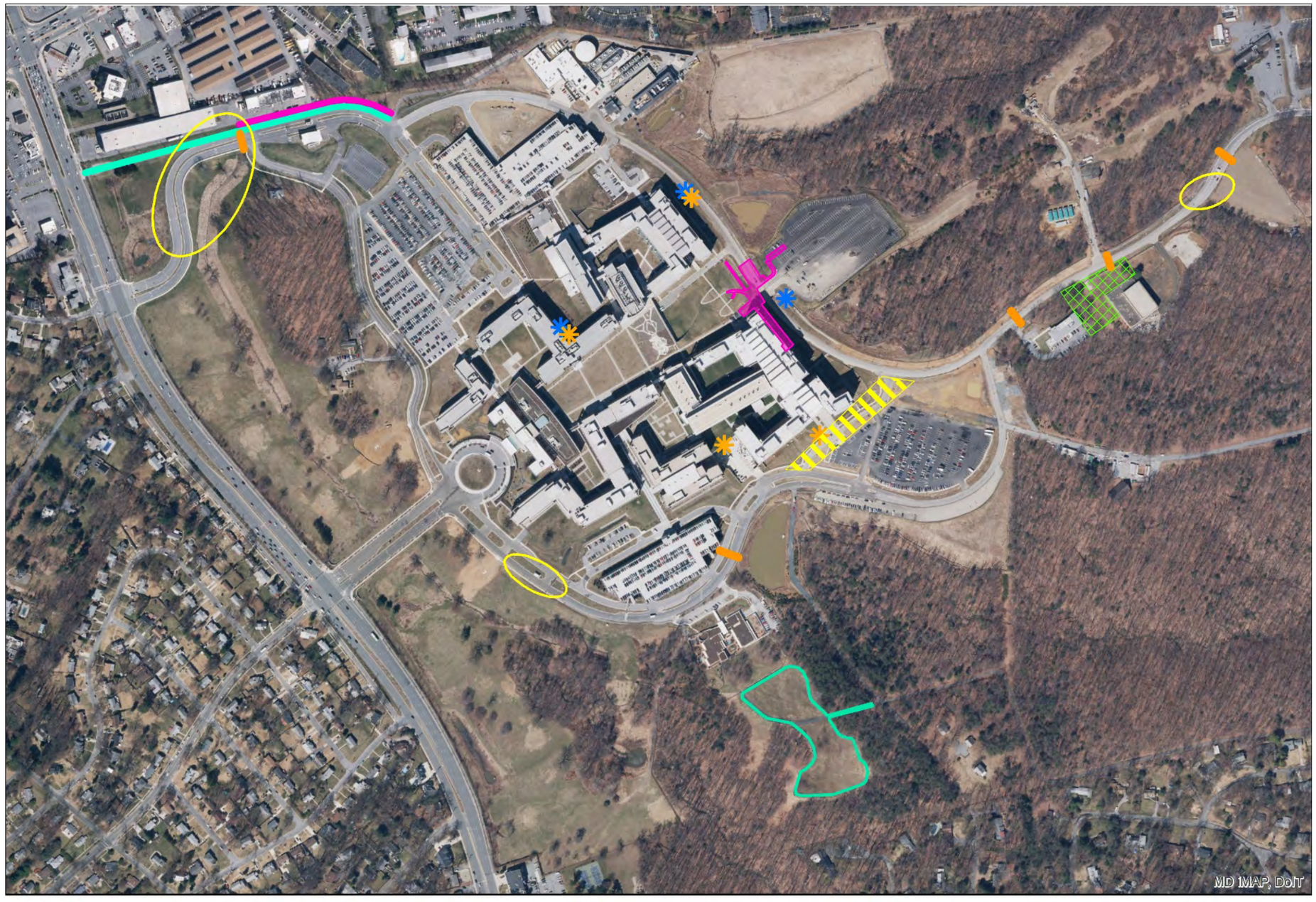

Figure 55. Current Projects at the FDA Campus

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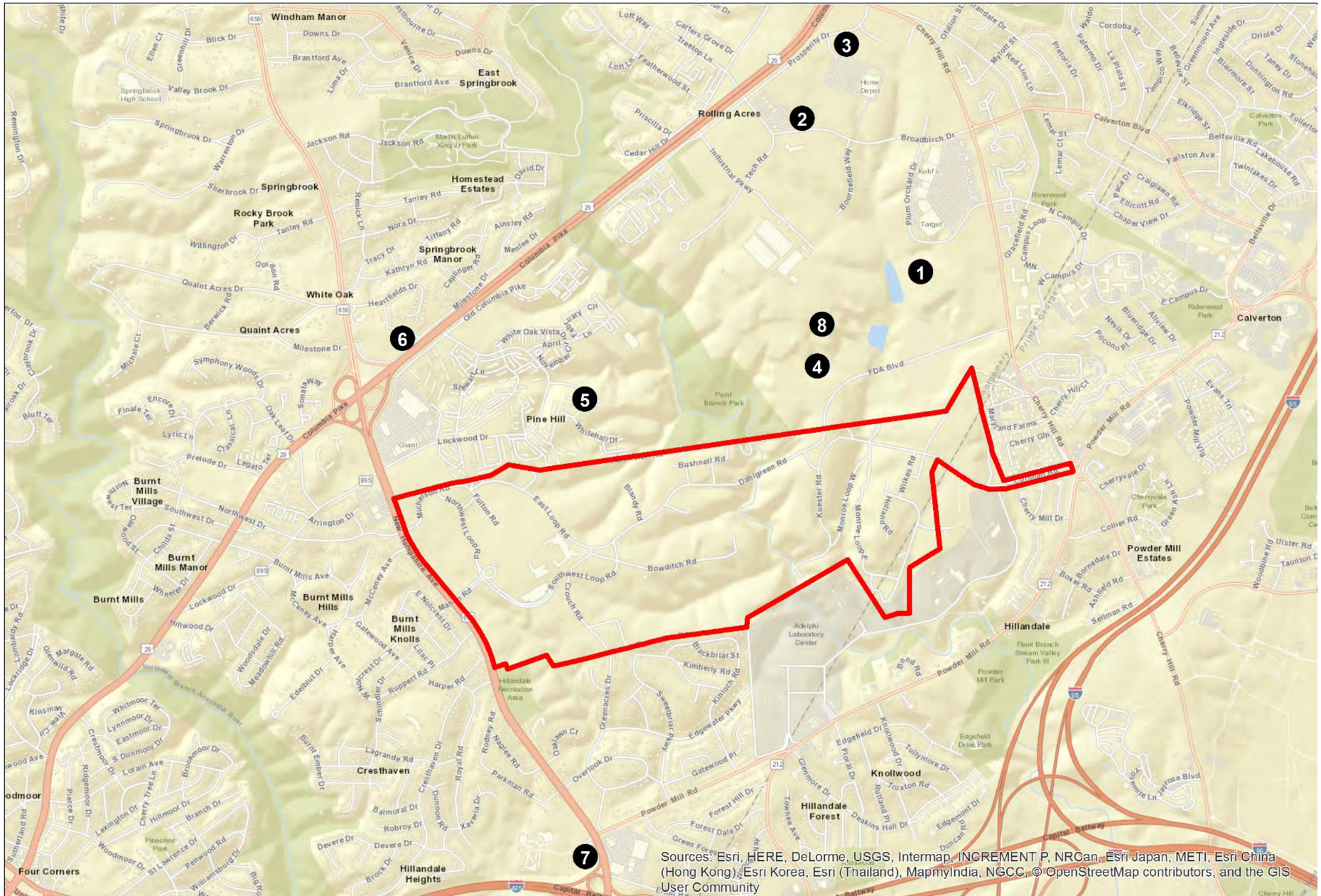

Figure 56. Area Development as of October 2017

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Beneficial cumulative impacts associated with past, current, and future development include increased job opportunities, improved housing, and an increase in the regional and state tax base. Ongoing improvements on the FDA Campus would not add to these beneficial impacts, but planned Viva White Oak development and BRT routes would support the expansion at the FDA Campus. Viva White Oak would include new residences which could address potential new demand for housing as a result of the expansion. The BRT Route would provide more reliable public transit to the FDA Campus and would support FDA's TMP. The FDA Master Plan development would add a moderate amount to the beneficial economic impacts through increases in construction spending.

3.17 ARE THERE ANY ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED ASSOCIATED WITH THIS PROJECT?

Environmental impacts for all Action Alternatives have been described in detail in the previous sections of this chapter. In general, there would be unavoidable adverse effects due to the type of the construction project that is proposed. There would be a loss of land to building space for the FDA Headquarters, which would include some forested land. While some space would remain open, some areas would be paved, thereby not allowing vegetative growth. The loss of these areas would lead to an unavoidable loss of habitat for some animal species. There would also be an increase in traffic densities in the area surrounding the site, due to commuting employees.

3.18 WHAT RELATIONSHIPS EXIST BETWEEN THE LOCAL SHORT-TERM USES OF THIS PROJECT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY?

The long-term benefits of the proposed action would occur at the expense of short-term impacts in the vicinity of the project site. These short-term effects would occur during the period of construction, and would include localized noise and air pollution, as well as traffic detours and delays. However, these impacts are temporary and proper controls would be utilized to prevent these impacts from having a lasting effect on the environment.

Short-term gains to the local economy would occur as local companies and workers are hired and local businesses provide services and supplies during the construction of the facilities and required infrastructure. However, upon completion of the project, the gains to the local economy would evolve into a long-term benefit as FDA employees move into the facilities and provide consistent business to the surrounding merchants. With the completion of the project the area could also see an increase in new businesses that would spur the economy.

Furthermore, upon the consolidation of the FDA facilities, there would be a long-term increase in efficiency of FDA operations, as coordination among various departments and disciplines would be encouraged by the consolidated location.

3.19 ARE THERE ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES ASSOCIATED WITH THIS PROJECT?

The proposed action would require the commitment of land for construction of the additional FDA facilities, the distribution center, the conference center, additional parking, and relocation of the East Loop Road. The total commitment would include loss of wildlife habitat currently present on site. While much of the habitat on the FRC would be preserved, this would not be possible in the paved areas and the loss of vegetation would be permanent.

A commitment of fuel, including natural gas and energy would be required to construct the additional facilities. Other resource commitments during the construction period would include construction materials and labor. There would be an additional long-term commitment of labor for the maintenance of the facilities and the infrastructure. In addition, once the facilities are in place, there is a commitment of utilities, fuel, and power. All of these resources relating to the construction and maintenance of the FDA Headquarters and its infrastructure are considered irretrievably committed.

While there would be the above commitment of resources, through conservation practices some of these resources, such as water supply and through energy net zero buildings, may be retrieved. In addition, the consolidation of the FDA facilities to the FDA Campus at White Oak would require a lower expenditure of funds, energy, and fuel than presently committed at other FDA facilities off site. The consolidation of FDA's facilities would reduce some of these expenditures at full build-out of the FDA Campus. FDA employees would not be spread out over numerous different locations in Montgomery and Prince George's Counties.