



GSA National Capital Region
Office of Planning & Design Quality

March 1, 2018

Mr. Marcel C. Acosta
Executive Director
National Capital Planning Commission
401 9th Street, NW, Suite 500
Washington, DC 20004

RE: Request for Preliminary Review of the Draft Master Plan for the FDA Headquarters Consolidation

Dear Mr. Acosta:

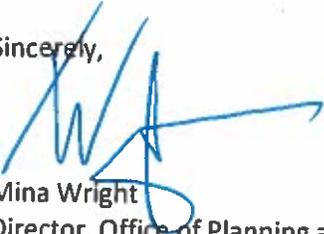
The U.S. General Services Administration (GSA) is submitting a draft Master Plan and a draft Transportation Management Plan (TMP) for the U.S. Food and Drug Administration's (FDA) Headquarters Consolidation at the Federal Research Center, White Oak Campus, Silver Spring, MD. We respectfully request a preliminary review by the Commission at its June 7, 2018 meeting.

As part of this Master Plan, the GSA, on behalf of FDA, is also preparing an Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act (NEPA) of 1969. The Draft EIS will be available for a 45 day public comment period March 2 -April 16 2018. Additionally, GSA has initiated Section 106 consultation with the Maryland Historical Trust.

In accordance with your submission requirements for regional referral we are submitting the Draft Master Plan and the Draft Transportation Management Plan to the following regional stakeholders, Maryland Departments of: Planning, Environment, Transportation, Natural Resources, Office of Military, Prince George's County Maryland-National Capital Park and Planning Commission (M-NCPPC, Planning Department), Montgomery County Planning Department, and the Maryland Clearinghouse. We've requested the regional stakeholders to provide comments by May 11, 2018.

If you have any questions, please contact Mrs. Shelly Jones at (202)-969-5505.

Sincerely,



Mina Wright
Director, Office of Planning and Design Quality

Enclosures:

1 CD of the Draft Master Plan FDA HQ Consolidation/Draft EIS, Draft TMP

U.S. General Services Administration
301 7th Street SW
Washington, DC 20407-0001
www.gsa.gov



DRAFT

2018 FDA Federal Research Center Master Plan

March 2, 2018

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PROJECT TEAM

Contract Holder



Client Agency



Project Management



Master Planning



Civil/ Environmental/
Transportation



Historic Preservation



Cost Estimating



NOMENCLATURE

The following terms and abbreviations may be used throughout this report:

• ALC: Adelphi Laboratory Center (Army Research Center)	1	• MRC: Muirkirk Road Campus	21
• AEDC: Arnold Engineering Development Complex (Air Force Wind Tunnel Facility)	2	• NCPC: National Capital Planning Commission	22
• BRT: Bus Rapid Transit	3	• NOL: Naval Ordnance Laboratory	23
• CUP: Central Utility Plant	4	• NSWC: Naval Surface Warfare Center	24
• DUP: District Utility Plant	5	• NSF: Net Square Footage	25
• EIS: Environmental Impact Statement	6	• SF, sf, ft2: Square Feet	26
• FAR: Floor Area Ratio	7	• SQM, m2: Square Meters	27
• FDA: Food and Drug Administration	8	• SP: Parking Spaces	28
• FRC: Federal Research Center	9	• SW: Storm Water	29
• GSA: General Services Administration	10	• SWM: Storm Water Management	30
• GSF: Gross Square Footage	11	• SVB: Stream Valley Buffer	31
• Housing: In the context of FDA, housing refers to provision of employee work location	12		32
• LUFS: Land Use Feasibility Study	13		
• M-NCPPC: Maryland National Capital Park and Planning Commission	14		

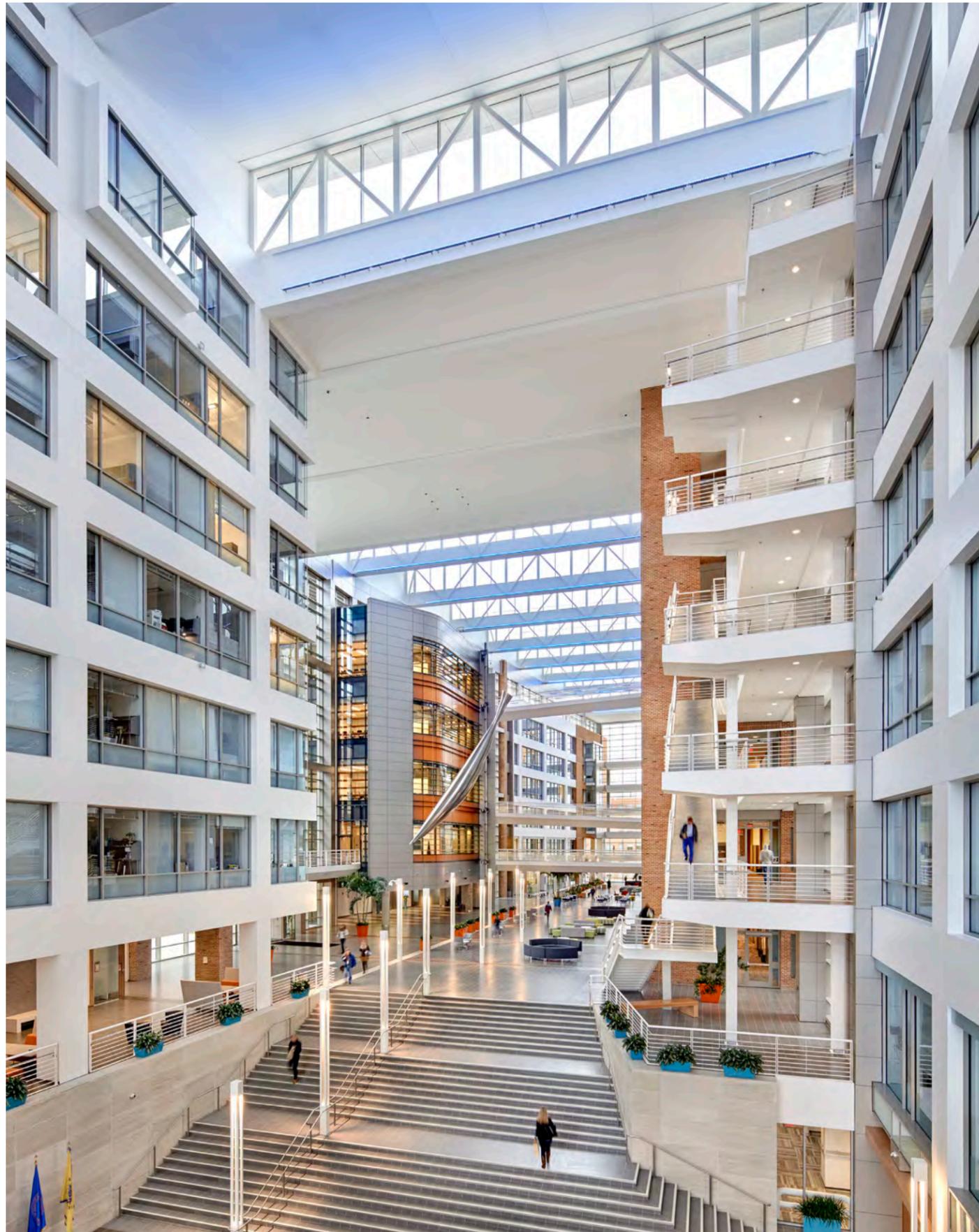


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FDA Mission

The Food and Drug Administration is responsible for protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, and medical devices; and by ensuring the safety of our nation’s food supply, cosmetics, and products that emit radiation.

FDA also has responsibility for regulating the manufacturing, marketing, and distribution of tobacco products to protect the public health and to reduce tobacco use by minors.

FDA is responsible for advancing the public health by helping to speed innovations that make medical products more effective, safer, and more affordable and by helping the public get the accurate, science-based information they need to use medical products and foods to maintain and improve their health.

FDA also plays a significant role in the Nation’s counterterrorism capability. FDA fulfills this responsibility by ensuring the security of the food supply and by fostering development of medical products to respond to deliberate and naturally emerging public health threats.

FDA Facilities

To effectively support the FDA mission, FDA’s facilities must promote internal collaboration across multiple functional areas and facilitate advanced operational models that spur innovation by interdisciplinary teams. The location and configuration of FDA’s facilities directly affect FDA’s ability to collaborate across scientific disciplines and product

Centers and realize the innovation and efficiencies that collaboration spurs. These innovations and efficiencies are particularly important as the products that the FDA regulates are becoming increasingly complex. Strategically locating and configuring facilities to improve opportunities for collaboration supports the function of integrated scientific teams, while, conversely, dispersing scientific expertise reinforces individual silos. Facilities that promote collaboration stimulate innovation and enhance FDA’s ability to tackle critical public health challenges, such as combating the national opioid epidemic and fostering increased medical product choice and competition for patients.

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**OVERVIEW
& EXISTING
CONDITIONS**



Entry Roundabout, Building 21 (Left), Building 1 (Center) and Building 31 (Right)

1. OVERVIEW & EXISTING CONDITIONS

The FDA Federal Research Center (FRC) 2018 Master Plan is a comprehensive master plan that prepares the FDA Campus for additional capacity.

1.1 Executive Summary

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 Master Plan's purpose is to plan for the future growth to further consolidate FDA operations. The Master Plan will provide a framework for development at the FRC to accommodate another 7,018 FDA employees and support staff on site for a total population of 18,000 FDA employees and support staff.

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 more efficiently use and to expand office and related space at the FRC. In addition, infrastructure improvements will be needed to serve the increase in office space and campus population.

The implementation of the Master Plan for FDA, is to include the following:

- Development of an additional 1,100,000 to 1,200,000 GSF of office space and 300,000 to 400,000 GSF of special use space to support FDA's mission;
- Anticipating the implementation of bus-rapid-transit (BRT), parking would be provided at ratio of 1 space for every 1.8 employees (1:1.8) for a total of 11,709 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.

1.2 Introduction

The purpose of the proposed action is to provide a Master Plan for the FDA Campus at the Federal Research Center (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 Program. Currently FDA has 10,987 assigned personnel to

the FDA Campus with a peak daily population of 7,793. The current projected growth for FDA at FRC is approximately 7,018 additional employees and support staff, which includes funded staff vacancies, existing employees currently in leased space in Montgomery and Prince George's counties, FDA support staff, and future growth projected by 2022. The Master Plan is being prepared to guide the development to accommodate a total of 18,000 FDA employees and support staff 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.

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.

1.2.1 Project and Surrounding Areas

The Federal Research Center (FRC) at White Oak is located at 10903 New Hampshire Avenue, Silver Spring, Maryland. 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.

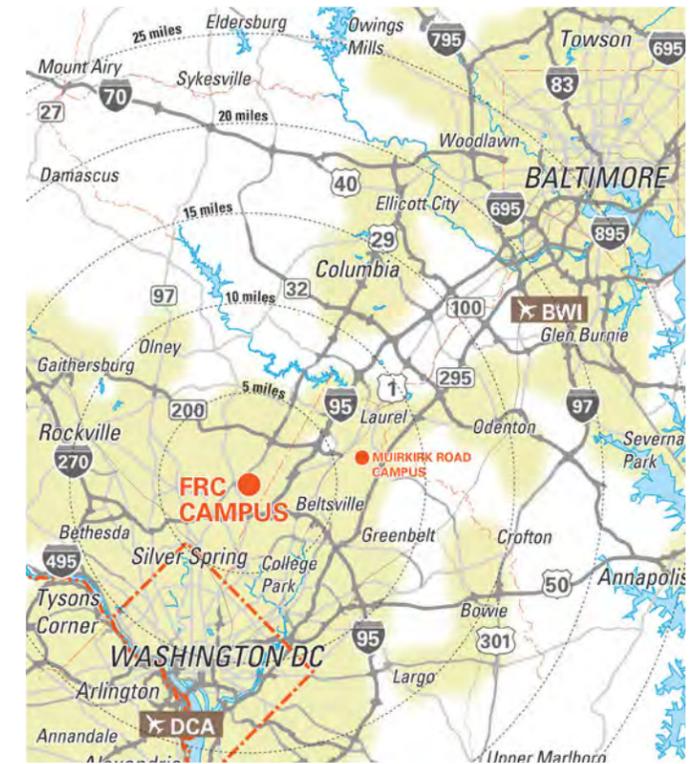


Figure 1-1: FRC/FDA Campus Location

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 1-1 shows the location of the FRC and the FDA Campus.

1.2.2 Campus History

Master Plan History & Evolution

GSA helps Federal agencies build and acquire office space, products and other workspace services, and oversees the preservation of historic Federal properties. In this role, 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)

The 2018 Master Plan is the fifth iteration of the Master Plan for the Food and Drug Administration Consolidation at White Oak, Maryland. Outlined below is brief history of the site.

Original Site - 1948: Acquired by the Navy in 1944, White Oak became the new home of the expanded Naval Ordnance Laboratory. The original campus was planned and designed for the site in 1946 and construction of the laboratory was completed in 1949. During the 1950s, 60s, and 70s, the campus population reached 4,000 employees before slowly declining in the 1980s and early 90s. In 1993, the site was transferred to GSA and the Navy research facility was reorganized and moved to another site.

1997: After site and building analysis, the former Naval Ordnance Laboratory site in White Oak,

1 Maryland was selected to be the new home for the
2 United States Food and Drug Administration. The
3 original 1997 Master Plan outlined the consolidation
4 of five FDA departments, 5,947 employees,
5 which occupied forty-eight leased buildings in
6 twenty various locations across the Washington
7 metropolitan area to the White Oak site.

8 **2002:** The Master Plan of the FDA consolidation
9 adapted the original NOL main building, Building
10 One, as the FDA Office of Commissioner and
11 the original fire station building as part of the
12 new Central Utility Plant. All the other office
13 and laboratory buildings were planned as new
14 construction projects. The population was
15 established at 6,256.

16
17 **2006:** By 2006, construction for phases I, II, and IIIA
18 of the implementation plan had been completed.
19 During these phases CDER I office building, Life
20 Science Laboratory, and Central Shared Use building
21 were completed and occupied by 1,896 employees.
22 The North Garage with 831 parking spaces was also
23 completed.

24 CDRH laboratory and CDER II office building were
25 under construction.

26
27 The 2006 Master Plan Update increased the
28 population from 6,256 to 7,719 and set new building
29 footprints for office and laboratory.

30
31 **2008:** Prior to the 2009 Master Plan Update, the
32 CDRH Laboratory, CDER II office building, CDRH
33 office building, and Building One renovation were
34 completed and over 4,300 employees worked on
35 the campus. The Southwest Garage with 1,229
36 parking spaces was also completed. The OC/ORO
37 office building was under construction along with
38 the Northeast Garage that provides 1,158 parking
39 spaces.

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41 **2009:** The 2009 Master Plan Update included the
42 following:

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1997 Master Plan (NCPA Approval - June 26, 1997)



2002 Master Plan (NCPA Approval - July 7, 2002)



2006 Master Plan (NCPA Approval - July 6, 2006)



2009 Master Plan (NCPA Approval - December 3, 2009)

- A population increase from 7,719 to 8,889 FDA employees
- Updated phasing/implementation plans including updated building footprints and locations, status of occupancy, and revised future phases
- An updated Transportation Management Plan, including public transit approach and increased parking requirements because of the population increase and the NCPA required employee parking ratio of 1 parking space for every 1.5 employees
- An updated campus-wide security plan, including

- revised Truck Screening Facility and Distribution Center
- Relocation of the Child Care Center and Fitness Center to the SW quadrant
- A revised Landscape Master Plan
- An updated utility distribution concept due to the status of utility capacities and future capacity requirements.
- An updated approach to environmental issues, including energy efficiency, sustainability, storm water management, and tree/forest conservation



Figure 1-2: 2009 Master Plan

- Increased visitor parking from 500 spaces to 1,000 spaces based on updated demand projections and increased density

The 2009 Master Plan Update maintained the vision of the original Master Plan and previous updates in terms of overall campus design and architectural character and served to guide the project toward its final completion within the established framework. Since the 2009 Update, driven by a Presidential Directive, the population of the campus has increased to 10,987. This figure includes not only FDA employees, but also GSA support staff. The increase in density has been

accomplished not by adding buildings but lowering the utilization rate to 170 sf/person. In fact, several buildings approved in the 2009 Master Plan Update have not been built. See figure 1-8. While the overall employee count is higher than the 2009 Master Plan Update, the peak population on campus is below 8,000. This has been accomplished through FDA's TMP that includes robust telecommuting.

1.2.3 FDA's influence

FDA plays an integral role in the development of the plan:

- FDA occupies the Campus at the FRC as a tenant to GSA.
- FDA is responsible for implementing the FDA Headquarters Transportation Management Plan (TMP) and ensuring transportation management strategies outlined in the TMP are carried out.

1.2.4 Planning Process

The planning process resulting in this Draft Master Plan for the FDA Headquarters at the FRC began in early 2017. The development of the Master Plan has been supported by three major project components:

1. The Land Use Feasibility Study (LUFS) was completed in Spring 2017 and provided a high level assessment on the feasibility of the FRC site and infrastructure to accommodate additional FDA staff. It put forward a series of development options and identified related costs.
2. The National Environmental Policy Act (NEPA) compliance Public Scoping Period occurred in the Summer and Fall of 2017. At this same time, technical studies were conducted that informed a Draft Environmental Impact Statement (EIS) issued in March 2018.
3. The National Historic Preservation Act (NHPA) compliance process has been tracking concurrently with the NEPA compliance process to identify, assess and resolve adverse effects to historic structures or landscapes. A Programmatic Agreement (PA) with appropriate state entities and other Consulting Parties will be completed in advance of the Final Master Plan.

The planning process considered a range of options for proposed development at the FRC leading to four Draft Development Alternatives presented in the Master Plan. Other options for development have not been further studied due to various environmental constraints, loss of collegial atmosphere, and connectivity to the existing campus.

Comments received on this Draft Master Plan and through consultation with Federal, state, and county agencies will inform the GSA planning process. In compliance with NEPA, at the conclusion of the Final Environmental Impact Statement, A Record of Decision (ROD) will outline the selected alternative for the Master Plan and describe measures to mitigate any potential environmental impacts from implementation of the Master Plan.

1.2.5 Related Studies

- Draft Land Use Feasibility Study (LUFS) March, 2017
- Draft Transportation Management Plan (TMP) October, 2017
- Draft Environmental Impact Statement (EIS) March, 2018

1.3 Master Plan Goals & Objectives

Image & Mission. Reinforce FDA's image as a leading scientific institution, foster retention and attraction by:

- Creating a compact walkable campus
- Creating architecture that is both compatible and iconic
- Reinforcing and extending the campus/courtyard concept
- Adding places for creative interchange & collaboration to spur administrative and scientific innovation
- Creating state-of-art-work spaces that attract world-class scientists and stimulate public confidence in FDA's operations and science
- Providing barrier free accessibility to campus facilities for persons with disabilities

Economics. Create a more efficient and cost-effective agency by:

- Maximizing on site population to streamline operations
- Reducing dependencies on leased facilities
- Utilization of shared facilities
- Reducing travel times to and from meetings and conferences

Environmental Stewardship. Protect the site’s tree canopy, maintain bio-diversity, minimize runoff, and create sustainable campus by:

- Maintaining the historic green buffer along New Hampshire Avenue
- Minimizing land coverage
- Converting surface parking lots into building pads
- Creating both zero net energy & zero net water facilities
- Utilizing innovative storm water practices

Transportation. Foster effective transportation solutions to minimize traffic and parking problems. Reinforce the innovative existing policies, and respond to potential benefits of autonomous vehicles by:

- Welcoming bus-rapid-transit on site
- Creating an on site transit hub
- Continuing to subsidize van and car pools
- Phasing future parking based on the impact of autonomous vehicles

1.4 Master Plan Compliance

1.4.1 Overview

The FDA Federal Research Center Master Plan (FDA FRC MP) is subject to review by the National Capital Planning Commission (NCP) to ensure the plan is consistent with the Federal Elements of the NCP Comprehensive Plan for the National Capital. The Federal Elements are guided by three principals:

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

All Action Alternatives would be consistent with 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. Additionally, 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.

1.5 Regional Context

The FDA Campus context is a clustering of structures to inspire employees to continually innovate while serving the public. The previous Master Plans and the proposed 2018 Master Plan support the goal of creating timeless and enduring structures and spaces. Refer to figures 1-3 & 1-4 and section 1.6 The FRC Campus for the existing campus context.

The surrounding community and context includes the White Oak Shopping Center and White Oak Tower, the Enclave Apartments, Viva White Oak, Hillandale Shopping Center and Hillandale Gateway.

1.5.1 Local Plans and Requirements

Development areas are defined by the following man-made and natural boundaries:

- Site boundary,
- Stream Valley Buffer,
- The flood plane,
- Paint Branch Creek and its tributaries,
- Security setbacks, and
- Other non-build-able areas.

Refer to figures 1-5.

1.5.2 Land Use and Development

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 NCP to ensure the plan is consistent with the Federal Elements of the Comprehensive Plan for the National Capital (Comprehensive Plan).

The Federal Elements related to the FDA Master Plan include:

- **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 (NCPC, 2016).

Montgomery County Land Use Planning

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.

Currently, a 300-acre parcel of land located northeast of the FRC is in the planning phase of being developed (see Figure 1-4). 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

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).

1.5.3 Natural Features

The natural features of the 130-acres of the FRC include built-up land at the FDA campus, large wooded land areas and aquatic features including the Paint Branch. The rolling topography, water resources, and the wildlife habitats enhance the FDA’s employee and guest experience. Refer to section 1.7 Natural Resources for additional information.

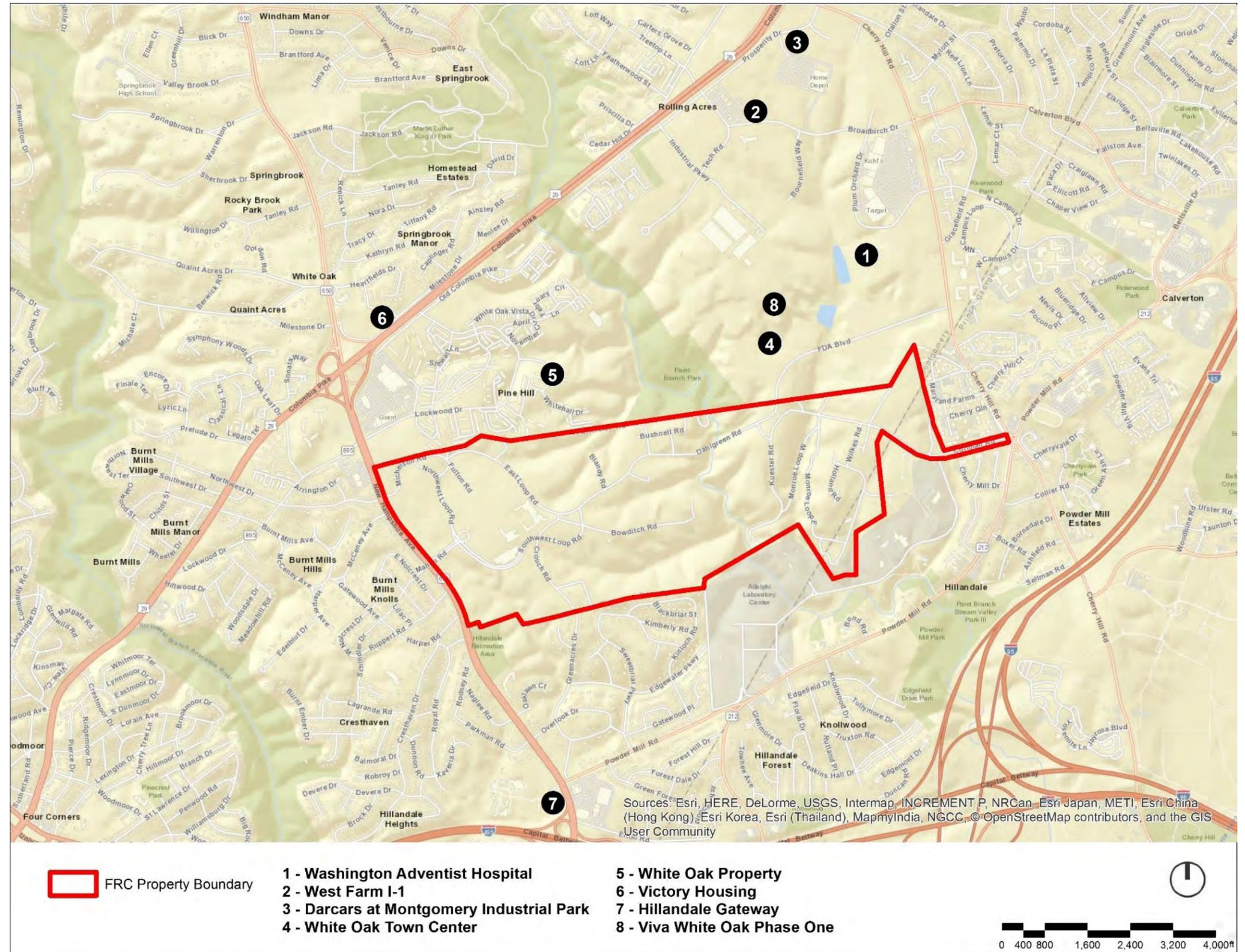


Figure 1-3: Planned Developments Near FRC

The Enclave Apart-
ments
19 Floors R-H ZONING

White Oak Shopping Center
CR ZONING 200' Height

White Oak Tower
23 Floors

Hillandale
Gateway

Viva White Oak
CR ZONING 220' Height

Hillandale
Shopping Center



Figure 1-4: SURROUNDING COMMUNITY & CONTEXT

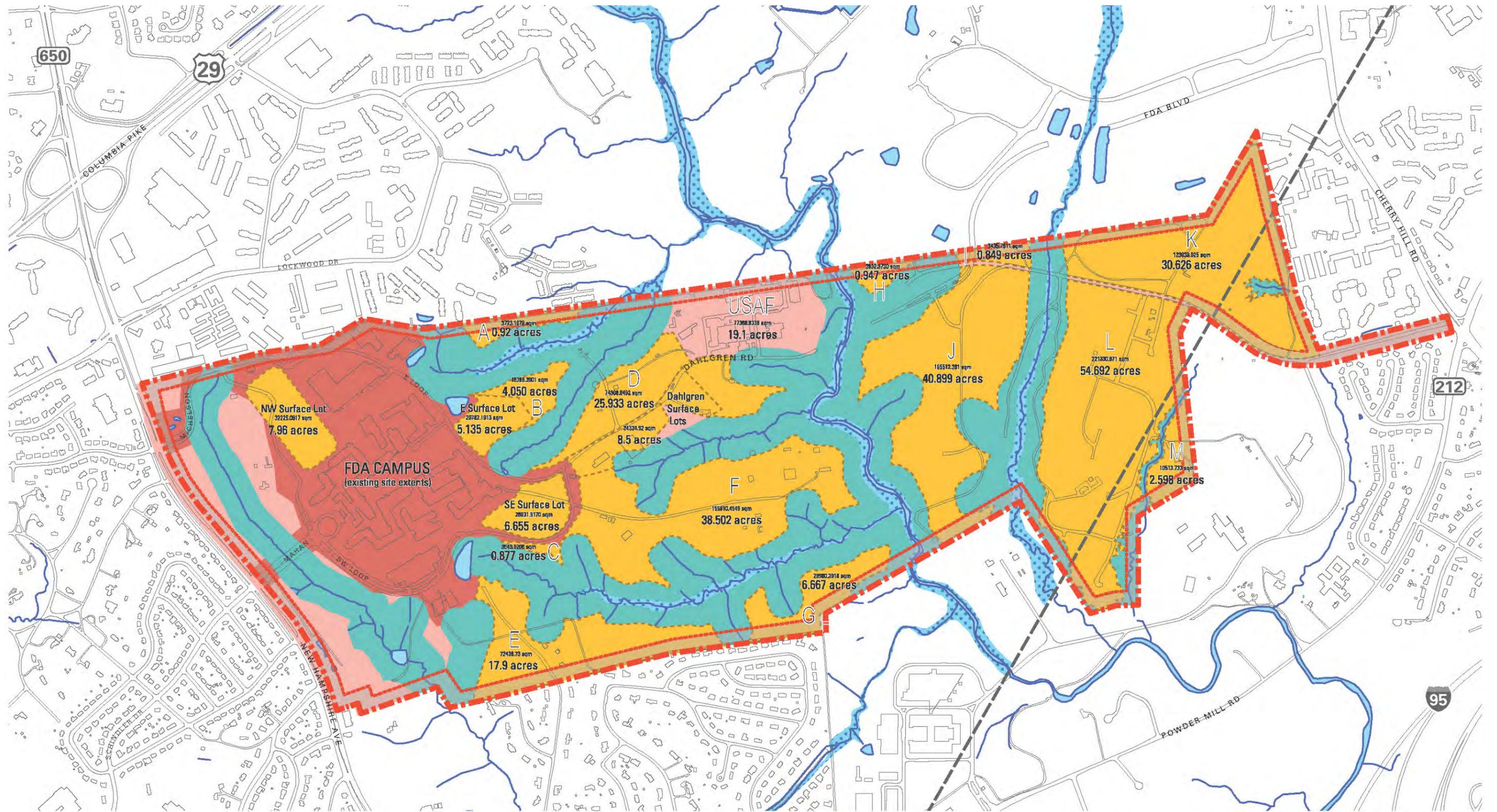


Figure 1-5: FRC Buildable Area



1.5.4 Coordination

Consultation with federal, state, and local agencies has been conducted throughout the Master Plan process. Coordination has also taken place with the:

- U.S. Fish and Wildlife Service (USFWS),
- Maryland Department of Natural Resources (MDNR),
- Maryland Department of Environment (MDE),
- Maryland Department of Transportation (DOT),
- Maryland State Highway Administration (SHA).
- Maryland-National Capital Park and Planning Commission (M-NCPPC) – Montgomery County
- M-NCPPC – Prince George’s County
- 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,
- Washington Metropolitan Transportation Authority (WMATA),
- Maryland State Historic Preservation Office (MD SHPO), and
- Major Property Owners.

1.5.5 Major Property Owners

Figure 1-6 depicts property boundaries as well as major property owners.

Federally Owned: The FDA Campus, as well as the Army’s Adelphi Research Laboratory to the south, are owned by the US Government, with frontages mainly on New Hampshire Avenue, Cherry Hill Road, and Powder Mill Road. The Federal Government maintains an easement along FDA Boulevard on the

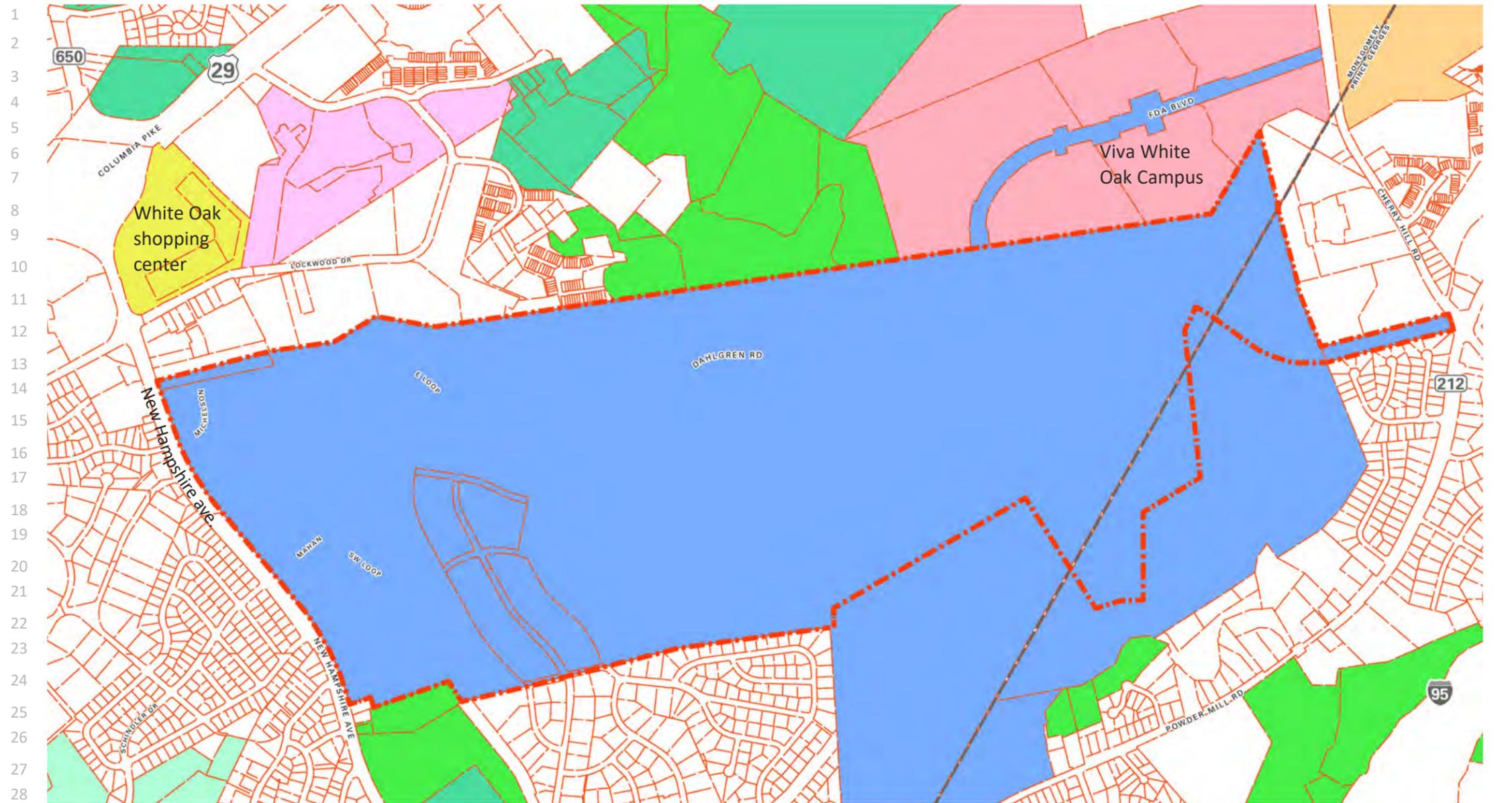


Figure 1-6: Major Property Owners

future Viva White Oak development.

M-NCPPC: The Maryland-National Capital Park and Planning Commission is a public agency that administers parks in Montgomery and Prince George’s County. The agency owns parcels to the north (within the Paint Branch stream valley) and to the south of New Hampshire Avenue (Hillandale Park) and to the southeast of Paint Branch Park.

Montgomery County: North of the campus, the County owns a community center, several undeveloped properties in the Paint Branch stream valley, and a composting facility.

Percontee: This private developer owns the land making up the future Viva White Oak campus (identified as Global Lifesci Development Corporation) as well several multifamily properties near the New Hampshire Avenue/US 29 interchange.

Saul Centers: This private developer (identified by Saul Subsidiary LTD Partnership) owns the White Oak shopping center, which may be redeveloped in the future.

Other Parcels: Much of the smaller parcels, especially to the east, west, and south of the FRC Campus, are privately owned and most are residences.

1.5.6 Zoning

The FRC is located in two Maryland county jurisdictions: Montgomery County and Prince George’s County, with the majority of the 662 acres being within Montgomery County. Adjacent zoning to the property in Montgomery County include:

- ROS: Reserved Open Space (FRC is zoned as such)
- R-90: Moderate Density Single Family
- R-20: Multifamily Med Density Residential
- RE-2: Residential Estate (FRC is zoned as such)
- C-2: Shopping Center
- I-3: Technology and Business Park

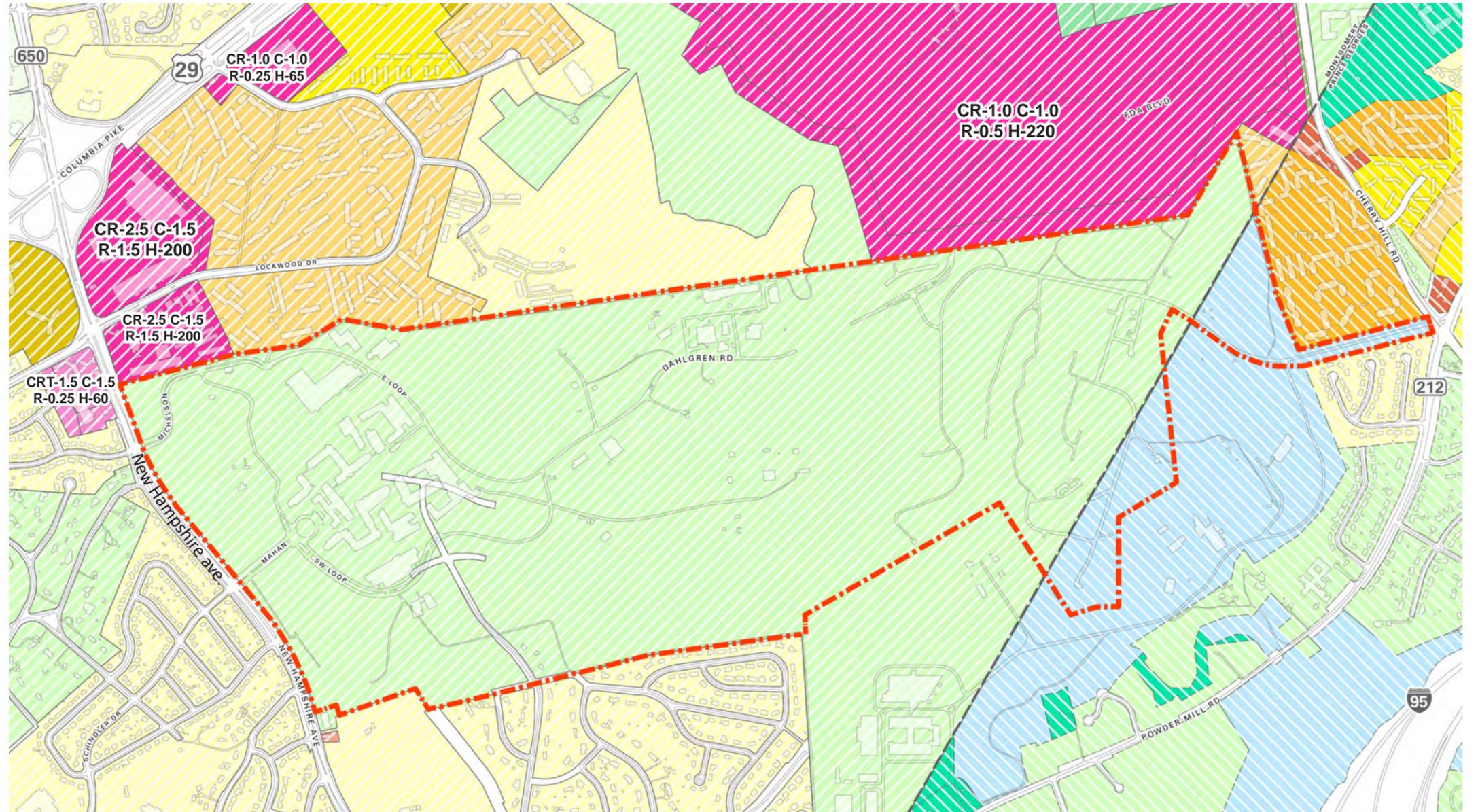


Figure 1-7: Zoning

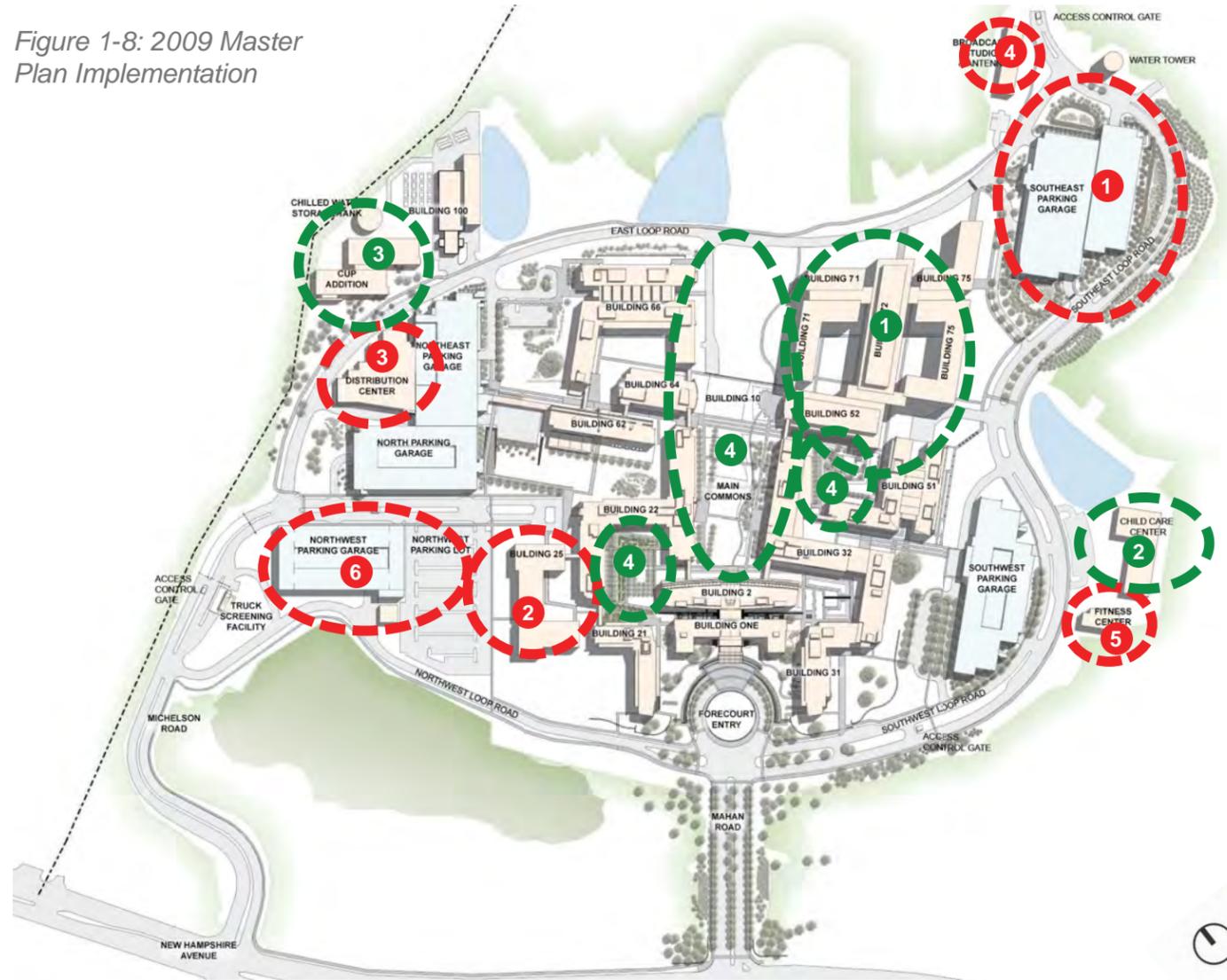
Adjacent Zoning in Prince George’s County include:

- R-80: One Family Detached Residential
- R-30: Multifamily Low Density Residential
- R-18: Multifamily Med Density Residential

The most significant zoning features near the FRC Campus are the new Commercial Residential and



Figure 1-8: 2009 Master Plan Implementation



Projects completed since 2009 Master Plan:

- 1 SE Quad 1,230,000 GSF
- 2 Child Care Center
- 3 CUP Expansion
- 4 Landscaping of the Commons & 2 courtyards
- Perimeter Security (Not Keyed to plan)
- Five Major Art Installations (Not Keyed to plan)

Projects that have not been completed:

- 1 Southeast Garage - 2,700 spaces
- 2 Building 25 – 180,000 SF
- 3 Distribution Center – 88,000 SF
- 4 Broadcast Studio
- 5 Fitness Center
- 6 Northwest Garage

Commercial Residential Town zones, established by Montgomery County in 2010. As part of the White Oak Science Gateway Master Plan, the parcels indicated in Figure 1-7 were rezoned in 2014.

Both zones encourage a flexible range of densities and heights, which allow a mix of commercial and residential uses, as well as encouraging well-designed streets and public spaces. As shown figure 1-4, there currently are several tall residential buildings in the immediate vicinity. The Enclave Apartments is 19 floors and White Oak Towers is 23 floors. In addition, the White Oak Shopping Center immediately to the north is zoned to permit construction up to 200 feet tall and Viva White on northeastern corner of the FRC is zoned to permit buildings up to 220 feet tall.

Commercial Residential and Commercial Residential Town zones are further classified by combined maximum FAR (Floor Area Ratio), a maximum non-residential FAR, a maximum residential FAR, and a maximum height limit in feet. For example, the White Oak Shopping Center, at the intersection of US 29 and New Hampshire Avenue, has a maximum FAR of 2.5, a maximum non-residential FAR of 1.5, a maximum residential FAR of 1.5, and a maximum height of 200 feet.

1.6 The FRC Campus

Figure 1-8 and 1-9 shows the FRC property boundary, the FDA Campus within the FRC, and major features on the site, as well as significant places of interest. The 660 acre campus is roughly 10,000 feet east-west by 3,300 feet north-south. The areas of development are separated by eight wooded stream courses. The largest of which is Paint Branch, bisecting the site from north to south.

The FRC campus is divided into several large numbered zones that were used during the days of the Naval Ordnance Laboratory for building identification purposes. These areas also roughly

1 corresponded to the type of research that was 43
 2 conducted. Areas include: 44

3
 4 **100 Area:** This area, served as the core of the former 46
 5 laboratory, now the FDA Campus, featuring building 47
 6 numbers over and under 100. In addition, the 100 48
 7 area features a handful of former laboratory facilities 49
 8 as well as several support facilities, some of which 50
 9 remain in use to this day. 51

10
 11 **200 Area:** The former magnetics testing area was 53
 12 designed to be isolated from the remainder of the 54
 13 property in order to minimize electromagnetic 55
 14 interference. The main laboratory buildings were 56
 15 built with wooden pegs instead of nails. 57

16
 17 **300 Area:** This steeply sloping area was the site of 59
 18 the lab's explosives research, and featured over 60
 19 150 buildings and explosives magazines prior to 61
 20 the closure of the NOL. Most facilities have been 62
 21 removed, but several structures and concrete pads 63
 22 remain. 64

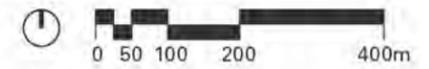
23
 24 **400 Area:** The former ballistics area includes several 66
 25 large technical facilities, a handful of which remain 67
 26 in use to this day. Several wind tunnels are currently 68
 27 in use by the Air Force, as part of the Arnold 69
 28 Engineering Development Center (AEDC). The first 70
 29 of these, the Supersonic Wind Tunnel, was captured 71
 30 from Germany after the Second World War. 72

31
 32 **500 and 700 Area:** These consist of small clusters 74
 33 of buildings that were once used to store or dispose 75
 34 of hazardous materials. At the extreme eastern edge 76
 35 of the campus was a gated connection to Cherry Hill 77
 36 Road, now permanently closed. 78

37
 38 **600 Area:** This area, located along Paint Branch, was 80
 39 involved in the testing of weaponry. 81



Figure 1-9: Property Boundary, Areas & Places of Interest



1.6.1 FDA Campus

The western portion of the FRC (most of Area 100) is dominated by the current FDA Campus. Only one significant building of the former Naval Ordnance Laboratory remains- the central Administration Building (Building 1), though some smaller outbuildings remain, including the memorial flagpole fronting. The construction of the new FDA Campus began concurrent with the demolition of the former laboratory in 2002. Other features of the site include the front lawn, which was originally a nine hole golf course but has been environmentally remediated and replanted. South of the FDA Child Care Center is a flat open space, which is intended to serve as a fitness trail. The following images and key plan (Figure 1-10) provide some context.

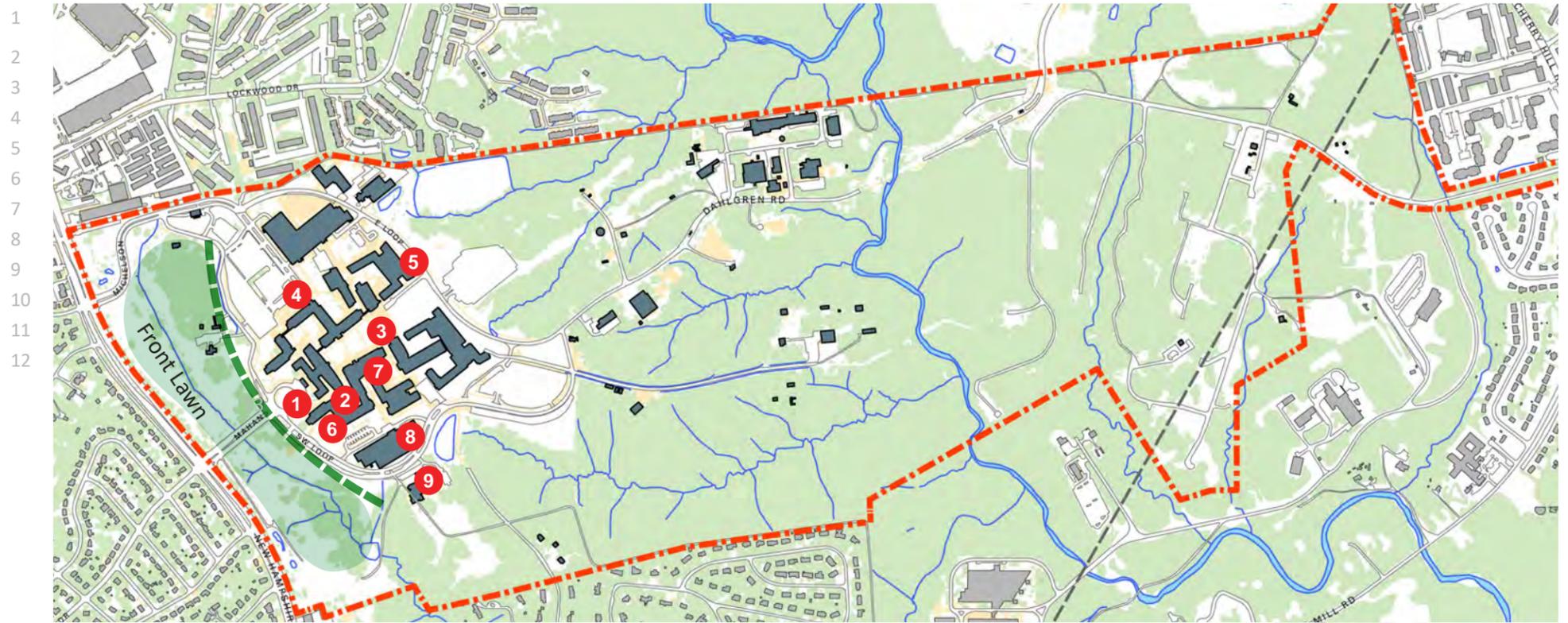
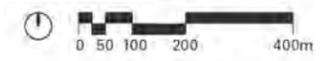


Figure 1-10: FDA Campus Key Plan



1 Entry roundabout, Front Lawn, Buildings 21 and Building 1



2 Buildings 2 and 32



3 Commons Area, Building 71, and Building 52/72



4 Building 22



5 Building 66



6 Building 31



7 Outdoor Dining terrace at Building 32



8 Southwest Parking Garage



9 FDA Child Care Center

1.6.2 Central Campus

The central portion of the property (areas 100, 200, and 400) is characterized by two smaller clusters of military research facilities, with one being still operational while the other has been deactivated. The Arnold Engineering Development Complex (AEDC), operated by the Air Force, maintains a handful of operational wind tunnels, with the oldest taken from Germany after the Second World War. Some of the AEDC complex is unoccupied, including the original facility that housed the German wind tunnel. The other complex is the former Magnetics Testing facility, which is part of the Naval Ordnance Laboratory. Most of the larger structures remain unoccupied to this day. The following images and key plan (Figure 1-11) provide some context.

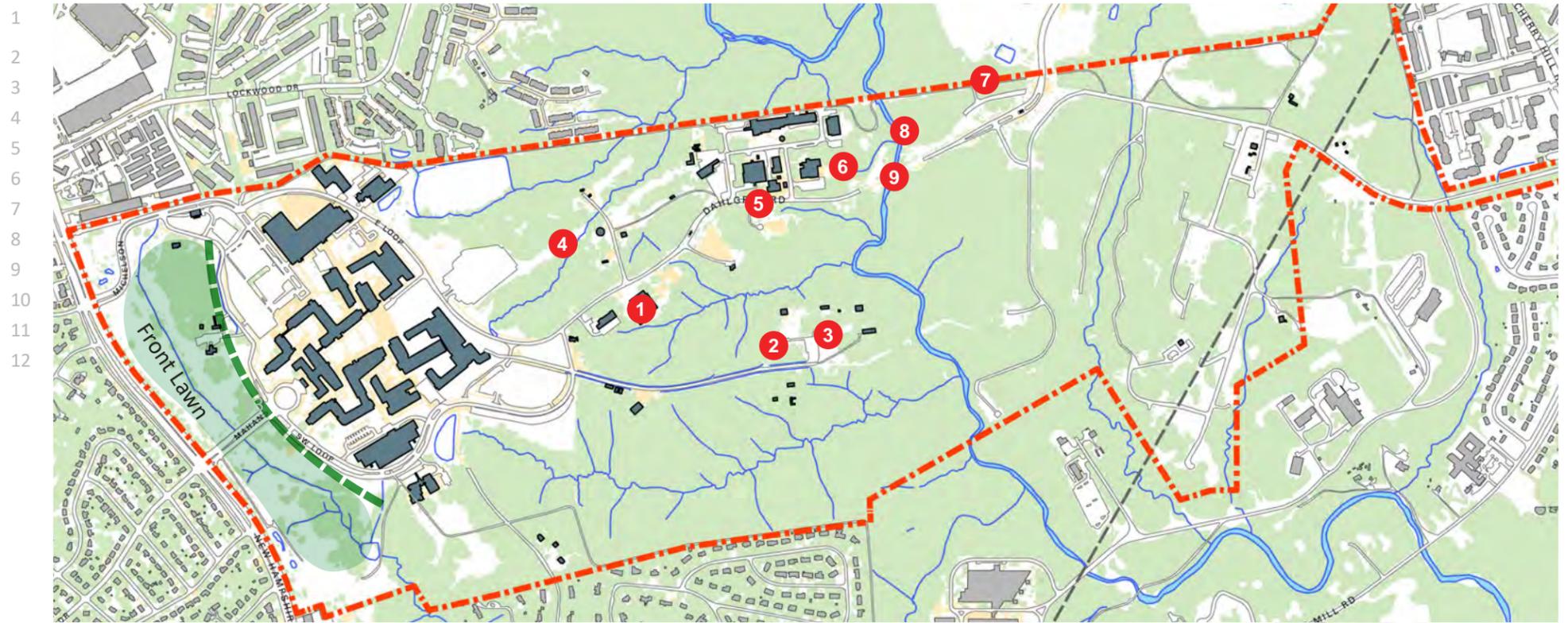


Figure 1-11: Central Campus Key Plan



1 Former Defence Nuclear Agency Casino Facility



2 Former Operations Lab in Magnetics Area



3 Former Large Projects Laboratory and Model Laboratory



4 Berm east of East Loop surface parking lot



5 Supersonic Wind Tunnel Building



6 Vacuum Sphere and Hydroballistics Tank Building



7 Northern Perimeter Road



9 Ruins of wooden bridge over Paint Branch



8 Paint Branch, new Dahlgren Road Bridge, and Undersea Weapons Tank

1.6.3 Eastern Campus & Viva White Oak

The eastern portions of the FRC campus (areas 300, 500, 600, and 700) are characterized by the former explosives research area of the Naval Ordnance Laboratory. Most of the facilities have been removed or demolished since the closure of the Laboratory in 1997. Some facilities continue to exist in a decaying state. North of the property is the future home of Viva White Oak. The property is currently vacant but its main feature will be the newly-built FDA Boulevard, which connects Cherry Hill Road to the FRC campus. The following images and key plan (Figure 1-12) provide some context.

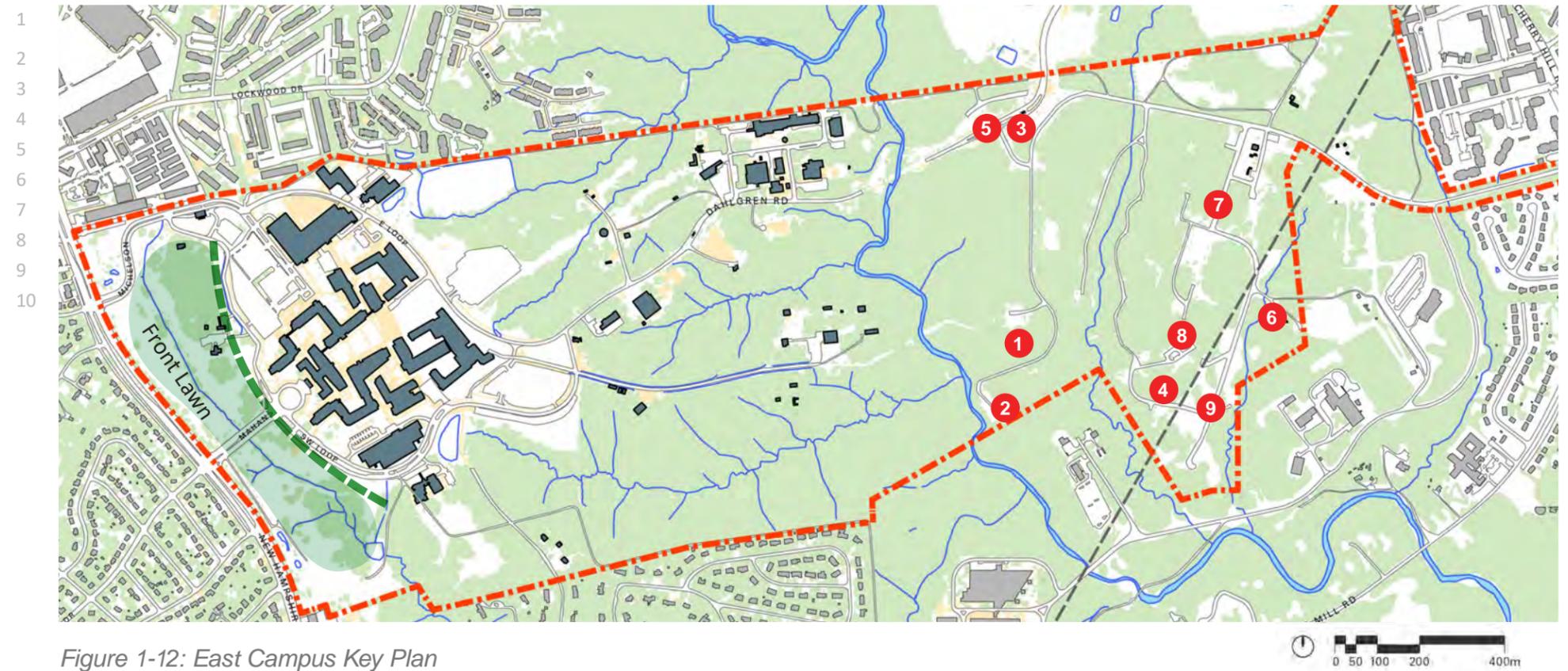


Figure 1-12: East Campus Key Plan



1 View of existing overhead power lines and clearing



2 Concrete retaining wall near Paint Branch



3 View looking north towards Viva White Oak site



4 Concrete retaining walls for explosives magazines (removed)



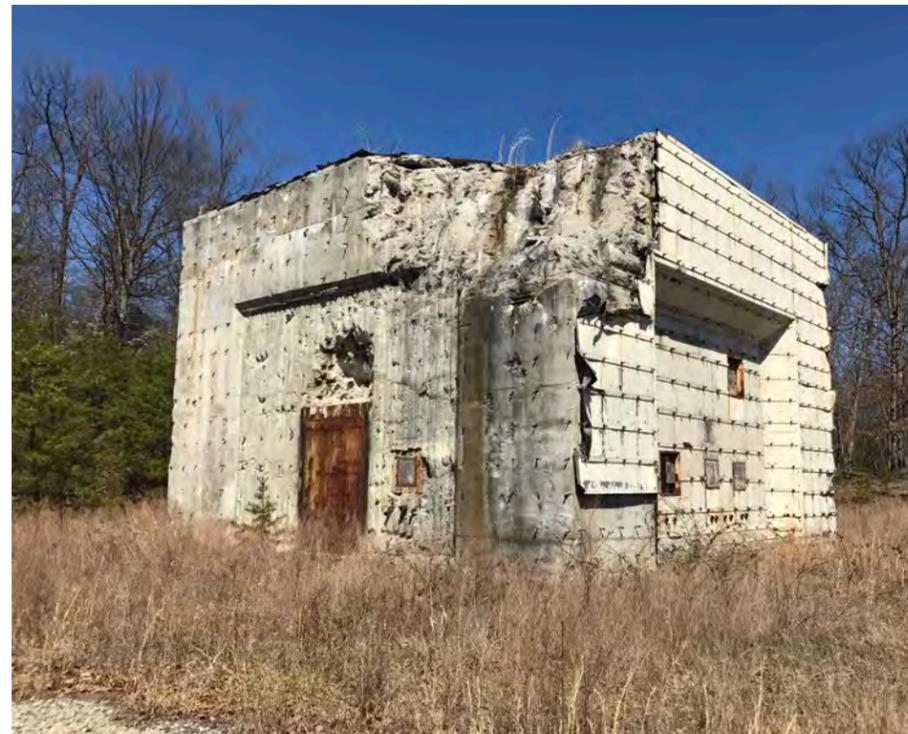
5 FDA Boulevard looking west



6 Former Air Blast Field Lab



7 Chart/Image Title



8 The former 50-Pound Bombproof Facility



9 The central intersection of the 600 area

1.6.4 Buildings & Hardscape

Through an examination of building footprints and hardscape, one can make broad assumptions on land use. Observations found on Figure 1-13 include:

- 1 Large office and laboratory facilities, supported by structured and/or surface parking lots: The existing FDA Campus, formerly the core of the Naval Ordnance Laboratory and Army Adelphi Laboratory Center
- 2 Big box retail surrounded by surface parking: The White Oak shopping center at the US 29 / New Hampshire Avenue interchange
- 3 Smaller buildings surrounded by surface parking: Light commercial and industrial establishments
- 4 Long buildings located parallel to driveways and cul-de-sacs: Garden apartment multifamily developments
- 5 Small buildings spaced evenly along looping roads and cul-de-sacs: Typical single family residential subdivisions
- 6 Small buildings placed along looping roads and cul-de-sacs with large gaps: Large lot single family residential subdivisions

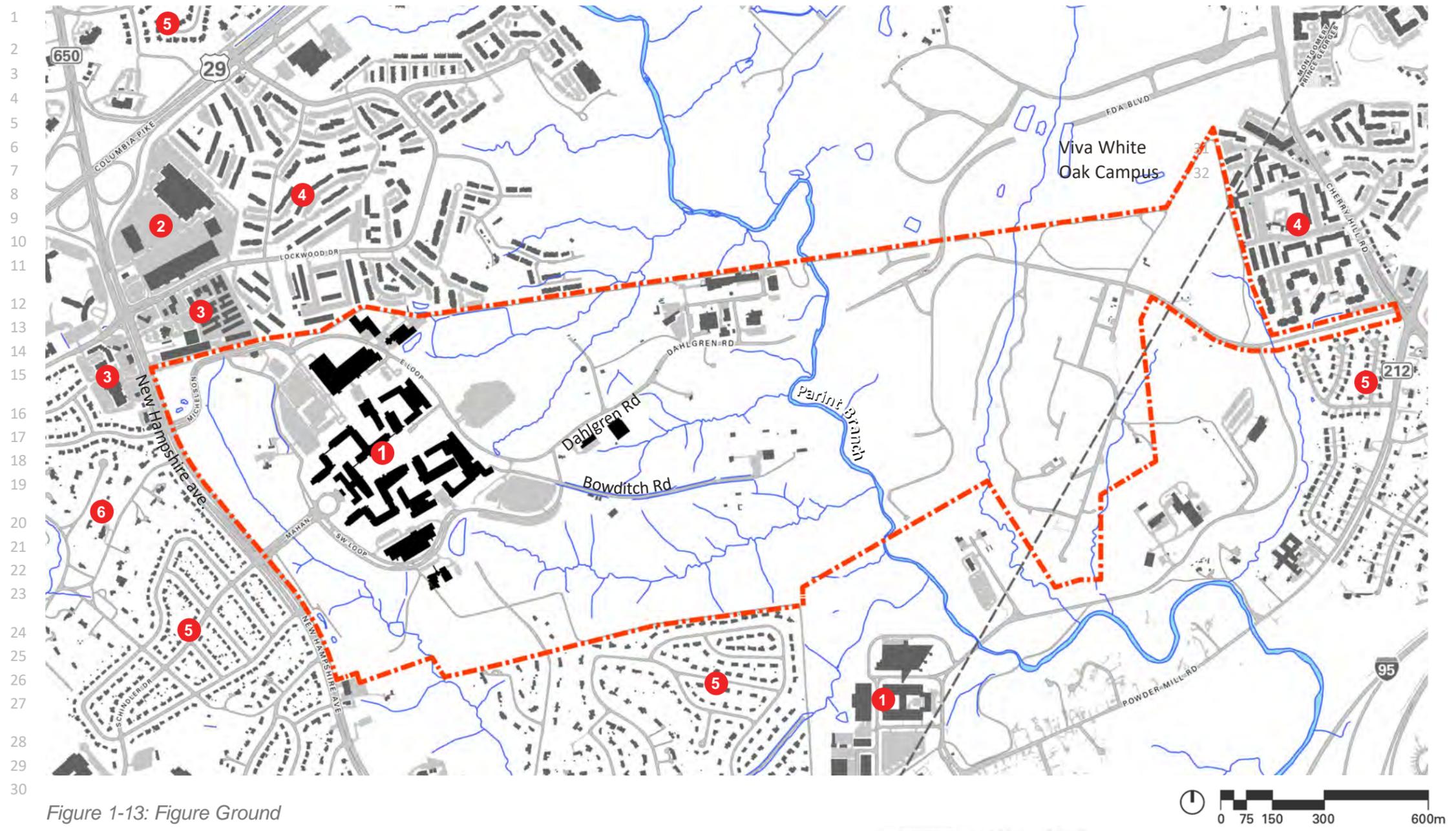


Figure 1-13: Figure Ground

1.7 Natural Resources

1.7.1 Topography

Figure 1-14 depicts the topography found on the FRC campus and its surrounding context.

The property is located along the Atlantic Coastal Plain, a relatively flat topographical region. The dominant topographical feature on the property itself is the Paint Branch stream valley, creating hills over 100 feet high. The lowest point on the property is located along the Paint Branch. Tributary streams to the Paint Branch create dynamic conditions on the central portions of the property.

The FDA Campus itself lies on a generally flat area at approximately 360' above sea level. The highest point on the property (approximately 390') is the northwest corner of the site, adjacent to the US 29 / New Hampshire Avenue interchange.

East of Paint Branch is another stream valley belonging to the West Branch that creates dynamic topographical conditions on the far east of the FRC.

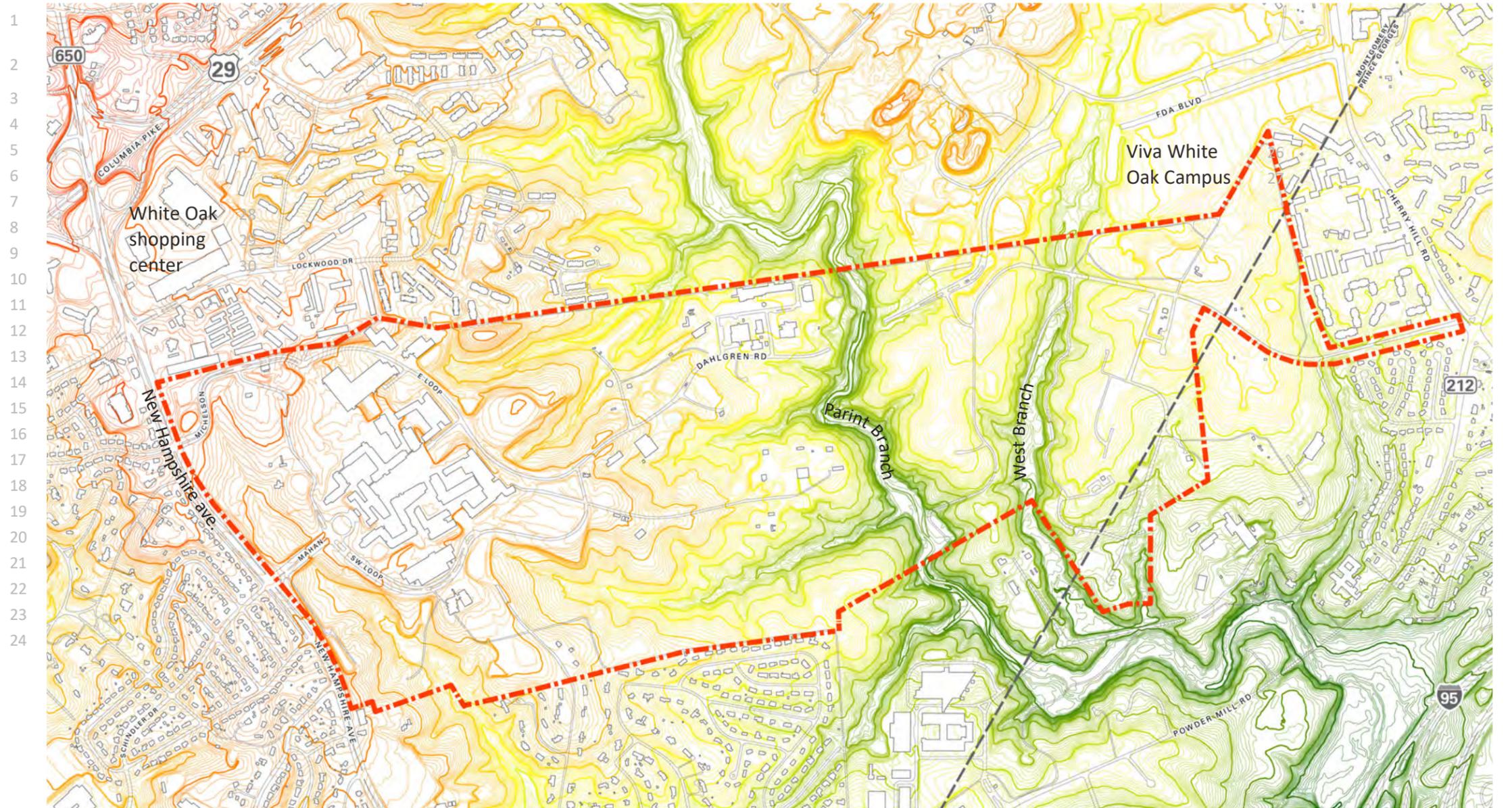


Figure 1-14: Site Topography

— 2' contours
 — 20' contours

400'
 300'
 200'
 100'
 Site Boundary



1.7.2 Steep Slopes

Figure 1-15 depicts the steep slopes found on the FRC campus and its surrounding context.

Most steep slope areas (at times greater than 25 percent) are located along stream valley buffers, primarily the Paint Branch, the West Branch, and their smaller tributaries and valleys. Aside from the FDA Campus itself, areas along Dahlgren and Bowditch Roads, as well as south of the FDA Campus do not feature significant steep slopes. While topographically dynamic, portions of land on the far east of the property do not feature steep slopes.

Several smaller, isolated steep slopes, especially on the western and eastern portions of the campus and its context, may be artificial creations typically consisting of landfill, berms, or retaining walls.

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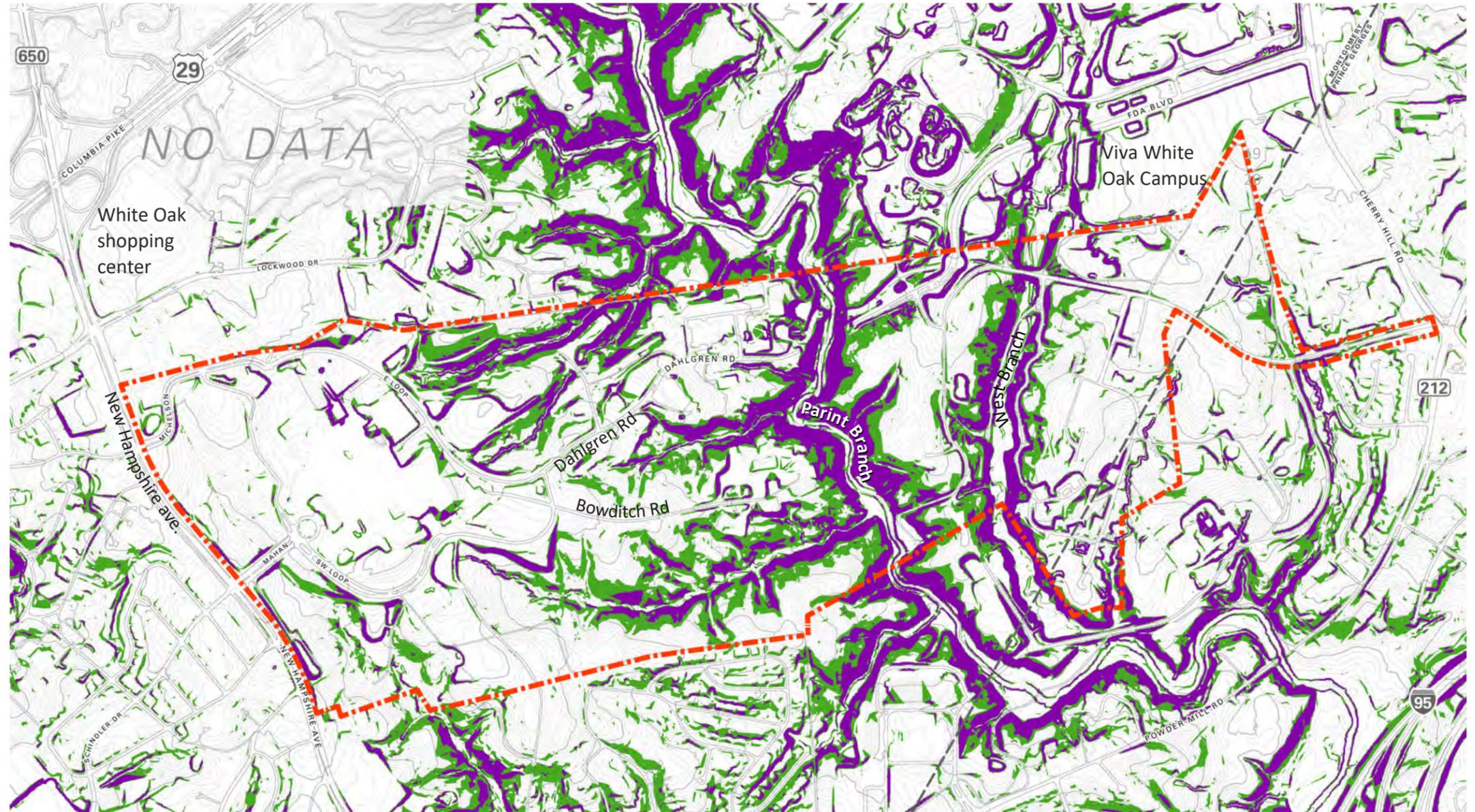


Figure 1-15: Steep Slopes



1.7.3 Tree Cover

Figure 1-16 shows the existing tree cover on the FRC and in the surrounding context. In addition, the Stream Valley Buffers have been overlaid to depict the amount of forest contained within these areas.

The majority of the property is forest save for the FDA Campus itself. The former NOL golf course was partially reforested as part of an environmental mitigation process.

Most of the magnetic research area on the center of the property, as well as the former explosives research area on the far east of the property is slowly becoming reforested due to the abandonment and/or demolition of the buildings and facilities.

Beyond the FRC, there is significant tree cover in the Paint Branch stream valley, as well as moderate tree cover within the older residential subdivisions to the south and west of the property.



Figure 1-16: Tree Cover



1.7.4 Historic Resources

None of the outlying areas beyond the current 130-acre FDA Campus has been surveyed in detail as part of this master plan process to see what remains and what has been removed. When the three Master Plan alternatives are developed, they are likely to include expansion beyond the current FDA Campus and could affect the Naval Ordnance Laboratory (NOL).

The former NOL maintains a large collection of properties built during and after the Second World War. While most of the smaller structures have been demolished, several large structures remain in various states of preservation and reflect the importance of the NOL. These include many interesting structures such as: the Undersea Weapons Tank (Building 409) where depth-charges and mines were tested; the Shock Testing Facility (Building 611) where a 90-foot-long 26-in bore air gun was used to test full size weapons; and the High-gravity Centrifuge (Building 387) that was powered by 12 v-8 automobile engines. These are all in poor condition but still remain at the site.

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Former Naval Ordnance Laboratory Main Building



Former Naval Ordnance Laboratory Fire Station



Former Supersonic Tunnel Infrastructure



Former Magnetic Research Facility



Current AEDC Wind Tunnel Facility



Former Dahlgren Road bridge and Free Fall Drop Tower

1.8 Circulation

1.8.1 Vehicular Circulation

The White Oak Campus is relatively well-connected to the regional freeway network, including I-95, I-495, and US 29 via Cherry Hill Road, New Hampshire Avenue, and Powder Mill Road. The campus has three access points: two access points on New Hampshire Avenue are provided via Michelson Road, which serves as the main entrance for visitors and deliveries, and Mahan Road, which provides access to employee parking areas and the main building entrance. A third access point is provided on Cherry Hill Road via FDA Boulevard. All three access points are signalized.

Traffic is distributed throughout the site via a loop roadway network which provides access to the various surface parking lots and parking garages around the campus. The loop roads are primarily two-lane roadways, with the exception of Southwest Loop Road which is a four-lane roadway between Mahan Road and the Southeast Parking Garage. All internal intersections are unsignalized and intersections between primary campus roadways are all-way stop-controlled. Refer to Figure 1-17 for a depiction of current vehicular circulation in the study area.

1.8.2 Transit

Several bus routes serve the FDA Campus with stops along New Hampshire Avenue or internally within the campus. Currently Montgomery County is planning several BRT lines, with potential service along the US 29 corridor by 2018. Possible alignments place BRT service along Lockwood Drive, adjacent to the FRC.

In addition, FDA operates six shuttle routes that serve various regional locations, including several Metro stations. These shuttles are intended to fill gaps in the existing public transit network.

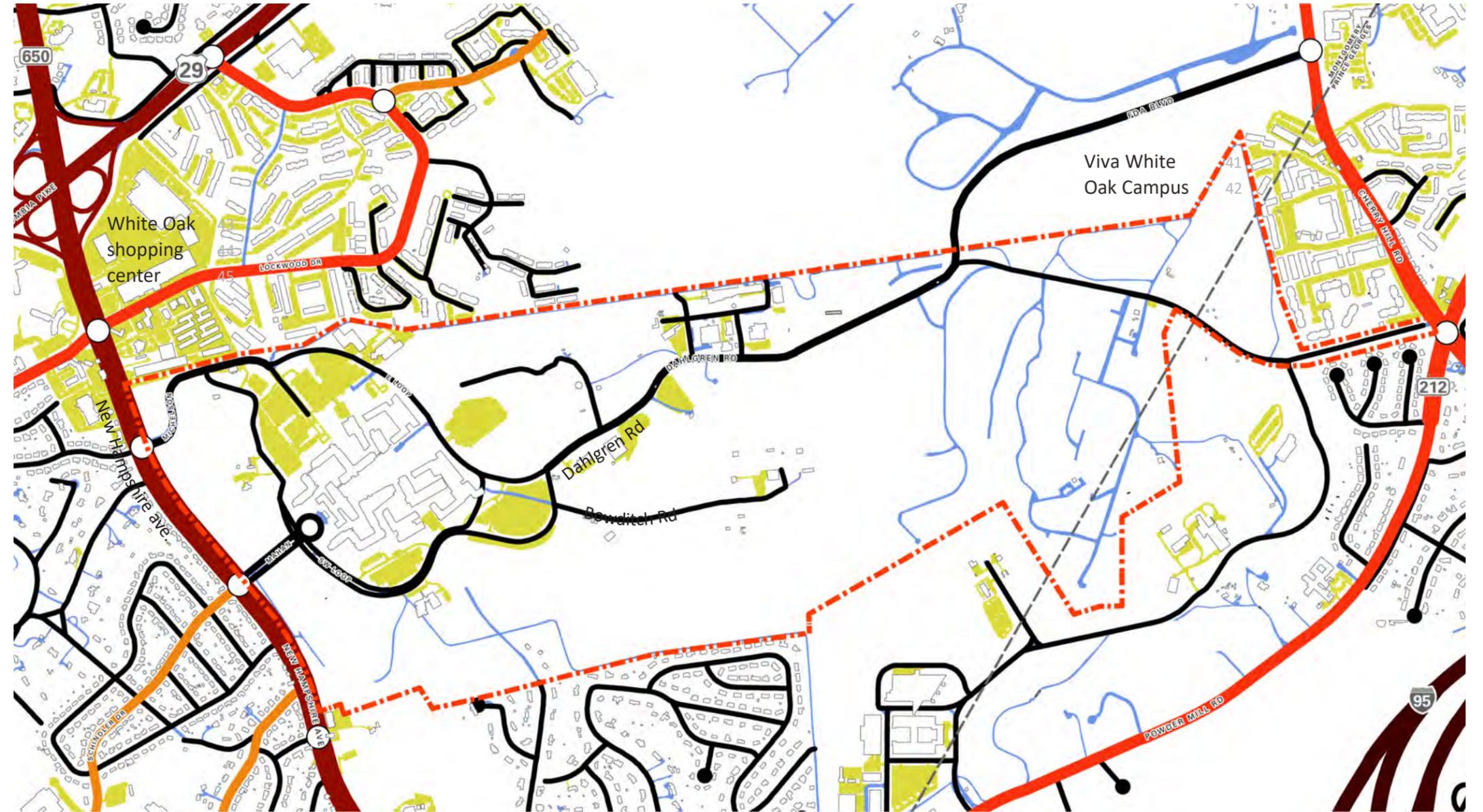


Figure 1-17: Vehicular Circulation

1.8.3 Parking

Parking has been identified as one of the key issues on the FDA Campus. Two parking structures have been constructed; however, a parking structure that was to be located in the southeast side of the campus has not been built. The FDA has implemented attendant-assisted parking in order to provide parking capacity for approximately 6,800 vehicles. The attendant-assisted parking is intended to be a stop-gap measure until additional parking can be provided because it is costly and not considered sustainable.

1.8.4 Pedestrian Facilities

Four- to five-foot wide sidewalks are provided along most roadways, connecting the FRC to nearby residential and retail areas. An eight-foot wide multi-use pathway is provided along northbound New Hampshire Avenue. A sidewalk and multi-use path are provided along FDA Boulevard. However, they terminate at the security gate and no pedestrian facilities are provided along Dalhgren Road to connect the FDA Campus.

1.8.5 Bicycle Facilities

Bicycle facilities are relatively limited. A narrow, five-foot wide bicycle lane is provided along northbound New Hampshire Avenue along the FDA site frontage. Please refer to Figure 1-18 for a depiction of the bicycle network.

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. However, bicycle lanes are not provided on the internal roadway network.

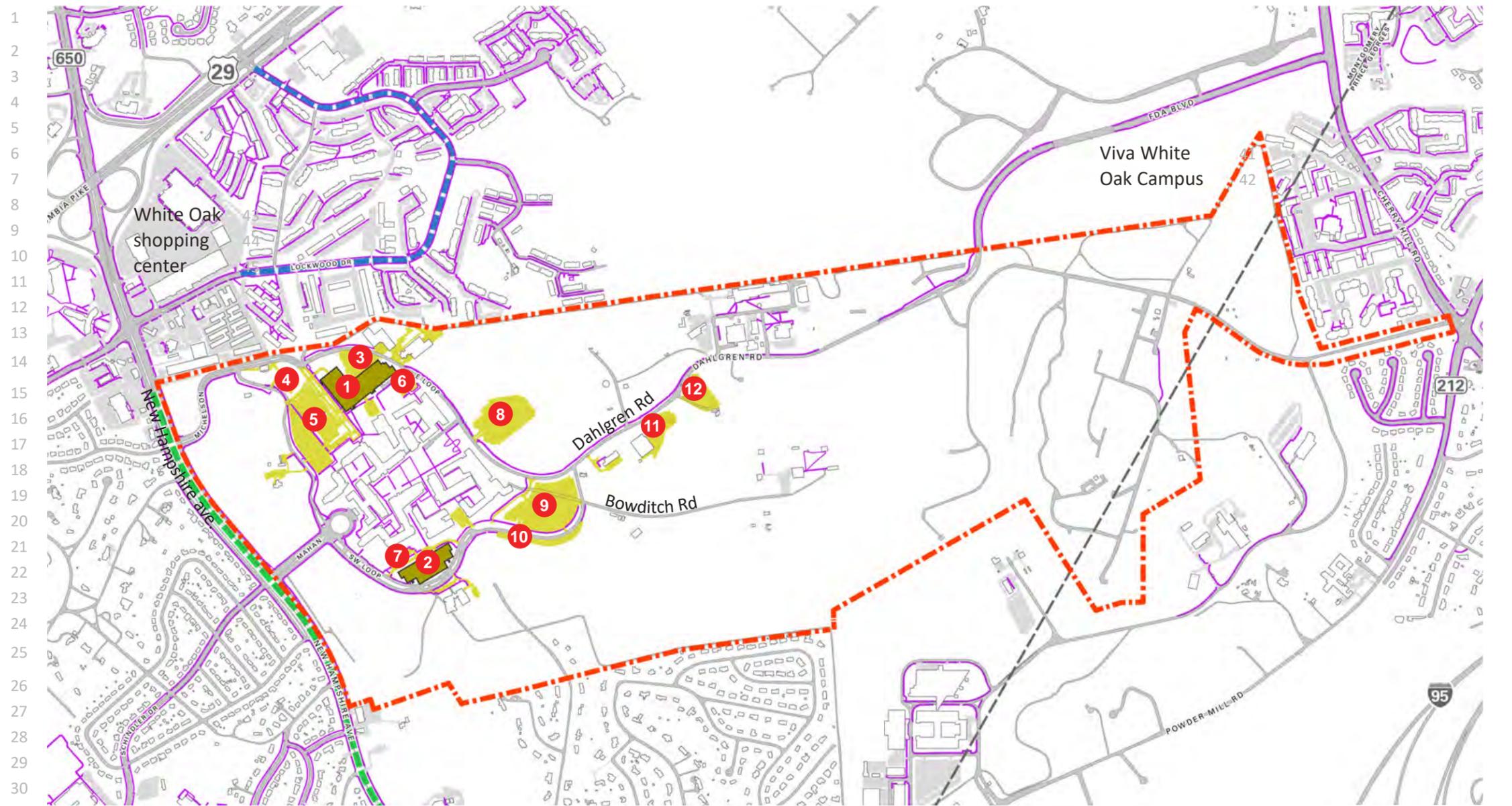


Figure 1-18: Parking, Pedestrian, & Bicycle Network

- | | | |
|---------------------------------------|------------------------------------|--------------------------------|
| 1 Northeast & North Parking Garage | 7 Southwest Surface Parking | 52 Parking Structure |
| 2 Southwest Parking Garage | 8 East Loop Road Surface Parking | 53 Parking Lot (on FRC campus) |
| 3 Northeast Surface Parking 2 | 9 Southeast Surface Parking | 54 Shared Use Path |
| 4 Visitor Parking Lot | 10 South Loop Road Surface Parking | 55 Bicycle Lane |
| 5 Northwest Surface Parking 1, 2, & 3 | 11 Lot 132A Surface Parking | 56 Sidewalk Network |
| 6 Northeast Surface Parking 1 | 12 Lot 132B Surface Parking | 57 Site Boundary |

1.8.6 Bus Rapid Transit and Campus Connectivity

The development of additional BRT lines that would provide service to the FRC will improve the site's transit service and access.

Currently two lines are planned that would be adjacent to the site, as depicted in Figure 1-19:

1. New Hampshire Avenue Route
2. US-29 Colesville Road Route

The route US-29 BRT line is projected to be in operation by 2020. Currently there is no anticipated implementation date for the New Hampshire Avenue BRT line.

The implementation of BRT service adjacent to the FDA Campus would have a potential impact to the amount of parking that NCPD would recommend for the facility.

NCPD has adopted the following parking ratio policies, as stated in the Comprehensive Plan for the National Capitol, Transportation Element:

1. Within the Central Employment Area, the parking ratio should not exceed one space for every five employees.
2. Outside of the Central Employment Area, but within the Historic District of Columbia boundaries, the parking ratio should not exceed one space for every four employees.
3. For suburban federal facilities within 2,000 feet of a Metrorail station, the parking ratio should not exceed one space for every three employees.
4. For suburban Federal facilities beyond 2,000 feet of a Metrorail station, the parking ratio will reflect a phased approach linked to planned improvements over time.

FDA anticipates that the provision of BRT to the site could allow for a reduction in the parking ratio from 1:1.5 to 1:1.8.

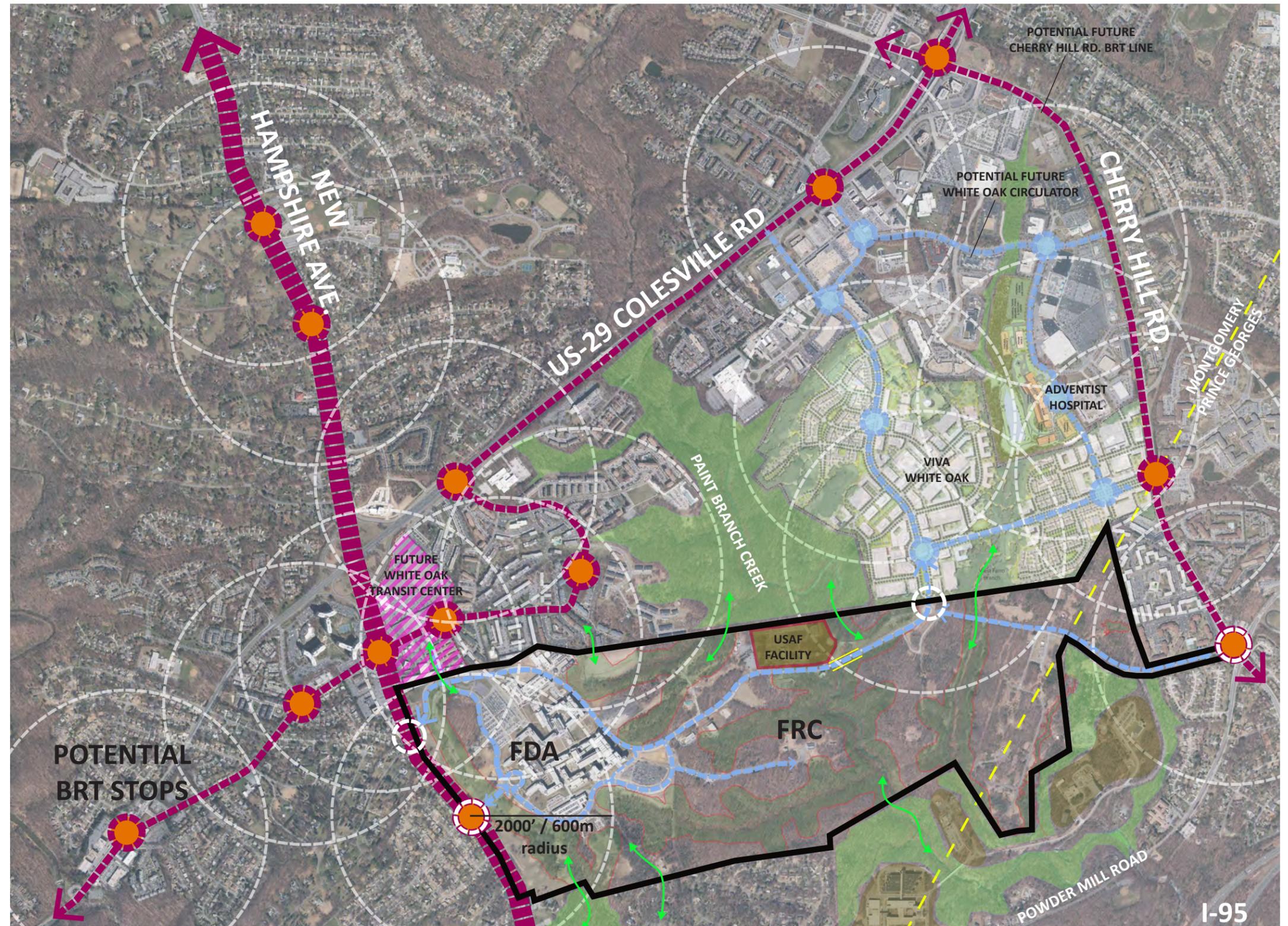


Figure 1-19: Site Context with Potential BRT Stations & Alignments



1.9 Utility Infrastructure

The following section describes water, sewer, storm water, and electrical power/HVAC on the FRC campus.

Refer to Figure 1-20 for a depiction of existing domestic water and sewer features and characteristics.

1.9.1 Domestic 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.

1.9.2 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.

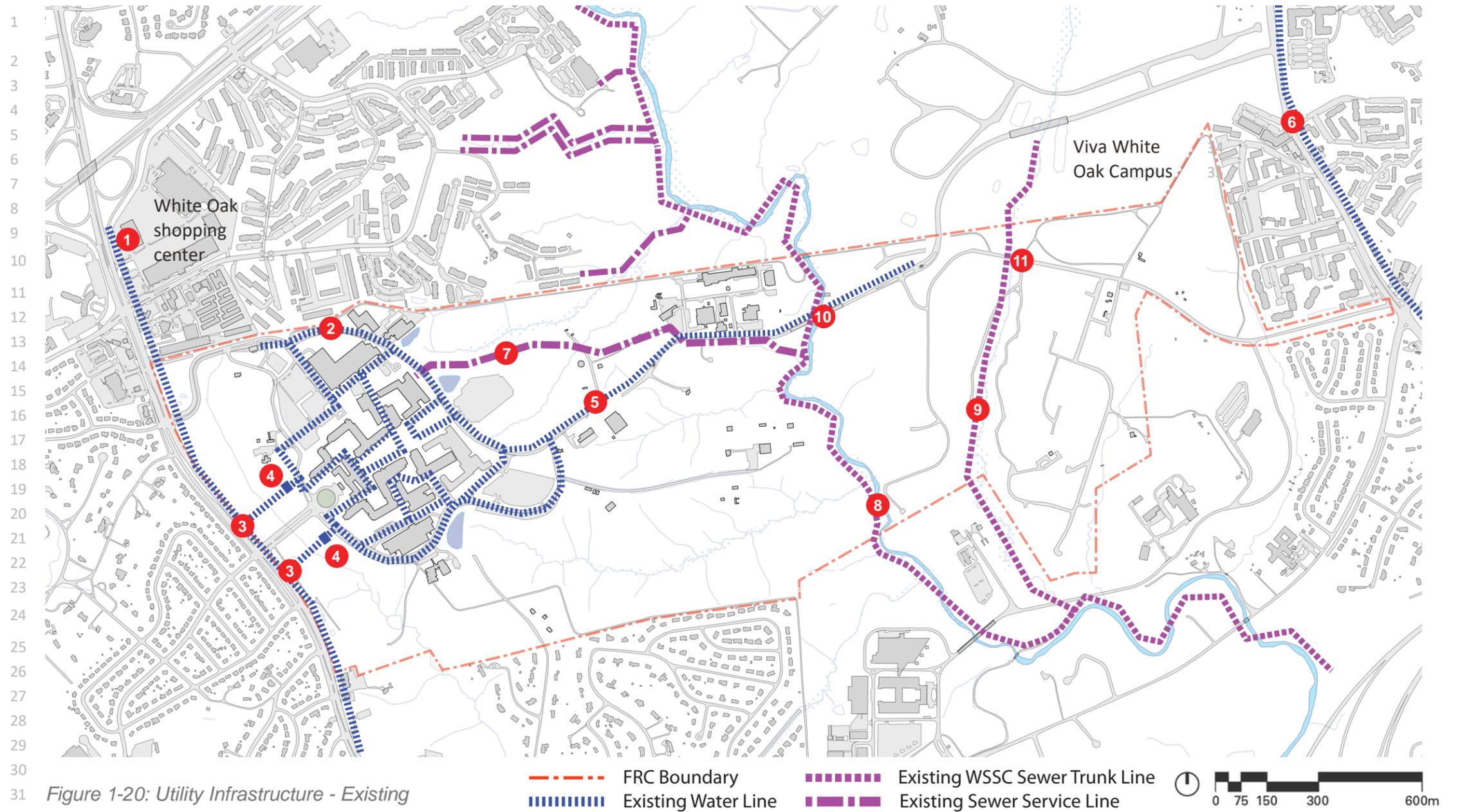


Figure 1-20: Utility Infrastructure - Existing

Existing Water

- 1 Existing 16" WSSC Water Main 39
- 2 Existing FDA Campus Water System (Primarily 12" Pipes) 40
- 3 Two Existing Connections to Existing 16" WSSC Water Main in New Hampshire Ave. 42
- 4 Two Existing Duplex Pumping Stations Increase Water Pressures on FDA Site 44

- 5 Existing 8" Water along Dahlgren Road from Campus Loop Road to East Guard House 49
- 6 Existing 12" WSSC Water Main in Cherry Hill Road 48
- Existing Sewer** 50
- 7 Existing 15" Sewer Outfall Pipe from FDA Campus 51

- 8 Existing 27" Paint Branch Sewer Trunk Line 53
- 9 Existing 20" West Farm Branch Sewer Trunk Line 54
- Existing Other** 56
- 10 Existing Bridge over Paint Branch 57
- 11 Existing Bridge over West Farm Branch 58

1.9.3 Storm Water

Please refer to Figure 1-21 for stream valley buffer and Figure 1-22 for a depiction of storm water management facilities.

The FDA Campus is served by a system of open swales and closed piped storm drains that convey storm runoff water. 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 1-22). 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.

All areas of the FDA Campus drain to Paint Branch. Paint Branch and all its tributaries upstream of the Capital Beltway are classified as Use III waters. No in-stream work is allowed between October 1 and April 30. Streams on the FRC site are subject to County Stream Valley Buffers. In addition to this, the presence of steep slopes and potentially erodible soils could increase the width of these buffers.

The FRC site is subject to the NPDES MS4 Discharge Permit (General Permit) requirements. The emphasis of this permit is on efforts that will help achieve the Chesapeake Bay total maximum daily load (TMDL) goals established under the authority of the Clean Water Act.

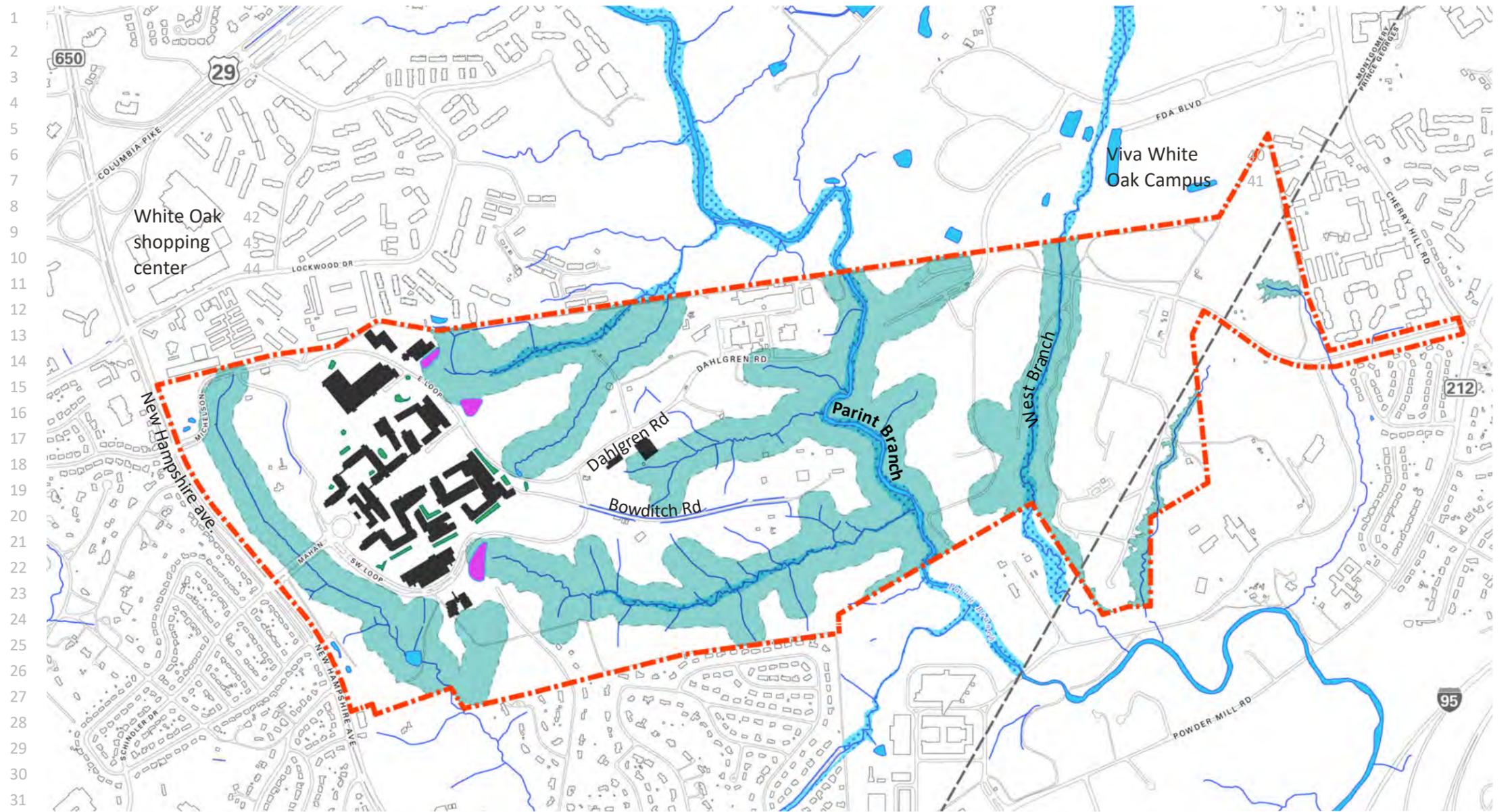


Figure 1-21: Bodies of Water & Stream Valley Buffers



1.9.4 Electrical/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 array provides additional electricity depending on weather. 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. The substation is managed by GSA.

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Figure 1-22: Stormwater Management - Existing

- Extended Detention Ponds
- Bio-Retention Facilities
- Rooftop Rainwater Harvesting
- Green Roofs
- Sand Filters



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2 OUTREACH AND COORDINATION



Entry Roundabout, Building 1 and Building 31

2. OUTREACH AND COORDINATION

2.1 Public Engagement

2.1.1 Introduction and Identified Issues

GSA and FDA have continued to meet with the public, area neighborhood groups, special interest groups, and government agencies throughout the Master Plan process. Key issues identified during scoping and meetings with the public and agencies include:

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

Plans for ongoing coordination of the Master Plan addressing key issues from the various public reviews include the following highlights:

- Encouraging employees to use alternative means of transportation.
- Maintaining the historic buffer and the views from New Hampshire Avenue to the façade of Building 1 as important campus features.
- Minimizing impacts to vegetation and wildlife by maintaining areas of forest as much as possible.

- Supporting the conservation of the natural resources on the campus by a careful and dense layout of new features.
- Paint Branch will not be directly impacted by the action alternatives.
- 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 Maryland-National Capital Park and Planning Commission (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.
- Implementation of strategies to incorporate Storm water management facilities into the site as amenities and spatial drivers will be pursued, as well as exploring the potential to integrate the design into the natural systems of the FRC site.
- Encouraging FDA employees to “live where they work”. FDA expansion will attract supporting businesses in the health care, pharmaceuticals, life sciences, and other advanced technology fields which would create employment opportunities within the community.

2.1.2 Public Review

GSA issued a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) on August 18, 2017. The letters included information on the public scoping meeting and asked for the public’s comments on the proposed FDA Master Plan. 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.

GSA held a public scoping period on the EIS/ Master Plan 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

59 communities were in attendance. 96
60 97
61 Poster boards were displayed showing the site 98
62 plan; a history of the FDA consolidation; the 99
63 Environmental Impact Statement (EIS) and National 100
64 Historic Preservation Act (NHPA) processes; the 101
65 Area of Potential Effect (APE); preliminary Master 102
66 Plan alternatives; and environmental features. In 103
67 addition, a continuously running slide presentation 104
68 was shown. The public was invited to comment on 105
69 the proposed project and twenty-four comments 106
70 were received from organizations, government 107
71 agencies, and individuals. 108
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2.2 Coordination with Federal, State, and Local Jurisdictions

Consultation with Federal, state, and local agencies has been conducted throughout the Master Plan process. GSA and FDA have also held scoping meetings with the NCPC, M-NCPPC, Prince George’s and Montgomery County governments, Advisory Council on Historic Preservation (ACHP), Maryland Historic Trust (MHT), Labquest, and the Hillandale Civic and North White Oak Citizens Associations.

As noted in section 1.5.4, coordination has also taken place with the:

- U.S. Fish and Wildlife Service (USFWS),
- Maryland Department of Natural Resources (MDNR),
- Maryland Department of Environment (MDE),
- Maryland Department of Transportation (DOT),
- Maryland State Highway Administration (SHA).
- Maryland-National Capital Park and Planning Commission (M-NCPPC) – Montgomery County
- M-NCPPC – Prince George’s County
- 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,
- Washington Metropolitan Transportation Authority (WMATA),
- Maryland State Historic Preservation Office (MD SHPO),and,
- Major Property Owners (refer to section 1.5.5).

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3

MASTER PLAN



Commons Area, Building 71 and Building 52/72

3. MASTER PLAN DEVELOPMENT

3.1 Land Use Feasibility Study

3.1.1 Land Use Strategies

Prior to the Master Plan development, a series of land use feasibility development strategies and scenarios were developed to test the feasibility of fulfilling the FDA program requirements on the FRC site, based upon the site analyses and capacity study. The purpose of the Land Use Feasibility Study (LUFS) was to study and demonstrate the feasibility of accommodating the proposed program on the FRC site. Based upon analyses of the constraints on the site, including stream valley buffers and steep slopes, the land use feasibility study demonstrated that it is feasible to accommodate the full program on the FRC site. In fact there is ample developable land on the 662 acre FRC site to allow for a variety of configurations of the program. Further, there is capacity on site to accommodate FDA growth beyond the current 18,000 employee planning parameters of this master plan.

Four fundamental land use strategies were examined in developing the land use feasibility development scenarios. The land use analyses demonstrated that there is sufficient land to allow for the implementation of each strategy, and each approach would yield their own set of advantages

and disadvantages which are further described in the evaluation portion of this report.

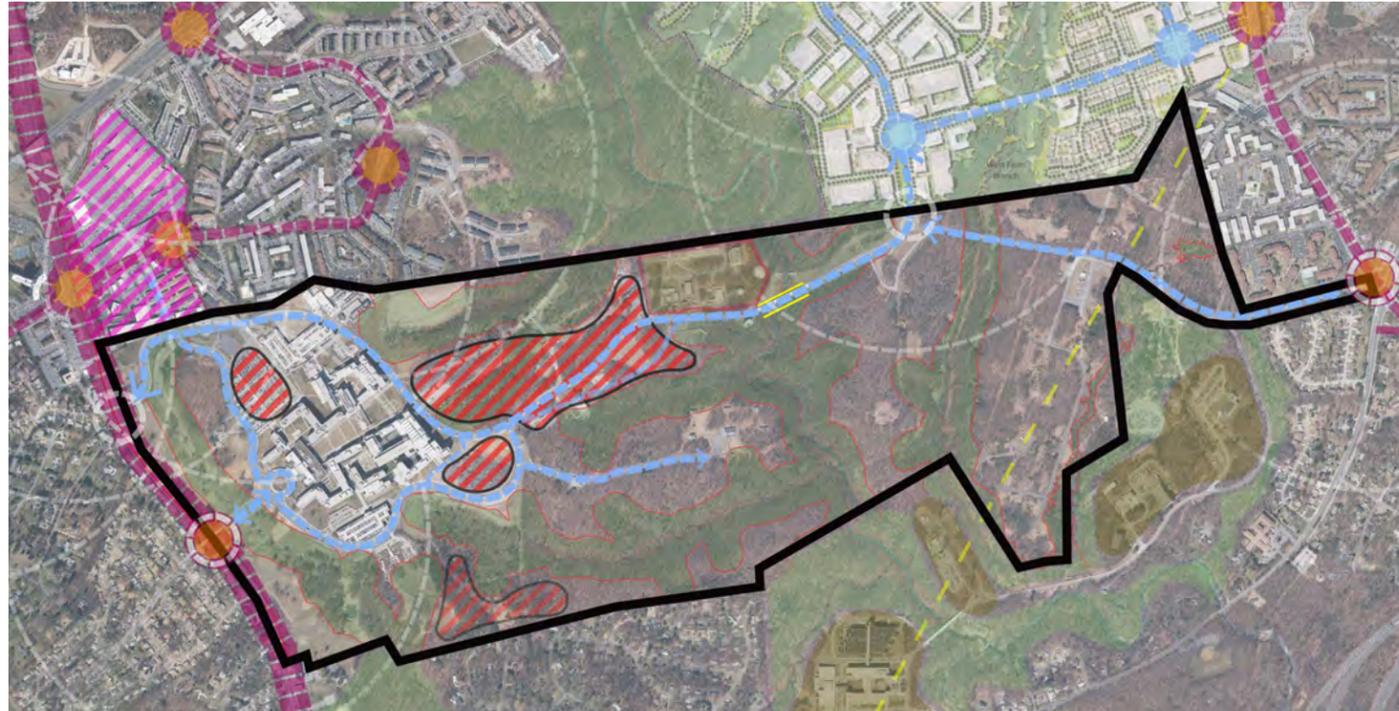
- Strategy 1: Expansion immediately adjacent to the existing campus
- Strategy 2: Development of a new campus central to the overall FRC property
- Strategy 3: Development of a new satellite campus on the Eastern portion of the FRC property
- Strategy 4: No new development, other than providing required parking spaces to maximize existing capacity

3.1.2 Preferred Land Use Strategy 1

Based on consultation between GSA, FDA and the consultants, Strategy 1 was selected to test three master plan options and a no-action option. Strategy 1 embodies the following important principals:

- Creates a walkable campus promoting collaboration,
- Maintains the tree canopy and biodiversity of the site, and
- Converts surface parking lots into building pads thereby minimizing additional impervious surface.

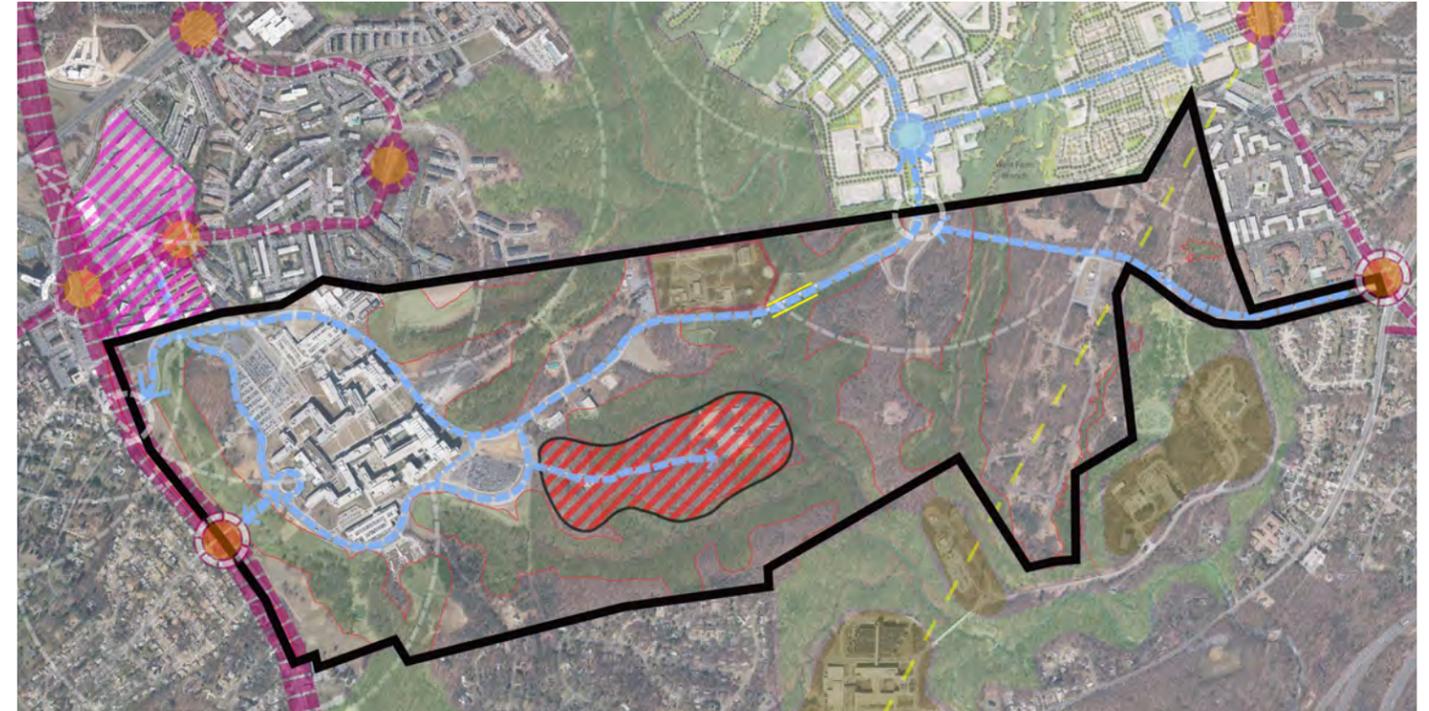




STRATEGY 1: DEVELOPMENT ADJACENT TO EXISTING FACILITIES

- Focuses new development on periphery of existing campus
- Proximity to main campus promotes connectivity and collaboration
- Potential to link into SE, E, and NW portions of campus
- May link into existing utility infrastructure and CUP
- May require increasing capacity of CUP
- Construction may disrupt some main campus operations/traffic
- Potential advantage to distribute some traffic between East/West sides of site, capture traffic from East and North sides of site

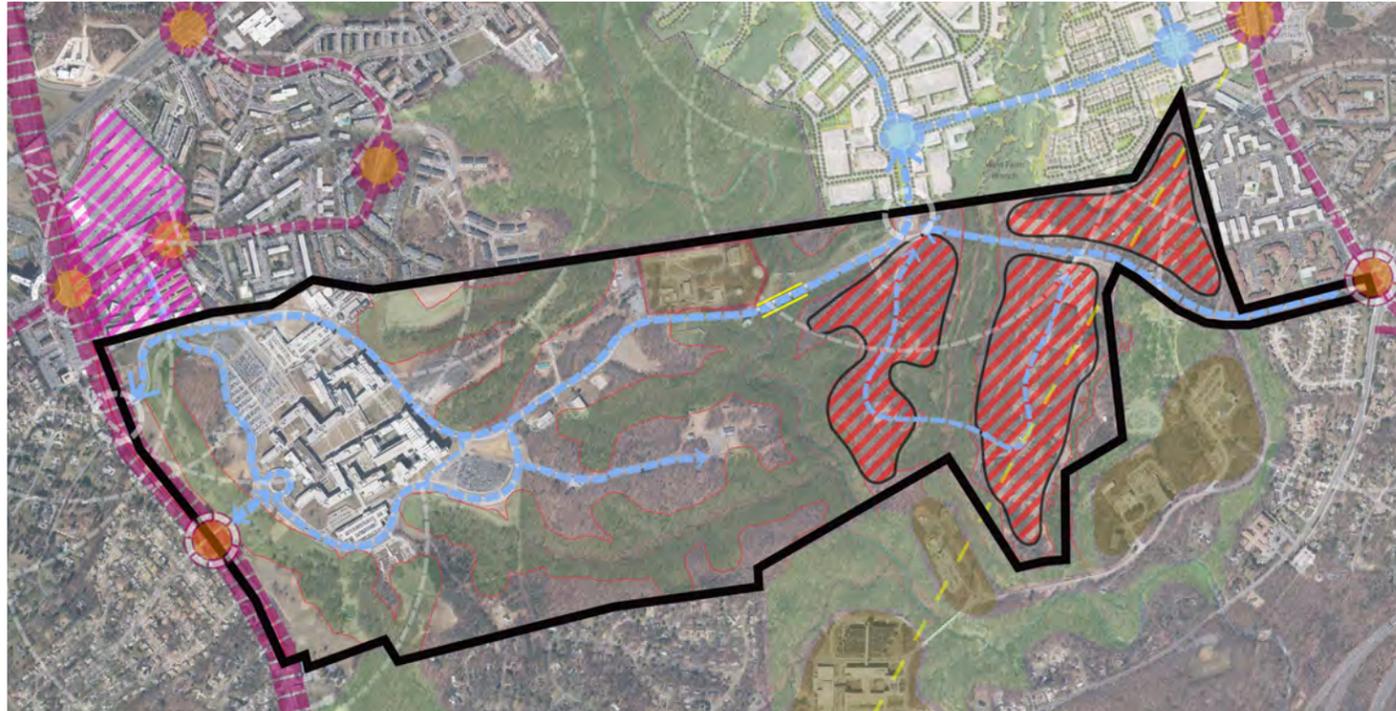
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STRATEGY 2: DEVELOPMENT IN CENTER OF PROPERTY

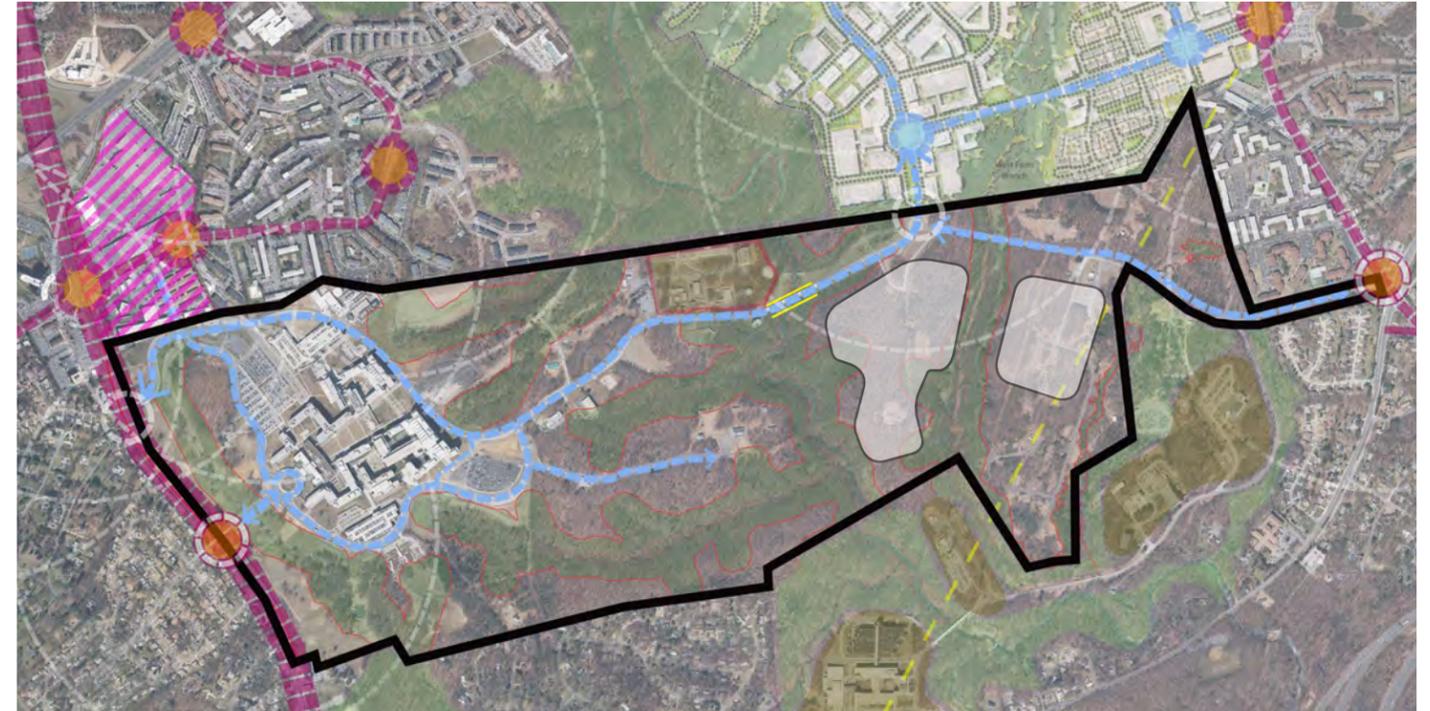
- Focuses new development in center of the campus
- Takes advantage of large land bay in center portion of site
- Expansion may be constrained by slopes and stream valley buffers
- Potential to link into SE portion of campus
- Potential to link into existing utility infrastructure
- May require independent or secondary utility plant
- May reduce construction disruption to main campus
- Distance from main campus may impede pedestrian connectivity/collaboration opportunities
- Potential advantage to distribute traffic between East/West sides of site, capture traffic from East and North sides of site
- Single road access may require construction of additional access road/bridge across Paint Branch Creek

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STRATEGY 3: **DEVELOPMENT TO EAST OF PROPERTY**

- Focuses new development on the east side of the campus
- Potential to integrate with Viva White Oak Development
- Takes advantage of large land bays on eastern portion of site
- May require independent or secondary utility plant
- Potential to tie into utility corridors in Cherry Hill Road and/or Viva White Oak
- May minimize construction disruption to main campus
- Distance from main campus may impede pedestrian connectivity/collaboration opportunities
- Potential advantage to distribute traffic between East/West sides of site



STRATEGY 4: **NO BUILD OPTION**

- Provides for additional remote parking to allow existing campus to reach capacity, does not propose new buildings
- Distance from main campus may impede pedestrian connectivity and create additional travel time from parking to offices
- New parking could be used to offset loss of parking in the event that existing surface lots surrounding campus are developed
- Potential to integrate with Viva White Oak Development in future
- Takes advantage of large land bays on eastern portion of site
- May minimize construction disruption to main campus
- Potential advantage to distribute traffic between East/West sides of site

3.2 Overview of Master Plan Alternatives

There are four alternatives in the draft master plan: Action Alternatives A, B and C and a No-Action Alternative.

3.2.1 No-Action Alternative

Under the No-Action Alternative, FDA would continue its current operations at the FRC. 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 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 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.



Figure 3-1: Existing Campus Aerial View



NO ACTION ALTERNATIVE
Illustrative Plan

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Figure 3-2: Existing Campus Plan

NO-ACTION ALTERNATIVE
Existing Commons View

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2

Figure 3-3: Existing Commons View



3.2.2 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 master plan alternatives would add between 1,100,000 to 1,200,000 gsf of office space and 300,000 to 400,000 gsf special use space to support FDA's mission.

Parking would be provided at ratio of 1 space for every 1.8 employees (1:1.8) for a total of 10,094 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 11,709, which would include the additional 7,436 new additional parking spaces for FDA and its employees. Additional new parking spaces include replacement of existing 2,544 parking spaces 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.

Under each of the Action Alternatives, a distribution center would be constructed either under the new plaza connecting the new development on the east with the existing development or adjacent to the Northeast Parking Garage. In both cases, the distribution would connect directly into the existing tunnel network. It is important to point out that while each alternative has specific location shown for the distribution center, the location of

the distribution center is interchangeable between alternatives. In other words, the location of the distribution center is an independent decision. In addition to the distribution center, FDA intends to enhance the loading docks adjacent to Building 72 to better handle chemical distribution to the lab buildings. This enhancement is common to all the alternatives.

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.

In addition to the above-mentioned elements, there are commonalities to each of the Action Alternatives that range from historic preservation to high preference buildings. The net result is that each of three action alternatives A, B and C have the capability of accommodating 18,000 FDA employees and support staff in GSA's proposed Master Plan.

MASTER PLAN ALTERNATIVES SUMMARY

- Approximately 18,000 employees and support staff
- Approximately 1,100,000 to 1,200,000 gsf of office space and 300,000 to 400,000 gsf special use space
- Parking ratio 1:1.8
- 10,094 total parking spaces for FDA employees and support staff
- Visitor parking of 1,615 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

Alternative A



- Mid Rise Buildings (5-9 Floors)
- Total New GSF : **1,589,161 ft²** (Office & Special Use)
- 4 new parking structures (7,064 Spaces*)
- Most impervious surfaces added

* New parking includes replacement of existing parking displaced by new buildings

Commonalities

- Preservation of the historic New Hampshire Avenue green buffer
- Preservation of historic structures
- Compact walkable campus
- Iconic building anchoring commons
- High performance buildings

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- New northern loop road

- Transit Center

- Significant storm water management

- Minimized natural environment disturbances

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Alternative B



- (1) 20-story Tower + Midrise Buildings
- Total New GSF : **1,748,834 ft²**
(Office & Special Use)
- 3 new parking structures (7,073 Spaces*)
- Least impervious surfaces added (equal to C)

7

Alternative C



- (2) 14-story towers + Midrise buildings
- Total New GSF : **1,573,124 ft²**
(Office & Special Use)
- 4 new parking structures (7,141 Spaces *)
- Least impervious surfaces added (equal to B)

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3.3 ALTERNATIVE A: Mid-Rise Office Buildings

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

NEW OFFICE	1.2M ft ²	109K m ²
COMMUNICATION CENTER	74K ft ²	6.9K m ²
TRANSIT/VISITOR CENTER	23K ft ²	2.2K m ²
CENTRAL CONFERENCE	64K ft ²	6K m ²
DISTRIBUTION CENTER	97K ft ²	9K m ²
OTHER SPECIAL /SHARED SPACES	160K ft ²	15K m ²
PARKING	7,064 spaces	
SITE INFRASTRUCTURE		

Table 3-1: Alternative A Development Concept

3.3.1 Summary of Alternative A

New buildings would be positioned at the eastern end of the commons and the plaza would be extended to facilitate a walkable campus. The buildings would not be visible from New Hampshire Avenue.

Alternative A would also include the following:

- Five new office buildings up to 10-stories tall;
- Three to four 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 located within the new campus expansion on the eastern end of the campus; and
- A Conference Center located in the northwest quadrant of the existing main campus.

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TOTAL NEW BUILDING AREA : 147,643 m² / 1,589,161 ft² (OFFICE AND SPECIAL SPACES ONLY)

- **TOTAL OFFICE : 108,669 m² / 1,169,715 ft²**
- **TOTAL SPECIAL USE AND SHARED USE : 38,974 m² / 419,446 ft²**

TOTAL NEW PARKING : 7,064 Spaces
(New parking includes replacement of existing parking displaced by new buildings, and assumes parking at 1 space per 1.8 Employees)

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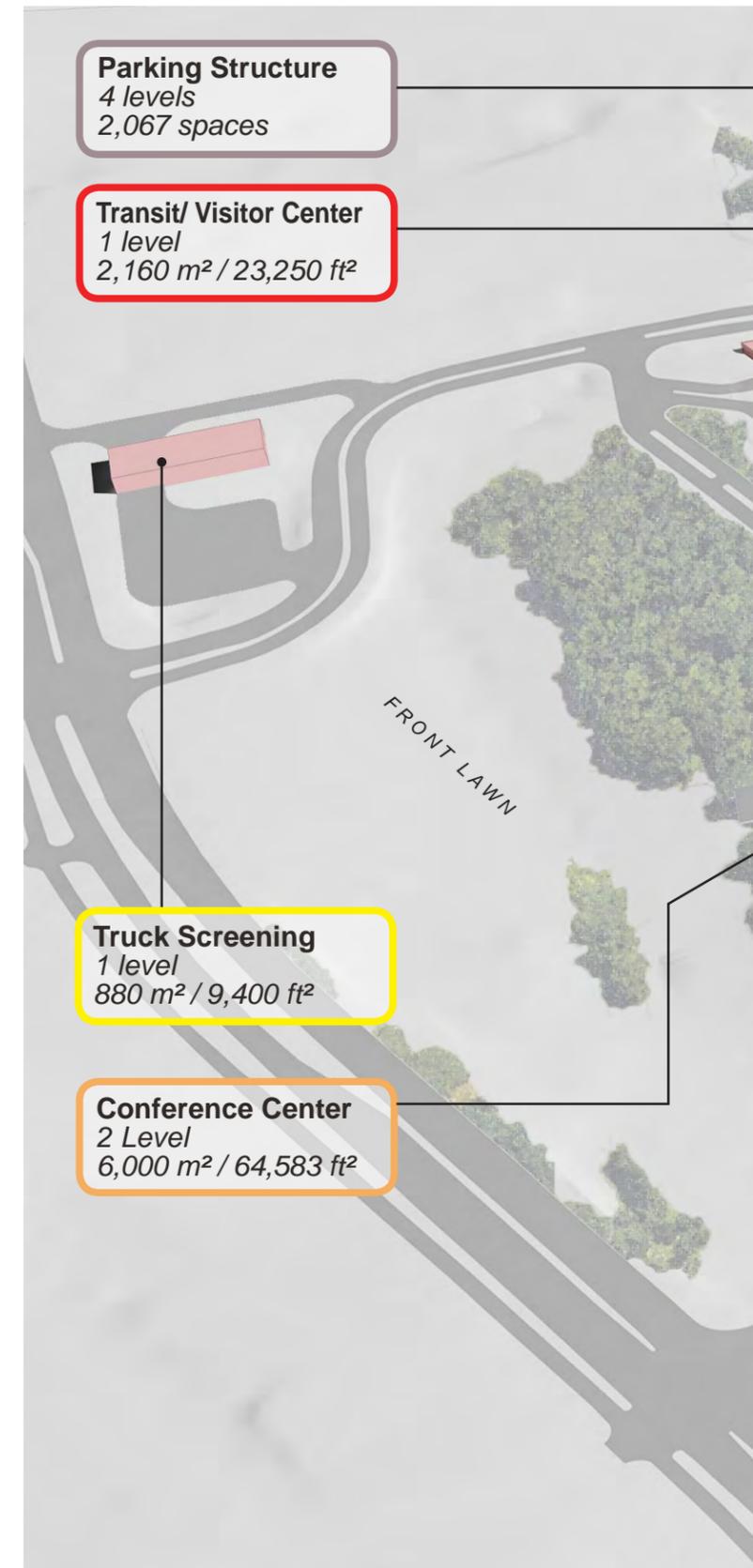
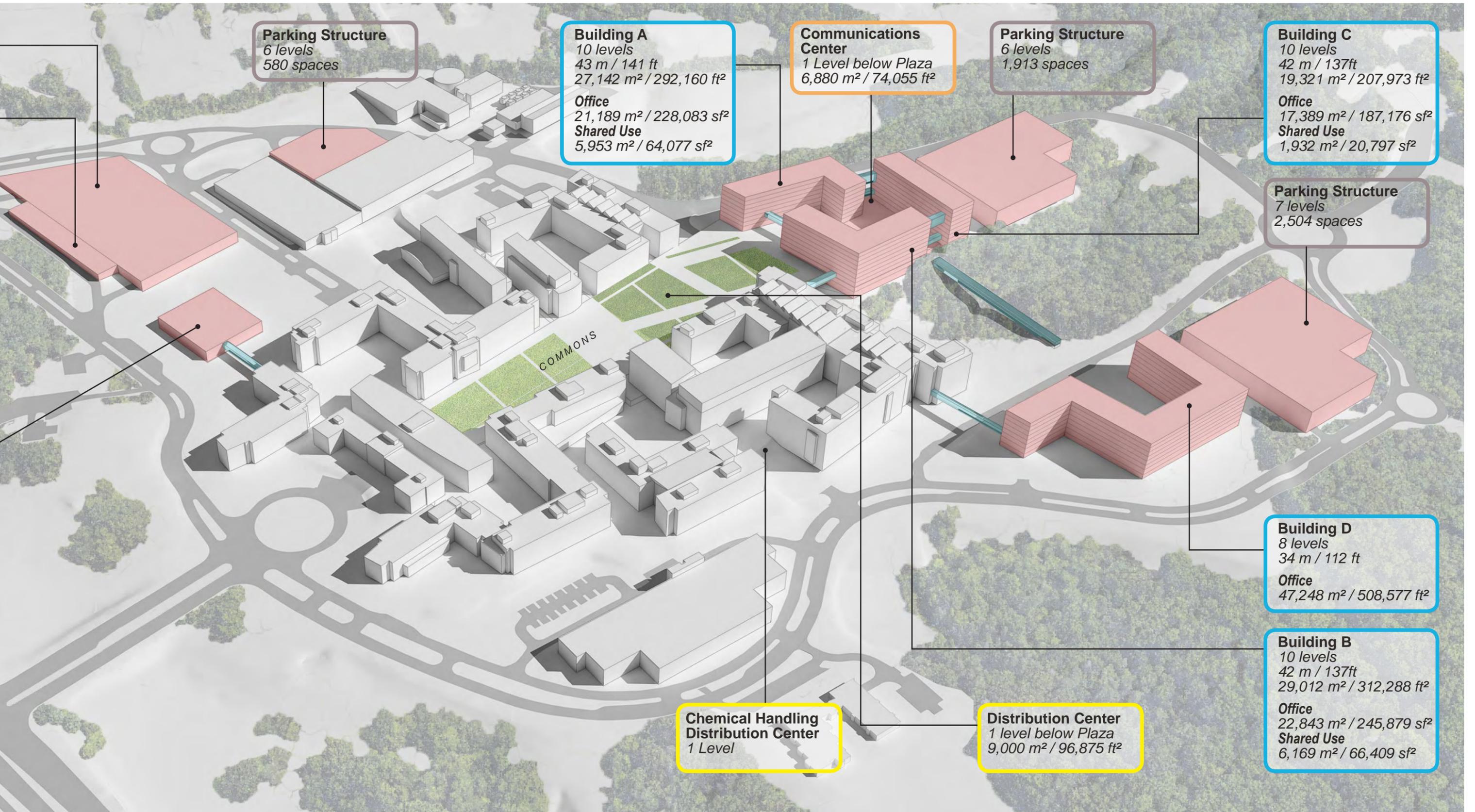


Figure 3-4: Alternative A Aerial View



Parking Structure
6 levels
580 spaces

Building A
10 levels
43 m / 141 ft
27,142 m² / 292,160 ft²
Office
21,189 m² / 228,083 sf²
Shared Use
5,953 m² / 64,077 sf²

Communications Center
1 Level below Plaza
6,880 m² / 74,055 ft²

Parking Structure
6 levels
1,913 spaces

Building C
10 levels
42 m / 137ft
19,321 m² / 207,973 ft²
Office
17,389 m² / 187,176 sf²
Shared Use
1,932 m² / 20,797 sf²

Parking Structure
7 levels
2,504 spaces

COMMONS

Building D
8 levels
34 m / 112 ft
Office
47,248 m² / 508,577 ft²

Building B
10 levels
42 m / 137ft
29,012 m² / 312,288 ft²
Office
22,843 m² / 245,879 sf²
Shared Use
6,169 m² / 66,409 sf²

Chemical Handling Distribution Center
1 Level

Distribution Center
1 level below Plaza
9,000 m² / 96,875 ft²

ALTERNATIVE A
New Development Concept Diagram

- 1 Central Axis from Building 1
- 2 Cross Axis

- LEGEND
- New Development
 - Axial Relationship



Scale 1:5,000

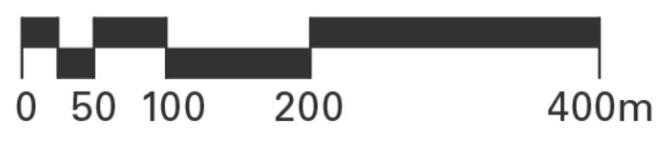


Figure 3-5: Alternative A Concept Diagram

ALTERNATIVE A

Illustrative Plan - Overall Land Use

- 1** New Office Building
- 2** New Parking Garage
- 3** Distribution Center (Below Plaza)
- 4** New Conference Center
- 5** New Cafeteria
- 6** Potential Truck Screening Facility
- 7** Potential Bypass Road to FDA Blvd
- 8** Transit Hub and Bus Bays
- 9** Pedestrian Only Path
- 10** Pedestrian Bridge

SUSTAINABILITY FEATURES

- 1** Proposed Green Roof
- 2** Rooftop Solar Panels
- 3** Permeable Paving
- 4** Bio-Retention Area

NORTH



Scale 1:5,000



Figure 3-6: Alternative A Illustrative plan

ALTERNATIVE A

Ground Level Plan (Below Plaza)

- 1** New Office Building
- 2** New Parking Garage
- 3** Distribution Center
- 4** New Conference Center
- 5** New Communication Center
- 6** Other Shared Use
- 7** Potential Bypass Road to FDA Blvd
- 8** Transit Hub and Bus Bays
- 9** Pedestrian Only Path
- 10** Truck Screening Facility
- 11** Pedestrian Bridge

LEGEND

-  Building Entrance/ Lobby
-  Existing Tunnel System
-  New Tunnel System

NORTH



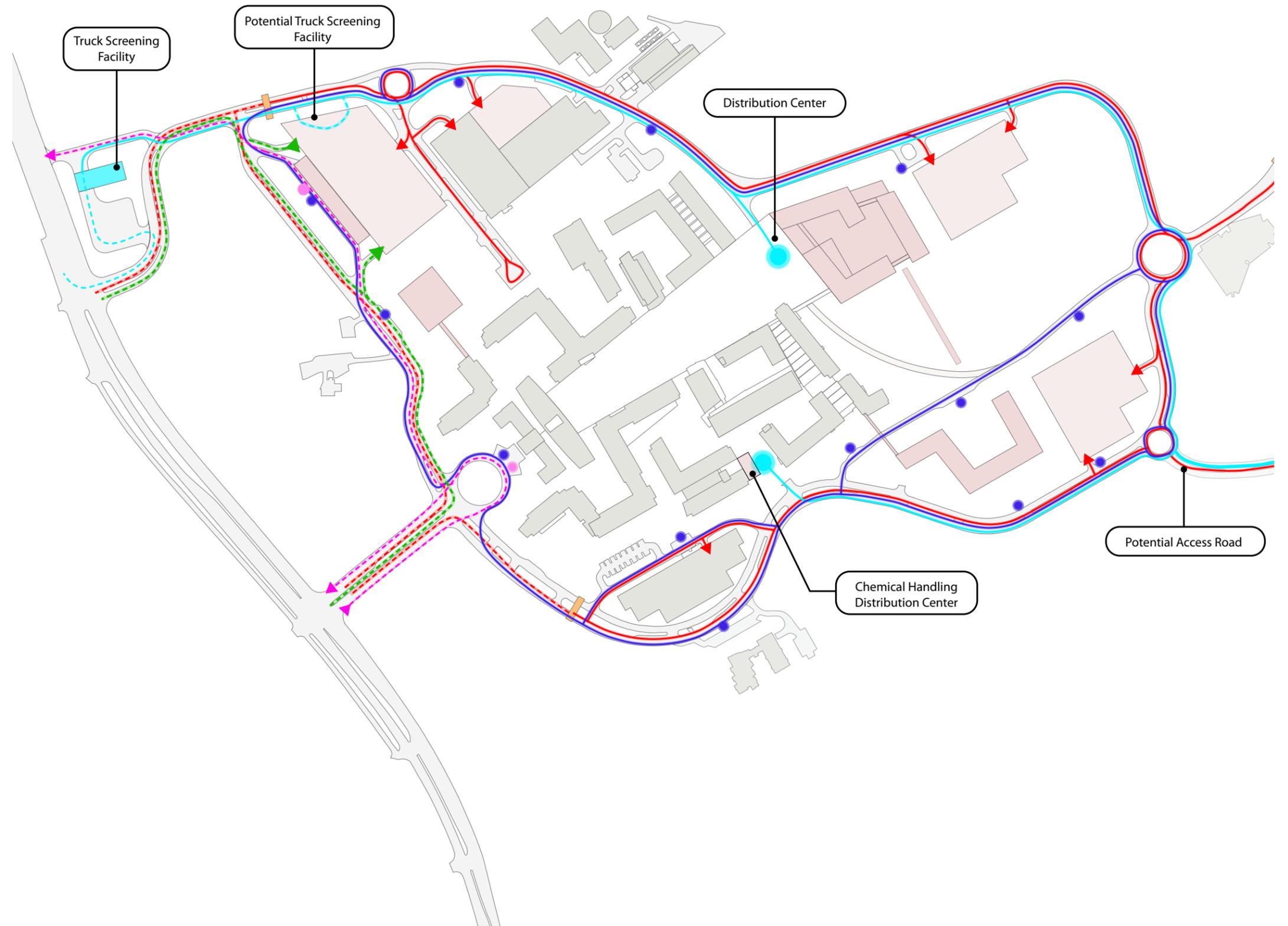
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Figure 3-7: Alternative A Ground Level Plan (Below Plaza)

ALTERNATIVE A
Circulation Diagram

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2



LEGEND

3

Vehicles	Unscreened	Screened	Stops	Garage Entrances
Trucks				
FDA Shuttle				
Bus				
Visitors				
FDA Employees				

NORTH



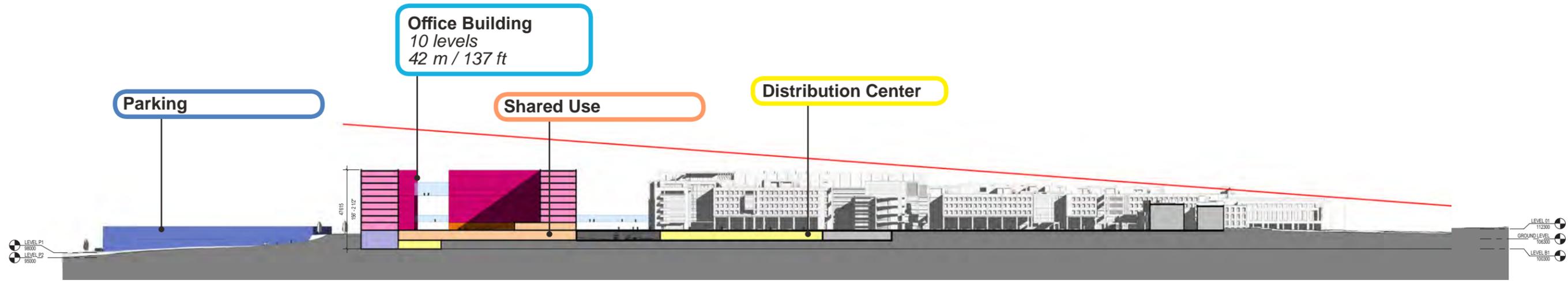
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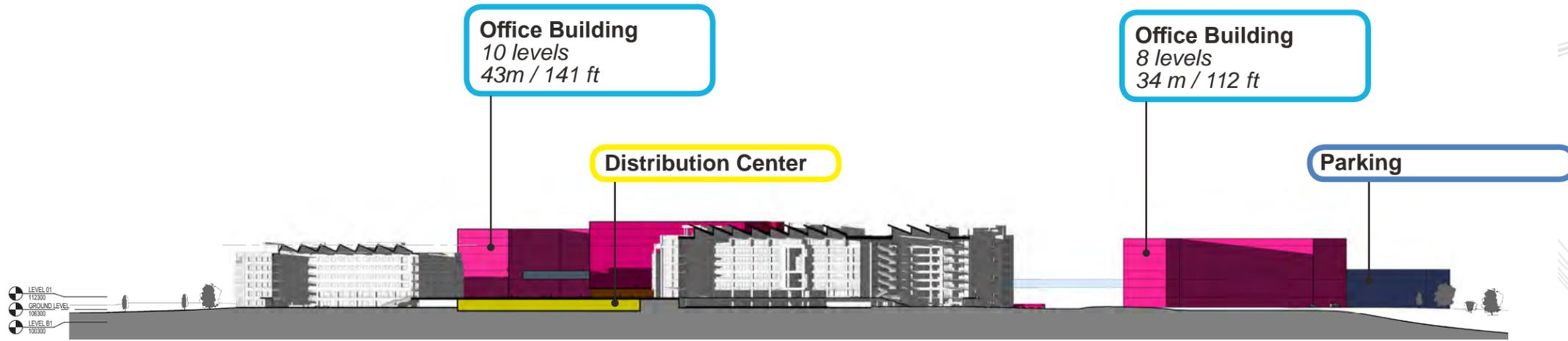
Figure 3-8: Alternative A Circulation Diagram

ALTERNATIVE A
Sections and Line of Sight

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SECTION A-A



SECTION B-B

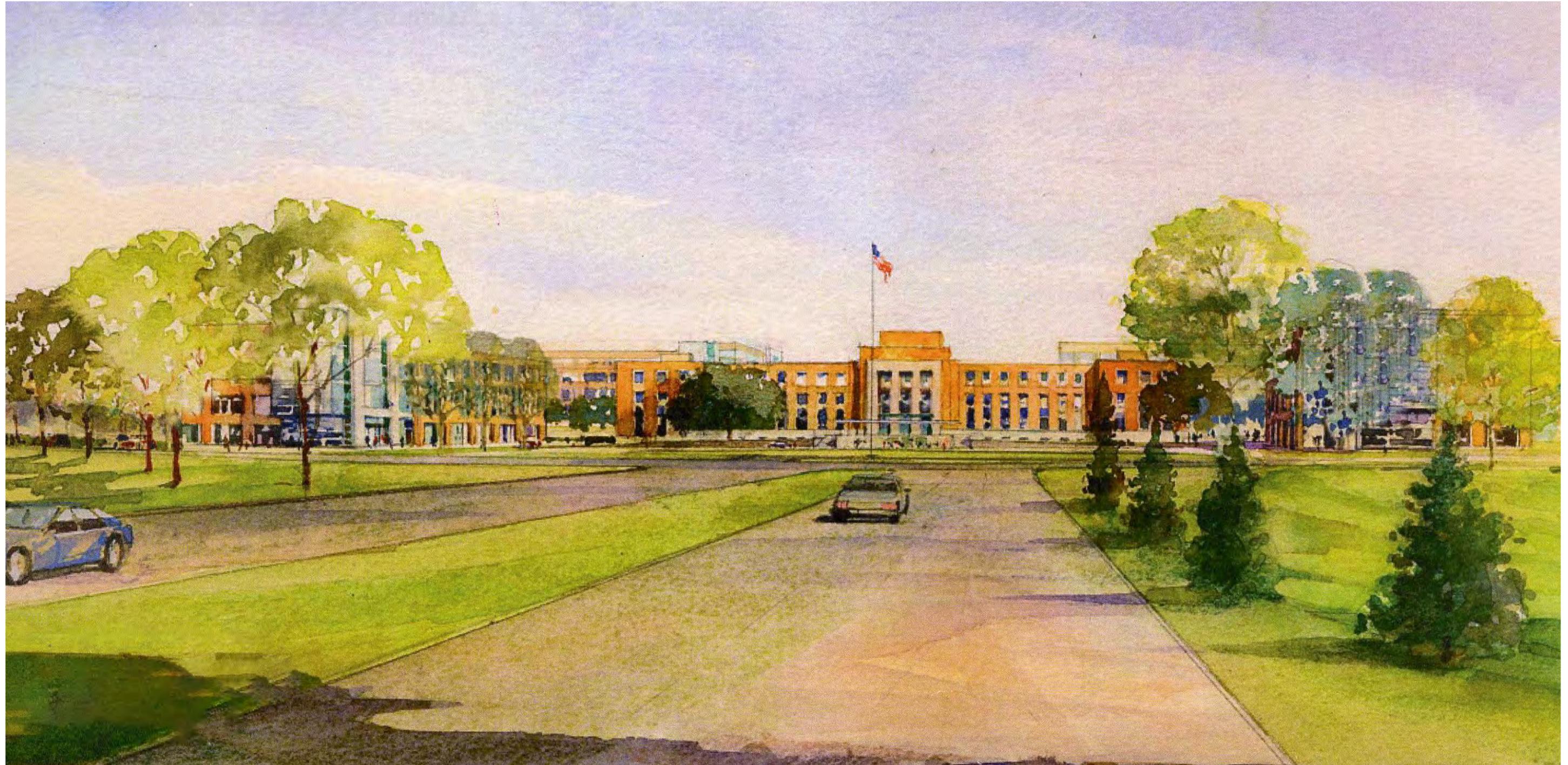
Figure 3-9: Alternative A Sections and Line of Sight Diagram

ALTERNATIVE A
New Hampshire Ave View

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2



Figure 3-10: Alternative A View from New Hampshire



ALTERNATIVE A
Mahan Road Circle View

1
2



Figure 3-11: Alternative A View from Mahan Road Circle



ALTERNATIVE A
View from Commons

1
2



Figure 3-12: Alternative A View from Commons



ALTERNATIVE A

Phasing and Implementation Plan

Critical to the needs of FDA is the construction of the distribution center and truck screening facility for security reasons. They would be both built in the first phase. Additionally, the first phase could include expansion of the NE parking garage.

Phase 2 would be construction of the parking garage and conference center in the NW quad. For the campus expansion, additional parking needs to be constructed because the future office buildings are located where surface parking currently exists.

These two initial phases set the stage for phase 3 and 4 to support those functions. Phase 3 and 4 would include the construction of office buildings and parking garages. In this diagram, construction of the buildings that extend the Commons to the east would be first, followed by expansion of the SE Quad.

LEGEND

-  Phase 1 Building
-  Phase 1 New Road and Improvement
-  Phase 2 Building
-  Phase 2 New Road and Improvement
-  Phase 3 Building
-  Phase 3 New Road and Improvement
-  Phase 4 Building
-  Phase 4 New Road and Improvement



Figure 3-13: Alternative A Phasing Diagram

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3.4 ALTERNATIVE B: One Large Tower Office Building

With Alternative B, a 20-story office building would be located on the eastern end of the FDA Campus. This iconic building would anchor the eastern of the commons and signal the significance of the campus, much like the tower at Walter Reed Hospital does in Bethesda.

NEW OFFICE	1.2M ft ²	110K m ²
COMMUNICATION CENTER	91K ft ²	8.5K m ²
TRANSIT/VISITOR CENTER	23K ft ²	2.2K m ²
CENTRAL CONFERENCE	73K ft ²	7K m ²
DISTRIBUTION CENTER	103K ft ²	9.6K m ²
OTHER SPECIAL /SHARED SPACES	265K ft ²	25K m ²
PARKING	7,073 spaces	
SITE INFRASTRUCTURE		

Table 3-2: Alternative B Development Concept

3.4.1 Summary of Alternative B

A 20-story office building would be located at the eastern end of campus. Given the current and future space needs of the FDA, a tall building provides 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 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. The space between the high rise and low rise building permits view into the woodlands beyond and is centered on the historic planning axis that dates to the 1940's.

Alternative B would also include the following:

- Four new office buildings up to 20-stories tall;
- Three to four new parking garages;
- A Communications Center located within the new campus expansion on the eastern end of the campus; and
- A Conference Center located in the northwest quadrant of the existing main campus.

TOTAL NEW BUILDING AREA : 162,478 m² / 1,748,834 ft² (OFFICE AND SPECIAL SPACES ONLY)

- **TOTAL OFFICE : 110,675 m² / 1,191,309 ft²**
- **TOTAL SPECIAL USE AND SHARED USE : 51,803 m² / 557,525 ft²**

TOTAL NEW PARKING : 7,073 Spaces
(New parking includes replacement of existing parking displaced by new buildings, and assumes parking at 1 space per 1.8 Employees)

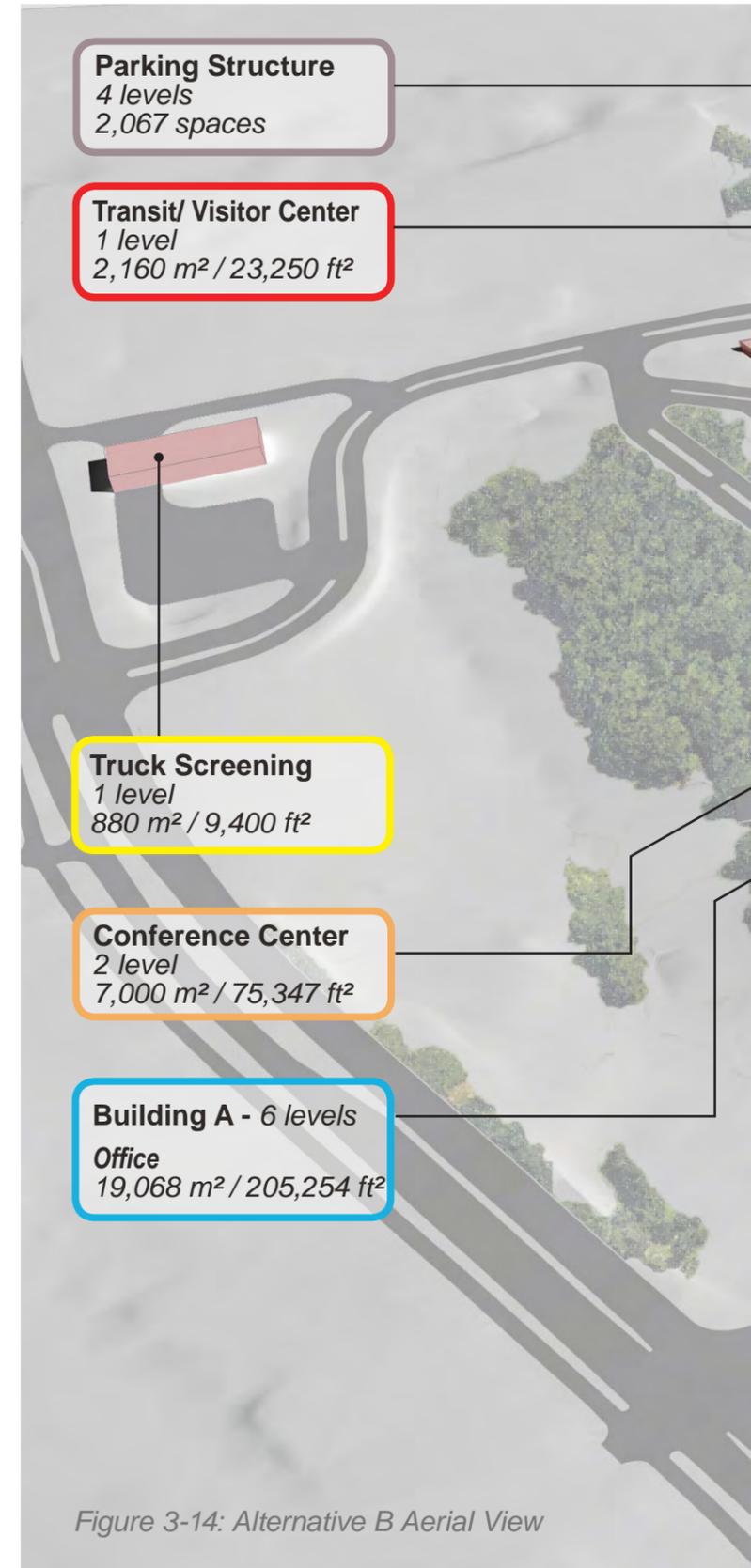


Figure 3-14: Alternative B Aerial View



Distribution Center
2 levels
9,000 m² / 96,875 ft²

Building B
20 levels + PH
91 m / 298 ft
49,040 m² / 527,862 ft²
Office
44,136 m² / 475,076 sf²
Shared Use
4,904 m² / 52,786 sf²

Parking Structure
7 levels
2,306 spaces

Building C
8 levels
34 m / 112 ft
66,265 m² / 713,278 ft²
Office (7 Levels)
47,471 m² / 510,979 sf²
Shared Use (Below Plaza Levels)
18,794 m² / 202,299 sf²

Parking Structure
7 levels
2,700 spaces

Chemical Handling Distribution Center
1 Level
600 m² / 6,458 ft²

Communications Center
1 Level below Plaza
8,464 m² / 91,110 ft²

COMMONS

FRONT LAWN

ALTERNATIVE B
New Development Concept Diagram

- 1** Central Axis from Building 1
- 2** Cross Axis

- LEGEND**
-  New Development
 -  Axial Relationship



Scale 1:5,000

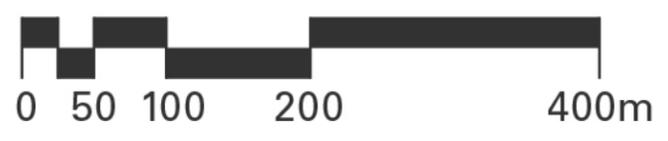


Figure 3-15: Alternative B Concept Diagram

ALTERNATIVE B

Illustrative Plan - Overall Land Use

- 1 New Office Building
- 2 New Parking Garage
- 3 Distribution Center
- 4 New Conference Center
- 5 New Cafeteria
- 6 Potential Truck Screening Facility
- 7 Potential Bypass Road to FDA Blvd
- 8 Transit Hub and Bus Bays
- 9 Pedestrian Only Path

SUSTAINABILITY FEATURES

- 1 Proposed Green Roof
- 2 Rooftop Solar Panels
- 3 Permeable Paving
- 4 Bio-Retention Area

NORTH



Scale 1:5,000



Figure 3-16: Alternative B Illustrative plan

ALTERNATIVE B

Ground Level Plan (Below Plaza)

- 1** New Office Building
- 2** New Parking Garage
- 3** Distribution Center
- 4** New Conference Center
- 5** New Communication Center
- 6** Other Shared Use
- 7** Potential Bypass Road to FDA Blvd
- 8** Transit Hub and Bus Bays
- 9** Pedestrian Only Path
- 10** Truck Screening Facility

LEGEND

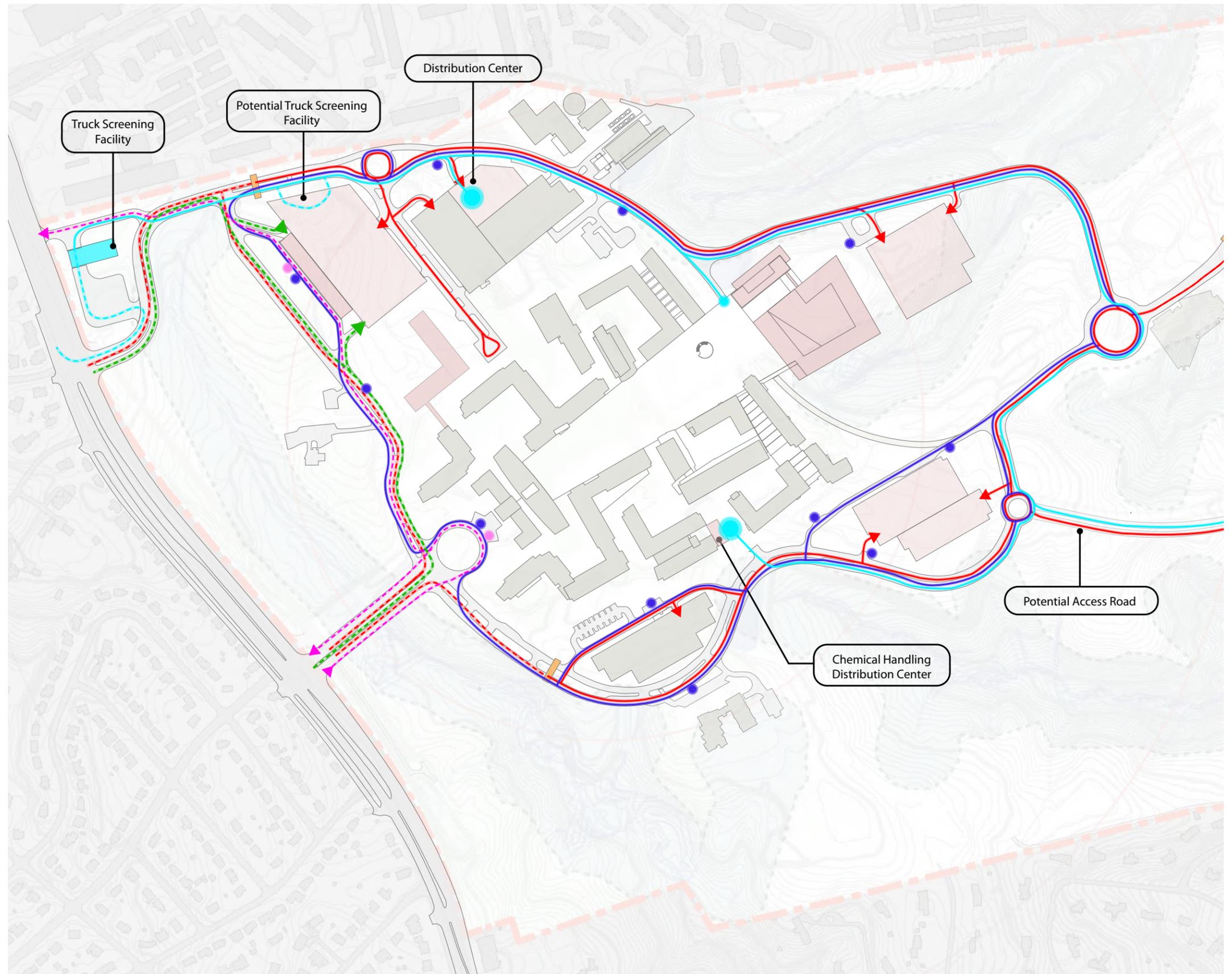
-  Building Entrance/ Lobby
-  Existing Tunnel System
-  New Tunnel System



Figure 3-17: Alternative B Ground Level Plan (Below Plaza)

ALTERNATIVE B
Circulation Diagram

1
2



LEGEND

3

Vehicles	Unscreened	Screened	Stops	Garage Entrances
Trucks				
FDA Shuttle				
Bus				
Visitors				
FDA Employees				

NORTH

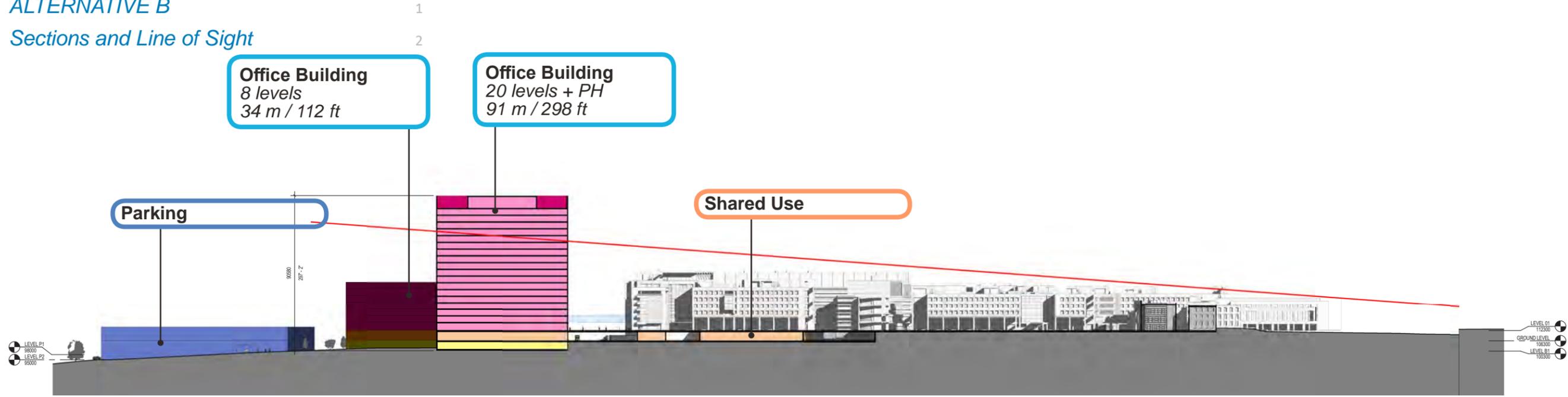


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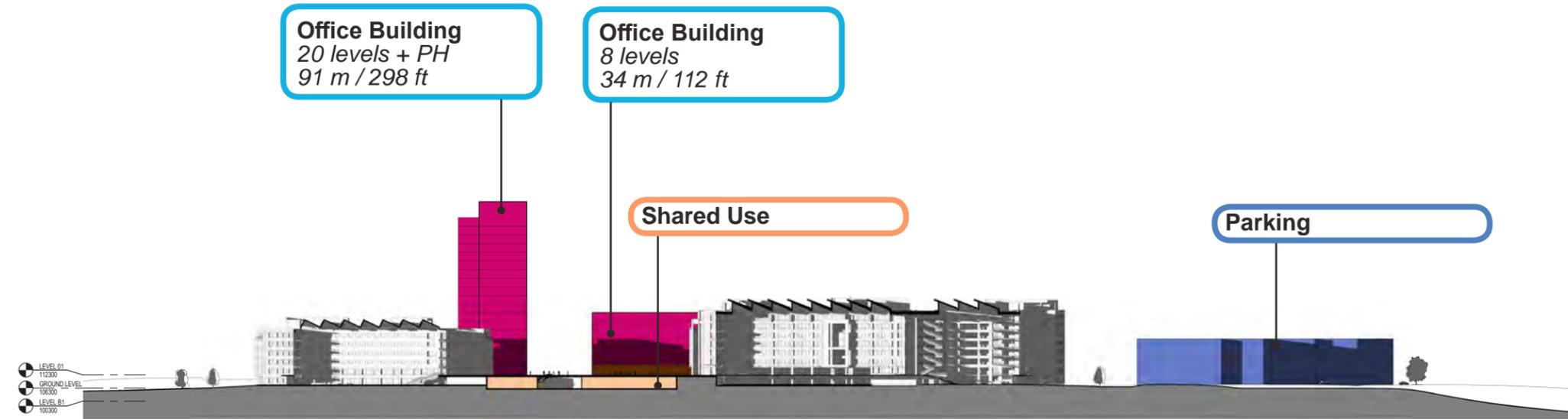


Figure 3-18: Alternative B Circulation Diagram

ALTERNATIVE B
Sections and Line of Sight



SECTION A-A



SECTION B-B

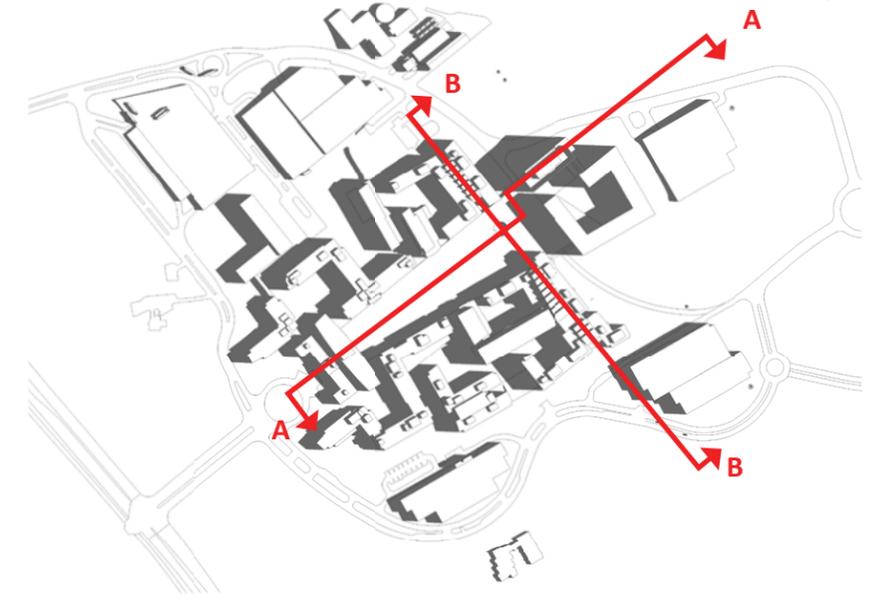


Figure 3-19: Alternative B Sections and Line of Sight Diagram

ALTERNATIVE B 1
South New Hampshire Ave View 2

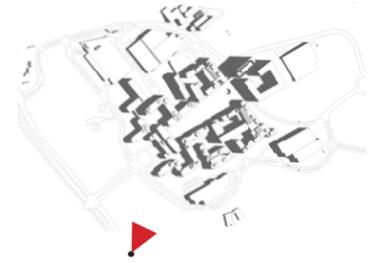


Figure 3-20: Alternative B View from South New Hampshire Ave.



ALTERNATIVE B
New Hampshire Ave View

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2



Figure 3-21: Alternative B View from New Hampshire Ave.



ALTERNATIVE B
Mahan Road Circle View

1
2



Figure 3-22: Alternative B View from Mahan Road Circle



ALTERNATIVE B
View from Commons

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2



Figure 3-23: Alternative B View from Commons



ALTERNATIVE B

Phasing and Implementation Plan

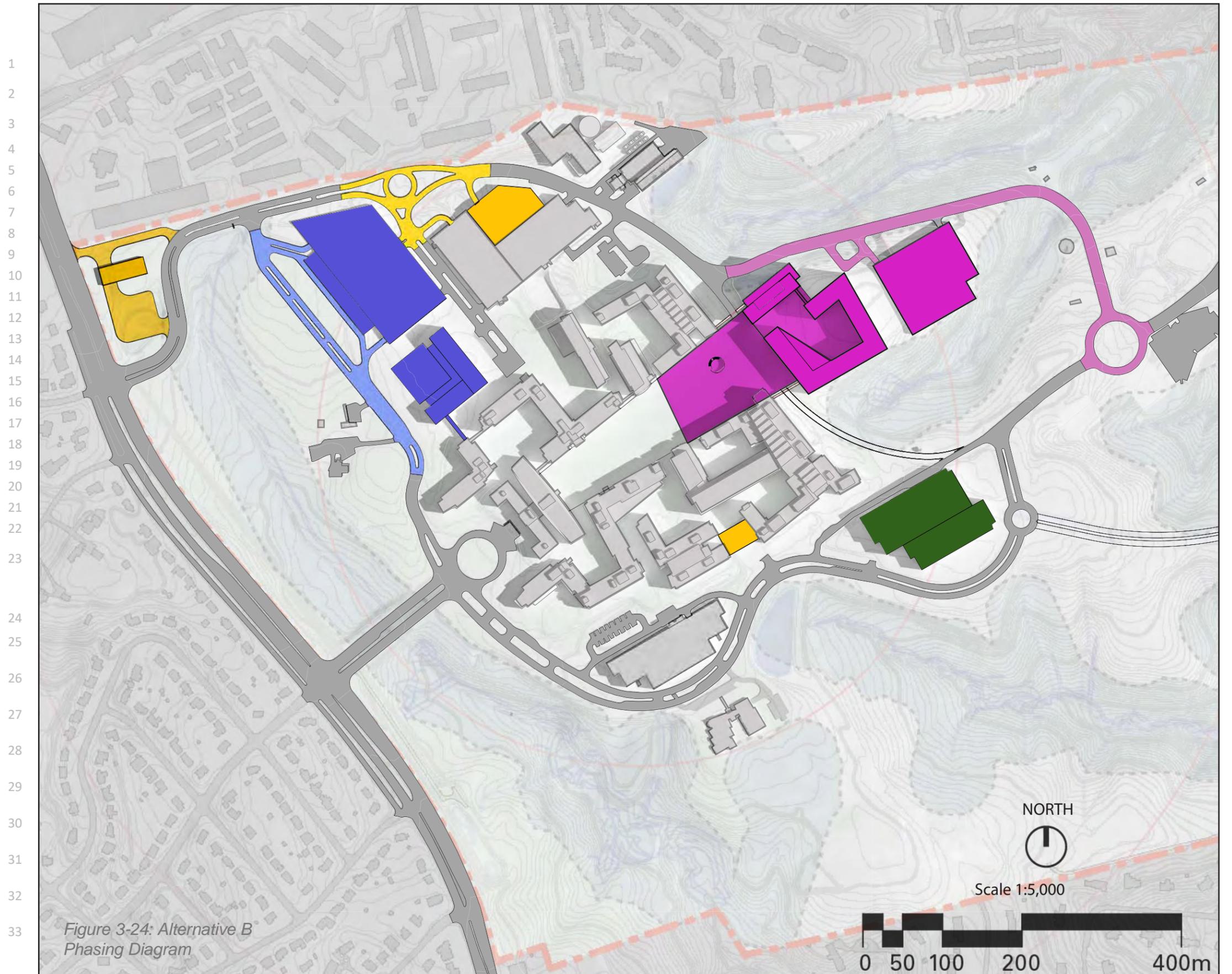
Critical to the needs of FDA is the construction of the distribution center and truck screening facility for security reasons. They would be both built in the first phase.

Phase 2 would be construction of the parking garage in the SE Quad. For the campus expansion, additional parking needs to be constructed because the future office buildings are located where surface parking currently exists.

These two initial phases set the stage for phase 3 and 4 to support those functions. Phase 3 and 4 would include the construction of office buildings, the conference center, and parking garages. In this diagram, construction of the buildings in the NW Quad would be first and the construction of the buildings that extend the Commons to the east is the last phase. They could be easily reversed based on the availability of funds.

LEGEND

-  Phase 1 Building
-  Phase 1 New Road and Improvement
-  Phase 2 Building
-  Phase 2 New Road and Improvement
-  Phase 3 Building
-  Phase 3 New Road and Improvement
-  Phase 4 Building
-  Phase 4 New Road and Improvement



3.5 ALTERNATIVE C: Mid-Rise Office buildings 1

With Alternative C, two 14-story office buildings would 2
be located on the eastern end of the FDA Campus. 3

 NEW OFFICE	1.1M ft ²	106K m ²
 COMMUNICATION CENTER	77K ft ²	8.5K m ²
 TRANSIT/VISITOR CENTER	23K ft ²	2.2K m ²
 CENTRAL CONFERENCE	73K ft ²	7K m ²
 DISTRIBUTION CENTER	97K ft ²	9K m ²
 OTHER SPECIAL /SHARED SPACES	155K ft ²	14K m ²
 PARKING	7,141 spaces	
SITE INFRASTRUCTURE		

Table 3-3: Alternative C Development Concept

3.5.1 Summary of Alternative C

Similar to Alternative B, the space between the two 14-story buildings permits view into the woodlands beyond and is centered on the historic planning axis that dates to the 1940's. The high-rise office buildings would be visible from New Hampshire Avenue but not as prominent as Alternative B. 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 include the following:

- Five new office buildings up to 14-stories tall;
- Three to four new parking garages;
- A Communications Center located within the new campus expansion on the eastern end of the campus;
- A Conference Center located in the northwest quadrant of the existing main campus; and
- A free-standing dining facility would be constructed on the plaza.

4 **TOTAL NEW BUILDING AREA : 146,155 m² /**
5 **1,573,124 ft² (OFFICE AND SPECIAL SPACES ONLY)**

- 6 • **TOTAL OFFICE : 106,398 m² / 1,145,270 ft²**
- 7 • **TOTAL SPECIAL USE AND SHARED USE : 39,755**
- 8 **m² / 427,854 ft²**

9 **TOTAL NEW PARKING : 7,141 Spaces**
10 *(New parking includes replacement of existing*
11 *parking displaced by new buildings, and assumes*
12 *parking at 1 space per 1.8 Employees)*

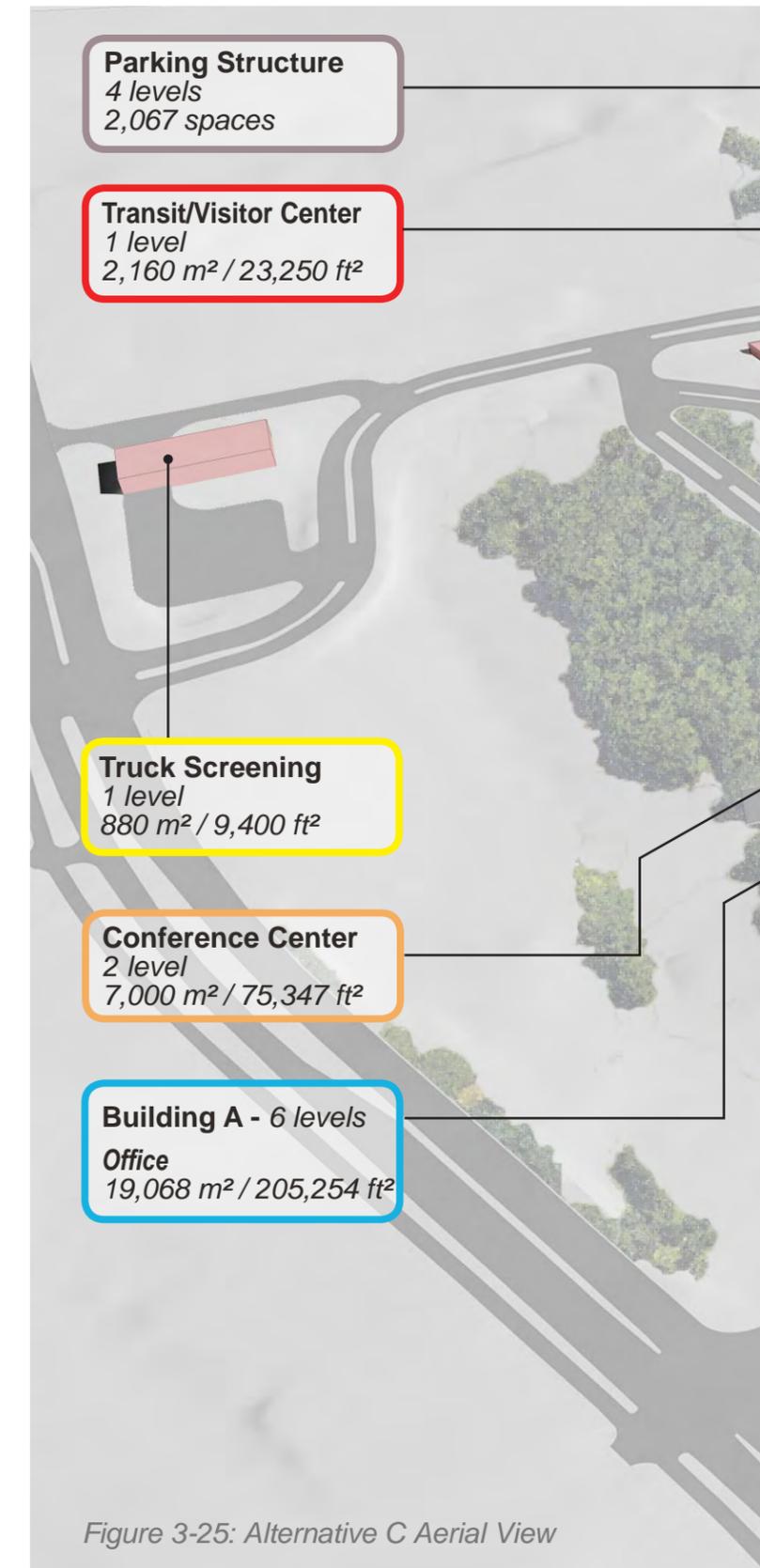
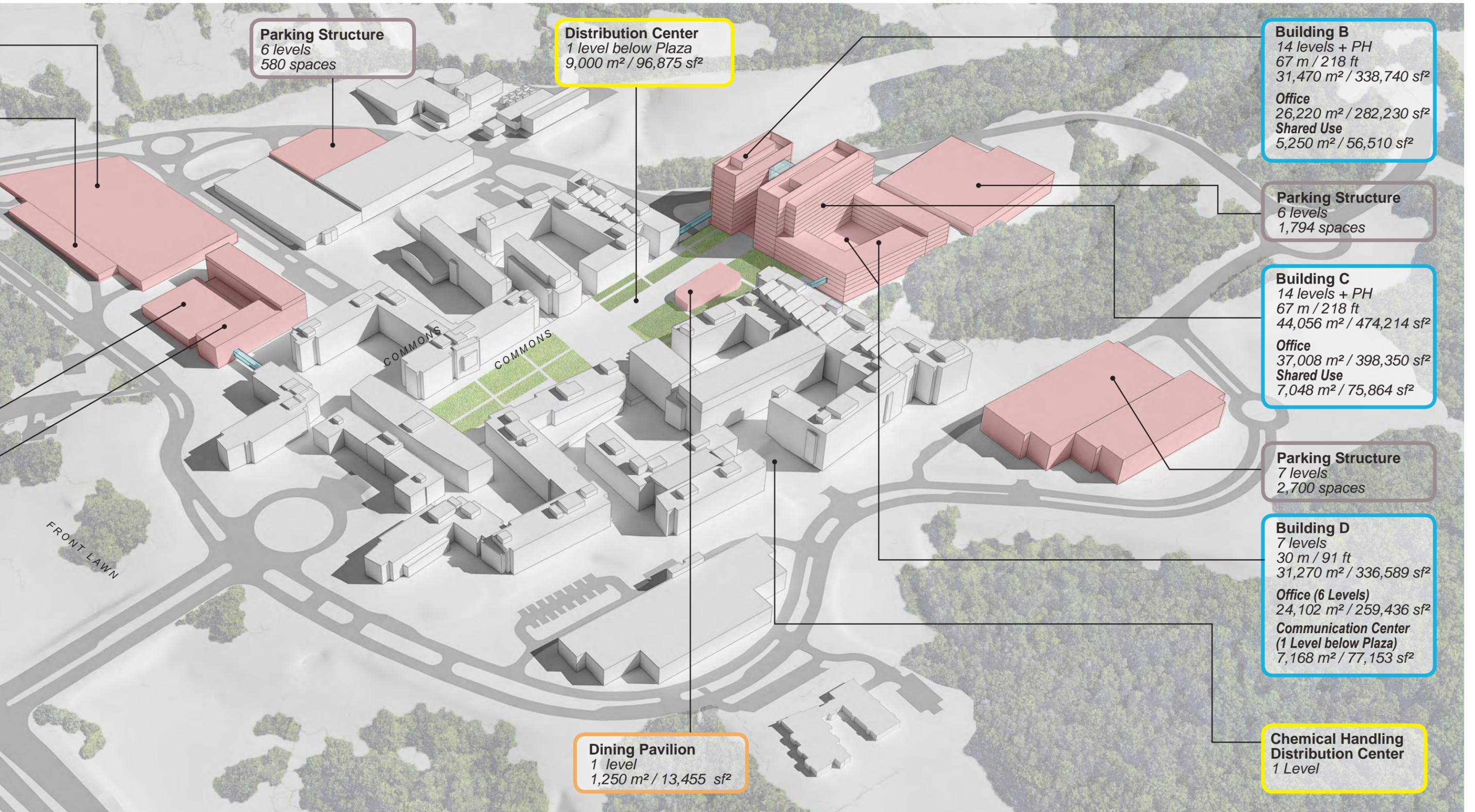


Figure 3-25: Alternative C Aerial View



Parking Structure
6 levels
580 spaces

Distribution Center
1 level below Plaza
9,000 m² / 96,875 sf²

Building B
14 levels + PH
67 m / 218 ft
31,470 m² / 338,740 sf²
Office
26,220 m² / 282,230 sf²
Shared Use
5,250 m² / 56,510 sf²

Parking Structure
6 levels
1,794 spaces

Building C
14 levels + PH
67 m / 218 ft
44,056 m² / 474,214 sf²
Office
37,008 m² / 398,350 sf²
Shared Use
7,048 m² / 75,864 sf²

Parking Structure
7 levels
2,700 spaces

Building D
7 levels
30 m / 91 ft
31,270 m² / 336,589 sf²
Office (6 Levels)
24,102 m² / 259,436 sf²
Communication Center
(1 Level below Plaza)
7,168 m² / 77,153 sf²

Dining Pavilion
1 level
1,250 m² / 13,455 sf²

Chemical Handling Distribution Center
1 Level

ALTERNATIVE C
New Development Concept Diagram

- 1 Central Axis from Building 1
- 2 Cross Axis

- LEGEND
- New Development
 - Axial Relationship



Scale 1:5,000



Figure 3-26: Alternative C Concept Diagram

ALTERNATIVE C

Illustrative Plan - Overall Land Use

- 1 New Office Building
- 2 New Parking Garage
- 3 Distribution Center
- 4 New Conference Center
- 5 New Cafeteria
- 6 Potential Truck Screening Facility
- 7 Potential Bypass Road to FDA Blvd
- 8 Transit Hub and Bus Bays
- 9 Pedestrian Only Path
- 10 Dining Pavilion

SUSTAINABILITY FEATURES

- 1 Proposed Green Roof
- 2 Rooftop Solar Panels
- 3 Permeable Paving
- 4 Bio-Retention Area

NORTH



Scale 1:5,000



Figure 3-27: Alternative C Illustrative plan

ALTERNATIVE C

Ground Level Plan (Below Plaza)

- 1** New Office Building
- 2** New Parking Garage
- 3** Distribution Center
- 4** New Conference Center
- 5** New Communication Center
- 6** Other Shared Use
- 7** Potential Bypass Road to FDA Blvd
- 8** Transit Hub and Bus Bays
- 9** Pedestrian Only Path
- 10** Truck Screening Facility

LEGEND

-  Building Entrance/ Lobby
-  Existing Tunnel System
-  New Tunnel System



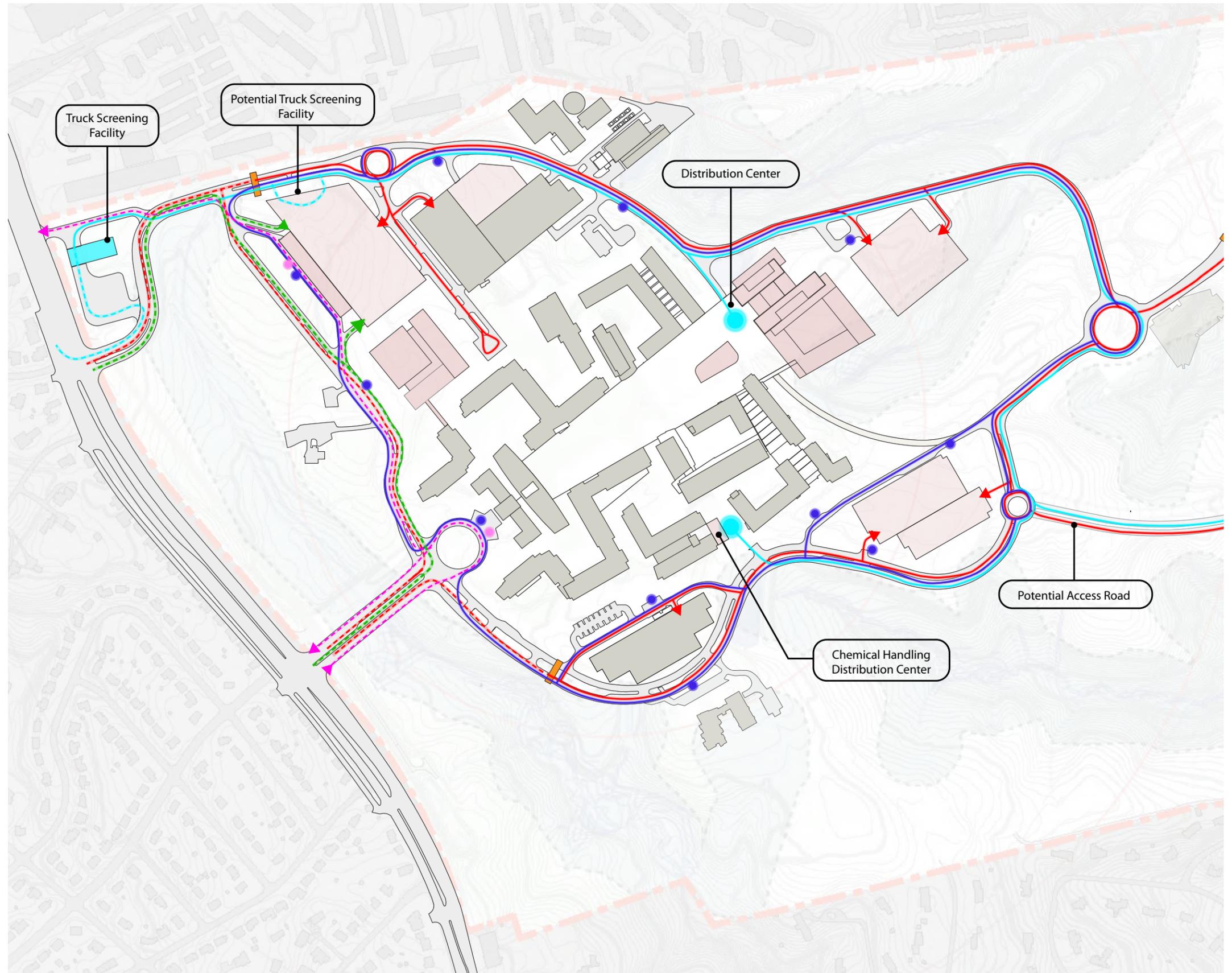
Scale 1:5,000



Figure 3-28: Alternative C Ground Level Plan (Below Plaza)

ALTERNATIVE C
Circulation Diagram

1
2



LEGEND

3

Vehicles	Unscreened	Screened	Stops	Garage Entrances
Trucks				
FDA Shuttle				
Bus				
Visitors				
FDA Employees				

NORTH



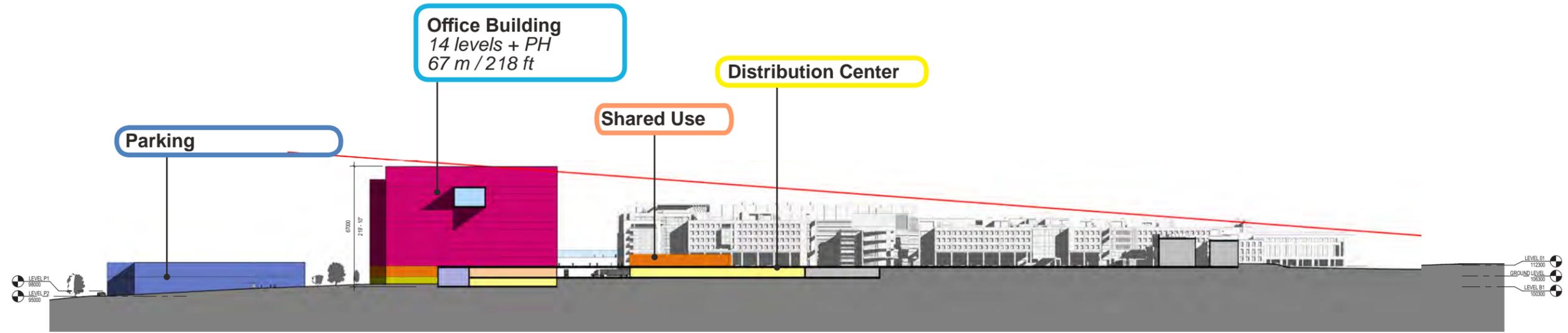
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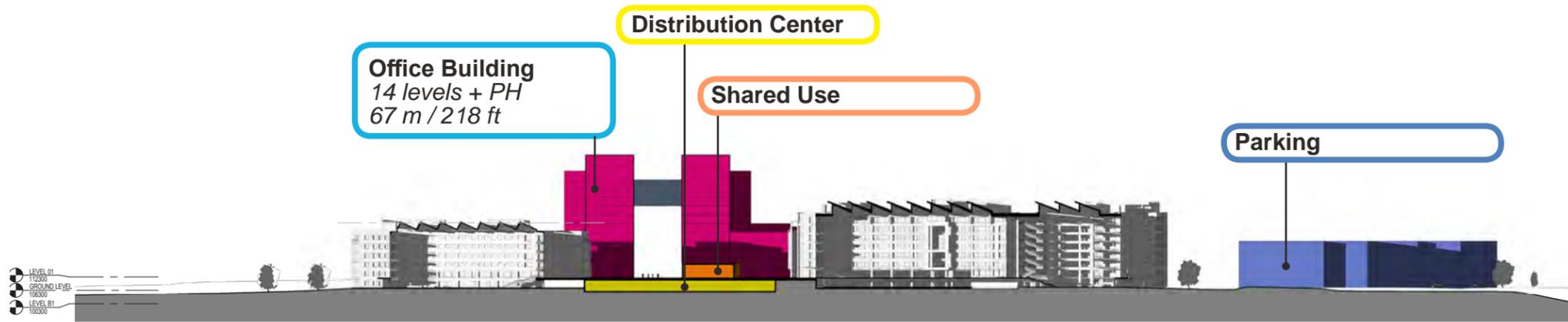
Figure 3-29: Alternative C Circulation Diagram

ALTERNATIVE C
Sections and Line of Sight

1
2



SECTION A-A



SECTION B-B

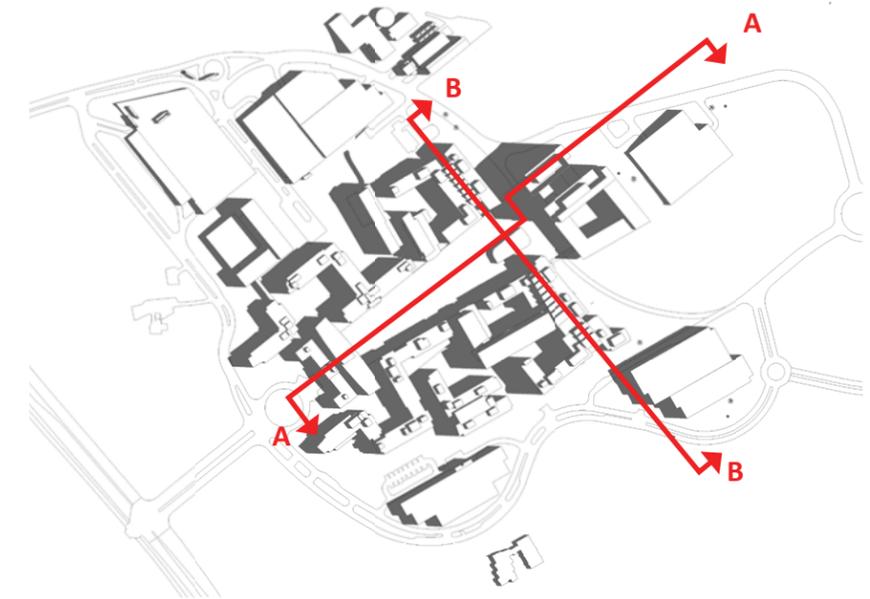


Figure 3-30: Alternative C Sections and Line of Sight Diagram

ALTERNATIVE C	1
South New Hampshire Ave View	2

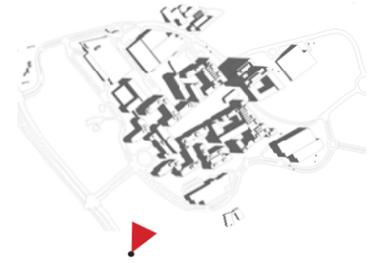


Figure 3-31: Alternative C View from South New Hampshire Ave.

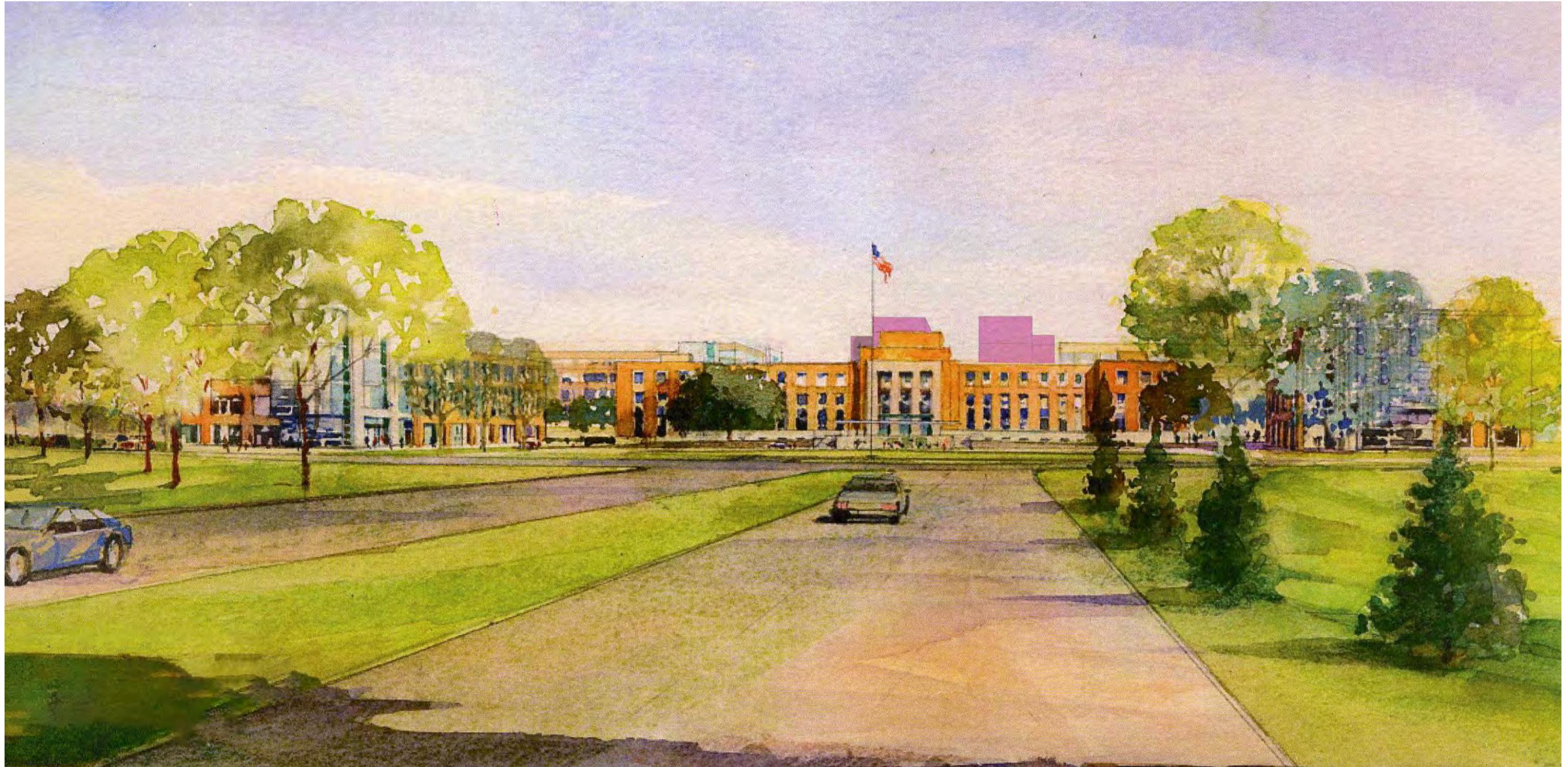


ALTERNATIVE C
New Hampshire Ave View

1
2



Figure 3-32: Alternative C View from New Hampshire Ave.



ALTERNATIVE C
Mahan Road Circle View

1
2



Figure 3-33: Alternative C View from Mahan Road Circle



ALTERNATIVE C
View from Commons

1
2



Figure 3-34: Alternative C View from Commons



ALTERNATIVE C

Phasing and Implementation Plan

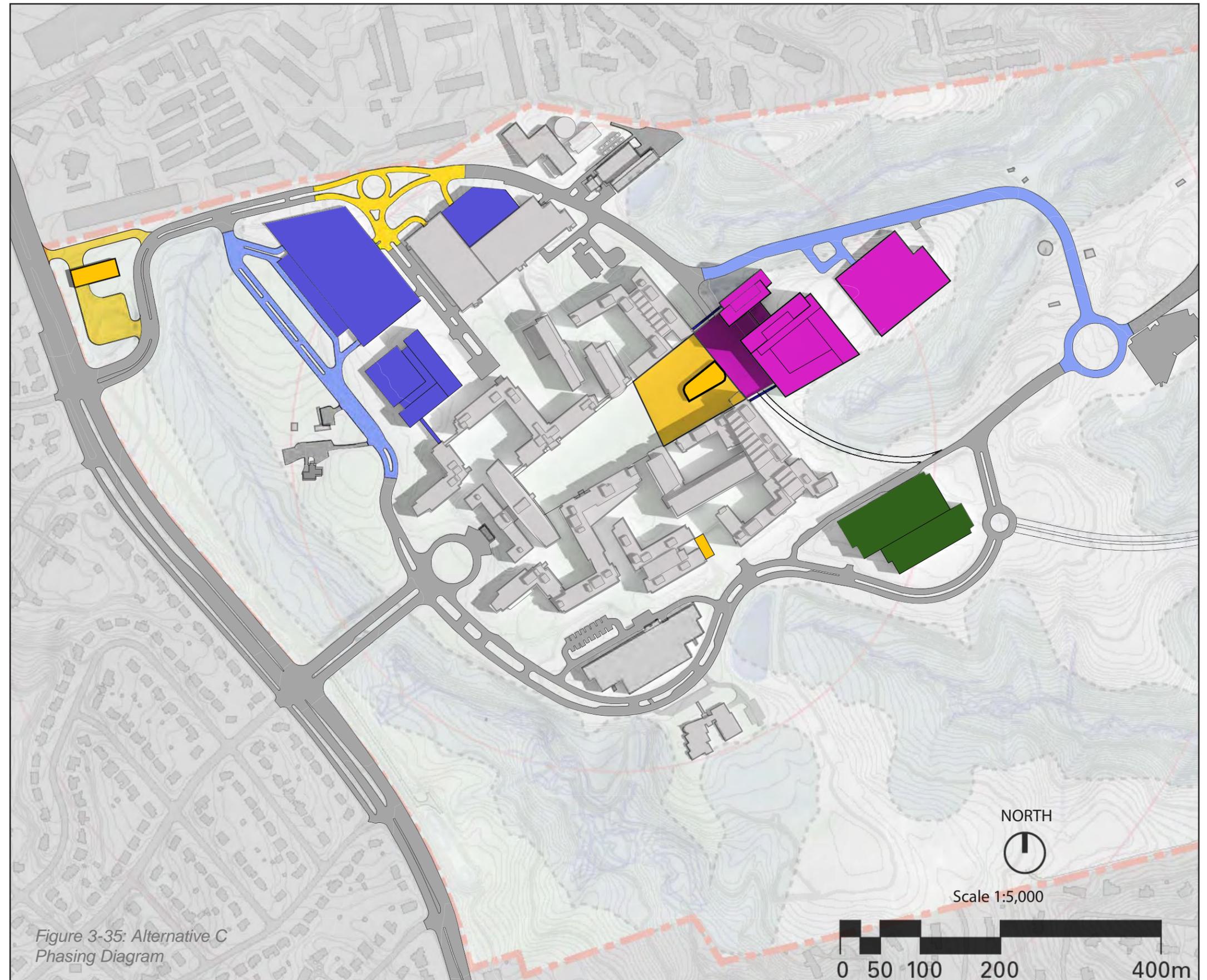
Like Alternative A & B, the construction of the distribution center and truck screening facility for security reasons is critical. They would be both built in the first phase.

Like Alternative B, phase 2 would be construction of the parking garage in the SE Quad. For the campus expansion, additional parking needs to be constructed because the future office buildings are located where surface parking currently exists.

These two initial phases set the stage for phase 3 and 4 to support those functions. Phase 3 and 4 would include the construction of office buildings, the conference center and parking garages. In this diagram, construction of the buildings in the NW Quad would be first and the construction of the buildings that extend the Commons to the east is the last phase. They could be easily reversed based on the availability of funds.

LEGEND

-  Phase 1 Building
-  Phase 1 New Road and Improvement
-  Phase 2 Building
-  Phase 2 New Road and Improvement
-  Phase 3 Building
-  Phase 3 New Road and Improvement
-  Phase 4 Building
-  Phase 4 New Road and Improvement



3.6 Design Guidelines

Architectural Character

With approximately 3.0 million square feet of space completed on campus, the architectural character established in the original 1997 Master Plan has clearly emerged and will continue to guide future planning, form making, and aesthetic development. The FDA Campus consists of buildings placed to define a variety of different scaled courtyards. Much like a university campus FDA has a large Commons that is the central focus of the campus and series of smaller courtyards all of which are intended to promote interaction and collaboration between staff.

The scale of the plan development is intended to serve dual purposes. On one hand, the scale of the development is to be as intimate as possible to offset immense project scope. On the other hand, the scale would clearly establish the significance and importance of this major Federal facility. The architecture should connote a sense of spontaneity and delight, notwithstanding the generic approach to building design necessitated by cost constraints. It should project an image for FDA as a forward looking modern institution, as well as a Federal agency of major stature, inspiring dignity, and permanence. The principal materials are to be both forward looking and compatible with the historic structures on campus.

The laboratory buildings are primarily clad in metal panels to depict FDA as leading scientific institution. Office buildings, which constitute a sizable percentage of the program, are clad in a brick that matches the historic buildings on campus. This is done to maintain continuity between the past and present and to create collegiate atmosphere. Typically, the office buildings have large punched window openings detailed in more modern way than the historic buildings to both differentiate from the historic buildings and ground them in the period

1 with which they are built. To stitch the campus
2 together, metal panels which match the office
3 buildings are used as an accent element in office
4 buildings. In addition, similar to Historic Building
5 1, limestone is used on the new office buildings in
6 strategic places.

7 As the Master Plan is implemented in the future,
8 the intent is to continue the material strategy that
9 was put in place in the 1997 Master Plan and has
10 continued to evolve through the latest construction
11 project completed in 2014. The exception to this
12 strategy is the taller buildings recommended in
13 the Alternatives B and C. These buildings are iconic
14 office towers anchoring the eastern end of the
15 campus. Rendering them entirely in brick will be
16 too heavy in appearance and inhibit the ability
17 to achieve zero net energy. These structure or
18 structures should be light in appearance using the
19 most sophisticated curtain systems available at the
20 time they are being designed. While they should
21 be contemporary in appearance and function, they
22 need to relate to the existing fabric that is now well
23 established on the campus.

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Building 32 Cafeteria Outdoor seats and Bridge to Building 51





Atrium of Building 71, 52, and 75

3.7 Streetscape and Landscape Plan

3.7.1 Existing Landscape & Streetscape

The existing grounds and site landscape are integrated into the composition of the campus. Generously sized outdoor spaces are positioned around the buildings and reflect the growth of the campus over time. The grounds serve mostly as flexible areas that support the basic needs of circulation between the buildings, however, some of the courtyards have been adapted to host unique gardens. The gardens grow mostly herbaceous species of a wide variety that display the changing seasons throughout the year. The contrast of these contemporary, wild planting beds against the well-manicured lawns laced throughout, gives the landscape a distinct character of an ever-evolving canvas.

3.7.2 Proposed Design & Improvement

The proposed improvements aim to build on the successes of the existing landscape and support new ambitions of the extended campus. The central quad will be extended to meet the new buildings creating new opportunities for gardens and outdoor gathering areas. Vegetation selection and layout will be used to emphasize views, highlight places for people, and meet performance expectations in stormwater management areas. The plant pallet will change depending on soil depth and structure in certain areas, but this will only enhance the diversity and seasonality of the landscape.

Perimeter security features, lighting, and signage are key elements to ensure a functional, safe, and user-friendly campus experience. Site elements will be selected carefully to match existing details and finishes. Security features such as bollards, curb walls or knee walls will be designed to blend into the landscape as much as possible to maintain a welcoming appeal.

3.7.3 Relationship to the Adjacent Public Area

While the campus is intentionally inwardly focused and avoids obtrusion to neighbors, the publicly accessible entry roads and those used by visitors, will be improved with the addition of a bike path and enhanced vegetation as needed. By replacing the surface visitor parking lot with a new garage, the curb appeal of the campus will improve with new opportunities for a welcoming landscape and entry plaza. The campus will maintain its connection to the surrounding landscape by remaining nestled in the landforms and wooded areas.

Courtyard of Building 31 and Building 32



ALTERNATIVE A
Streetscape & Landscape Concept Diagram

- 1** Building Axis / Concept Guideline
- 2** Existing Garden Art
- 3** Existing Commons

LEGEND

-  Proposed Structures
-  Multi-Use Trail and Bike Path
-  Bike Path Under Land Bridge
-  Plaza
-  Pedestrian Walkway
-  Planting
-  Bio-Retention Area
-  Art or Sculpture

NORTH



Scale 1:5,000

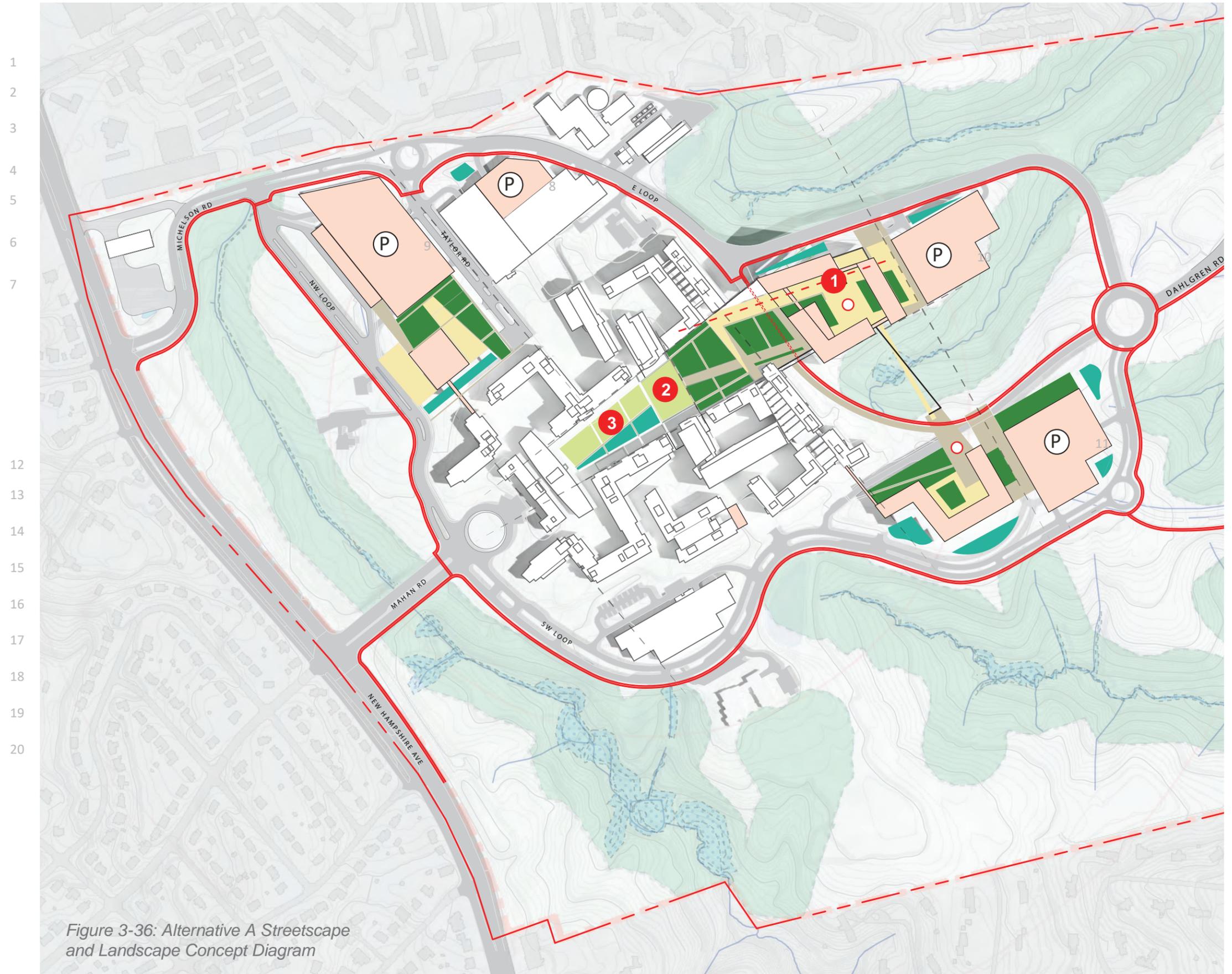


Figure 3-36: Alternative A Streetscape and Landscape Concept Diagram

ALTERNATIVE B
Streetscape & Landscape Concept Diagram

- 1** Building Axis / Concept Guideline
- 2** Existing Garden Art
- 3** Existing Commons

LEGEND

-  Proposed Structures
-  Multi-Use Trail and Bike Path
-  Bike Path Under Land Bridge
-  Plaza
-  Pedestrian Walkway
-  Planting
-  Bio-Retention Area
-  Art or Sculpture

NORTH



Scale 1:5,000

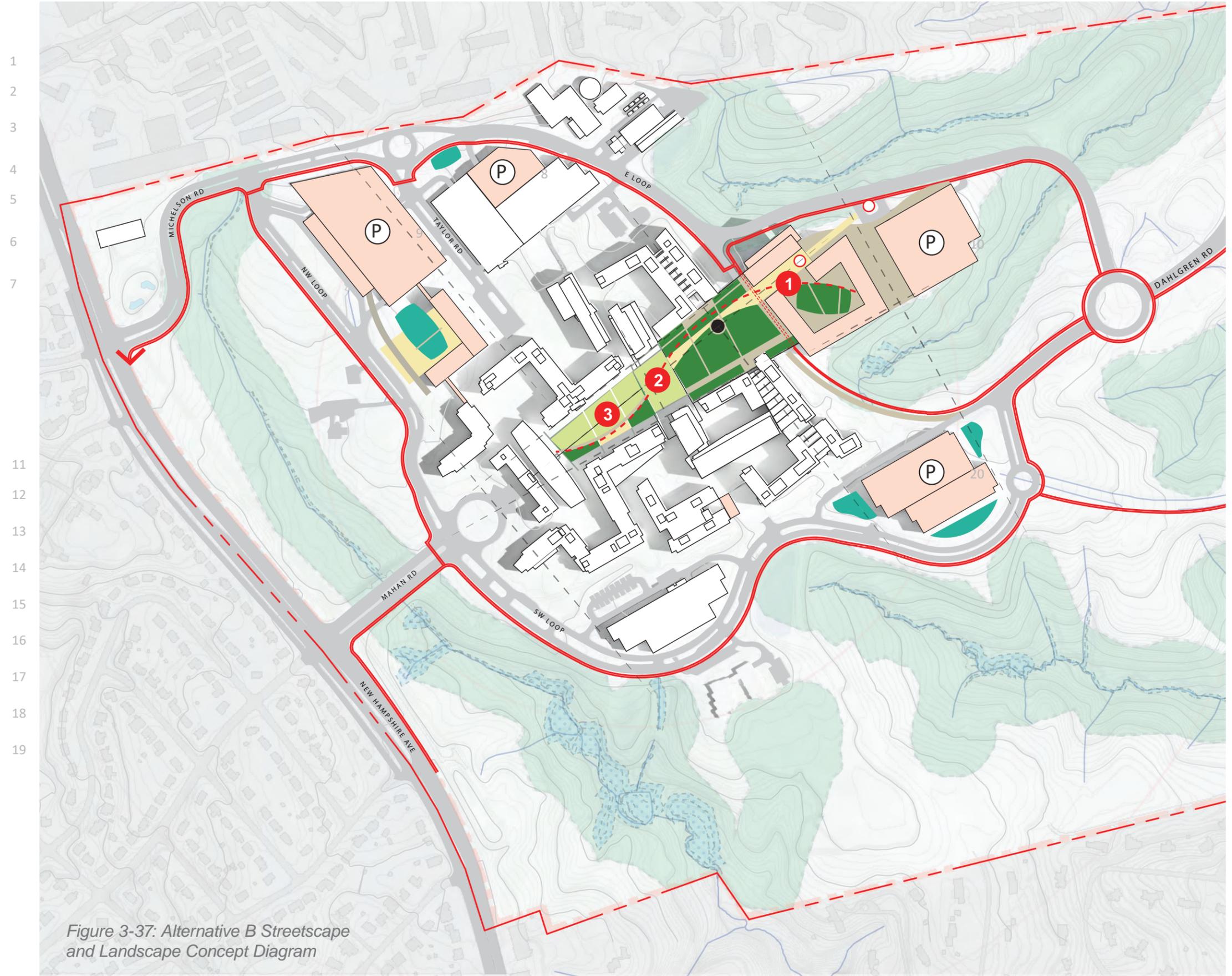


Figure 3-37: Alternative B Streetscape and Landscape Concept Diagram

ALTERNATIVE C
Streetscape & Landscape Concept Diagram

- 1** Building Axis / Concept Guideline
- 2** Existing Garden Art
- 3** Existing Commons

LEGEND

-  Proposed Structures
-  Multi-Use Trail and Bike Path
-  Bike Path Under Land Bridge
-  Plaza
-  Pedestrian Walkway
-  Planting
-  Bio-Retention Area
-  Art or Sculpture

NORTH



Scale 1:5,000

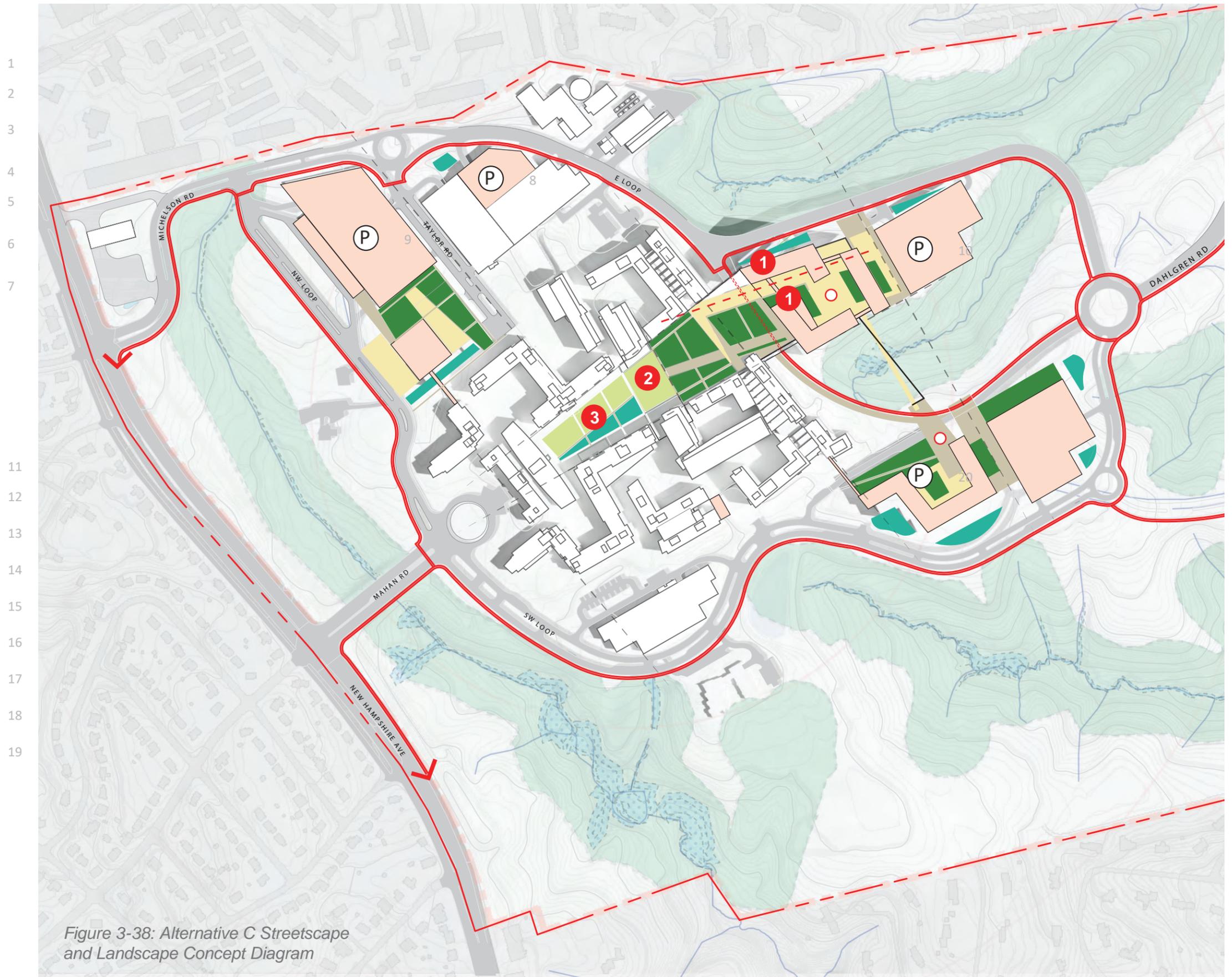


Figure 3-38: Alternative C Streetscape and Landscape Concept Diagram

3.8 Parking and Circulation

3.8.1 Existing Campus Users

The primary current users of the FDA Campus at the FRC are employees of the FDA. A very small percentage of overall users are GSA employees.

Online surveys of existing on-campus and off-campus employees were conducted to determine current commuting patterns and how they might change after the consolidation as part of the Transportation Management Plan (TMP). The survey examined the modes by which employees travel to work, working hours, telecommuting, origin/destination, possible improvements to transit options, and reasons for mode choice. The survey results show that most (about 86.7%) of the existing on-campus employees work a typical 5 day/40 hours per week work schedule. In addition, a majority, 62.3%, of employees arrive between 7:00 AM and 9:00 AM and 61.2% depart between 3:30 PM and 5:30 PM.

3.8.2 Existing and Proposed Transportation Access

Regional access to the FDA Campus is provided from US 29, I-95, the Capital Beltway (1-495), and New Hampshire Avenue (MD 650). The FDA Campus can be accessed via two driveways (Michelson Road and Mahan Road) on New Hampshire Avenue, as well as Cherry Hill Road via FDA Boulevard. Upon completion of the Viva White Oak development, the site would also be accessed via a planned extension of Industrial Parkway from US 29 to FDA Boulevard.

Several bus routes serve the FDA Campus with stops along New Hampshire Avenue (MD 650) or internally within the campus. Most of the bus routes provide service during typical FDA operating hours at 15 to 30-minute headways. In addition to the bus services listed above, FDA operates six commuter

1 shuttle routes that serve local Metro stations. These
2 shuttles are intended to fill gaps in the existing
3 public transit network. Circulator shuttles are also
4 provided internally to link the buildings and parking
5 lots on the FDA Campus.

6 Four- to five-foot wide sidewalks are provided along
7 most roadways, providing a network that connects
8 the FDA Campus to nearby residential and retail
9 areas. Sidewalks are provided along northbound and
10 southbound Cherry Hill Road and southbound New
11 Hampshire Avenue (MD 650). An eight-foot wide
12 multi-use pathway is provided along northbound
13 New Hampshire Avenue (MD 650). The FDA Campus
14 is connected to the facilities on New Hampshire
15 Avenue (MD 650) via sidewalks along Michelson
16 Road and Mahan Road. A sidewalk and multi-use
17 path are provided along FDA Boulevard and the
18 multi-use path continues along Dahlgren Road to
19 connect the FDA Campus with the facilities on FDA
20 Boulevard and Cherry Hill Road.

21 Bicycle facilities are relatively limited for accessing
22 the site. A narrow, five-foot wide bicycle lane is
23 provided along northbound New Hampshire Avenue
24 (MD 650) along the FDA Campus frontage that
25 begins just south of the FDA Campus and continues
26 to an area just north of Columbia Pike (US 29). Given
27 the narrow width of the bicycle lane, its proximity to
28 a heavily traveled roadway, and limited connections,
29 it is not likely to encourage FDA employees to
30 commute via bicycle. There is a multi-use path is
31 provided along the northside of FDA Boulevard
32 that extends to the campus along Dahlgren Road.
33 However, there are limited facilities on Cherry Hill
34 Road, which does not make the multi-use path an
35 attractive bicycle route.

36 The results of the employee survey show that
37 approximately 75% of existing on-campus employees
38 currently commute by driving alone to work. In
39 addition to commuting by other modes, FDA
40 offers a robust telework program. Only 31% of
on-campus employees typically work all five days
on campus, and 87% of off-campus employees

41 report telecommuting at least one day per week, on
42 average.

43
44 Of the 25% of campus employees that do not
45 drive alone to work, only 4% of them bicycle or
46 walk to work. Approximately 12% of respondents
47 participate in FDA's sponsored carpool and vanpool
48 programs.

49
50 There were many reasons cited for the reliance on
51 driving to work alone; however, the recurring themes
52 were convenience, shorter overall commute times,
53 lack of suitable pedestrian and bicycle facilities,
54 and the lack of a high-frequency and high-capacity
55 transit service in White Oak.

3.8.3 Increased Volume Impact

56
57
58 Currently, 10,987 employees and support staff work
59 at the FDA Campus. The future development plans
60 to accommodate another 7,018 people on-site, for a
61 total population of 18,000.

62
63 A trip capacity analysis was performed using existing
64 data to generate an AM and PM peak hour trip per
65 employee rate based upon the current employee
66 population. These rates account for the effect
67 of site constraints, like parking capacity, as well
68 as employees that telecommute or take transit.
69 It is anticipated that the ratio of employees that
70 telecommute or take transit would remain relatively
71 consistent from the employee survey that was given;
72 therefore, the rates developed based on existing
73 activity likely provide a fair estimate of future
74 vehicular trip generation.

75
76 The number of AM and PM peak hour entering and
77 exiting trips was then calculated for the proposed
78 7,013 additional employees based on these rates.
79 A trip distribution analysis then was used to estimate
80 how the new vehicle trips would travel to and from
81 the site using the following established entrance/exit
82 points:

83
84

- 85 • New Hampshire Avenue (MD 650) North 128
- 86 • New Hampshire Avenue (MD 650) South 129
- 87 • Columbia Pike (US 29) South 130
- 88 • Columbia Pike (US 29) North 131
- 89 • Cherry Hill Road South 132
- 90 • Powder Mill Road (MD 212) East 133
- 91 • Fairland Road East 134
- 92 • Musgrove Road East 135

93
94
95
96 The results of the capacity analysis indicate that the
97 proposed site would generate significant additional
98 delay and queuing on multiple intersection
99 approaches to the campus. Given the built-out
100 nature of the transportation network within
101 the study area, emphasis should to be placed
102 on improving overall intersection operations
103 through adjustments to signal timing and phasing.
104 In addition, physical capacity improvements will
105 need to be evaluated for movements that would
106 experience an increase in delay of at least ten
107 seconds per vehicle.

108
109 It is possible that at least two, if not all three of
110 the proposed BRT corridors serving the White Oak
111 area would be operational once the expansion
112 of the campus is underway. However, suburban
113 to suburban transit routes, even those located in
114 higher density areas, tend to have a limited impact
115 on journey to work trips for office sites, like the FDA
116 campus. To plan appropriately, roadway mitigation
117 measures will be required to support the Master
118 Plan development.

119
120 The trip capacity and traffic studies are detailed
121 further in the Traffic Transportation Report (TTR)
122 and TMP.

Planned Onsite Circulation Improvements

Under the proposed Master Plan development, internal roadway improvements and increased parking capacity and management are planned to accommodate the increased driver population. Security check points will be enhanced and internal intersections improved through widening and roundabouts. Some consideration should also be given to building a new road which would by-pass the Air Force Wind Tunnel.

The existing FDA Campus already has a well-planned fabric of landscaped pedestrian walkways that employees and visitors use to traverse to and from parking garages and between buildings on campus. The proposed Master Plan expands this approach using ample sidewalk connections and nature/fitness path connections to and around the new structures planned to encourage and support pedestrian use.

3.8.4 Alternative Transportation Strategies

Based on the Draft TMP, improvements to pedestrian, bicycle, and transit facilities are also recommended as part of a robust and comprehensive mitigation strategy that attempts to reduce and mitigate the impact of peak hour vehicle trips on the external roadway network by an additional 20% beyond what is currently being achieved onsite.

Several enhancements are recommended to provide better connections for alternative modes, such as transit, pedestrians, and bicyclists. These recommendations include:

- Provide a 10-foot wide multi-use path along the campus loop roads that connect pedestrian and bicycle facilities on the external roadway network to the on-campus facilities.
- Provide secure, covered bicycle parking near building entrances. FDA currently provides locker room and shower facilities as well as bicycle

repair stations throughout the campus.

- Construct a new transit hub that provides a climate-controlled waiting area with amenities, such as benches, wi-fi, and real-time transit information.
- Work with Montgomery County to provide a connection to the proposed Columbia Pike and New Hampshire Avenue bus rapid transit (BRT) corridors.
- 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.

3.8.5 Parking Ratio

The proposed FDA Master Plan increases the number of FDA employees and support staff at the FDA Campus to 18,000. To accommodate the planned growth, up to an additional 1.6 million gross square feet (GSF) of building space and 7,436 additional parking spaces is proposed. The parking equates to a parking ratio of 1:1.8, or approximately one parking space for every 1.8 employees.

Parking has been identified as one of the key issues on the FDA Campus. NCPC permitted 6,926 parking spaces (at a rate of 1:1.5 or 2 parking spaces for every 3 employees) as part of the 2009 Master Plan. However, a proposed parking structure that was to be located in the southeast side of the campus was not constructed. Thus, the FDA has implemented attendant-assisted parking to provide parking capacity for approximately 6,800 vehicles. The attendant-assisted parking is intended to be a stop-gap measure until additional parking can be provided because it is costly and not considered sustainable.

Based on NCPC guidelines, a suburban facility that is not located in close proximity to a high-capacity transit stop, such as a Metrorail station, can have a parking ratio as high as 1:1.5. Therefore, based on this ratio, up to 12,000 parking spaces for employees

would be permissible on the FDA Campus. However, it is important to think critically about parking supply and demand because additional parking would likely lead to an increase in vehicle trips. During days of peak attendance, it is likely that all parking spaces would be occupied. Therefore, the site would be expected to see an increase in peak period vehicle trips of approximately 5,200 vehicles over a three to four-hour period. This would likely have a significant impact on the study area roadway network.

A sensitivity analysis was performed early in the master planning process to identify the threshold at which major intersections along New Hampshire Avenue (MD 650), US 29, and Cherry Hill Road would begin to fail, making it difficult for employees to access the campus, and requiring significant roadway improvements on a scale that would likely not be feasible. The results of the sensitivity analysis revealed that a lower parking ratio, approximately 1:1.8 would be more appropriate, reducing peak period trip generation by 2,000 vehicles. Refer to the Draft TMP.

At a 1:1.8 parking ratio, approximately 10,094 parking spaces would be permitted for employees and support staff. However, some additional parking is needed for visitors. Thus, approximately 11,709 parking spaces are recommended in the FDA Campus Master Plan.

Excluding visitor parking, the additional employee parking will only accommodate approximately 54% of staff that is assigned to the campus. Based on information contained in the employee commuter survey, approximately 75% of existing on-campus employees drive alone to work, while 79% of employees at leased locations are anticipated to drive alone to work if they are relocated to the FDA campus. Factoring in FDA's robust telework program, and peak employee attendance rate of 85% on any given day, the amount of employees that are anticipated to drive-alone to work will be 64%. This is 10% above the planned parking ratio. Refer to the

Draft TMP.

As required by NCPC, a Transportation Management Plan (TMP) has been prepared to recommend strategies that FDA can use to reduce the single-occupancy vehicle trips to the site and encourage increased vehicle occupancy and alternative modes of transportation.

3.8.6 Potential Access Road & Truck Screening Locations 1
2

The diagram on the following page illustrates several issues: 3
4
5

- Possible locations for truck screening either off New Hampshire Avenue or off FDA Boulevard 6
7
8
- Vehicle checkpoints to screen vehicles coming into the site from New Hampshire Avenue, FDA drive to the east, and between the Wind Tunnel site and the FDA campus 9
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11
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- Potential future development of the center or eastern end of the Federal Research Campus is depicted in this diagram as well and with it a new southern loop road and bridge over Paint Branch Creek that would be required to support this development. However, neither the development outside of FDA's campus or the new loop road is being proposed as part of this Master Plan and is shown for illustrative reasons only. 13
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- 1** Potential Truck Screening Facility 22
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- 2** Vehicle Screening/ Checkpoint 24
- 3** New Bridge 25
- 4** New Access Road 26
- 5** Junction with Loop Road 27
- 6** Junction with FDA Blvd. 28
- 7** AEDC Air Force Facility 29
- 8** Potential Future Development Zones 30
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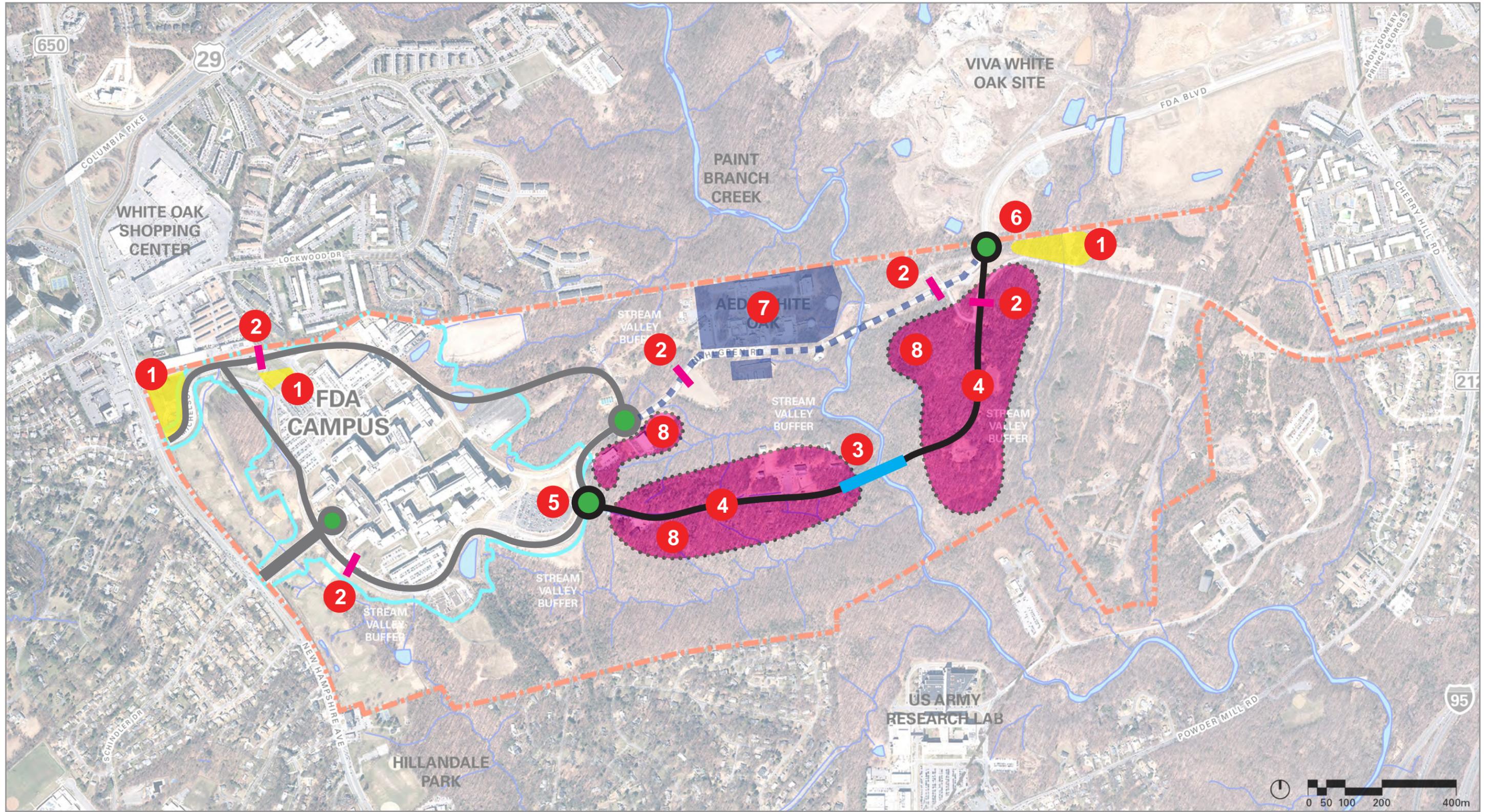


Figure 3-39: Potential Access Road & Truck Screening Locations



FDA Child Care Center with Green Roof

3.9 Sustainability

3.9.1 Sustainable Design Plan

The entire FDA Consolidation project is designed with the intent to achieve the highest possible degree of sustainability within the project constraints. Since 2003, all the buildings on campus have been designed to achieve a LEED silver certification using a variety of strategies summarized below. GSA plans to pursue LEED in the future.

Site

The LEED process began with the act of consolidating the scattered facilities of the FDA onto a single, pedestrian oriented campus. The chosen site is a former Naval Ordnance Laboratory. During this process, site disturbance has been kept to a minimum preserving wetlands and woodlands, including landscaped areas and mature trees. Located within walking distances of multiple stops for public bus lines, the consolidated site encourages the use of public transportation. The Transportation Management Plan expresses a commitment through the planning of limited employee parking, a campus circulating shuttle that connects to the public bus lines, and substantial biking and pedestrian paths on the campus.

Strategies employed in the past and in the future include:

- Increasing the parking ratio from 1:1.5 employee parking ratio to 1:1.8
- Provided preferred parking, 5% of total parking spaces each, for low emission vehicles and car/vanpooling
- Substantial secured storage and shower facilities for bicyclists
- Maximized open/green space on site vs. building and parking footprints
- Storm water quality and quantity management
- Bio-retention areas for roof and parking runoff

- Minimizing the heat island effect -through the use of light colored roofs and shaded pavements
- Reduction of light pollution

Water

Maximizing water efficiency by implementing creative conservation strategies within the buildings on the campus has helped to reduce the burden on the municipal water supply and wastewater systems. In addition to being ecologically wise, the following measures also reduce total operating costs:

- Using low-flow/no-flow plumbing fixtures in the facilities
- Water efficient landscaping

Energy & Atmosphere

Through the use of high performance mechanical and electrical equipment and innovative design, the campus buildings have achieved increased levels of energy performance in order to reduce environmental and economic impacts associated with excessive energy use. Strategies include:

- A central co-generation plant provides electricity, and hot and chilled water for the entire campus
- Exhaust heat recovery system
- High-efficiency HVAC systems
- Occupancy sensors for office lights
- Active and passive solar techniques
- Energy (enthalpy) recovery wheel systems
- Free cooling/preheat conditioning systems
- Low temperature HVAC air systems
- Dual duct CO2 system
- Natural ventilation systems
- Building commissioning
- Environmentally compliant refrigerators

Materials & Resources

Material waste has been reduced with the implementation of a campus wide recycling program. Recycled materials are collected at each of the buildings on campus and transported to a staging area in Building 51 and the Distribution Center loading docks where it is then hauled to a recycling facility. Strategies include:

- Recycling of demolished building materials
- Adaptive use of Building 1 and Building 100
- Use of locally manufactured brick
- On-site concrete batch plant
- Construction waste management plans

Indoor Environmental Quality

Efficient and filtered air handling systems, natural day lighting and ventilation, and low emitting interior materials provide occupants with a healthy, comfortable work environment. Strategies include:

- Under-floor air distribution in Building 51
- Natural thermo-syphon ventilation in Central Shared Use building
- Night flushing with thermal mass in Central Shared Use building
- CO2 based demand control ventilation
- Enhanced building commissioning
- Low VOC materials

Innovative Design

Each building in conjunction with the Central Utility Plant has been targeted for Innovative Design strategies which include:

- Campus-wide green cleaning/housekeeping program
- Green education program
- LEED certified professionals on the design team

The Future

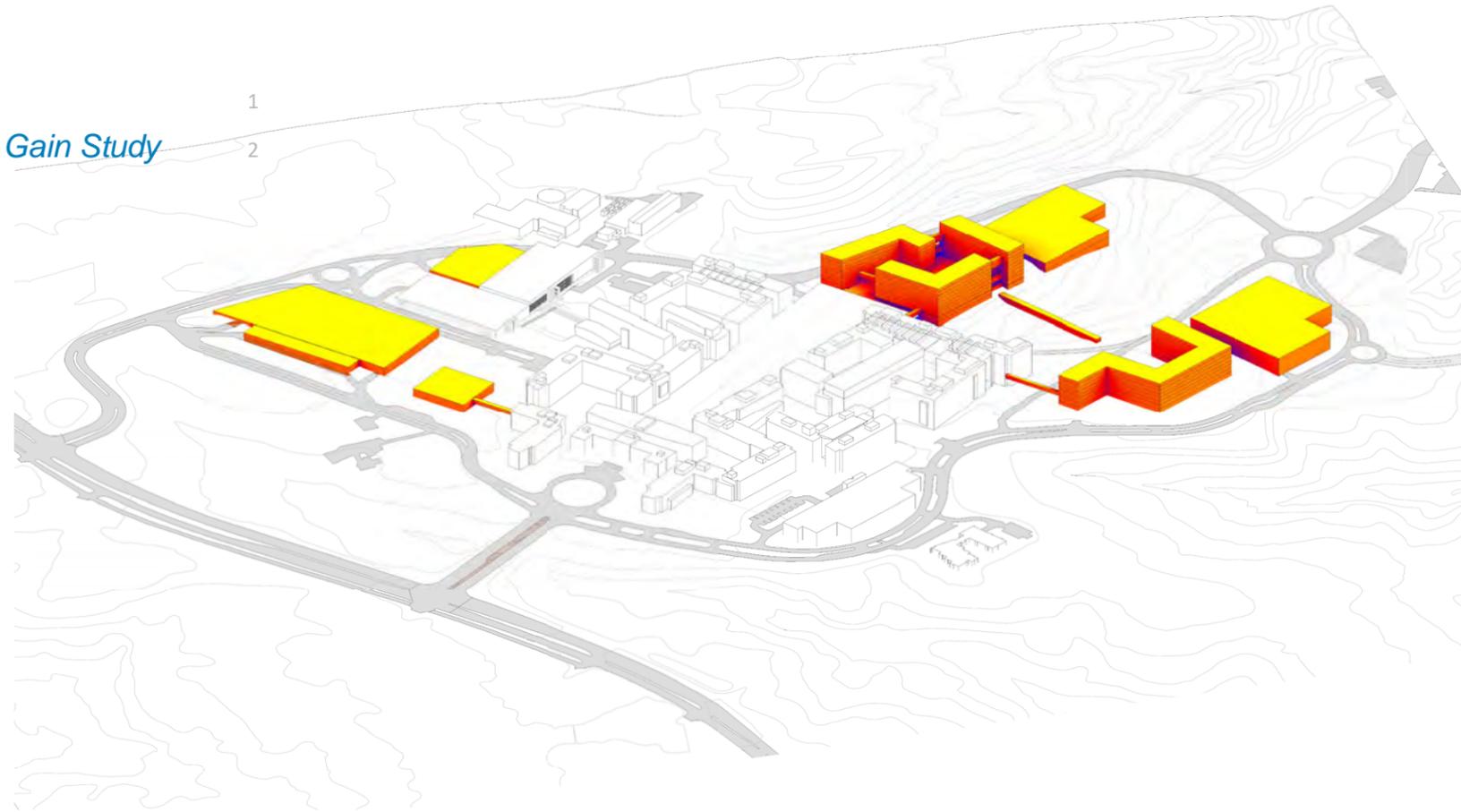
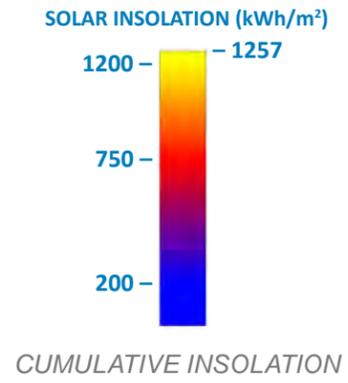
The proposed master plan is guided by the following Federal standards:

- Executive Order 13693 – Planning for Federal Sustainability in the Next Decade - “reduce agency direct greenhouse gas emissions by at 40% over the next decade”
- Executive Order 13653 - Climate Change Risk Mitigation and Resiliency
- Executive Order 13693 - Stormwater Management
- Executive Order 13508 - Federal Leadership in Chesapeake Bay Protection and Restoration
- FDA’s Agency Sustainability Plan
- EISA 438 - Storm water runoff requirements for federal development projects
- MD MDE MS4 Permit - General Permit for Discharges from State and Federal Small Municipal Separate Storm Sewer Systems

This will result in future construction designed to meet the following strategies:

- LEED Gold
- Energy Net Zero Buildings
- Water Net Zero
- SITES Silver

ALTERNATIVE A Sustainable Design
Sustainability features and Solar Heat Gain Study



AXON – South/West



AXON – North/West

Figure 3-40: Alternative A
Solar Heat Gain Diagram

- 1 New Office Building
- 2 New Parking Garage
- 3 Distribution Center (Below Plaza)
- 4 New Conference Center
- 5 New Cafeteria
- 6 Potential Truck Screening Facility
- 7 Potential Bypass Road to FDA Blvd
- 8 Transit Hub and Bus Bays
- 9 Pedestrian Only Path
- 10 Pedestrian Bridge

SUSTAINABILITY FEATURES

- 1 Proposed Green Roof
- 2 Rooftop Solar Panels
- 3 Permeable Paving
- 4 Bio-Retention Area

NORTH



Scale 1:5,000



Figure 3-41: Alternative A Sustainability features

ALTERNATIVE B Sustainable Design
Sustainability features and Solar Heat Gain Study

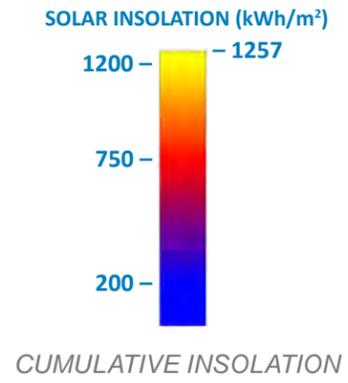
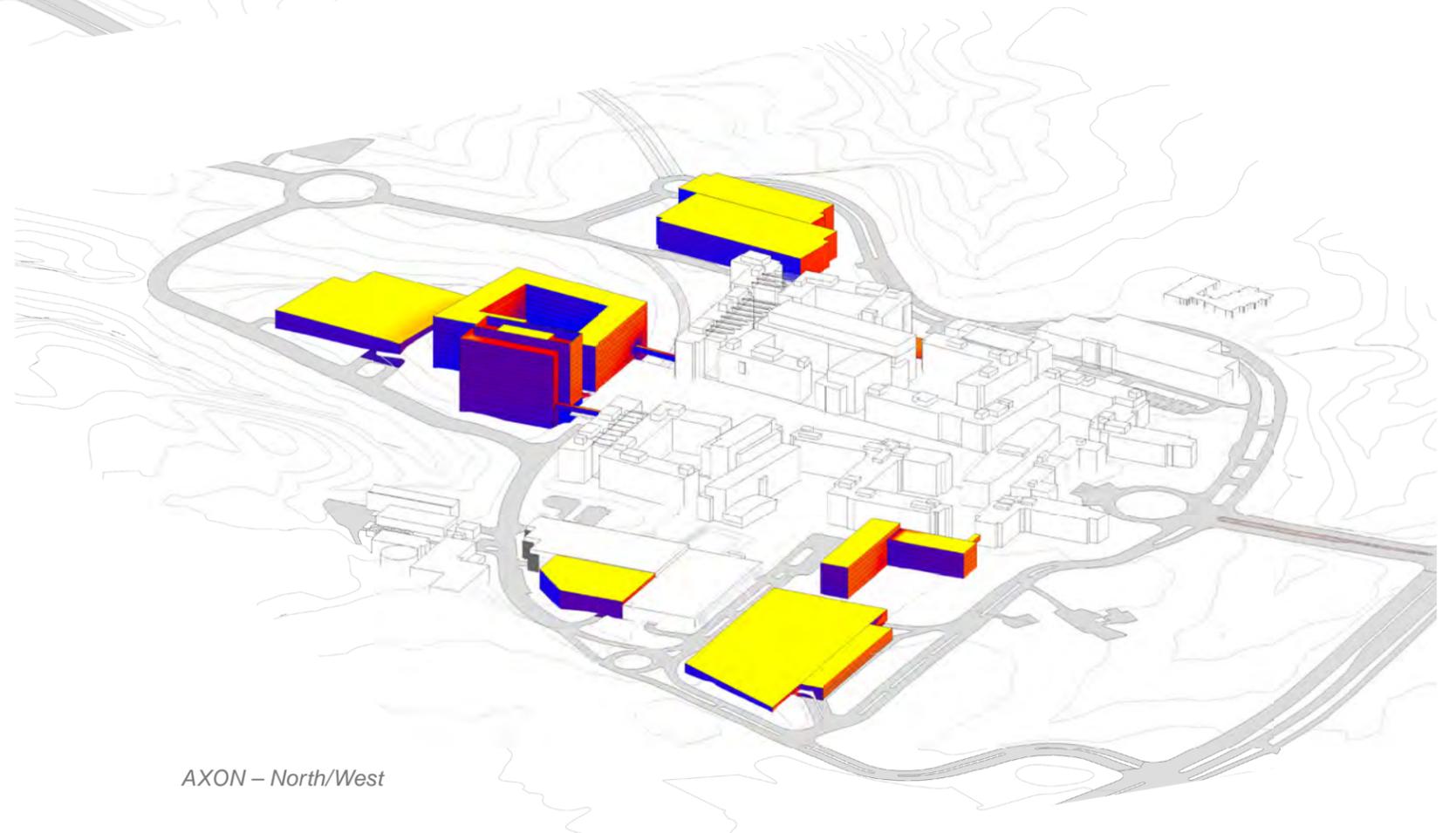


Figure 3-42: Alternative B
Solar Heat Gain Diagram



- 1 New Office Building
- 2 New Parking Garage
- 3 Distribution Center
- 4 New Conference Center
- 5 New Cafeteria
- 6 Potential Truck Screening Facility
- 7 Potential Bypass Road to FDA Blvd
- 8 Transit Hub and Bus Bays
- 9 Pedestrian Only Path

SUSTAINABILITY FEATURES

- 1 Proposed Green Roof
- 2 Rooftop Solar Panels
- 3 Permeable Paving
- 4 Bio-Retention Area

NORTH

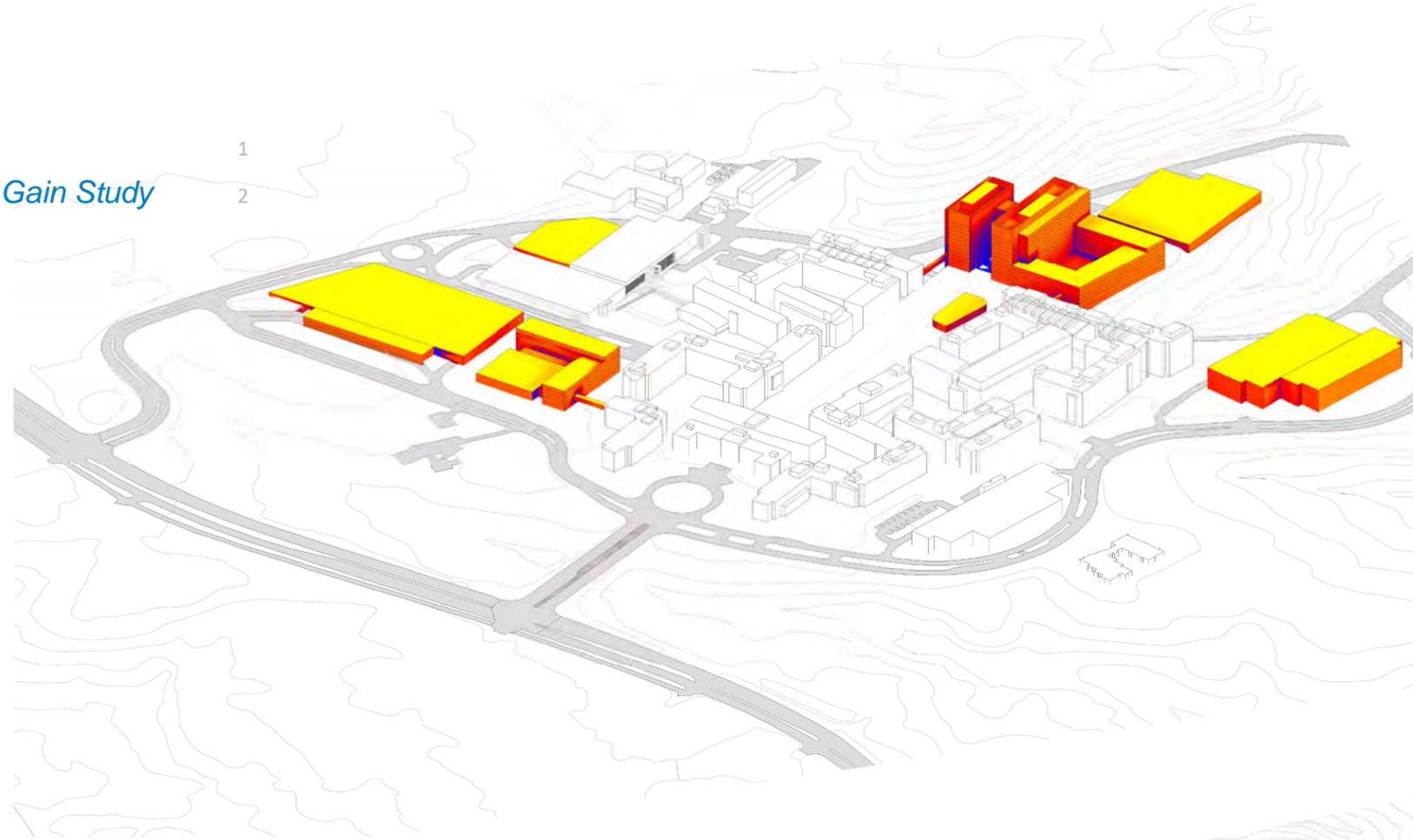
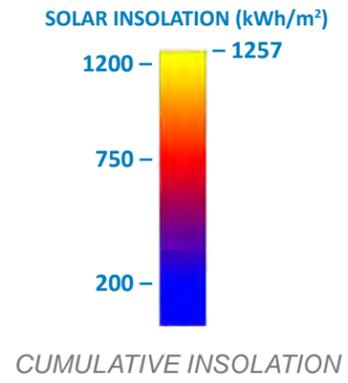


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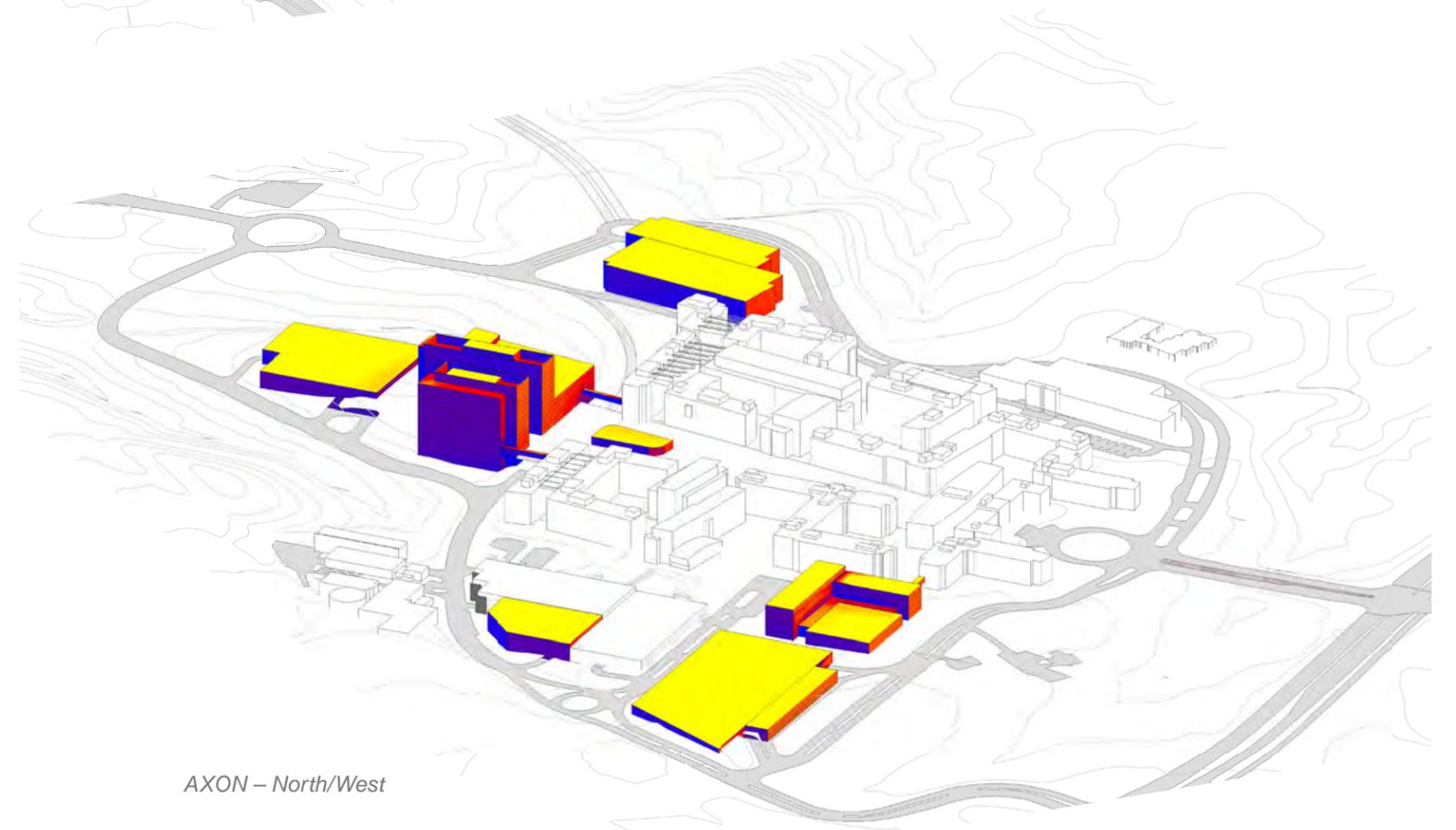


Figure 3-43: Alternative B Sustainability features

ALTERNATIVE C Sustainable Design
Sustainability features and Solar Heat Gain Study



AXON – South/West



AXON – North/West

Figure 3-44: Alternative C
Solar Heat Gain Diagram

- 1 New Office Building
- 2 New Parking Garage
- 3 Distribution Center
- 4 New Conference Center
- 5 New Cafeteria
- 6 Potential Truck Screening Facility
- 7 Potential Bypass Road to FDA Blvd
- 8 Transit Hub and Bus Bays
- 9 Pedestrian Only Path
- 10 Dining Pavilion

SUSTAINABILITY FEATURES

- 1 Proposed Green Roof
- 2 Rooftop Solar Panels
- 3 Permeable Paving
- 4 Bio-Retention Area

NORTH



Scale 1:5,000



Figure 3-45: Alternative C Sustainability features

3.10 Perimeter Security

3.10.1 Perimeter Security Plan

As a civilian Federal facility, the FDA Campus must adhere to the latest standard of the “Physical Security Criteria for Federal Facilities” per the Interagency Security Committee (ISC). Using the ISC Risk Management Process, the FDA Campus is 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 (> 250,000SF).

The perimeter of the FDA Campus is therefore required to meet the Level IV security requirements and reinforce its presence as a U.S. Government Facility. As such, the campus plan incorporates those elements necessary to restrict the uncontrolled access of both vehicles and pedestrians. The existing perimeter fence will be extended and enhanced to accommodate all the new development. These include additional fencing, access control equipment, intrusion detection devices, site lighting and security patrol pathways. Ornamental fencing is used in areas of public visibility and chain link fencing is used in the hidden wooded locations. Where possible, the site perimeter security boundary incorporates the existing natural site features and incorporates aesthetically-designed landscaping elements.

Access to the site occurs via two main roadways from New Hampshire Avenue. Michelson Road is intended not only for staff, but is the primary access for all Service Vehicles and Visitors as it feeds directly to the Visitor facilities and the Campus Support Functions. Mahan Road is the Main Entry approaching Building 1 and provides staff access to the Loop Roads and Parking Structures. Access is also from the East via two-lane Dahlgren Road. That Road has access control points at both ends in support of the AEDC Facility. Increased use of secure shuttles (FDA managed) and external parking structures are the long-term, most cost-effective strategies.

3.10.2 Inner Perimeter

The primary security goal for the campus is the protection of the staff, and to that requirement it is necessary to keep all vehicles as far away as possible from the inhabited facilities. The planning team worked with FDA Security to determine the minimum standoff requirements for each individual building, and where possible, the campus planning maximized those distances to provide efficient perimeters as elegant collective groupings. Most of the stand-off perimeter length is established with use of the natural topography, integration of thoughtful new landscape elements, location of interactive and engaging outdoor spaces, creation of recreational areas and alignment of the requisite storm water best management practices.

The FDA Master Plan creates holistic solutions that establish the requisite stand-off, while ensuring that the design integrates an aesthetically-pleasing campus experience within the context of a totally green pedestrian-friendly environment. Bollards and deployable barriers are only located where necessary to provide the requisite hardening and setbacks. Walking and other outside activities are key elements of the design and the campus planning encourages wellness behaviors. Circulation pathways and adjacent green spaces are unrestricted and free-flowing to pedestrians within the inner campus once both staff and pass a security screening point. These occur at all major building entrances. As the campus expands the intent maintain that concept. The extension of the plaza to east facilitates that capability. However, in Alternative A there is one building outside inner core which will require an elevated bridge connecting it the inner core to facilitate movement between buildings without having to go through security.

ALTERNATIVE A
Perimeter Security Plan

LEGEND

- 25' Standoff
- 75' Standoff
- Site Perimeter
- Vehicle Barrier
- Outer Perimeter Fence
- Permanent Gate
- Over-size Vehicle Barrier
- Pedestrian Entrance Security Point
- Service Access Point
- Inner Campus Perimeter
- New Building
- New Building Garage
- Existing Building
- Existing Building Garage
- Entrance Function

NORTH



Scale 1:5,000

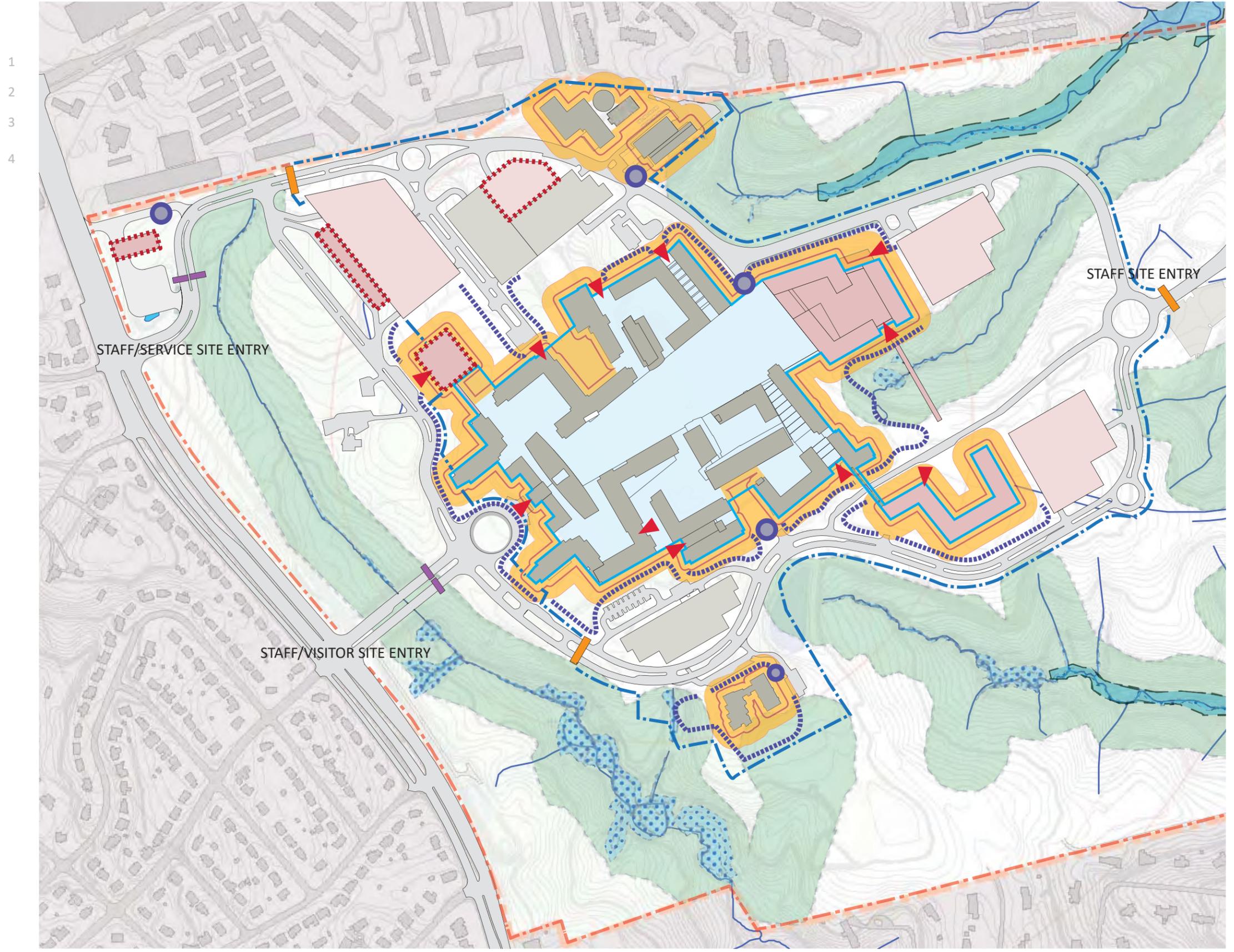


Figure 3-46: Alternative A Perimeter Security Diagram

ALTERNATIVE B
Perimeter Security Plan

LEGEND

- 25' Standoff
- 75' Standoff
- Site Perimeter
- Vehicle Barrier
- Outer Perimeter Fence
- Permanent Gate
- Over-size Vehicle Barrier
- Pedestrian Entrance Security Point
- Service Access Point
- Inner Campus Perimeter
- New Building
- New Building Garage
- Existing Building
- Existing Building Garage
- Entrance Function

NORTH



Scale 1:5,000



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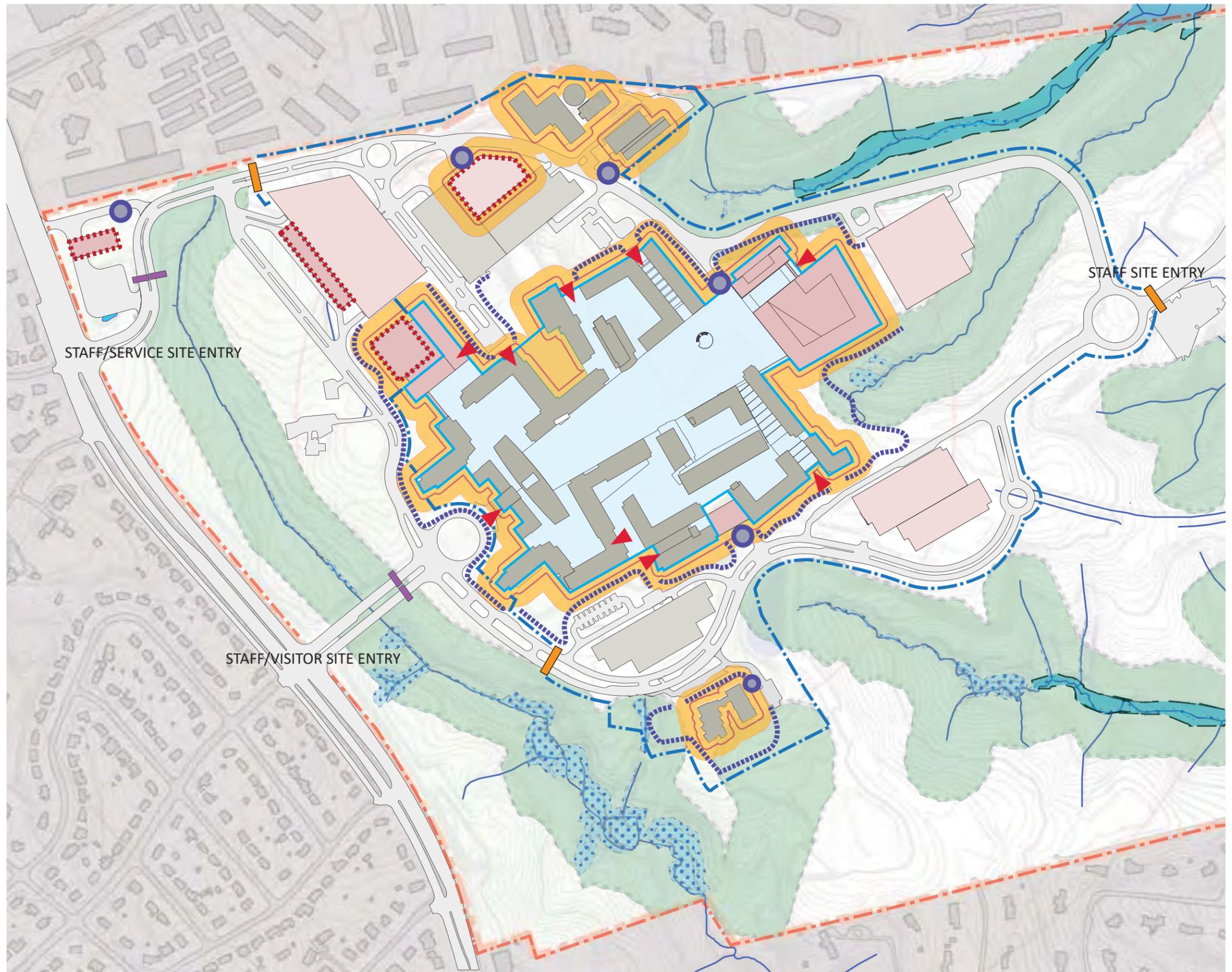


Figure 3-47: Alternative B Perimeter Security Diagram

ALTERNATIVE C
Perimeter Security Plan

LEGEND

-  25' Standoff
-  75' Standoff
-  Site Perimeter
-  Vehicle Barrier
-  Outer Perimeter Fence
-  Permanent Gate
-  Over-size Vehicle Barrier
-  Pedestrian Entrance Security Point
-  Service Access Point
-  Inner Campus Perimeter
-  New Building
-  New Building Garage
-  Existing Building
-  Existing Building Garage
-  Entrance Function

NORTH



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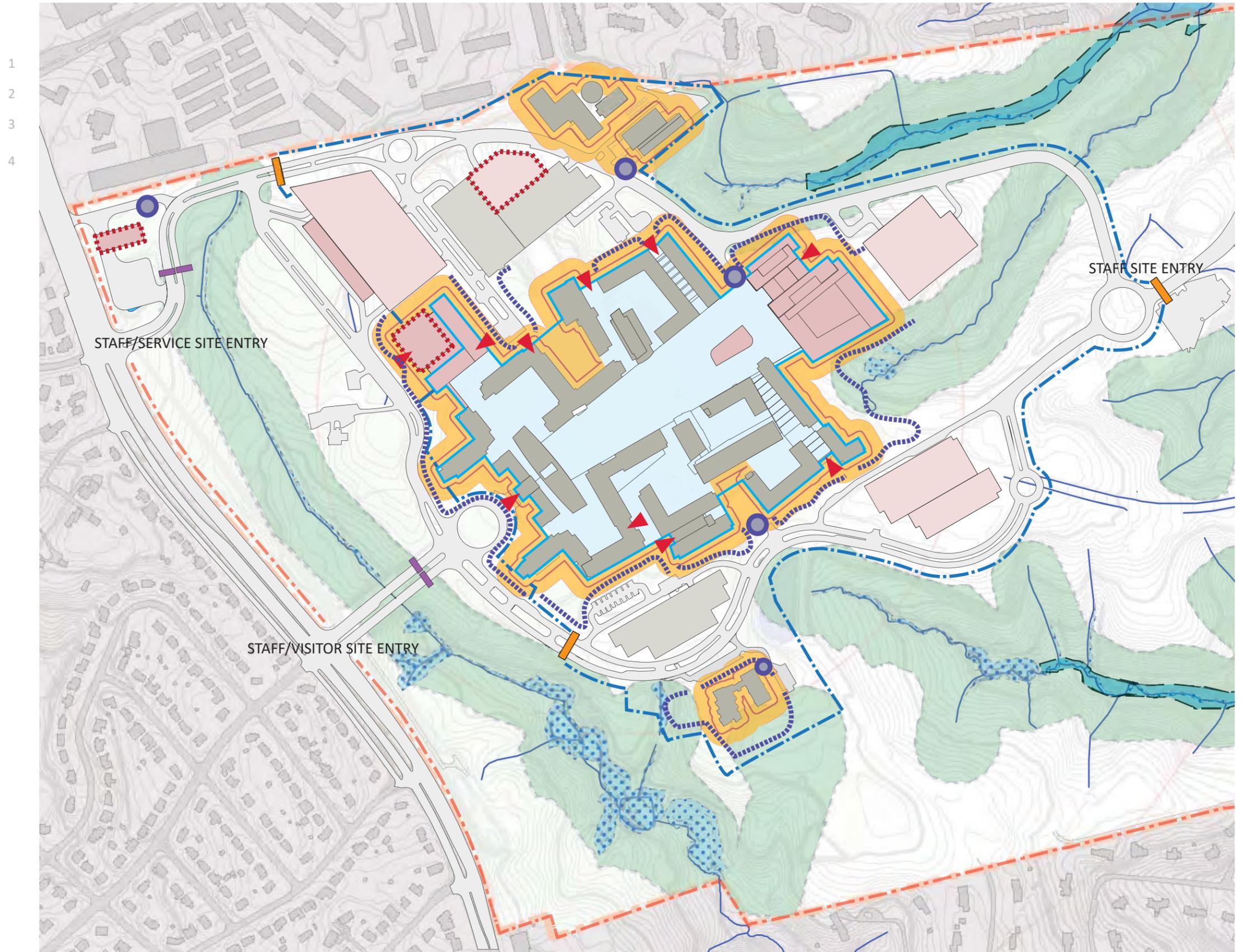


Figure 3-48: Alternative C Perimeter Security Diagram



4

ENVIRONMENTAL AND HISTORICAL CONSIDERATIONS

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Building 22 from Commons Area

4. ENVIRONMENTAL AND HISTORICAL CONSIDERATIONS

4.1 Historic Preservation

4.1.1 Area of Potential Effect (APE)

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.” Two Areas of Potential Effect have been identified for the FDA Master Plan

Primary APE

The primary APE encompasses the resources visually or physically affected by the demolition and construction associated with the expansion of the FDA campus. This includes the existing FDA campus, the historic green buffer zone between the campus and New Hampshire Avenue, and an area extending north and east to the historic 400 area. The primary APE includes the historic resources of the White Oak Naval Ordnance Laboratory Historic District that were retained under a previous Memorandum of Agreement agreed 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

1 100. The primary APE also includes the National Register-eligible buildings within the 400 (Ballistics) area, currently operated by the United States Air Force as the Arnold Engineering Development Center (AEDC)-White Oak.

Secondary APE

The secondary APE encompasses the remainder of the areas within the boundary of the historic Naval Ordnance Laboratory that will not be directly or visually impacted by construction or demolition, but that may be indirectly impacted during the course of construction or by long-term or cumulative effects. Both APEs for the expansion of the FDA campus include all historic resources that may be affected by the proposed 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



Figure 4-1: Front Lawn, Flag Pole, and Main Administration Building 1



Figure 4-2: Former Naval Ordnance Laboratory Fire Station

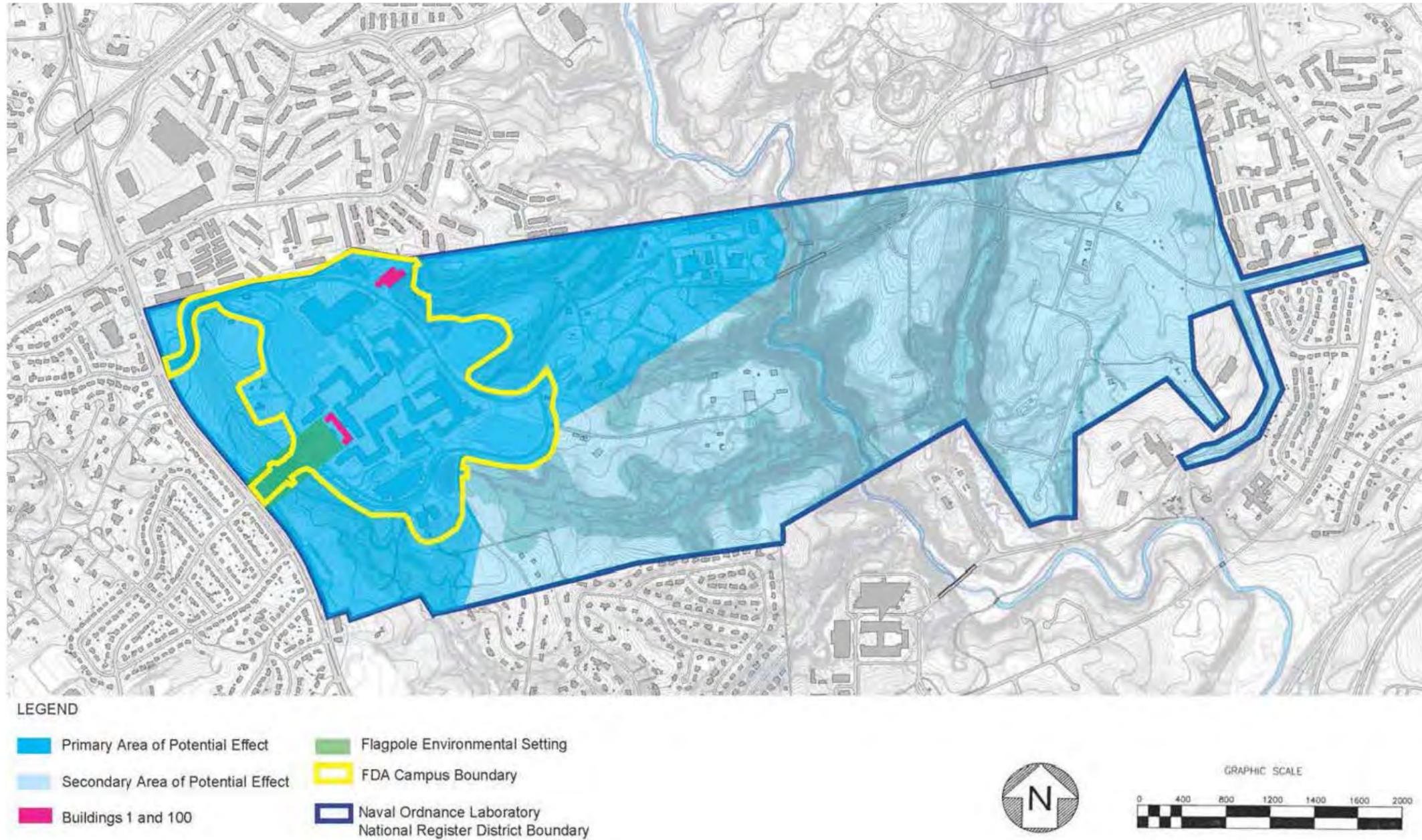


Figure 4-3: Area of Potential Effect Map

4.1.2 Historic Resources in the APE

When the Naval Ordnance Laboratory (NOL) 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, which provided a “physical and natural buffer which preserves the visual character of the main complex” and was also important as an amenity “conceived, built, and maintained entirely by the employees” of the NOL. Under a 2002 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 area were removed. Historic resources remain in the 200 and 400 areas.

4.1.3 Approach to Addressing Historic Resources within the APE(s)

It is understood that the 2002 Memorandum of Agreement is still in effect until it is terminated or a new MOA is negotiated. The 2002 MOA stipulated that GSA should consult with the MHT 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, MHT and other signatories established compatibility standards for future development at the Federal Research Center that have been adhered to throughout subsequent master plans (2006, 2009) and implementation.

Because this is a new Master Plan, GSA intends to close out the existing MOA. It has initiated consultation with potential consulting parties under Section 106 of the National Historic Preservation Act (NHPA), which is being carried out in conjunction with the Environmental Impact Statement for the project. GSA intends to negotiate a new Memorandum of Agreement or Programmatic Agreement (PA) to govern work carried out under the new Master Plan. GSA also intends to carry forward the compatibility standards established under the 2002 MOA to the new MOA or PA.

No historic resources within either the primary or secondary APE are expected to be physically affected by the planned construction under the Master Plan alternatives. The truck screening facility would be built north of Michelson Road, which constitutes the north edge of the historic buffer. Under Alternatives B and C, the construction of a high-rise tower (B) or towers (C) would represent a departure from the compatibility standards established under the 2002 MOA. GSA has initiated consultation under Section 106 of the National Historic Preservation Act to prepare a Memorandum of Agreement or Programmatic Agreement for mitigation in the event of any adverse effects to the historic buildings or landscapes as a result of the preferred alternative.

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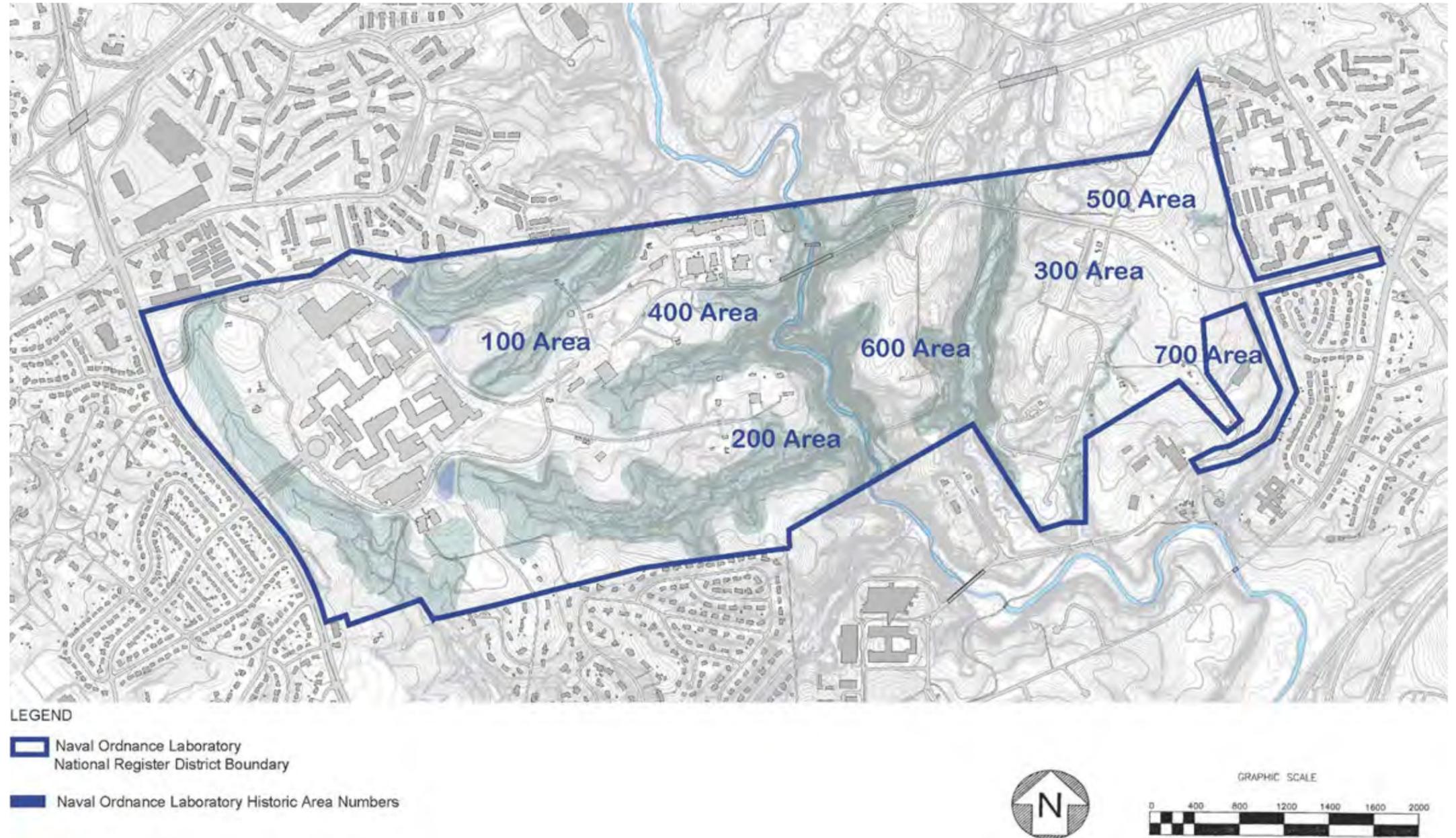


Figure 4-4: Historic District Boundary and Areas Map

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4.2 Natural Resources

The existing natural features of the FRC defining the built-up land at the FDA campus include large wooded land areas, wooded stream valleys, and grassy meadow areas. The rolling topography, water resources, and the wildlife habitats enhance the FDA's and Air Force's employee and visitor experience. GSA analyzed potential direct, indirect, short-term, long-term, and cumulative impacts on the natural resources associated with each of the alternatives under consideration.

4.2.1 Soils and Topography

There are eight soil unit types within the study area (see Table 8 and Figure 15). 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).

1 Prime farmland soils are soils that have the best
2 combination of characteristics for producing crops
3 such as food, feed, forage, fiber, and oilseed crops.
4 Sassafras loam with 2 to 5 percent slopes (58B) is
5 considered prime farmland soils in all areas. Soil
6 map unit 58B comprises approximately 3 percent
7 of the soil within the FDA Campus. Glenelg silt loam
8 with 8 to 15 percent slopes (2C) and Croom gravelly
9 loam with 3 to 8 percent slopes (61B) and with 8 to
10 15 percent slopes (61C) are classified as farmland
11 soils of statewide importance and account for the
12 majority of the soils within the project area (USDA,
13 2017). Although there a prime farmland soils within
14 the FDA Campus, the land is classified as urban
15 or built-up and therefore exempt from the Farm
16 Protection Act.
17 Generally speaking, the topography of the FRC
18 is generally rolling with elevations ranging from
19 approximately 160 to 400 feet above mean sea
20 level (msl). Within the FDA Campus, the topography
21 is relatively flat due to grading and existing
22 construction, ranging from approximately 350 to 390
23 feet msl. Towards the west end of the FRC, elevation
24 is approximately 290 feet msl with steep slopes
25 along the unnamed tributaries to Paint Branch.
Slopes of greater than 15 percent are considered to
have severe erosion potential.

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 4-5: Soil Map Units Within the Study Areas (USDA, 2017)



Figure 4-6: Area adjacent to new loop road

4.2.2 Surface Water and Wetlands

All waterways on the FRC are unnamed tributaries of Paint Branch, located within the Anacostia River watershed. Perennial and intermittent streams on the FDA site are subject to Montgomery County Stream Valley Buffers (SVBs) and 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.

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.

Stream Valley Buffers and Mitigation Strategies

A number of the development scenarios may require development in or adjacent to existing stream valley buffers.

M-NCPPC provides guidelines for stream valley buffers and development. Based upon those guidelines, mitigation of encroachments into the stream valley buffers could be mitigated by re-forestation plantings. The re-forested areas may be on a 1:1 basis with the impacted area.

M-NCPPC recommended guidelines for stream buffers states:

“5. The plan design provides compensation for loss of buffer function.

In reviewing buffer compensation proposals, staff

will consider such options as buffer averaging, enhanced forestation, bioengineering practices, and other environmentally beneficial techniques. Buffer averaging provides environmentally comparable on-site area outside the delineated stream buffer in exchange for the allowance of encroachment elsewhere in the delineated stream buffer. The concept of enhanced forestation (as described in detail in Chapter V, section C) goes beyond the county legal requirements for forest conservation to enhance the existing riparian forest or to accelerate the creation of healthy mature forest in afforestation/reforestation areas.”

p.19 Environmental Guidelines

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Examples of Stream Valley Mitigation Improvements



Photos of Paint Branch Stream

4.2.3 Vegetation

A variety of pine and hardwood forested areas, wooded stream valleys, and grassy meadow areas define areas around the campus.

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.

4.2.4 Wildlife

The large wooded land areas and aquatic features on the FRC support numerous wildlife species. The Paint Branch bisects the FRC. The Paint Branch and its tributaries are home to aquatic wildlife. Numerous animal species, amphibians, avian and aquatic species are potentially in the FRC. There are no known protected species, federally listed threatened or endangered species.

Minimization of impacts to wildlife would be obtained by maintaining areas of forest that provide

1 habitat and movement corridors for wildlife. Signage
2 for deer crossing would be placed along the roadway
3 through the FRC to mitigate for the risk of deer
4 being struck by vehicles. Time-of-year restrictions
5 of construction activities may be used to protect
6 species most sensitive to human activities.
7 Compliance with the approved erosion and sediment
8 control plan would minimize impacts to aquatic biota
9 by controlling sedimentation.

4.3 Public Realm and Viewsheds

10 The FDA Master Plan will enhance the public realm in
11 the following ways:

- 12 • Strengthening the walkability of the campus to
13 include accessible sidewalks, adequate light, and
14 maintained vegetation along the entry roads.
- 15 • Encouraging healthy community behavior by
16 improving bike infrastructure for bike commuters.
- 17 • Minimizing energy resources by reducing the
18 maintenance of the vegetation as much as
19 possible around the perimeter of the campus.
- 20 • Supporting the conservation of the natural
21 resources on the campus by a careful and dense
22 layout of new features.

23 Refer to section 3.6 Streetscape and Landscape plan
24 for additional information.

4.3.1 Trees

25 The Master Plan is defined by a large area of
26 tree conservation. Overall, the removal of trees
27 will be minimized by the Plan's ability to limit
28 most of the disturbance to areas that have been
29 previously developed. In areas where trees need
30 to be removed, proper measures will be taken to
31 protect mature vegetation adjacent to new areas of
32 disturbance.

33 Additional trees will be planted along the Loop road

34 to increase the campus character of the grounds. 84
35 Along this road today there is extensive mowing that 85
36 new trees will help to limit. Street trees will also 86
37 help to provide a buffer for bikers using the new bike 87
38 trail that is proposed around the perimeter of the 88
39 campus. 89
40 Within the campus, trees will be used intermittently 90
41 to support the function of the site but play an 91
42 important role. Trees used as part of the plant 92
43 pallet will help to connect the interior of the campus 93
44 to the surrounding forest and tie the grounds back 94
45 to the ecological context of the region. Species will 95
46 be carefully selected by evaluating the health of the 96
47 variety of species that are planted on the grounds 97
48 today. The ability of trees to survive will also be 98
49 determined by the soil quality, especially in areas 99
50 that are on structure. Adequate soil depth and 100
51 quality will be considered in areas where new trees 101
52 are proposed. 102
53 103

4.3.2 Existing View Sheds and How the Project Would Affect Views

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 the relative location and height east of Building 1, the high-rise building(s) proposed in Alternatives B and C 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(s) would not intrude on the view of the Building 1 façade across the buffer from New Hampshire Avenue, the broader viewshed of Building 1 from New Hampshire Avenue would include a taller building(s) behind and above the historic building. They may also be visible, depending on seasonal vegetative cover, from the northwest portion of the campus (area 400).

The new buildings at the east and north ends of the campus would be visible from the fire station (Building 100) but given their distance from the building and the already affected visual setting due to past construction, there is no anticipated effect from the construction of new facilities.

GSA has initiated consultation under Section 106 of the National Historic Preservation Act to prepare a Memorandum of Agreement or Programmatic Agreement for mitigation in the event of any adverse effects to historic views or view sheds as a result of the preferred alternative.



Figure 4-7: Front Lawn, Flag pole, and Main Administration Building 1



Figure 4-8: Entrance from New Hampshire Avenue

Equinox (Spring & Fall)

Summer Solstice

Winter Solstice

4.3.3 Light and Shadow

The anticipated impacts on light and shadow are depicted in the diagrams for various times and seasons.

ALTERNATIVE A
Shadow Study

Figure 4-9: Alternative A Shadow Study

9 am

Noon

3 pm



ALTERNATIVE B
Shadow Study

Figure 4-10: Alternative B Shadow Study



1
2
3

9 am

Noon

3 pm

ALTERNATIVE C
Shadow Study

Figure 4-11: Alternative C Shadow Study



4.4 Flooding

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 13). 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.

4.5 Proposed Stormwater Management

Figures 4-12, 4-13, and 4-14 show the proposed stormwater management plans for each Action Alternative.

The State of Maryland Environmental Site Design (ESD) strategies would be implemented to the maximum extent practicable. LEED and 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

1 potential to integrate the design into the natural
2 systems of the White Oak FRC site.
3
4 Potential types of LID/BMP facilities for the
5 expanded FDA Campus are: Micro-bioretenion
6 (Structural walled micro-bioretenion may be
7 used in lieu of graded micro-bioretenion where
8 space limitations dictate), Bio-swales (on road
9 sides), Rooftop Rainwater Harvesting (Typical reuse
10 methods are toilet flushing and cooling tower
11 makeup water), Green Roof/Partial Green Roof
12 (Green roof with 4" media provides 38% of the
13 required MDE Environmental Site Design Volume
14 (ESDv)), Pervious Pavements (The best opportunities
15 on the campus are likely to be fire lanes, sidewalks,
16 paths, and other hardscape areas), Submerged
17 Gravel Wetlands (MDE will generally accept these if
18 alternative ESD BMPs are not feasible), Tree Planting,
19 and Stream Restorations (Tree planting and stream
20 restoration can at times be credited toward meeting
21 water quality requirements).
22 Roadways would maximize use of bio swales.
23 Office buildings would maximize the use of rooftop
24 rainwater harvesting as well as green roofs. Any
25 untreated storm runoff from roads, buildings, and
26 parking structures would be conveyed to new non-
27 structural ESD/BMP facilities such as bio-retention
28 areas. Once ESD measures have been implemented
29 to the maximum extent practicable (MEP), then
30 structural and other non-ESD type BMP facilities
31 could be utilized. An existing SWM pond (Pond #3)
32 located at the east end of the central commons
33 would be removed and replaced with a walled or
34 underground SWM facility. The existing SWM pond
35 (SHA Pond #2) located north of Michelson Road,
36 and adjacent to New Hampshire Avenue (MD 650)
37 would be removed and replaced by a submerged
38 gravel wetland located south of Michelson Road.
39 The other existing stormwater facilities on the FDA
40 Campus may be retrofitted, relocated, or replaced
41 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

42 required to be non-erosive.
43
44 Construction would be authorized under the
45 NPDES General Permit for Stormwater Associated
46 with Construction Activity. Notices of Intent (NOI)
47 would be filed and NPDES General Permits for
48 Construction would be obtained for all new work.
49 During construction, BMPs such as silt fence, erosion
50 matting, inlet protection, sediment traps, sediment
51 basins, and revegetation of exposed sediment
52 would be implemented to minimize soil erosion and
53 stormwater pollution. Stormwater management
54 plans and erosion and sediment control plans would
55 be prepared and submitted to MDE for review and
56 approval prior to construction. MDE enforces a
57 maximum limit of 20 acres of disturbed ground at
58 any time. All disturbed areas would be permanently
59 revegetated and stabilized following construction.
60 Temporary impacts to streams and wetlands would
61 be restored to pre-construction conditions to the
62 maximum extent practicable following construction,
63 including contour and elevation restoration,
64 revegetation with native species, streambank
65 stabilization, and stream substrate replacement.
66
67 Stormwater quantity and quality control measures
68 would be designed and implemented in accordance
69 with the following regulations, permits and guidance
70 documents:
71
72 • COMAR 26.17.01 Erosion and Sediment Control
73 • COMAR 26.17.02 Stormwater Management
74 • Maryland Standards and Specifications for Soil
75 Erosion and Sediment Control (MDE, 2011)
76 • Maryland Stormwater Management and Erosion
77 & Sediment Control Guidelines for State and
78 Federal Projects (MDE, 2015)
79 • Maryland Stormwater Design Manual, Volumes I
80 & II (MDE, 2000) and Supplement 1 (MDE, 2009)
81 • Section 438 of the Energy Independence and
82 Security Act of 2007 (EISA)
83 • Technical Guidance on Implementing the

86 Stormwater Runoff Requirements for Federal
87 Projects under EISA 438 (EPA, 2009)
88 • Guidelines for Environmental Management of
89 Development in Montgomery County (M-NCPPC,
90 2000)
91 • NPDES General Permit for Stormwater Associated
92 with Construction Activity, administered by MDE
93 • NPDES General Permit for Discharges from State
94 and Federal Small Municipal Separate Storm
95 Sewer Systems (MS4s), administered by MDE
96 • Maryland State Programmatic General Permit 5
97 (MDSPPG-5), co-administered by USACE and MDE
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ALTERNATIVE A

Stormwater Management Plan

LEGEND

-  Bio-swale
-  Schematic locations for Micro Bio-Retention Facilities
-  Rainwater capture and reuse
-  Walled or Underground SWM Facility
-  Green Roof
-  Submerged Gravel Wetland Area



Figure 4-12: Alternative A - Stormwater Management Plan

ALTERNATIVE B

Storm Water Management Plan

LEGEND

-  Bio-swale
-  Schematic locations for Micro Bio-Retention Facilities
-  Rainwater capture and reuse
-  Walled or Underground SWM Facility
-  Green Roof
-  Submerged Gravel Wetland Area

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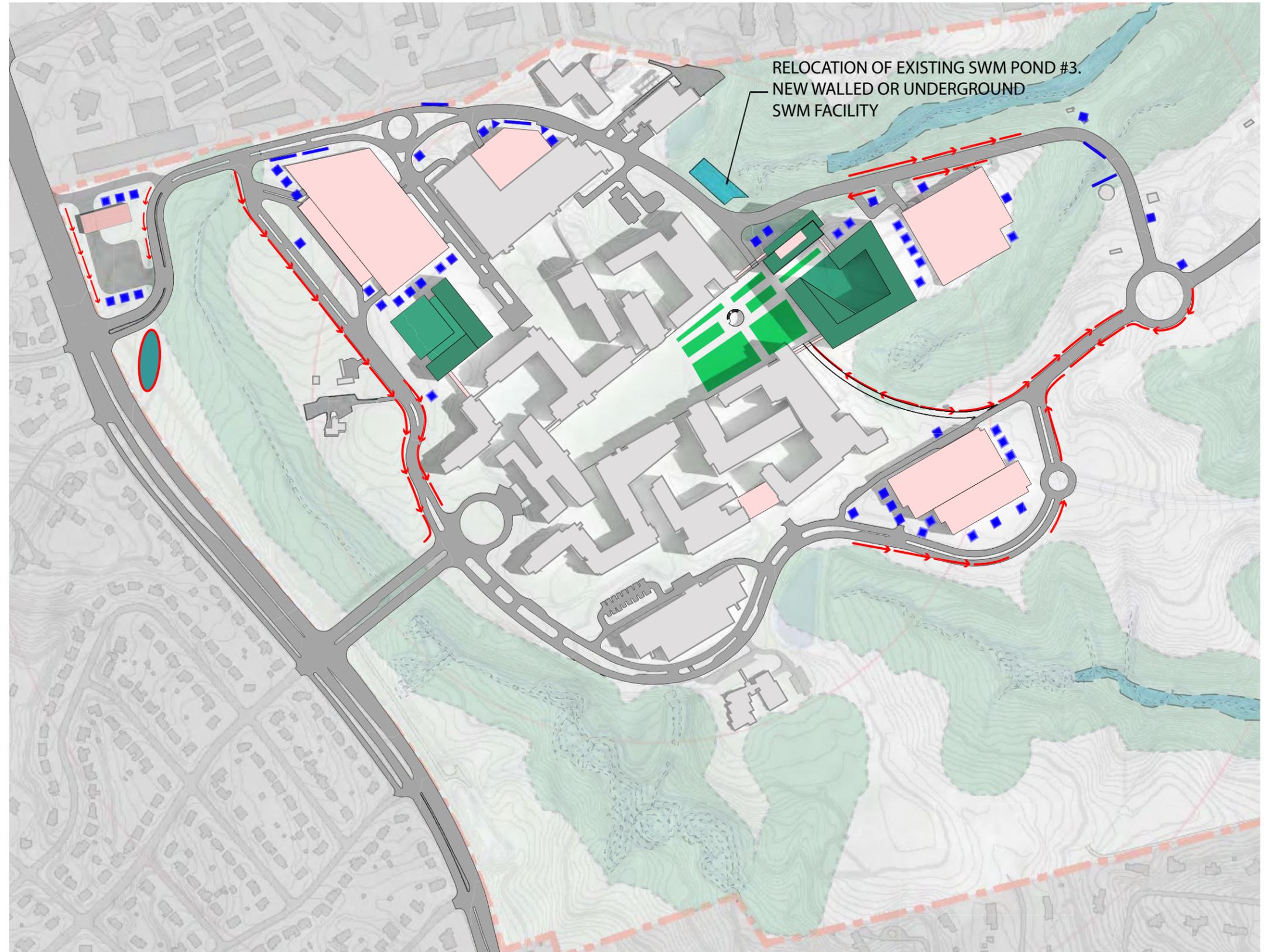


Figure 4-13: Alternative B - Stormwater Management Plan

ALTERNATIVE C

Stormwater Management Plan

LEGEND

-  Bio-swale
-  Schematic locations for Micro Bio-Retention Facilities
-  Rainwater capture and reuse
-  Walled or Underground SWM Facility
-  Green Roof
-  Submerged Gravel Wetland Area

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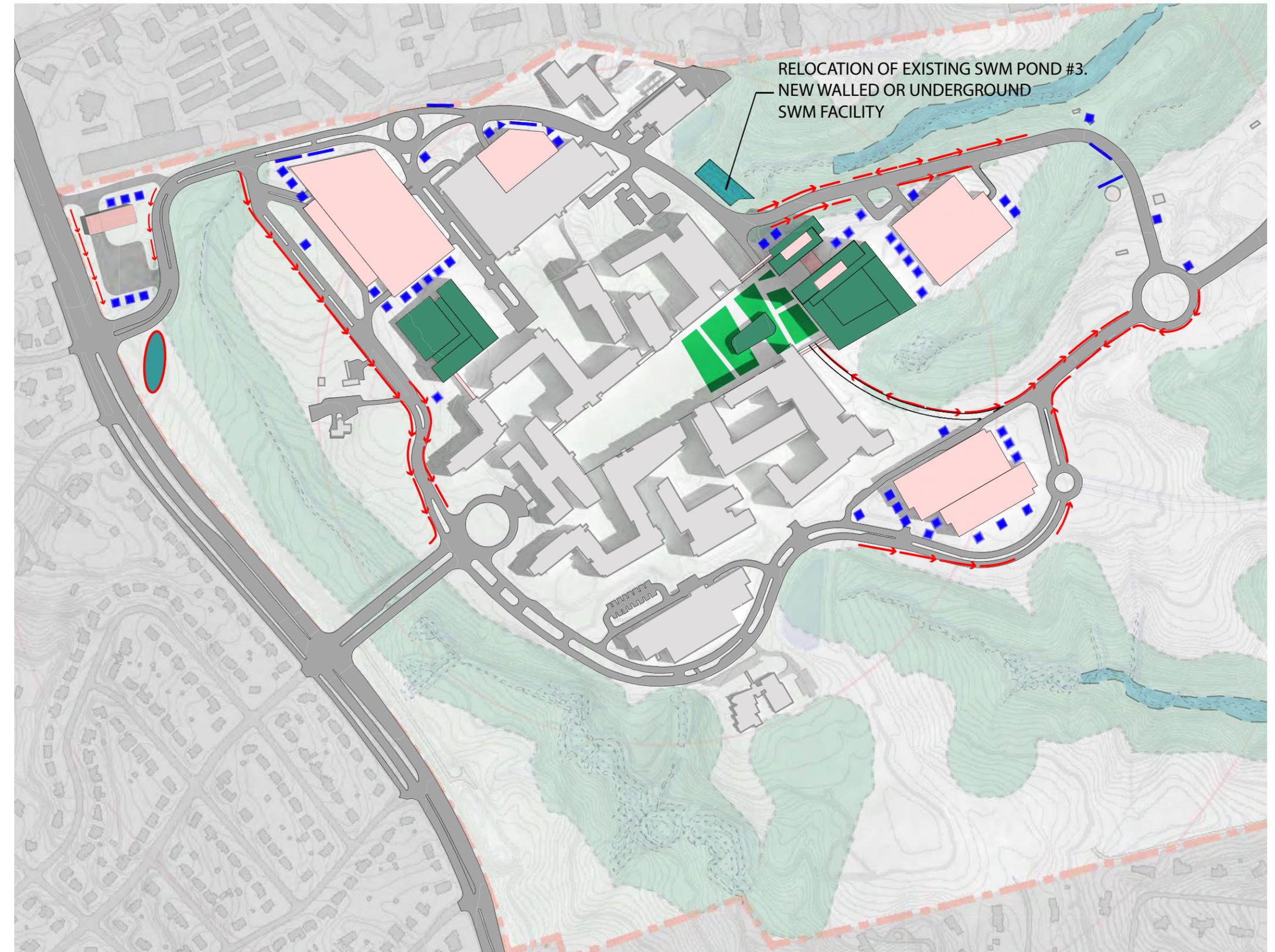


Figure 4-14: Alternative C - Stormwater Management Plan

NORTH



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4.6 Proposed Power

Under all Action Alternatives, the proposed addition of employees and support staff on the FDA Campus would result in increased demand for electrical, and HVAC services.

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. 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 energy conservation strategies would be used: 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 usage would be achieved for all new buildings.

4.7 Proposed Water

Under all Action Alternatives, the proposed addition of employees and support staff 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

1 water service should be adequate for the proposed 42
2 Master Plan development. 43
3 While new 12"-inch and 8-inch water service lines 44
4 would be constructed within the FDA Campus to 45
5 service new buildings, no additional connections to 46
6 the New Hampshire Avenue water main would be 47
7 required. It is expected that a connection will be 48
8 made from the existing 8" water line in Dahlgren 49
9 Road to a new water system constructed as part of 50
10 the VIVA White Oak project to the northeast. 51
11 52
12 The proposed new buildings and parking structures 53
13 would include water-efficient landscaping and low- 54
14 flow plumbing fixtures that would reduce potable 55
15 water usage. Rooftop rainwater harvesting would be 56
16 employed when possible, and rainwater would be 57
17 reused for toilets and cooling towers, reducing the 58
18 demand for potable water. 59
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ALTERNATIVE A
Water Service Plan

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- LEGEND
-  EXISTING WATER LINES
 -  EXISTING BOOSTER PUMP STATIONS
 -  NEW 12" WATER LINES
 -  NEW 8" WATER LINES



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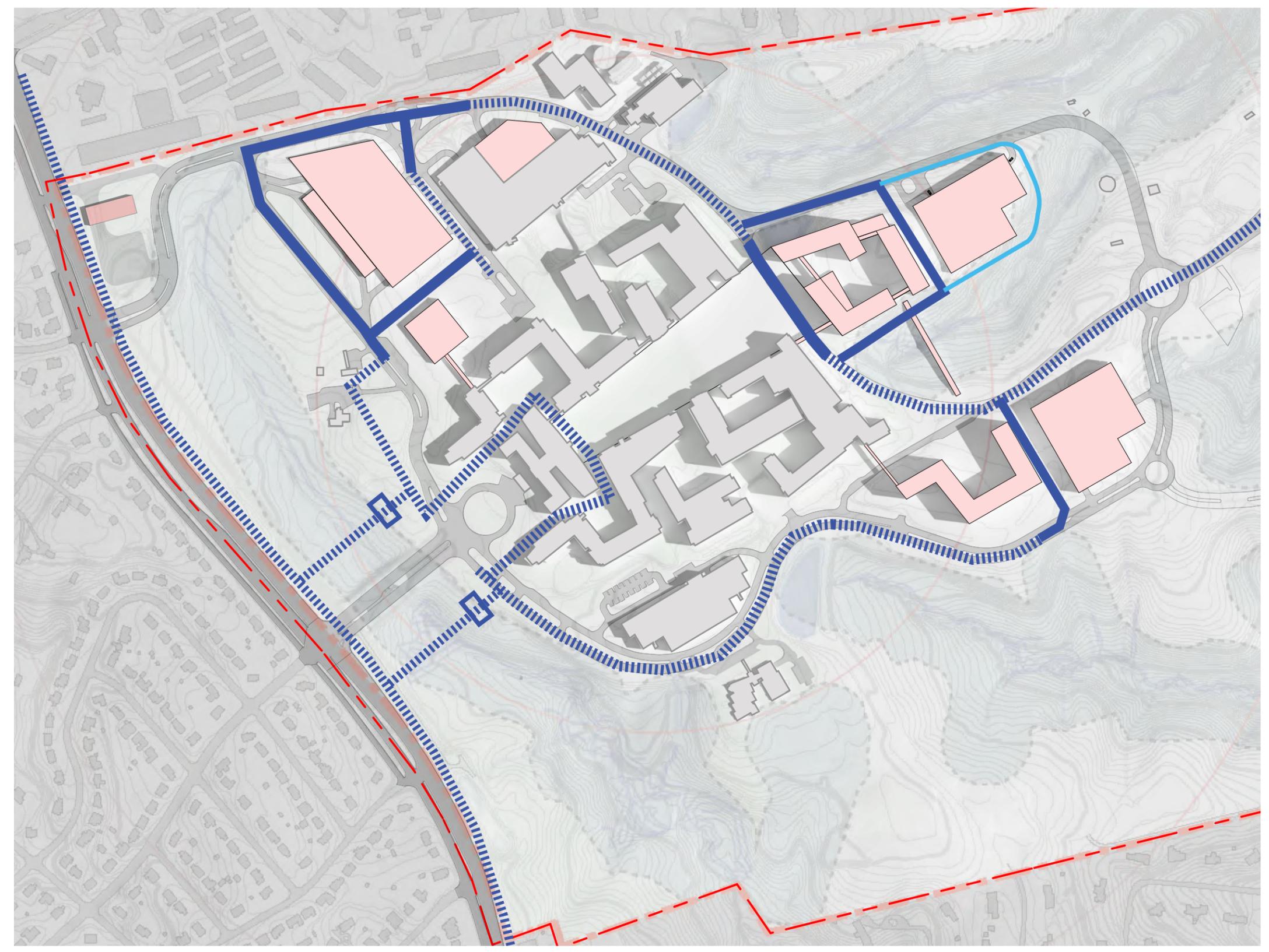


Figure 4-15: Alternative A Water Service Plan

ALTERNATIVE B
Water Service Plan

LEGEND

-  EXISTING WATER LINES
-  EXISTING BOOSTER PUMP STATIONS
-  NEW 12" WATER LINES
-  NEW 8" WATER LINES

NORTH



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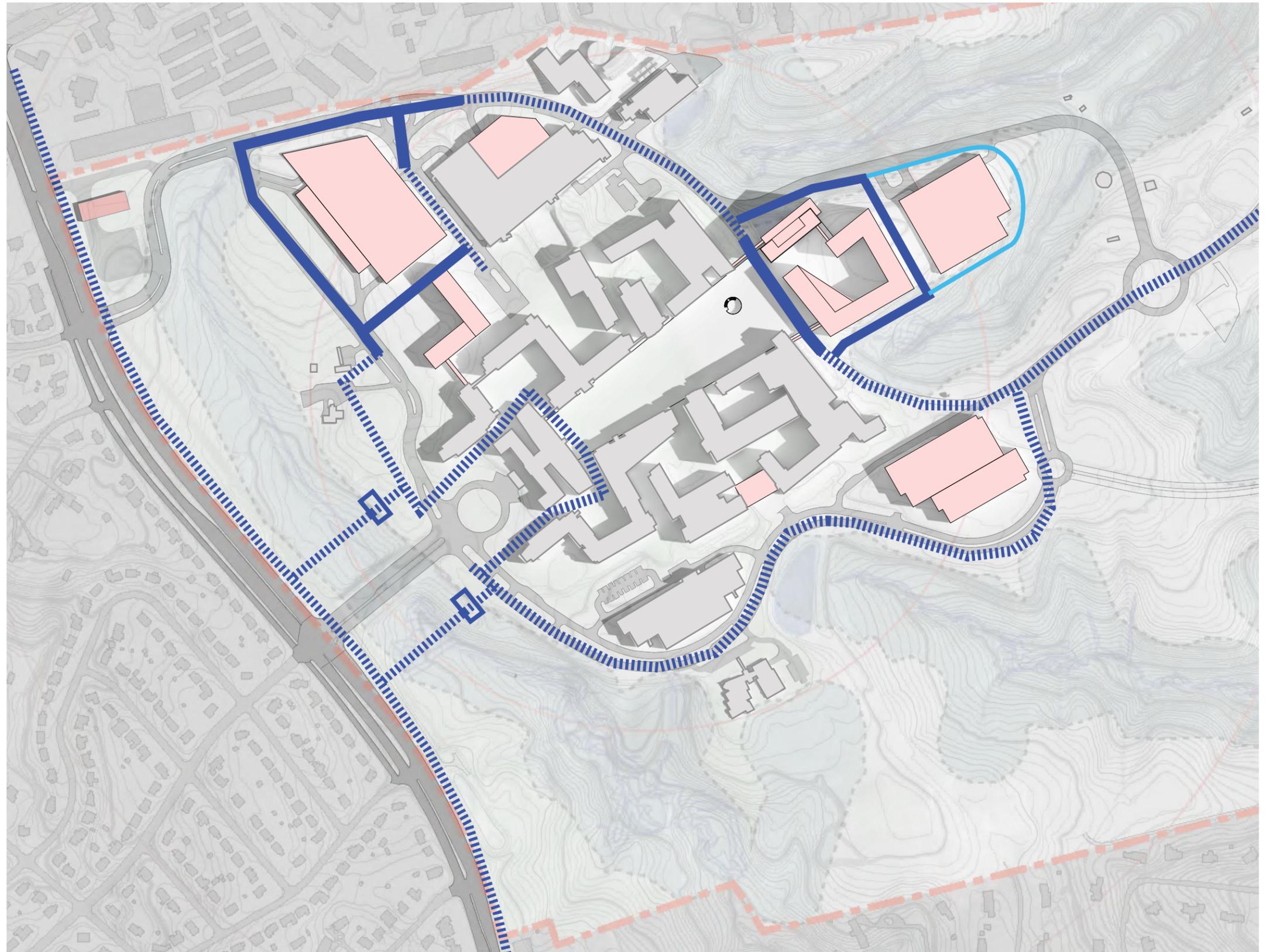


Figure 4-16: Alternative B Water Service Plan

ALTERNATIVE C
Water Service Plan

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- LEGEND
-  EXISTING WATER LINES
 -  EXISTING BOOSTER PUMP STATIONS
 -  NEW 12" WATER LINES
 -  NEW 8" WATER LINES



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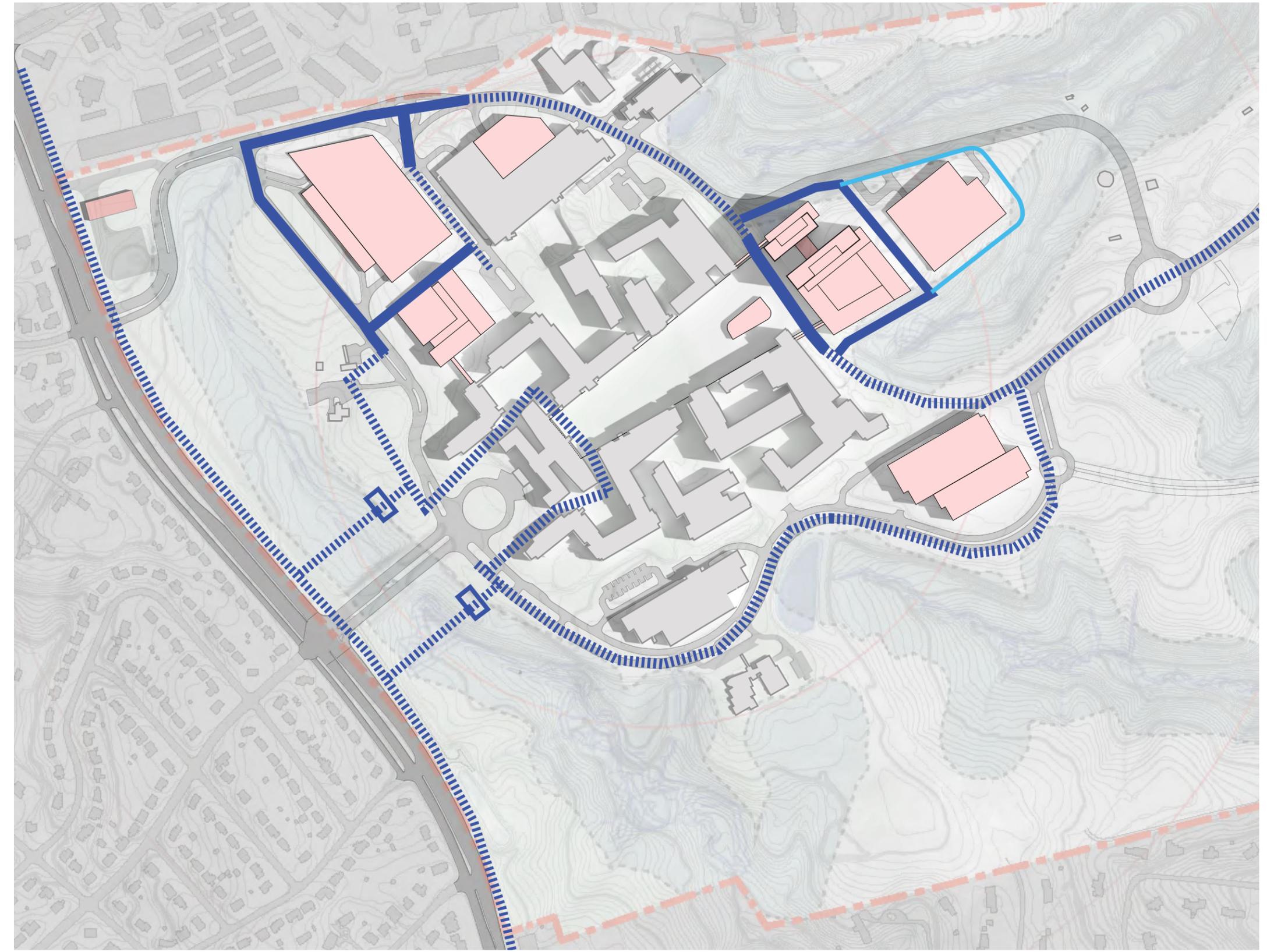


Figure 4-17: Alternative C Water Service Plan

4.8 Proposed Sewer

Under all Action Alternatives, the proposed addition of employees and support staff on the FDA Campus would result in increased demand for sewer service. WSSC conducted a System Planning Forecast (SPF) to review the water and sewer demands for the proposed Master Plan development. The WSSC Letter of Findings for the SPF, issued May 31, 2017, concluded that the required sewer service is available for the project and may be obtained through a new (or existing) service connection to the Paint Branch trunk line; however, the project has the potential to exacerbate downstream sewer overflows (due to stormwater infiltration during large storm events). Therefore, WSSC would require the implementation of mitigation measures so that the impact would be minimized.

The existing FDA 15-inch sewer service line has capacity to serve the existing campus but will not handle the ultimate build out of the expanded site under this Master Plan. A new 15" outfall sewer service line will convey sewer flows from the new buildings (and some of the existing buildings) to the existing 27" WSSC Sewer Trunk Line running along Paint Branch.

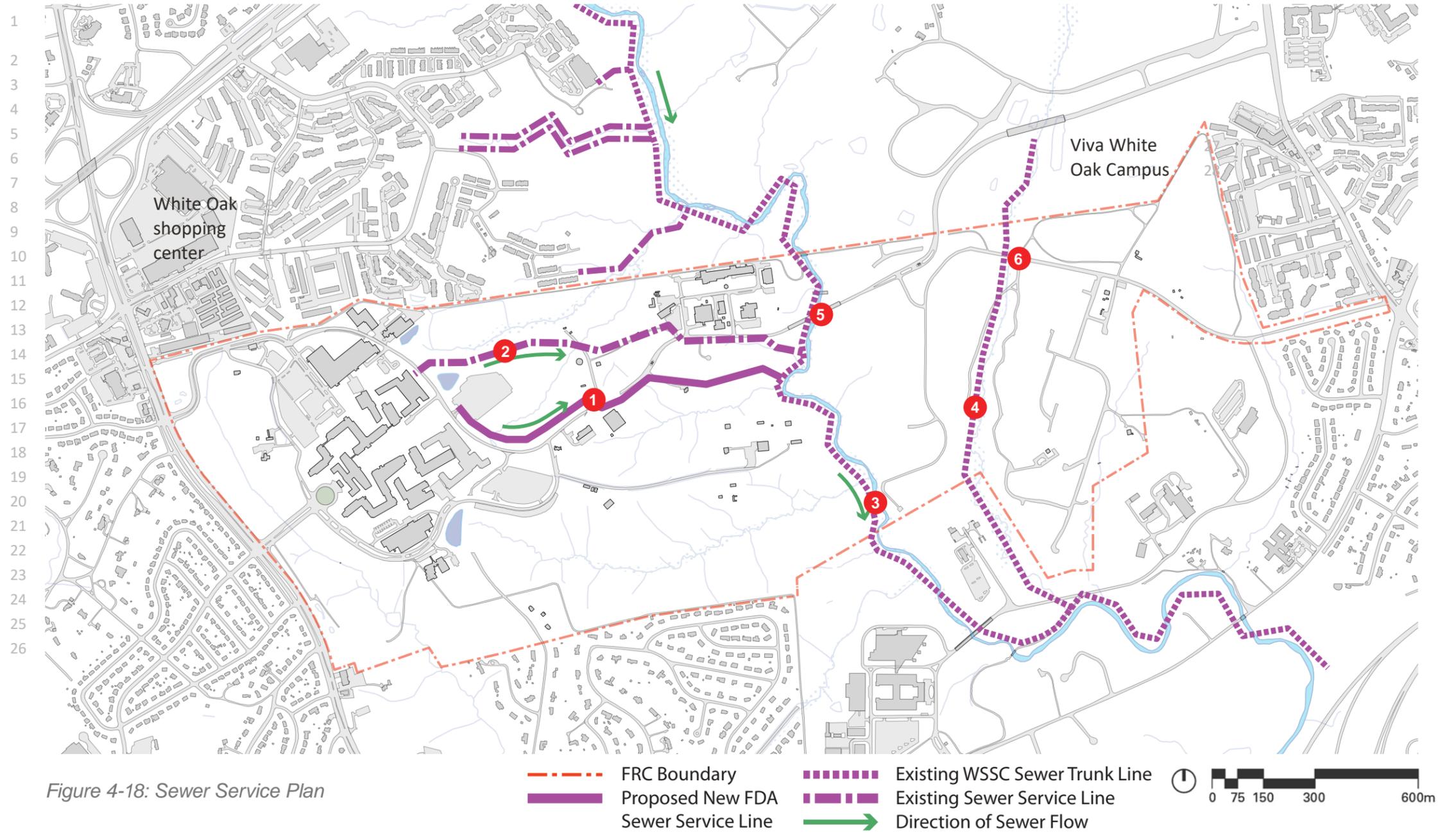


Figure 4-18: Sewer Service Plan

New Sewer

- 1 Proposed New 15" Sewer Line To Serve Expanded FDA Campus

Existing Sewer

- 2 Existing 15" Sewer PVC Sewer Line Serving FDA Campus
- 3 Existing 27" Paint Branch Trunk Sewer Line Serving The White Oak Area
- 4 Existing 20" West Farm Branch Sewer Trunk Line

Existing Other

- 5 Existing Bridge over Paint Branch
- 6 Existing Bridge over West Farm Branch

ALTERNATIVE A
Sewer Service Plan

See Figure 4-18 for Sewer lines downstream of FDA site

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LEGEND

-  EXISTING 15" PVC SEWER LINE SERVING THE EXISTING FDA CAMPUS - TO REMAIN
-  PROPOSED NEW 15" SEWER LINE TO SERVE EXPANDED FDA CAMPUS
-  DIRECTION OF FLOW

NORTH



Scale 1:5,000



Figure 4-19: Alternative C Sewer Service Plan

ALTERNATIVE B
Sewer Service Plan

See Figure 4-18 for Sewer lines downstream of FDA site

LEGEND

-  EXISTING 15" PVC SEWER LINE SERVING THE EXISTING FDA CAMPUS - TO REMAIN
-  PROPOSED NEW 15" SEWER LINE TO SERVE EXPANDED FDA CAMPUS
-  DIRECTION OF FLOW

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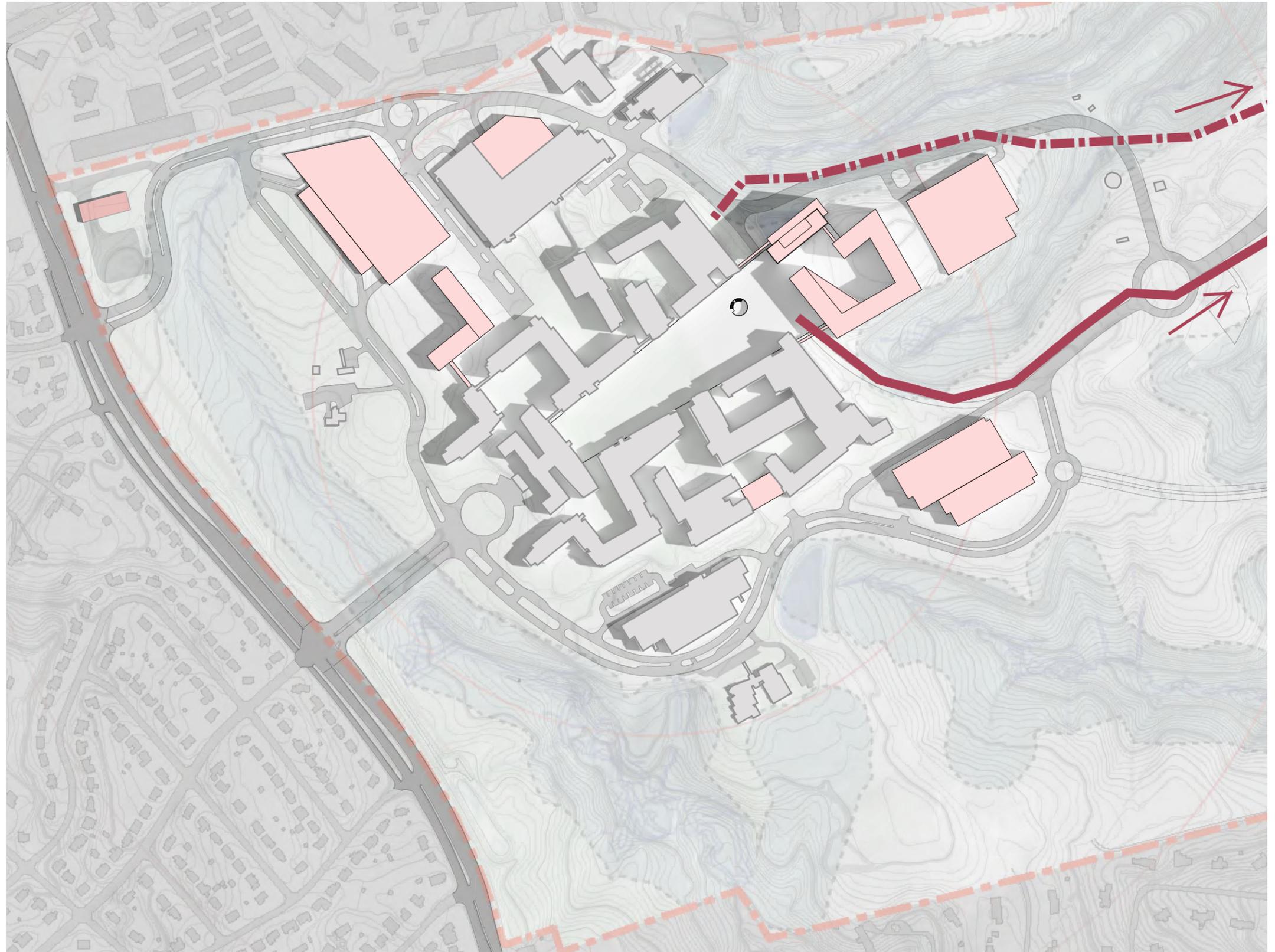


Figure 4-20: Alternative B Sewer Service Plan

ALTERNATIVE C
Sewer Service Plan

See Figure 4-18 for Sewer lines downstream of FDA site

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LEGEND

-  EXISTING 15" PVC SEWER LINE SERVING THE EXISTING FDA CAMPUS - TO REMAIN
-  PROPOSED NEW 15" SEWER LINE TO SERVE EXPANDED FDA CAMPUS
-  DIRECTION OF FLOW

NORTH



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Figure 4-21: Alternative C Sewer Service Plan