

FINAL ENVIRONMENTAL ASSESSMENT

LEASE CONSTRUCTION AND OPERATION OF A CONSOLIDATED NATIONAL CANCER INSTITUTE (NCI) CAMPUS IN MONTGOMERY COUNTY, MARYLAND



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Final Environmental Assessment

Lease Construction and Operation of a Consolidated National Cancer Institute (NCI) Campus in Montgomery County, Maryland

Responsible Agency:

U.S. General Services Administration

Abstract:

U.S. General Services Administration (GSA) proposes the lease construction and operation of a consolidated National Cancer Institute (NCI) Campus consisting of 575,000 rentable square feet (rsf) of administrative/office space developed and operated by a private sector developer and contractor. GSA would be entering a lease with a private sector developer and would administer the lease of the consolidated NCI Campus. GSA is seeking to consolidate NCI's current leased spaces into a campus environment for use by approximately 2,400 NCI employees. The campus would consist of two to three low to mid-rise buildings, and a minimum of 1,900 parking spaces. Potential locations for the proposed action are The Preserve at Tower Oaks in Rockville, Maryland (Alternative I), the Washington Science Center (WSC) Campus in North Bethesda, Maryland (Alternative II), or the Shady Grove Life Sciences Center (LSC) in Rockville, Maryland (Alternative III); these locations are not listed in any particular order.

The principal conclusions of this EA are:

- (1) Implementation of the Proposed Action, lease construction and operation of a consolidated NCI Campus at either The Preserve at Tower Oaks in Rockville, Maryland (Alternative I), the WSC Campus in North Bethesda, Maryland (Alternative II), or the Shady Grove LSC in Rockville, Maryland (Alternative III), would result in no significant, non-mitigable, adverse environmental, human health, or socioeconomic impacts.
- (2) The Proposed Action would consolidate various NCI leased spaces in Montgomery County, Maryland into a campus, resulting in a more efficient, contiguous work environment for administrative staff.
- (3) Implementation of the Proposed Action would increase NCI's usable square feet while decreasing National Institute of Health's current high market annual rental rate per rentable square foot (rsf).
- (4) Implementation of Alternative IV (No Action) would not enhance NCI mission performance, would not provide a consolidated, more efficient work environment, and would not decrease NIH's annual rental rate per rsf.

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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
LIST OF FIGURES	iv
1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION	1-1
1.1 INTRODUCTION	1-1
1.2 PURPOSE AND NEED FOR THE CONSOLIDATED NCI CAMPUS	1-1
1.3 ASSESSMENT METHODOLOGY	1-2
2.0 DESCRIPTION OF THE PROPOSED ACTION and Alternatives	2-1
2.1 PLANNED CONSTRUCTION	2-11
2.2 REGULATORY AND PERMITTING REQUIREMENTS FOR CONSTRUCTION	2-11
2.2.1 Site Selection Requirements	2-11
2.2.2 Air Permitting Requirements	2-11
2.2.3 Sedimentation, Erosion, and Stormwater Management Requirements	2-11
2.2.4 Forestation Requirements	2-12
2.2.5 Waste Management Requirements	2-12
2.2.6 Sustainable Design and Construction	2-12
2.2.7 Utility Requirements	2-13
2.2.8 Sustainable and Energy Efficient Operations	2-14
2.2.9 Waste Stream Management	2-15
2.2.10 Safety	2-15
2.2.11 Noise	2-15
3.0 AFFECTED ENVIRONMENT	3-1
3.1 LAND USE	3-1
3.2 CLIMATE	3-1
3.3 GEOLOGY	3-2
3.4 SOILS	3-2
3.5 WATER RESOURCES	3-3
3.5.1 Surface Water	3-3
3.5.2 Groundwater	3-4
3.5.3 Stormwater	3-4
3.5.4 Drinking Water	3-5
3.6 WETLANDS AND FLOODPLAINS	3-5
3.7 PLANT AND ANIMAL ECOLOGY	3-9
3.8 AIR QUALITY	3-10
3.9 HISTORICAL AND CULTURAL RESOURCES	3-11

3.10	SOCIOECONOMIC ENVIRONMENT	3-12
3.11	NOISE	3-13
3.12	TRANSPORTATION	3-14
3.13	ENERGY RESOURCES	3-16
3.14	POLLUTION PREVENTION AND WASTE MANAGEMENT	3-17
3.14.1	Wastewater.....	3-17
3.14.2	Municipal Solid Waste and Recycling.....	3-18
3.14.3	Hazardous Waste	3-18
4.0	ENVIRONMENTAL CONSEQUENCES	4-1
4.1	INTRODUCTION.....	4-1
4.1.1	Land Use	4-1
4.1.2	Climate	4-2
4.1.3	Geology	4-2
4.1.4	Soils.....	4-2
4.1.5	Water Resources.....	4-3
4.1.6	Wetlands and Floodplains	4-4
4.1.7	Plant and Animal Ecology.....	4-4
4.1.8	Air Quality	4-5
4.1.9	Historical and Cultural Resources	4-6
4.1.10	Socioeconomic Environment	4-6
4.1.11	Noise	4-7
4.1.12	Transportation	4-8
4.1.13	Energy Resources	4-10
4.1.14	Pollution Prevention and Waste Management	4-11
4.1.15	Human Health and Safety	4-11
4.1.16	Environmental Justice	4-12
4.1.17	Cumulative Impacts	4-12
5.0	CONCLUSIONS	5-1
6.0	REFERENCES	6-1
7.0	ACRONYMS and ABBREVIATIONS.....	7-1
8.0	PERSONS AND AGENCIES CONTACTED	8-1
9.0	LIST OF PREPARERS.....	9-1

LIST OF FIGURES

Figure 2-1.	Alternative Locations for the Proposed Consolidated NCI Campus.	2-3
Figure 2-2.	Aerial Photograph of a Proposed Location for the Consolidated NCI Campus – The Preserve at Tower Oaks.	2-5

Figure 2-3. Aerial Photograph of a Proposed Location for the Consolidated NCI Campus – WSC Campus.....2-7

Figure 2-4. Aerial Photograph of a Proposed Location for the Consolidated NCI Campus – Shady Grove LSC.2-9

Figure 3-1. Location of the 100-Year Flood Plain near The Preserve at Tower Oaks.3-7

LIST OF TABLES

Table 4-1. Summary of Potential Environmental Impacts Related to Construction of the Proposed Consolidated NCI Campus.4-13

Table 4-2. Summary of Potential Environmental Impacts Related to Operation of the Proposed Consolidated NCI Campus.....4-15

Table 4-3. Summary of Mitigation Measures Related to Construction of the Proposed Consolidated NCI Campus.....4-17

Table 4-4. Summary of Mitigation Measures Related to Operation of the Proposed Consolidated NCI Campus.....4-19

APPENDICES

Appendix A GSA Solicitation for Offers NO. 08-008

Appendix B Transportation Study

Appendix C Official Correspondence with USFWS and MDNR Regarding Presence of Threatened or Endangered Species

Appendix D Comments Received on Draft EA

Appendix E Cultural Resources Investigations for 30 Acres within the Proposed Preserve at Tower Oaks, Montgomery County, Maryland

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

U.S. General Services Administration (GSA) proposes the lease construction and operation of a consolidated National Cancer Institute (NCI) Campus consisting of administrative/office space. GSA would be entering a lease with a private sector developer and would administer the lease of the consolidated NCI Campus. The proposed consolidated NCI Campus would then be developed and operated by the selected private sector developer and contractor (see Section 2.0). GSA Solicitation for Offers (SFO) 08-008 is seeking approximately 575,000 rentable square feet (rsf) to consolidate NCI's current leased spaces into a campus environment for use by NCI (GSA SFO 08-008 is included in its entirety in Appendix A). The campus would consist of two to three low to mid-rise buildings and a minimum of 1,900 parking spaces. The delineated area for this solicitation is the vicinity of Rockville, Maryland. The Proposed Action would relocate approximately 2,400 full time staff members from many separate existing leased spaces into a single consolidated campus in Montgomery County, Maryland.

In accordance with the National Environmental Policy Act of 1969 (NEPA) (42 U.S. Code [USC] 4321-4347), as amended, Federal agencies must evaluate the potential environmental impacts associated with proposed major actions. The Council on Environmental Quality (CEQ) established the regulations that govern the implementation of the procedural provisions outlined in NEPA (Title 40, Code of Federal Regulations [CFR] Parts 1500-1508). In accordance with GSA's Public Buildings Service's NEPA Desk Guide, the screening criteria applied to categorical exclusions indicate that an Environmental Assessment (EA) must be prepared to analyze the impacts the proposed action may have on the human environment.

1.2 PURPOSE AND NEED FOR THE CONSOLIDATED NCI CAMPUS

NCI focuses on direct research aimed at identifying the causes of cancer, AIDS, and related diseases. More than 100 Principal Investigators lead distinct research programs which investigate the genetic, molecular, environmental, and behavioral factors that contribute to human cancers, as well as identifying new targets for cancer diagnosis, treatment, and prevention. NCI also provides core scientific expertise and advanced technology development to other components of the National Institute of Health (NIH).

GSA is seeking approximately 575,000 rsf to consolidate NCI's current leased spaces into a campus environment for use by NCI. The delineated area for this solicitation is in the vicinity of Rockville, Maryland because of the proximity to NIH headquarters. The Proposed Action is a mission-enhancing project that would consolidate existing personnel currently operating in several different leased spaces located in Montgomery County, Maryland. The leased spaces are currently held by NIH at current high market rent. By consolidating these leases into one with a lower rental rate, the Proposed Action would create a more cost effective campus. Completion of the Proposed Action would increase NCI's usable square feet by approximately 5.6 percent, while decreasing their annual rental rate per rsf. The Proposed Action would also create a more efficient and contiguous work environment for administrative staff in a consolidated office and support space.

The characteristics deemed essential to meet the needs of the new consolidated NCI Campus are outlined in GSA SFO 08-008 and include: 1) a quality building of sound and substantial construction as described in the SFO, 2) potential for efficient building layout, 3) contain the necessary square footage range to accommodate 2,400 full-time staff members, 4) be the sole

occupants of the buildings, and 5) be in compliance with all of the Government's minimum requirements set forth in GSA SFO 08-008. The GSA SFO provides four technical evaluation factors that when combined with cost or price will provide the best value to the Government. Factor 1 is Building Characteristics and is considered the most important of all four technical evaluation factors. This factor considers the quality of the building, architecture, building systems, construction, and finishes; planning efficiency and flexibility; and access to natural light. Factor 2 is Location and considers, in descending order of importance, the proximity to NIH campus, proximity to public transportation, proximity to a major highway, and proximity to amenities. Factor 3 is Site Parameters and considers the layout/design of the exterior components of the offered facility including campus environment, NCI Campus image, green space, and pedestrian, bicycle, and vehicular circulation. Finally, Factor 4 is Key Personnel/Past Performance which considers the offeror's ability to provide quality property and construction management on time and on budget. Factor 1 and Factor 2 combined are considered substantially more important than Factor 3 and Factor 4 combined.

1.3 ASSESSMENT METHODOLOGY

This EA has been prepared in accordance with CEQ's regulations for implementing NEPA and GSA's PBS NEPA Desk Guide. This EA outlines and describes activities associated with the Proposed Action (Section 2.0), and systematically reviews the three reasonable alternatives (Section 3.0). It characterizes the environment that may be impacted due to the implementation of the Proposed Action (Section 4.0), and describes potential impacts to the human environment, including natural and man-made environment, associated with the implementation of the Proposed Action (Section 5.0). This analysis considers impacts that are expected to result from lease construction and routine operations, and examines the potential for cumulative impacts, including synergistic effects among these activities in the affected areas.

This EA provides the best available information, as of October 2009, including guidance provided by GSA and NCI personnel. Data presented in Sections 2.0 and 4.0 reflect the current conditions at the proposed locations for the consolidated NCI Campus, using references to the most recent available data source.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The Proposed Action and subject of this EA is the lease construction and operation of a consolidated NCI Campus. The consolidated NCI Campus would consist of two to three low to mid-rise buildings totaling approximately 575,000 rsf with a minimum of 1,900 parking spaces. Under the Proposed Action, approximately 2,400 Federal employees would be relocated from existing space in Montgomery County to the consolidated NCI Campus. The Proposed Action would allow for the consolidation of many existing leased spaces currently operating in Montgomery County, Maryland, while decreasing NIH's current high market annual rental rate per rsf, creating a more cost effective campus.

According to NEPA, all agencies of the Federal Government shall "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources" (42 USC 4332). This EA analyzes three reasonable action alternatives and a no action alternative. Potential locations for the proposed action are The Preserve at Tower Oaks in Rockville, Maryland (Alternative I), the Washington Science Center (WSC) Campus in North Bethesda, Maryland (Alternative II), or the Shady Grove Life Sciences Center (LSC) in Rockville, Maryland (Alternative III), these locations are not listed in any particular order.

Alternative I: The Preserve at Tower Oaks

The proposed site at The Preserve at Tower Oaks (see Figure 2-2), is a mostly undeveloped commercial/industrial park located in the southern portion of the City of Rockville, Montgomery County, Maryland. The site is approximately 18 highway miles northwest of central Washington, D.C. Site topography can be described as gently rolling, with elevations ranging from 350 to 375 ft above mean sea level. The proposed site area for the consolidated NCI Campus is currently forested.

The NCI Campus would be built on 32 acres in the Tower Oaks Development. The consolidated NCI Campus would consist of two to three low to mid-rise buildings totaling approximately 575,000 rsf with a minimum of 1,900 parking spaces. The facility is expected to begin operations by fall 2012 and employ approximately 2,400 full time staff members relocated from other currently leased spaces in Montgomery County, Maryland.

Alternative II: WSC Campus

The WSC is an established office campus in North Bethesda (see Figure 2-3). The WSC campus is located at the intersection of Montrose Parkway, Old Georgetown Road, and Executive Boulevard in southern Montgomery County, Maryland in North Bethesda (North Bethesda Policy Area). The site is approximately 16 highway miles northwest of central Washington, D.C. The site is gently sloping from north to south, with elevations ranging from 370 to 390 ft above mean sea level. Currently, much of the proposed site area for the consolidated NCI Campus includes office buildings, parking, landscaped areas, and a marginal forested area which covers approximately one-quarter of the proposed site.

The consolidated NCI Campus would be composed of two to three low to mid-rise buildings totaling approximately 575,000 rsf with a minimum of 1,900 parking spaces. The facility is expected to begin operations by fall 2012 and employ approximately 2,400 full time staff members relocated from other currently leased NCI spaces in Montgomery County, Maryland.

Alternative III: Shady Grove LSC

The Shady Grove LSC is an established business park zoned for life sciences and biotechnology, (see Figure 2-4). The Shady Grove LSC is located in the south-central portion of Montgomery County, Maryland just outside the northwest border of the City of Rockville, approximately 22 highway miles northwest of central Washington, D.C. The site is within the zoned LSC and is bordered by Key West Avenue, Medical Center Drive, Blackwell Road, and existing Johns Hopkins University (JHU) buildings. The terrain can be described as flat to gently rolling with elevations ranging from 440 to 475 ft above mean sea level. A stormwater management pond is located on the north end of the site, with much of the remaining site area as landscaped parking.

The consolidated NCI Campus would be built within the 300 acres of the Shady Grove LSC Campus. The consolidated NCI Campus would consist of two to three low to mid-rise buildings totaling approximately 575,000 rsf with a minimum of 1,900 parking spaces. The facility is expected to begin operations by fall 2012 and employ approximately 2,400 full time staff members relocated from other currently leased NCI spaces in Montgomery County, Maryland.

Alternative IV: No Action Alternative

Alternative IV, the No Action Alternative, is to not implement the lease construction and operation of the proposed consolidated NCI Campus. The No Action Alternative was evaluated in accordance with CEQ regulations [40 CFR 1502.14(d)]. Although it would not satisfy the purpose of and need for the project, the No Action Alternative does establish the baseline to which the action alternative can be compared. Under the No Action Alternative, NCI personnel would remain in their current leased locations in Rockville, MD. The majority of these leases are currently located at 6116, 6120 and 6130 Executive Boulevard, Rockville, MD (the "Executive Boulevard Properties"). Implementation of the No Action Alternative would not enhance NCI mission performance, and would not provide a consolidated and more efficient work environment.

Alternative(s) Considered but Dismissed from Detailed Analysis

While an additional offer for an existing building(s) was received in response to the SFO, this offer did not meet various minimum requirements and is not further analyzed in this EA.

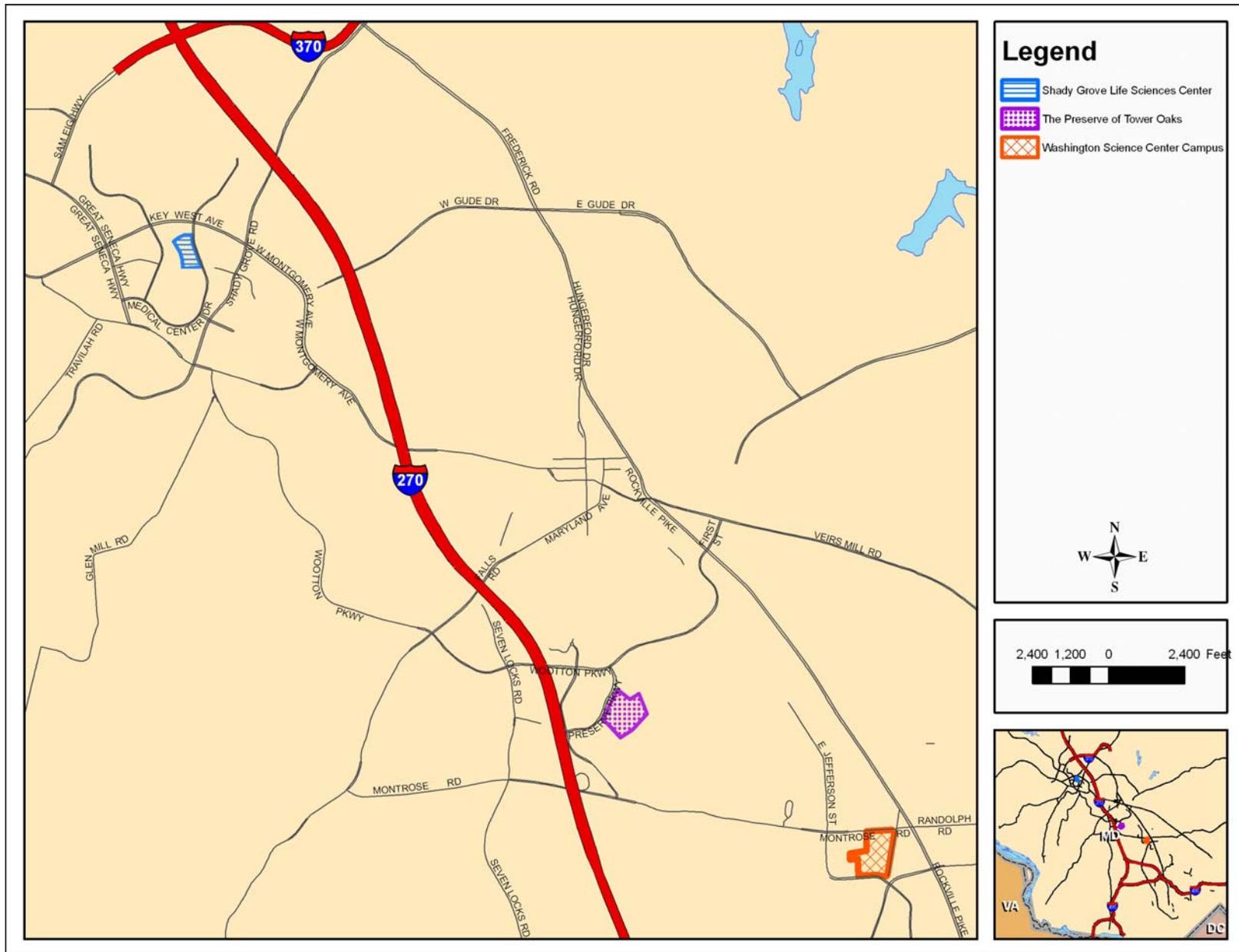


Figure 2-1. Alternative Locations for the Proposed Consolidated NCI Campus.

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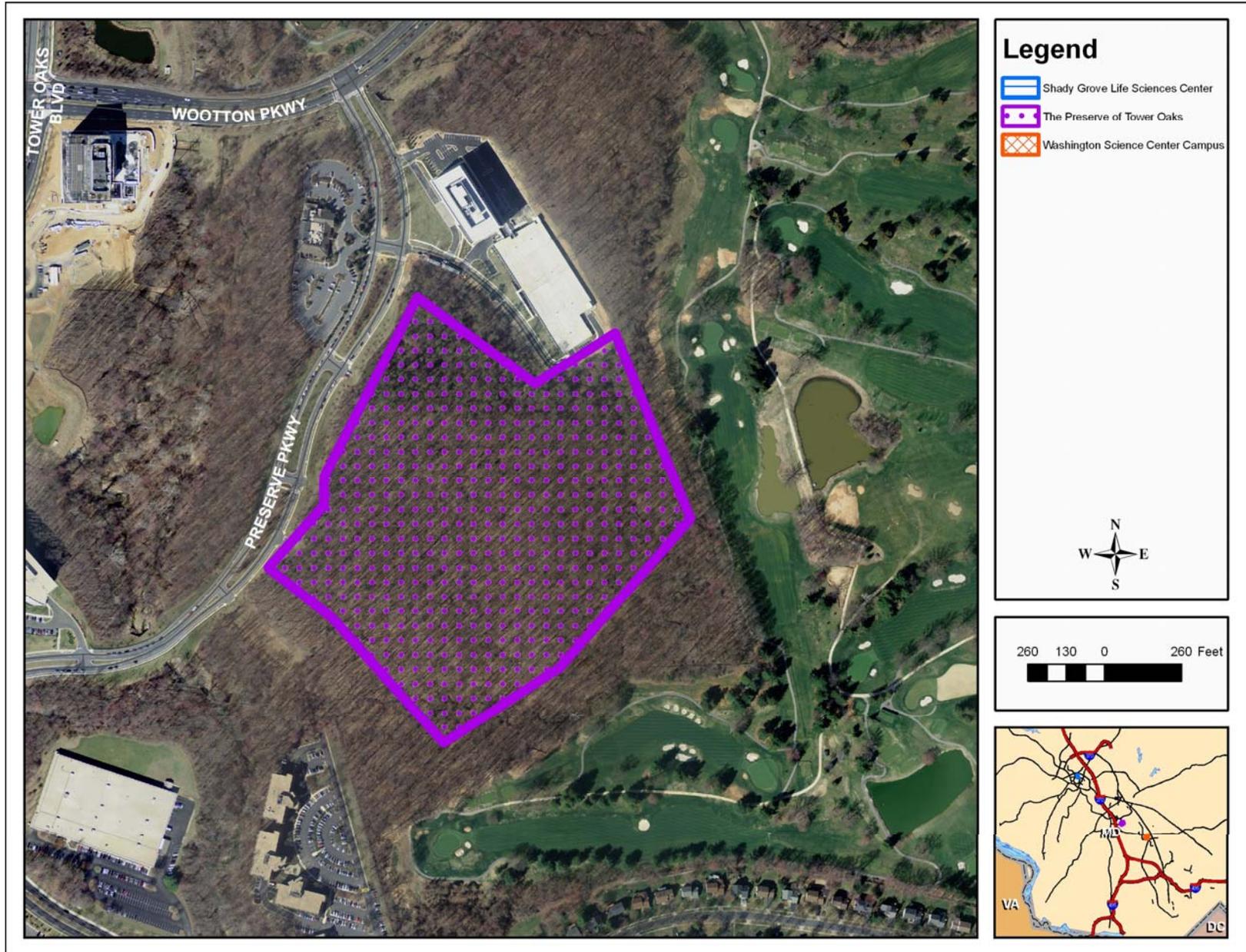


Figure 2-2. Aerial Photograph of a Proposed Location for the Consolidated NCI Campus – The Preserve at Tower Oaks.

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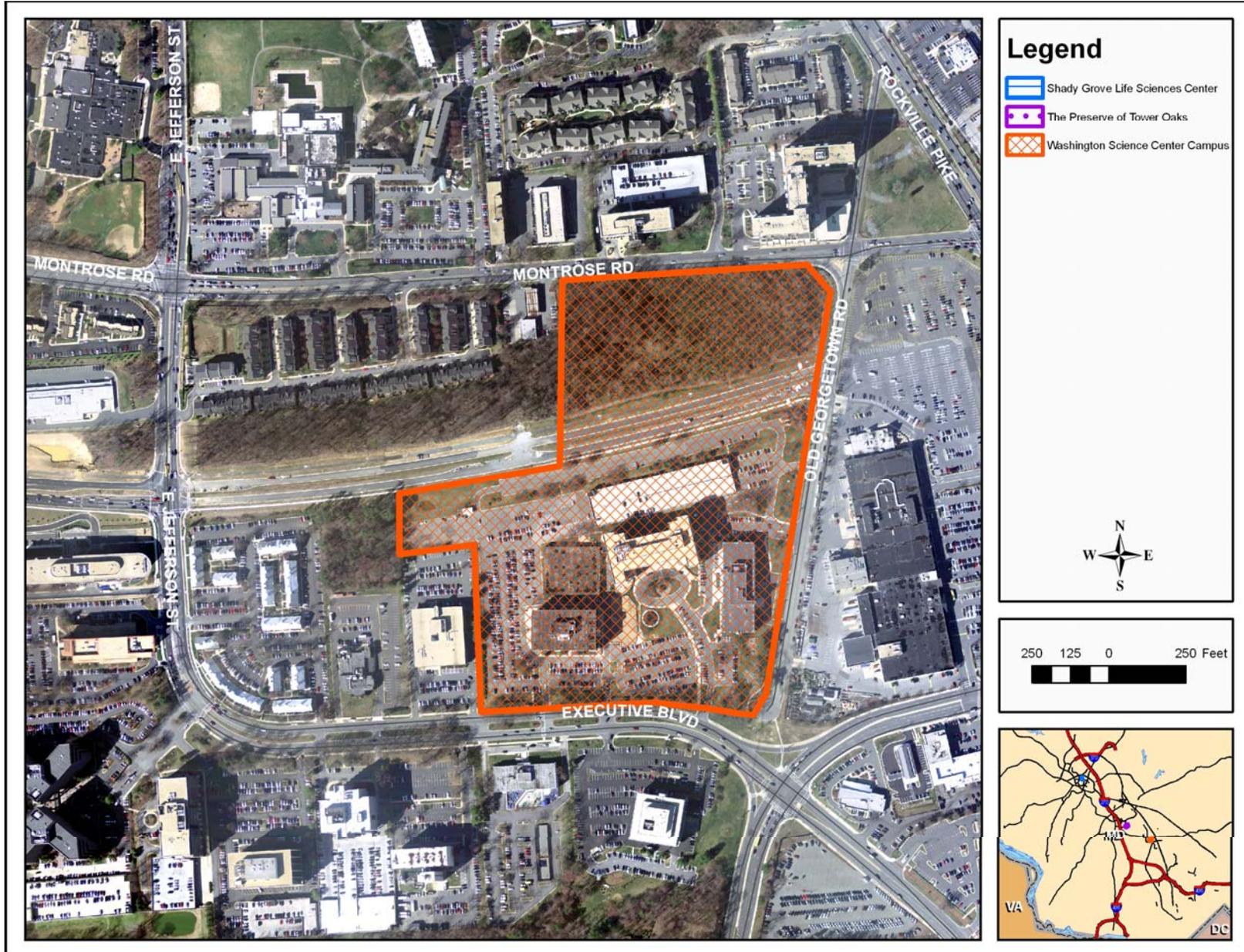


Figure 2-3. Aerial Photograph of a Proposed Location for the Consolidated NCI Campus – WSC Campus.

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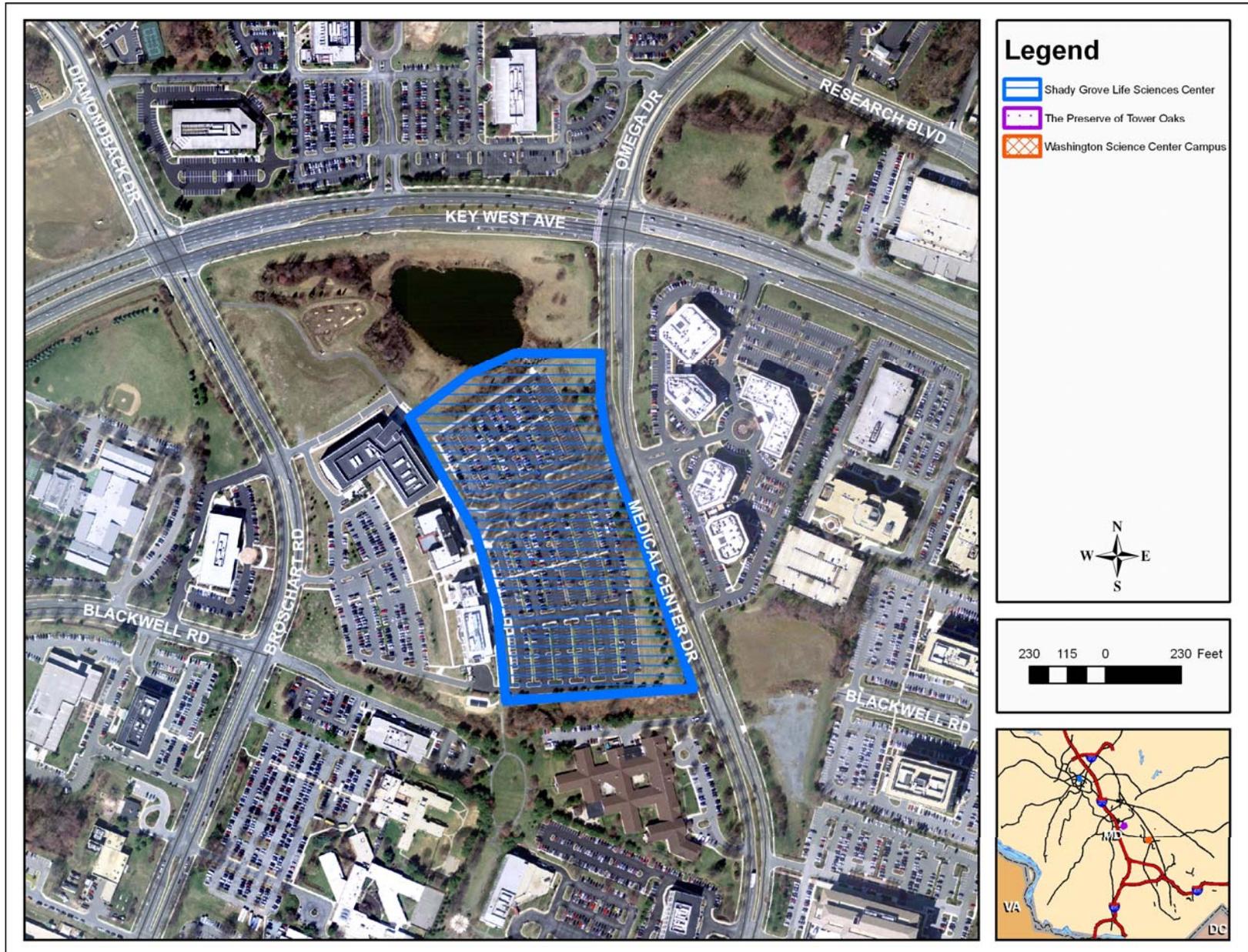


Figure 2-4. Aerial Photograph of a Proposed Location for the Consolidated NCI Campus – Shady Grove LSC.

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Section 2.1 below briefly summarizes the planned construction activities for the Proposed Action, and Section 2.2 discusses regulatory and permitting requirements for mitigation of potential environmental impacts during construction. The discussion includes erosion and sediment control, disposal of construction waste, forest conservation, historical and cultural resources, stormwater management, and sustainable design and construction considerations. Section 2.2 also presents the routine operational activities for the Proposed Action, including sustainable and energy efficient operations, waste management, and regulatory and permitting requirements for mitigation of potential environmental impacts of the Proposed Action. Section 2.3 briefly summarizes the safety requirements for both the construction and operational phases of the proposed consolidated NCI Campus.

2.1 PLANNED CONSTRUCTION

Construction of the proposed consolidated NCI Campus would occur on non-federally owned land and would be managed and funded by the selected developer and is expected to be ready for occupancy beginning fall 2012, or as soon thereafter as possible. The proposed consolidated NCI Campus would contain approximately 575,000 rsf of office and support space, located in Montgomery County, Maryland (see Figure 2-1). Construction would include associated parking lots, driveways, sidewalks, and utility infrastructure improvements. The Proposed Action would also include interior architectural finishes, major electrical components, building utilities (including but not limited to, boilers, piping, air compressors, and sprinkler systems), climate control systems (heating, ventilation, and air conditioning), and fire and security systems.

2.2 REGULATORY AND PERMITTING REQUIREMENTS FOR CONSTRUCTION

2.2.1 Site Selection Requirements

The following requirements, listed in order of importance, were listed as technical evaluation criteria of the GSA SFO 08-008. In determining the quality of the building, consideration will be given to (1) quality of building architecture, building systems, construction, and finishes; (2) planning efficiency and flexibility; and (3) access to natural light. The factors deemed important for the location of the proposed consolidated NCI Campus include: (1) proximity to NIH Campus, (2) proximity to major highways, (3) proximity to public transportation, and (4) proximity to amenities. In determining the quality of the site, consideration will be given to (1) campus environment, (2) NCI Campus Image, (3) green space, and (4) pedestrian, bicycle and vehicular circulation. Though unrelated to the site and location, there was a fourth factor dealing with each offerors past performance and key personnel.

2.2.2 Air Permitting Requirements

The construction of the proposed consolidated NCI Campus may include the installation of one or more emergency backup generators. Air Quality permits to construct are currently required for generators greater than 500 horsepower or 373 kilowatts. Air quality permits to operate are required for fuel burning equipment with maximum rated capacities of 50 million British Thermal Units (mmBTU) per hour, or more (Code of Maryland Regulations [COMAR] 26.11.02).

2.2.3 Sedimentation, Erosion, and Stormwater Management Requirements

According to COMAR 26.17.01, *Water Management*, and 26.17.02, *Stormwater Management*, construction activities that disturb more than 5,000 square feet (ft²) (0.11 acre) of land area and/or more than 100 cubic yards of earth require a sedimentation and erosion control plan and

a stormwater management plan consistent with the *2000 Maryland Storm Water Design Manual, Volumes I and II* (Maryland Department of the Environment [MDE], 2000). In addition, if the area disturbed is more than one acre, a general permit for construction activity under the National Pollutant Discharge Elimination System (NPDES) would be required for the discharge of stormwater during construction. As the construction of the proposed consolidated NCI Campus would disturb more than one acre, the selected developer would be required to maintain a sedimentation and erosion control plan and a stormwater management plan, as well as obtain a NPDES permit. A sedimentation and erosion control plan and stormwater management plans are designed to protect any adjacent wetland and floodplain areas from the impacts related to construction activities.

The State of Maryland enacted the Stormwater Management Act of 2007 requiring environmental site design and low-impact development practices for new development and redevelopment projects.

2.2.4 Forestation Requirements

In accordance with the State Forest Conservation Program (COMAR 08.19.04) and the City of Rockville Forest and Tree Preservation Ordinance (FTPO), any project that disturbs over 40,000 ft² (0.92 acres) of land requires approval and implementation of a Forest Conservation Plan (FCP) and Forest Stand Delineation Plan, which would be conducted by a qualified professional.

2.2.5 Waste Management Requirements

The construction contractor would make every effort to reduce overall construction waste by recycling and reusing materials whenever possible, consistent with the GSA SFO. The contractor would dispose of all non-recyclable waste generated during construction at a licensed facility and in accordance with Federal and state regulations. Additionally, the construction contractor would be responsible for the proper management and disposal of any hazardous waste generated during construction.

2.2.6 Sustainable Design and Construction

The proposed new NCI Campus would be designed to be efficient from an environmental and energy consumption perspective, and would adhere to the tenets of sustainable design and requirements. Sustainable design includes efficient use of natural resources, better performance, enhanced desirability and more affordable infrastructure and buildings. Sustainable design incorporates the energy efficiency concerns of the 1970s with present concerns related to damage to the natural environment; emissions of greenhouse gases and ozone depleting chemicals; use of limited material resources; management of water as a limited resource; reductions in construction, demolition and operational waste; indoor environmental quality; and occupant/worker health, productivity, and satisfaction.

Sustainable implementation was initiated by the signing of the Guiding Principles of the *Federal Leadership in High Performance and Sustainable Building Memorandum of Understanding* (MOU) on 24 January 2006. Nineteen Federal agencies and authorities, including GSA, signed the Guiding Principles MOU in effort to integrate sustainable practices in Federal buildings. GSA has incorporated sustainable practices as a requirement in the SFO for the consolidated NCI Campus.

On 24 January 2007, the *Guiding Principles* of the MOU became a requirement for all Federal agencies with the signing of Executive Order (EO) 13423 “Strengthening Federal Environmental, Energy, and Transportation Management”. The *Guiding Principles* MOU is the flagship collaborative Federal effort to define guiding principles of green building and provide leadership in the design, construction, operation, and maintenance of high performance and sustainable Federal buildings. Parties to the MOU account for more than 95 percent of the total Federal facility square footage. The MOU *Guiding Principles* includes the following five principles:

- Employing integrated design principles;
- Optimizing energy performance;
- Protecting and conserving water resources;
- Enhancing indoor environmental quality; and
- Reducing the environmental impact of materials.

In addition to following the *Guiding Principles* MOU, operation of the new NCI Campus will be in accordance with EO 13423 and the Energy Independence and Security Act of 2007 (EISA). EO 13423 consolidated five previous EOs and made compliance with the *Guiding Principles* mandatory for new construction and major renovation of agency buildings. With respect to sustainable building design and operations, the EO requires each Federal agency to:

- reduce building energy consumption per square foot by 30 percent by 2015, relative to the 2003 baseline;
- reduce greenhouse gas emissions related to facility energy use by 30 percent by 2015, relative to the 2003 baseline;
- reduce water consumption intensity by 2 percent per year through 2015, relative to the 2007 baseline;
- procure at least half of statutorily required renewable energy comes from new renewable sources; and
- place energy generation projects on agency property for agency use, where feasible.

GSA's SFO requires that the consolidated NCI Campus achieve a Leadership in Energy and Environmental Design (LEED) Silver Certification from the U.S. Green Building Council (USGBC). The LEED green building rating system is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. LEED was created by the USGBC to define green building by establishing a common standard of measurement. LEED also seeks to: promote integrated, whole-building design practices; recognize environmental leadership in the building industry; stimulate green competition; raise consumer awareness of green building benefits; and transform the building market. LEED provides a complete framework for assessing building performance and meeting sustainability goals. Based on well-founded scientific standards, LEED promotes a whole-building approach to sustainability by recognizing performance in six key areas of human and environmental health: sustainable site development, water savings, energy efficiency, CO₂ emissions reduction, stewardship of resources, and indoor environmental quality. LEED recognizes achievements and promotes expertise in green building through a comprehensive system offering project certification, professional accreditation, training and practical resources (USGBC, 2008; 2006).

2.2.7 Utility Requirements

All three proposed action alternatives for the consolidated NCI Campus are approximately the same density and would therefore have similar utility requirements. Water consumption at the

proposed consolidated NCI Campus would be a result of water chillers, sanitary uses, human consumption, and landscaping. Due to the water conservation measures described in Section 2.2.6 and the consolidated NCI Campus's requirement for LEED Silver certification, operation of the proposed consolidated NCI Campus would consume a negligible portion of the total water consumption in Montgomery County. The developer for The Preserve at Tower Oaks would apply to the City of Rockville and the developers for the WSC Campus and Shady Grove LSC would apply to Washington Suburban Sanitary Commission (WSSC) to obtain a water allocation contract, which would be approved prior to construction of the proposed consolidated NCI Campus.

Any natural gas needs for the proposed consolidated NCI Campus would be supplied by the local provider and may be used for space heating purposes. Due to the energy conservation measures described in Section 2.2.6 and the consolidated NCI Campus's requirement for LEED Silver certification, the amount of natural gas to be consumed by the proposed consolidated NCI Campus is a negligible portion of the total energy consumption in Montgomery County.

Electricity needs for the proposed consolidated NCI Campus would be supplied by the local provider and may be used for lighting systems, space heating, and mechanical and electronic device uses. New state-of-the-art energy efficient equipment would be used for the proposed consolidated NCI Campus to minimize its energy demand, in accordance with achieving LEED Silver certification as described in Section 2.2.6. Therefore, the amount of electricity to be consumed by the proposed consolidated NCI Campus is a negligible portion of the total energy consumption in Montgomery County. Emergency backup power for the proposed consolidated NCI Campus may be provided by one or more diesel-fired backup generators.

2.2.8 Sustainable and Energy Efficient Operations

The proposed consolidated NCI Campus would operate, in accordance with GSA's SFO, in a sustainable and energy efficient manner. As described in Section 2.2.6, the sustainable operations required by EO 13423 include reductions in building energy consumption, greenhouse gas emissions, and water consumption relative to the agency's baseline. In addition, EO 13423 requires that at least half of statutorily required renewable energy come from new renewable sources and that renewable energy generation projects be placed on agency property for agency use, where feasible. In addition, EO 13514 requires federal agencies to identify and analyze impacts from energy usage and alternative energy sources in all Environmental Impact Statements and Environmental Assessments for proposals for new or expanded Federal facilities. The GSA SFO does not require the offeror to utilize alternative energy sources. However, as stated above, the selected offeror would have to operate the facility in a sustainable and energy efficient manner.

EO 13423 also mandates sustainable procurement of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products, as well as use of paper containing at least 30 percent post-consumer fiber content. With respect to electronics, the EO requires 95 percent of purchases meet the Electronic Product Environmental Assessment Tool standards, and all computers and monitors must be Energy Star compliant. One hundred percent of electronic equipment that has reached the end of its useful life must be reused, donated, sold, or recycled. The EO requires reductions in the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of; increased diversion of solid waste as appropriate; and the maintenance of cost-effective waste prevention and recycling programs. Finally, EO 13423 mandates the implementation of Environmental Management Systems (EMS)

at all appropriate organizational levels to ensure use of EMS as the primary management approach for addressing environmental aspects of internal agency operations and activities.

2.2.9 Waste Stream Management

In line with the sustainability objectives outlined in Section 2.2.6, the construction contractor would make every effort to reduce overall construction waste by recycling and reusing materials whenever possible. The contractor would dispose of all non-recyclable waste generated during construction at a licensed facility in accordance with Federal and state regulations. Additionally, the construction contractor would be responsible for proper management and disposal of any hazardous waste generated during construction.

Normal operations at the proposed consolidated NCI Campus would generate municipal solid waste (MSW), including recyclable material. MSW would be shipped off-site by a contractor to a licensed disposal facility. Recyclable material would be diverted from the MSW to the maximum extent possible and in accordance with EO 13423 (see Section 2.3.3). Recyclable material would be shipped from the proposed consolidated NCI Campus to end users by a contractor.

2.2.10 Safety

The health and safety of construction workers and Federal workers in the proposed consolidated NCI Campus would be protected by adherence to accepted work standards and regulations set forth by the Occupational Safety & Health Act (OSHA) (29 CFR Part 1910, *Occupational Safety and Health Standards* and 29 CFR Part 1926, *Safety and Health Regulations for Construction*) and COMAR (09.12.20, *Occupational Safety and Health*).

2.2.11 Noise

The State of Maryland (COMAR 26.02.03.02 and 26.02.03.03) has established environmental noise standards that set maximum allowable noise levels for receivers located in industrial, commercial, and residential districts. The regulatory limits for noise levels for receivers in residential areas are 65 decibels (Type A; decibels on an A-weighted scale (dBA)) during daytime hours (i.e., 7:00 a.m. – 10:00 p.m.) and 55 dBA at night (i.e., 10:00 p.m. – 7:00 a.m.). The regulatory limit for noise levels for receivers in industrial areas is 75 dBA anytime. Noise levels exceeding maximum standards are not permitted beyond the property line of the source. Noise impacts on the health of construction workers would be mitigated by adherence to OSHA standards for occupational noise exposure associated with construction (29 CFR 1926.52).

The State of Maryland (COMAR 26.02.03.03 A(2)(a)) states that noise levels from construction activities must not exceed 90 dBA at the boundaries of the construction site during daytime hours (i.e., 7:00 a.m. – 10:00 p.m.). If warranted, a noise level monitoring system using an approved sound level analyzer may be located at or within the property line of the receiving property.

Construction activities must not produce prominent discrete tones and periodic noises (e.g., dump truck tail gate banging) that exceed a level that is 5 dBA lower than the noise level standard established in this requirement. Blasting operations associated with construction activities are exempt from COMAR requirements for noise during daytime hours. All activities associated with the Proposed Action would abide to the above mentioned regulations as well as all Montgomery County noise ordinances.

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3.0 AFFECTED ENVIRONMENT

This section of the EA discusses aspects of the environment that may potentially be impacted by the lease construction and operation of the consolidated NCI Campus at either The Preserve at Tower Oaks, the WSC Campus, or the Shady Grove LSC, all of which are located in Montgomery County, Maryland.

3.1 LAND USE

The Preserve at Tower Oaks

Historically, the former use of the site is presumed to have been agricultural. However, the site appears as heavily wooded in aerial photographs from 1951 forward (Law Engineering and Environmental Services, 1997). The site is bordered by Woodmont Country Club to the east and southeast, residential development to the north, the Montrose Office Park and residential development to the south, and the remainder of the Tower Oaks commercial/industrial park and I-270 corridor to the west. I-270 crosses within 0.5 km (0.3 mi) of the project area. Exit 4 of I-270 (Montrose Road) empties onto Tower Oaks Boulevard just south of its intersection with Preserve Parkway and about 0.61 km (0.37 mi) south of the project area.

The plan for development, site use, and density was established in 1985 with the City of Rockville's approval of a Comprehensive Planned Development, CPD-1-85, located on 192 acres referred to as the Tower Oaks Tract. In 1993, City Resolution No. 21-93 eliminated the creation of a proposed Cabin John Lake as a stormwater management facility and added a Stream Valley Park element (located to the west and northwest of the property). City Resolution No. 1-01, adopted in January 2001, defines the development standards for the property. The property is located within Development Area 5 of Tower Oaks. This area is approved for 945,000 gross square feet (gsf) of office development (including the existing 189,000 square foot office building at 1 Preserve Parkway).

WSC Campus

The site was used as farmland until the early 1960s, when the property was cleared for commercial development (Schnabel Engineering North, 2005). Current land use of the approximately seven acre site consists of one office building, surface parking, and a parking garage.

Shady Grove LSC

Initial development of the site dates to 1986. The 1990 Master Plan states that the LSC is a "Research and Development (R&D) Village and promotes the creation of a high quality environment not only for R&D firms, but also for offices, corporate headquarters, light manufacturing, and business support services. Montgomery County currently is undertaking revisions to the 1990 Master Plan through its Gaithersburg West Master Plan process, which may incorporate a wider range of uses for the LSC area (Montgomery County Planning Department, 2009).

3.2 CLIMATE

All three proposed sites lie within the humid subtropical climate zone, characterized by hot, humid summers and mild to chilly winters. Rockville, Maryland receives approximately 43 inches of average annual precipitation, with only occasional snowfall averaging approximately 11

inches annually. The monthly average maximum and minimum temperatures for Rockville, Maryland for the month of January are 40°F and 24°F, respectively. The July monthly average maximum and minimum temperatures are 85°F and 65°F, respectively. The record high temperature for Rockville is 105°F (July 1954) and the record low temperature is -13°F (January 1985) (Intellicast, 2009).

3.3 GEOLOGY

All three proposed sites lie within the Piedmont Physiographic Province, generally characterized by gentle to steep rolling topography, low hills, and ridges. Surficial geology of the area and site is characterized by crystalline igneous and metamorphic rock of volcanic origin consisting primarily of gneiss and schist (MDE, 2006). Bedrock is generally overlain by a mantle of saprolite soil formed by the in-place weathering of the bedrock. It is unknown if there are any bedrock outcrops on either the WSC Campus site or the Shady Grove LSC site; however, no bedrock outcrops are found on the Tower Oaks site (Law Engineering and Environmental Services, 1997).

All three proposed sites are located within a Seismic Zone 1 area with seismic coefficients ranging from 0.03 to 0.07. Seismic Zone 1 is characterized as an area that may receive minor damage due to distant earthquakes, such as earthquakes with epicenters in other states. Nearly all of Maryland, including Montgomery County, is classified as a region of negligible seismicity with very low probability of collapse of the structure. GSA's SFO further instructs developers regarding seismic safety considerations. Between 1758 and 2008, 62 earthquakes occurred in the State of Maryland. Pre-instrumental magnitude estimates were taken prior to 1962. Maryland's strongest confirmed tremor was a 3.1-magnitude event near Hancock, Washington County, in 1978. That perhaps was rivaled by an intensity V event (unknown magnitude) near Phoenix, Baltimore County, in 1939. Earthquakes of such magnitudes or intensities are still considered to be minor, and very seldom result in significant damage or injury (Maryland Geological Survey, 2008).

3.4 SOILS

The Preserve at Tower Oaks

The majority of The Preserve at Tower Oaks site occurs on undisturbed soils. Soils found at the Tower Oaks site are generally of the Glenelg-Manor and Chester Associations, consisting of well-drained, gentle to strongly sloping soils. Glenelg silt loam occupies most of the upland areas. Erosion is fairly easily controlled in these soils [U.S. Department of Agriculture (USDA) Soil Conservation Service, 1990]. In addition, these soils are conducive to implementing many of the specific Environmental Site Design practices now required by the MDE.

WSC Campus

The majority of the WSC Campus site occurs on previously disturbed soils and a parking lot area with 75 percent or more of ground covered by gravel, asphalt and other paved surfaces. These soils are classified as "urban land" by the USDA Natural Resources Conservation Service. The majority of underlying soil on the site is classified as Chester silt loam, a well-drained soil weathered from underlying gneissic schists (Schnabel Engineering North, 2005).

The soils on the site are residual of in-place chemical weathering of igneous and metamorphic bedrock typically of the Piedmont province which underlies the site (Engineering Consulting Services, 2003). Previous studies have found a surficial layer of soil three to eight inches deep overlying existing fill (Engineering Consulting Services, 2003). The majority of the Shady Grove LSC site occurs on a parking lot area and disturbed soils. These soils are classified as “urban land” by the USDA Natural Resources Conservation Service because 75 percent or more of the ground is covered by gravel, asphalt, and other paved surfaces.

3.5 WATER RESOURCES

3.5.1 Surface Water

The Preserve at Tower Oaks

The Tower Oaks site is located in the Cabin John Creek drainage basin, which empties into the Potomac River. Cabin John Creek flows through the southwestern corner of the proposed site and drainage has its origin just east of the project area on the grounds of the Woodmont Country Club and joins Cabin John Creek just west of the project area on the opposite side of Preserve Parkway. The proposed site drains to the west into the Upper Mainstem of Cabin John Creek. The creek flows southward through Cabin John Regional Park, eventually discharging into the Potomac River approximately eight miles upstream of central Washington, D.C. A survey of this subwatershed indicated that the stream condition is fair and habitat conditions are good (Maryland County, 2009). The primary factors affecting the stream are uncontrolled stormwater runoff and nonpoint source pollution. The stream is impaired by fecal coliform bacteria from nonpoint sources for the Primary Contact Recreation use designation. A total maximum daily load (TMDL) for fecal coliform bacteria was developed for Cabin John Creek with the goal of attainment for Primary Contact Recreation (MDE, 2008). The Aquatic Life and Wildlife designated use is also not being met for Cabin John Creek due to total phosphorus and total suspended solids pollution. These pollutants are associated with sedimentation and sediment loads in runoff from developed and disturbed areas. However, developing a TMDL for these sources is a low priority for the state. The biological condition of the creek adjacent to the site is categorized as “fair” (Montgomery County Department of Environmental Protection, 1999).

WSC Campus

No bodies of water, streams, retention ponds, pits, ponds or lagoons are associated with the WSC Campus site (Building Diagnostics, 2007). Old Farm Creek is approximately one-eighth of a mile to the south and surface water on the site drains toward the creek (Schnabel Engineering North, 2005). The site is located in the Cabin John Creek Watershed (Greenhorn & O'Mara, 2008a).

Shady Grove LSC

Surface water exists as a SWM pond is located on the northern portion of the Shady Grove LSC site. Natural vegetation is established along the edge of this freshwater pond. The site drains northward into the Decoverly Tributary, a subwatershed of the Muddy Branch Creek approximately one quarter of a mile north of the site. The tributary flows northwestward into the Muddy Branch Creek drainage basin which eventually drains into the Potomac River. Montgomery County has performed baseline surveys of the Decoverly Tributary and found the stream and habitat to be in fair condition (Montgomery County, 2009). The primary factors affecting the quality of this tributary are stream channel incision, poor bank stability, sediment deposition, high levels of imperviousness and inadequate riparian buffers.

3.5.2 Groundwater

The Preserve at Tower Oaks

Shallow groundwater within soils overlaying bedrock is unconfined and flows southwest toward the nearest surface water, Cabin John Creek (Law Engineering and Environmental Services, 1997). Fluctuations in the groundwater table are caused by precipitation, surface runoff, time of year, and evaporation.

WSC Campus

There is no evidence of past or present groundwater monitoring wells on the site. The site is underlain by the Crystalline-rock aquifer (Building Diagnostics, 2007). Groundwater was encountered at depths ranging from 19 to 39 feet below ground surface during several geotechnical investigations. Groundwater is generally expected to flow to the south (Schnabel Engineering North, 2005). Fluctuations in the groundwater table are caused by precipitation, surface runoff, time of year, and evaporation.

Shady Grove LSC

The Phase I site evaluation encountered groundwater at a depth of 22 feet below ground surface (Engineering Consulting Services, 2003). Fluctuations in the groundwater table are caused by precipitation, surface runoff, time of year, and evaporation.

3.5.3 Stormwater

The Preserve at Tower Oaks

The 1999 Cabin John Creek Watershed Study states that drainage from highly impervious areas in many tributaries has a detrimental effect on habitat quality and stream conditions (Montgomery County Department of Environmental Protection, 1999). The City of Rockville conditionally approved the Stormwater Management Concept Plan in September 2000, prepared by VIKA, Inc. for the site, which includes stormwater quantity and quality measures. According to the conditionally approved plan, final detailed engineering plans and computations, agreements and fees must be submitted with an application before the permit is issued (City of Rockville, 2000).

WSC Campus

The site must comply with the Montgomery County Department of Permitting Services sediment control/stormwater management approval for development to occur. Stormwater quality and quantity measures would be incorporated into the campus design. Greenhorne & O'Mara has prepared a Stormwater Management Plan for the WSC Campus (Greenhorne & O'Mara, 2008a).

Shady Grove LSC

Stormwater drains over the paved surface on the site into below ground storm sewers (Engineering Consulting Services, 2003). On-site stormwater quality and quantity measures would be required for site development. The Montgomery County Department of Permitting Services conditionally approved a Stormwater Management Concept Request for Shady Grove

LSC on May 3, 2007. The site must comply with the Montgomery County Department of Permitting Services sediment control/stormwater management approval for development to occur. Measures include on-site water quantity control via an existing stormwater management pond, and water quality control and recharge via a sand filter and bioretention structure (Montgomery County Department of Permitting Services, 2007).

3.5.4 Drinking Water

The Safe Drinking Water Act (SDWA), 40 CFR 141, sets forth Federal water quality standards for drinking water. The National Primary Drinking Water Standards of the SDWA establish Maximum Contaminant Levels (MCLs) for various contaminants in drinking water. The Water Management Administration of the MDE monitors and enforces compliance with Federal drinking water standards.

The Preserve at Tower Oaks

The WSSC would supply drinking water to the proposed site at The Preserve at Tower Oaks. No active or inactive wells exist on the site (Law Engineering and Environmental Services, 1997).

WSC Campus

The WSSC supplies drinking water to the WSC Campus (Building Diagnostics, 2007).

Shady Grove LSC

Drinking water for buildings currently located at the Shady Grove LSC is supplied by WSSC.

3.6 WETLANDS AND FLOODPLAINS

The Federal Emergency Management Agency (FEMA) provides Flood Rate Insurance Maps (FIRM) indicating zones that are within flood hazard areas including the 100-year flood plain areas. These maps were consulted for each site to determine the potential for flooding.

Wetlands are jointly defined by the U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE) as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (40 CFR 230.3(t) and 33 CFR 328.3(b)). Wetlands are beneficial for stormwater management, erosion control, and sediment control. They also provide habitat for ducks, geese, herons, shore birds, muskrat, mink, and beaver and support numerous species of annual and perennial herbaceous plants. Federal activities within floodplains and wetlands must comply with Floodplain Management: EO 11988, 33 CFR 1977, and Protection of Wetlands: EO 11990. Because field surveys provide the best available information regarding location of wetlands on each site, a Forest Conservation Plan and a Natural Resources Inventory (NRI) were consulted for evidence of wetlands on The Preserve at Tower Oaks and the WSC Campus sites, respectively.

The Preserve at Tower Oaks

No 100-year floodplain areas or regulated wetlands exist on the site (Law Engineering and Environmental Services, 1997). The site is a Zone X area which is determined to be outside the 0.2 percent annual chance floodplain. The State Coastal Zone Management Plan is not applicable to the site. The 100-year floodplain of Cabin John Creek is approximately 215 ft from the western border of the Tower Oaks site; however Preserve Parkway, which runs parallel to Cabin John Creek, separates the site from the floodplain (see Figure 3-2). The proposed new NCI Campus would not encroach upon the 100-year floodplain (Montgomery Co UNINC & INC Area 24031C 0334 D) (FEMA, 2009a).

A review of the Forest Conservation Plan for The Preserve at Tower Oaks, no wetlands exist on the site; however, there are several wetlands nearby (VIKA, Inc., 2007). Forested areas border the site to the north and beyond this area is a small emergent wetland located along Wootton Parkway. This emergent wetland is located within a forested riparian wetland which extends west along Wootton Parkway and south along the creek banks of Cabin John Creek as it flows south. The north-south extension of the forested riparian wetland along Cabin John Creek is west of The Preserve at Tower Oaks site; however Preserve Parkway separates the riparian wetland and the site.

WSC Campus

The FEMA map indicates this site is a Zone X area which is determined to be outside the 0.2 percent annual chance floodplain (Montgomery Co UNINC & INC Area 24031C 0327 D) (FEMA, 2009b). The State Coastal Zone Management Plan is not applicable to the site.

A review of a NRI map for the WSC Campus indicates there are no wetlands at the site or on the adjacent properties (Site Solutions Inc., 2009).

Shady Grove LSC

There are no 100-year floodplain areas on the Shady Grove LSC (Engineering Consulting Services, 2003 and FEMA 2009c). The site is a Zone X area which is determined to be outside the 0.2 percent annual chance floodplain (Montgomery Co UNINC & INC Area 24031C 0361 D). The State Coastal Zone Management Plan is not applicable to the site.

The SWM pond on the north side has become naturalized through the establishment of natural vegetation along the fringe of the pond. No other wetlands exist on or are adjacent to the site according to the NWI map (U.S. Fish and Wildlife, 2009). Additionally, since the proposed site location is currently a landscaped parking lot, there is no likelihood that wetlands exist within the limits of disturbance for this site.

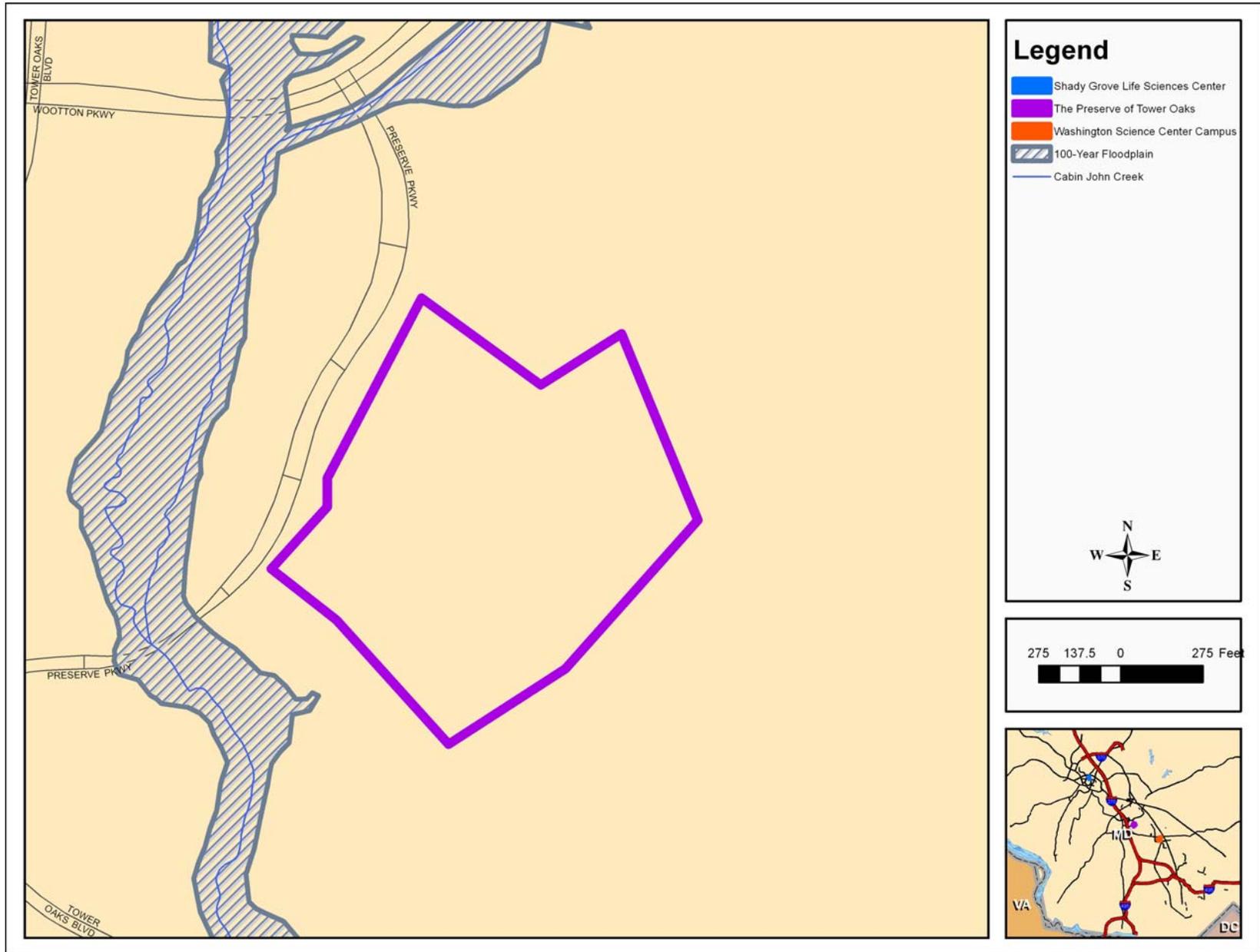


Figure 3-1. Location of the 100-Year Flood Plain near The Preserve at Tower Oaks.

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3.7 PLANT AND ANIMAL ECOLOGY

The Preserve at Tower Oaks

Forested areas of the Tower Oaks site are predominantly undisturbed mature deciduous woods that include tulip, poplar, sycamore, ash, box elder, and silver maple trees. A number of specimen trees are present at the site. The area provides habitat for large and small fauna dominated by deer, raccoon, squirrel and rabbit. Numerous native songbirds inhabit the area, as well as several species of snakes (City of Rockville Planning Commission, 1985). The United States Fish and Wildlife Service (USFWS) certifies that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Furthermore, the Maryland Department of Natural Resources (MDNR) Wildlife and Heritage Service has also determined that there are no state or Federal records for rare, threatened, or endangered species within the boundaries of the project site as delineated; however, there exists the possibility that the forested area on the project site contains Forest Interior Dwelling Bird habitat (see Appendix C for official correspondence with the USFWS and MDNR). The MDNR Wildlife and Heritage Service strongly encourages the conservation of Forest Interior Dwelling Bird species (FIDS) as many of their populations are declining in Maryland and throughout the eastern United States. Guidelines for minimizing the project's impacts on FIDS and other native forest plants and wildlife are included in Appendix C.

WSC Campus

A Natural Resource Inventory (NRI) of the site conducted in 2008 found that most of the site (5+ acres) is a "poor quality forest" with "trees generally well under significant tree size". The NRI notes there is concrete and asphalt rubble exposed along steep slopes in the wooded area, and that this rubble is likely present under the tree stand because the area was cleared in the 1960s for development. A smaller tree stand of approximately two acres, designated as Stand A, likely has remained undisturbed for over 60 years and is in moderate to good condition. Stand A, however, is categorized in the NRI as "not within or containing an environmentally significant area," such as an environmental buffer, wetland, or large number of specimen trees (Greenhorne & O'Mara, 2008b). The entire seven acre site has a number of invasive plant species present. Wildlife on the site is limited to species that readily adapt to co-habitation with humans (e.g., Canada goose). These species can be temporarily displaced during construction and would likely return to the site once construction is complete. The USFWS certifies that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Furthermore, the MDNR Wildlife and Heritage Service has also determined that there are no state or Federal records for rare, threatened, or endangered species within the boundaries of the project site as delineated (see Appendix C for official correspondence with the USFWS and MDNR).

Shady Grove LSC

The trees on site generally are considered immature being less than 15 years old. The site is exempted from the requirements of Chapter 22A of Montgomery County Code (Forest Conservation Law) under the grandfathering provision because an approved plan was in effect between 1 July 1984 and 1 July 1991 (NCPCC, 2002). Wildlife on the site is limited to species that readily adapt to co-habitation with humans, including species such as the Canada goose. These species can be temporarily displaced during construction and would likely return to the site once construction is complete. The USFWS certifies that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist

within the project area. Furthermore, the MDNR Wildlife and Heritage Service has also determined that there are no state or Federal records for rare, threatened, or endangered species within the boundaries of the project site as delineated (see Appendix C for official correspondence with the USFWS and MDNR).

3.8 AIR QUALITY

The USEPA adopted the National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA) to control a select group of widely occurring pollutants. These standards establish safe concentration levels for the six criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_x), ozone (O₃), particulate matter (PM), and sulfur dioxide (SO₂). PM is divided into two classes, coarse PM (PM₁₀) (i.e., particles less than 10 microns in diameter) and fine PM (PM_{2.5}) (i.e., particles less than 2.5 microns in diameter).

All three sites lie within the Washington, D.C. region, which does not meet the CAA standards for ozone and PM_{2.5}. Currently, there are approximately five days per year that the 1-hour ozone standard (120 parts per billion) is exceeded and approximately 29 days per year that the 8-hour ozone standard (80 parts per billion) is exceeded (Montgomery County Sustainability Working Group, 2009). The Air Quality Index (AQI) for the Washington, D.C. Forecast Region is provided daily by MDE. For example, in June 2009 the AQI registered 16 “good” days, 11 “moderate” days and three “unhealthy” days. According to the AQI for the period 2004-2008, approximately 10.5 percent of days were “unhealthy” and for the period 1999-2008, approximately 13.1 percent of days were “unhealthy.” Thus far in 2009, the AQI “unhealthy” levels have occurred on 1.4 percent of the days (MDE, 2009).

A greenhouse gas emissions inventory conducted by MDE in 2005 for Montgomery County, Maryland yielded total annual greenhouse gas emissions for the county were 2.592 million metric tons of carbon dioxide equivalents. The Montgomery County government, in April 2008, enacted law to reduce countywide greenhouse gas emissions by 10 percent every five years over the next 40 years, thus limiting greenhouse gas emissions in 2050 to a total of 2.518 metric tons (Montgomery County Sustainability Working Group, 2009).

Title V of the CAA requires all “major sources” of criteria air pollutants or their precursors to file a Part 70 application for an operating permit. A Title V Part 70 permit application must be submitted to MDE for facilities with emissions that exceed the threshold levels of 100 tons per year (tpy) for CO, Pb, SO₂, NO_x, PM₁₀, and volatile organic compounds (VOCs). Under the auspices of the CAA, the State of Maryland has established an emission standards program in COMAR 26.11.16 regulating toxic air pollutants (TAPs), also known as Hazardous Air Pollutants (HAPs). TAPs are compounds that pose serious health hazards, such as cancer causing substances or teratogens. The USEPA controls 188 HAPs, as listed in Title I of the CAA, and the State of Maryland has established a complementary, more stringent emission standards program regulating all Title I HAPs and additional TAPs.

Air Quality permits to construct are currently required for generators greater than 500 horsepower or 373 kilowatts. Air quality permits to operate are required for fuel burning equipment, such as boilers, with maximum rated capacities of 50 mmBTU per hour, or more (COMAR 26.11.02).

3.9 HISTORICAL AND CULTURAL RESOURCES

The Preserve at Tower Oaks

A Phase I Cultural Resources Investigation for 30 Acres within the Proposed Preserve at Tower Oaks was completed during October and November 2009 by R. Christopher Goodwin & Associates, Inc. (See Appendix E for complete draft report). The archeological investigations were designed to facilitate compliance with county, state, and Federal regulations including Article 5A, sections 325 and 326 of the Annotated Code of Maryland; and in anticipation of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended; or Subsection 5A-325 and 5A-326 of the State Finance and Procurement Article of the Annotated Code of Maryland. All work was completed in accordance with the National Preservation Act of 1966, as amended, and its implementing regulations “Protection of Historic Properties” (36 CFR Part 800); the Secretary of the Interior’s Standards and Guidelines; with the state’s Guidelines for Archeological Investigations in Maryland (Shaffer and Cole 1994).

The cultural resources investigation suggests that no archeological sites or historic built resources are located within the approximately 12.1 ha (30 ac) surveyed for The Preserve at Tower Oaks. Archival research also indicates the project area historically has remained undeveloped. The earliest detailed maps of the project area are Griffith’s 1795 Map of the State of Maryland, Martenet’s 1865 Martenet and Bond’s Map of Montgomery County, Maryland, and Hopkins’ 1879 Atlas of Fifteen Miles Around Washington, including the County of Montgomery, Maryland. These maps indicate no historic structures are present within the project area. During both periods, development is concentrated northwest of the project area in the town of Rockville, and east of the project area in the vicinity of the Montrose Post Office. Woodmont Country Club was established in 1913. By the mid-twentieth century much of the surrounding land had been developed. Development of the Tower Oaks Industrial Park did not begin until the early 1990s with the construction of Tower Oaks Boulevard, Preserve Parkway, and the nearby Wootton Parkway.

Because no archeological sites or historic built resources were identified during the archeological survey, the Phase 1 suggests that no historic properties, as defined by 36 CFR 800.16(l), are present within the current survey boundaries and that no additional archeological surveys are needed for The Preserve at Tower Oaks.

WSC Campus

According to historic records, the WSC Campus site and the majority of the surrounding area was used as farmland from the early 1900s until the early 1960s, when the property was cleared for development. The WSC Campus site was originally developed with an office building structure in the early 1960s while the majority of the surrounding area was developed commercially by the late 1960s. Continued construction on the WSC Campus site took place from 1965 to 1979 (Building Diagnostics, 2007 and Schnabel Engineering North, 2005).

There are no historic or culture resources listed or eligible to be listed in the NRHP or of locally designated significance on the WSC Campus site, thus consultation under Section 106 of the National Historic Preservation Act is not required. Maryland Historical Trust concurred that there are no historic properties within the WSC Campus and no further consultation is needed for this site (see Appendix D).

Shady Grove LSC

There are no historic or culture resources listed or eligible to be listed in the NRHP or of locally designated significance on the site, thus consultation under Section 106 of the National Historic Preservation Act is not required. Historical records document the previous land use to be farmland from the early 1900s to the 1960's when the land was cleared for development. The closest site listed in the County's Master Plan for Historic Preservation is the England/Crown Farm at 192 Fields Road. This Victorian farmstead is on a 47.5 acre parcel one mile north from the Shady Grove LSC site. The farm is surrounded by residential development, forest, Muddy Branch Creek, and an existing large office complex. Therefore, development of the site would not have an adverse impact on this historic resource. Maryland Historical Trust concurred that there are no historic properties within the Shady Grove LSC and no further consultation is needed for this site (see Appendix D).

3.10 SOCIOECONOMIC ENVIRONMENT

All three proposed sites are located along the I-270 Technology Corridor, home to numerous software and biotechnology companies, as well as several large government agencies. The professional, scientific and technical services sector employs the greatest number of people (64,253) in Montgomery County, Maryland, followed by the health care and social assistance sector (49,371), and then the retail trade sector (48,018). The mean travel time to work in Montgomery County in 2007 was 33 minutes, compared to 25 minutes nationally (U.S. Census Bureau, 2009).

The population of Montgomery County increased 8.9 percent from 2000 to 2007. The population of Montgomery County in 2007 was 950,680. Of this total, 61.2 percent were Caucasian, compared to 74.1 percent nationally, 16.2 percent were African American, compared to 12.4 percent nationally, 14.0 percent were Hispanic or Latino, compared to 14.7 percent nationally, and 13.0 percent were Asian, compared to 4.3 percent nationally. Median annual household income in 2007 for Montgomery County was \$89,284, compared to \$50,007 nationally. Per capita annual income in 2007 for Montgomery County was \$45,032, compared to \$26,178 nationally. The value and cost of housing in Montgomery County in 2007 was \$500,500 for a single-family home, compared to \$181,800 nationally (U.S. Census Bureau, 2009).

EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low Income Populations*, requires that Federal agencies prepare NEPA documents to address any significant adverse impacts of Federal projects on minority or low-income populations. A "poverty area" is defined by the U.S. Census Bureau as an area in which at least 20 percent of the population lives below the poverty level. In addition, a "minority area" is defined by the U.S. Census Bureau as an area in which less than 50 percent of the population is comprised of Caucasians.

The Preserve at Tower Oaks

The Preserve at Tower Oaks is located in the City of Rockville, Maryland in census track 7010.01. According to the 2006-2008 American Community Survey 3-year estimates for the U.S. Census Bureau, the City of Rockville has a total population of 56,243. Of this total, 3.9 percent were living below poverty level (U.S. Census Bureau, 2009). Therefore, the City of Rockville is not considered a poverty area. Of the total population of the City of Rockville, 66.7 percent are Caucasian, 19.5 percent are Asian, 7.4 percent are African American, 0.4 are American Indian and Alaska Native, 4.0 percent are some other race, while 1.9 percent reported

being two or more races (U.S. Census Bureau, 2009). Therefore, the City of Rockville is not considered a minority area. More specifically, census track 7010.01 reports 7 percent of its population living below poverty level and a 72 percent Caucasian population (U.S. Census Bureau, 2009). Therefore, The Preserve at Tower Oaks is not located within a census track that is considered a poverty area or a minority area, respectively. Lease construction and operation of the new consolidated NCI Campus at The Preserve at Tower Oaks would not result in any disproportionately high and/or disparate impacts to low income or minority populations in the City of Rockville or census track 7010.01.

WSC Campus

The WSC Campus is located in North Bethesda, Maryland in census track 7012.04. According to the 2006-2008 American Community Survey 3-year estimates for the U.S. Census Bureau, the North Bethesda has a total population of 38,308. Of this total, 5.2 percent were living below poverty level (U.S. Census Bureau, 2009). Therefore, North Bethesda is not considered a poverty area. Of the total population of North Bethesda, 61.3 percent are Caucasian, 13.1 percent are Asian, 16.1 percent are African American, 0.3 are American Indian and Alaska Native, 6.8 percent are some other race, while 2.4 percent reported being two or more races (U.S. Census Bureau, 2009). Therefore, North Bethesda is not considered a minority area. More specifically, census track 7012.04 reports 10.3 percent of its population living below poverty level and a 64.6 percent Caucasian population (U.S. Census Bureau, 2009). Therefore, the WSC Campus is not located within a census track that is considered a poverty area or a minority area, respectively. Lease construction and operation of the new consolidated NCI Campus at the WSC Campus would not result in any disproportionately high and/or disparate impacts to low income or minority populations in the North Bethesda or census track 7012.04.

Shady Grove LSC

The Shady Grove LSC is located in the City of Rockville, Maryland in census track 7008.17. According to the 2006-2008 American Community Survey 3-year estimates for the U.S. Census Bureau, the City of Rockville has a total population of 56,243. Of this total, 3.9 percent were living below poverty level (U.S. Census Bureau, 2009). Therefore, the City of Rockville is not considered a poverty area. Of the total population of the City of Rockville, 66.7 percent are Caucasian, 19.5 percent are Asian, 7.4 percent are African American, 0.4 are American Indian and Alaska Native, 4.0 percent are some other race, while 1.9 percent reported being two or more races (U.S. Census Bureau, 2009). Therefore, the City of Rockville is not considered a minority area. More specifically, census track 7008.17 reports 6.1 percent of its population living below poverty level and a 65.1 percent Caucasian population (U.S. Census Bureau, 2009). Therefore, the Shady Grove LSC is not located within a census track that is considered a poverty area or a minority area, respectively (U.S. Census Bureau, 2009). Lease construction and operation of the new consolidated NCI Campus at the Shady Grove LSC would not result in any disproportionately high and/or disparate impacts to low income or minority populations in the City of Rockville or census track 7008.17.

3.11 NOISE

All three proposed locations have a relatively quiet environment with no significant noise pollution sources. Each proposed site is located in developed or developing areas for general office space. The noise levels at these proposed locations are similar to the noise levels in the area surrounding the sites. Construction of the NCI Campus may temporarily increase the amount of noise at the site.

3.12 TRANSPORTATION

The effects of the proposed consolidated NCI Campus on regional and local traffic were evaluated by Gorove/Slade Associates, Inc. The following discussion on current and future traffic is based on their assessment. The evaluation is included in its entirety in Appendix B.

The Preserve at Tower Oaks

The Preserve at Tower Oaks is located along Preserve Parkway between I-270 to the west and Woodmont Country Club to the east in Montgomery County, Maryland. The proposed campus would have direct access from Preserve Parkway between Wootton Parkway and Tower Oaks Boulevard.

The existing traffic conditions in the vicinity of The Preserve at Tower Oaks were established using the *Preserve Parkway Regional Traffic Assessment* (Wells and Associates, Inc., 2008) and the *Revised and Updated Letter Report for Park Potomac* (The Traffic Group, 2007). Turning movement counts were conducted for 16 study intersections in the vicinity of the Tower Oaks site by both Wells and Associates, Inc. and The Traffic Group. Based on these volumes and other collected information, the capacity of the intersections was evaluated for both the weekday morning and afternoon peak hours, using the Critical Lane Analysis Technique, as stipulated by the Montgomery County Local Area Transportation Review (LATR) Guidelines (MNCPPC, 2008). The Critical Lane Analysis outputs an intersection Critical Lane Volume (CLV) which is then compared against the CLV standard for that jurisdiction. The existing conditions capacity analysis results show that all study area intersections and campus access points operate within the applicable CLV standards.

Year 2012 background traffic forecasts for the vicinity of The Preserve at Tower Oaks were developed based on a composite of the base traffic counts and impacts from future area developments approved, but not yet built (excluding the proposed consolidated NCI Campus). The background traffic conditions also include planned and programmed roadway improvements that can influence the capacity of study area intersections and/or influence travel route and time of day patterns. Sixteen background projects have been identified as approved yet unbuilt projects reasonably assumed to be completed by fall 2012, the build out year for the NCI project. The future background capacity analysis results show that all study area intersections and campus access points would operate within the applicable CLV standards.

Total future capacity results for 2012, including the 16 background projects and the consolidated NCI Campus, show that the intersection of the northbound I-270 off-ramp and on-ramp with Tower Oaks Boulevard would not operate within the CLV standards for the afternoon peak hour.

Two Montgomery County Transit Ride-On bus lines service the immediate area. Line 81 runs along Montrose Road, Tower Oaks Boulevard, and Wootton Parkway, while Line 38 runs along Montrose Road and Seven Locks Road.

WSC Campus

The WSC Campus is located along Montrose Parkway near Rockville Pike in Montgomery County, Maryland. The principal roadways involved include Executive Boulevard, East Jefferson Street, Montrose Parkway, Montrose Road, Randolph Road, Rockville Pike, and Old Georgetown Road.

The existing traffic conditions in the vicinity the WSC Campus were established using the *LATR and PAMR for 6000 Montrose Parkway (Formerly Wilgus East Property)* (The Traffic Group, 2009a) and the *LATR and PAMR and Site Plan Amendment #81993016C for 6015 Executive Boulevard* (The Traffic Group, 2009b). Turning movement counts were conducted at 22 study intersections in the vicinity of the WSC Campus. Based on these volumes and other collected information, the capacity of the intersections was evaluated for both the weekday morning and afternoon peak hours, using the Critical Lane Analysis Technique, as stipulated by the Montgomery County LATR Guidelines (MNCPPC, 2008). The existing conditions traffic projections account for the construction of the Montrose Parkway as an alternative east-west route through this region. The existing conditions capacity analysis results show that all study area intersections and campus access points operate within the applicable CLV standards except the Executive Boulevard and Montrose Parkway intersection in the morning peak hour.

The future background conditions represent future traffic levels in 2012 without the proposed development at the Washington Science Center. Fifteen background projects have been identified as approved yet unbuilt projects reasonably assumed to be completed by fall 2012, the build-out year for the NCI project. In addition to the background developments, traffic would be impacted as a result of the planned improvement of the Nebel Street extension. The future background capacity analysis results show that all study area intersections and campus access points operate within the applicable CLV standards except for the following:

- Executive Boulevard and Montrose Parkway
- Rockville Pike and Bou Avenue
- Rockville Pike and Hubbard Drive
- Rockville Pike and Old Georgetown Road
- Nebel Street and Randolph Road

Total future capacity results for 2012, including the fifteen background projects and the consolidated NCI Campus, show that the following five intersections would not operate within the CLV standards for the afternoon peak hour:

- Executive Boulevard/E. Jefferson Street and Montrose Parkway
- Rockville Pike and Bou Avenue
- Rockville Pike and Hubbard Drive
- Rockville Pike and Old Georgetown Road
- Nebel Street and Randolph Road

The WSC Campus is close to the White Flint MetroRail station, with Lines 5, 26, 38, 46, and 81 providing access to the campus and the MetroRail station. Line 5 traverses Jefferson Street, Executive Boulevard and Rockville Pike. Line 26 runs along Jefferson Street, Executive Boulevard, and Old Georgetown Road. Line 38 runs along Montrose Road to Rockville Pike and Lines 38 and 46 run along Rockville Pike through the WSC Campus. Line 81 connects Montrose Road, Jefferson Street, Executive Boulevard, and Marinelli Road.

Shady Grove LSC

The proposed site for the consolidated NCI Campus on the Shady Grove LSC is located north of the future Blackwell Road, south of Key West Avenue, west of Medical Center Drive, and east of the existing Johns Hopkins buildings which are east of Broschart Road.

Existing morning and evening peak hour volumes at 16 study intersections in the vicinity of the Shady Grove LSC campus and other collected information was used to evaluate the capacity of the intersections using the Critical Lane Analysis Technique, as stipulated by the Montgomery County LATR Guidelines (MNCPPC, 2008). The analysis is based on information from the *Johns Hopkins University Montgomery County Campus LATR* (Wells and Associates, Inc., 2007). The existing conditions capacity analysis results show that all study area intersections and campus access points operate within the applicable CLV standards.

Year 2012 background traffic forecasts for the vicinity of the Shady Grove LSC were developed based on a composite of base traffic counts and impacts from other future area developments approved, but not yet built (excluding the proposed consolidated NCI Campus). The background traffic conditions also include planned and programmed roadway improvements that can influence the capacity of study area intersections and/or influence travel route and time of day patterns. Fifteen background projects have been identified as approved yet unbuilt projects reasonably assumed to be completed by fall 2012, the build-out year for the NCI project. The future background capacity analysis results show that all study area intersections and campus access points would operate within the applicable CLV standards in the morning and afternoon peak hours except for the following:

- Great Seneca Highway and Sam Eig Highway (p.m. peak hour only), and
- Key West Avenue and Shady Grove Road (p.m. peak hour only)

Total future capacity results for 2012, including the 15 background projects and the consolidated NCI Campus, would result in four intersections not operating within the CLV standards. These include the following:

- Great Seneca Highway and Sam Eig Highway (p.m. peak hour only)
- Key West Avenue and Diamondback Drive (a.m. peak hour only)
- Key West Avenue and Shady Grove Road (p.m. peak hour only), and
- Darnestown Road and Shady Grove Road (p.m. peak hour only)

The Shady Grove LSC is served by Montgomery County's Ride-on Lines 43, 56, 66, and 74. Lines 43 and 66 travel along Medical Center Drive. Line 74 runs along Key West Avenue and Omega Drive, and Line 56 traverses Darnestown Road to Shady Grove Road. Lines 43, 66, and 74 connect to the Shady Grove Metro Rail station. The future Corridor Cities Transitway is a proposed line north of the Shady Grove LSC Campus along the I-270 and will also provide an addition transit mode serving the LSC Campus.

3.13 ENERGY RESOURCES

In Montgomery County, Maryland, three sectors account for 99 percent of the total countywide greenhouse gas emissions: energy use in commercial/multifamily/public buildings (32 percent), energy use in residential buildings (33 percent), and transportation (34 percent). Montgomery County government adopted a Climate Protection Plan in January 2009 that sets goals for reducing greenhouse gas emissions. Three programs that may be used to achieve reductions include: fuel/energy and carbon taxes, sustainability energy funds, and cap and trade programs. Recommendations for the plan that may affect development and management of the site include but are not limited to: setting energy performance requirements and timelines for new and existing commercial buildings to reduce energy consumption by 25 percent by 2020, developing a process for adopting new energy efficiency standards for commercial buildings,

and using energy efficient lighting technologies for existing and new streetlights (Montgomery County Sustainability Working Group, 2009).

For providing electricity to the campus, the developer would be responsible for meeting the applicable requirements of local codes and ordinances. The more stringent standards shall apply when codes are in conflict. For additional information regarding specific requirements related to electrical distribution and systems delivery, refer to Appendix A: GSA SFO NO. 08-008. Also as per the GSA SFO the facility would have to meet certain energy efficiency requirements and would have to achieve LEED silver certification.

The Preserve at Tower Oaks

Natural gas would be supplied to the proposed site at the Preserve at Tower Oaks by Washington Gas and electrical service would be provided by Potomac Electrical Power Company. The facility would be designed to accommodate requirements in GSA's SFO.

WSC Campus

Natural gas is supplied to the WSC Campus by Washington Gas. Electrical service is provided by Pepco. One exterior pad-mounted electrical transformer is located on-site. Pipelines or utility easements, other than for domestic purposes, are not found at the site (Building Diagnostics, 2007). The facility would be designed to accommodate requirements in GSA's SFO.

Shady Grove LSC

Washington Gas provides natural gas service to the Shady Grove LSC. Electrical service is provided by Potomac Electrical Power Company. The facility would be designed to accommodate requirements in GSA's SFO.

3.14 POLLUTION PREVENTION AND WASTE MANAGEMENT

3.14.1 Wastewater

Wastewater generated by the consolidated NCI Campus would be discharged to the sanitary sewer system and pumped to a Waste Water Treatment Plant (WWTP). Due to the water conservation measures described in Section 2.2.6 and the requirement for the consolidated NCI Campus to achieve LEED Silver certification, operation of the proposed consolidated NCI Campus would produce a negligible portion of the total wastewater in Montgomery County.

The Preserve at Tower Oaks

The WSSC would provide sanitary sewer service to the proposed site at The Preserve at Tower Oaks.

WSC Campus

The WSSC provides sanitary sewer service to the WSC Campus (Building Diagnostics, 2007).

Shady Grove LSC

The WSSC provides sanitary sewer services to the buildings currently located on the Shady Grove LSC.

3.14.2 Municipal Solid Waste and Recycling

Solid waste collection within Montgomery County is by both County and private companies. Service provided by the County is primarily in the southern portion of the county. Collection service in the northern portion of the county, including the locations for all three site alternatives, would be provided by independent trash collection companies. There are approximately ten companies from which to choose within ten miles of Rockville, MD.

Montgomery County has been a national leader in recycling to protect trees, wildlife and natural resources and reduce waste put into landfills (Montgomery County, 2009). As a requirement, all businesses, must recycle and participate in the Division of Solid Waste Services Smart Organizations Reduce and Recycle Tons (SORRT) Program (Montgomery County, 2009). The County is committed to 50 percent recycling of all solid wastes and bans recyclables from entering the solid waste stream. Items that may be recycled are mixed paper, commingled materials, yard trim, Christmas trees and scrap metals. The County also encourages businesses to recycle additional wastes where feasible. During construction and operation of the proposed new NCI Campus, municipal solid wastes and recyclable material would be collected and shipped off-site for processing (see Section 2.3.4).

3.14.3 Hazardous Waste

Controlled hazardous substances, as defined in COMAR 26.13.02.03, (that is, hazardous wastes) include a wide variety of substances and toxic materials generated or used in a multitude of processes. All hazardous waste generated during the construction of the proposed consolidated NCI Campus would be managed and disposed of in accordance with applicable Federal, state, and local regulatory requirements. The operation of the consolidated NCI Campus is not expected to generate any hazardous waste.

The Preserve at Tower Oaks

The Phase I Environmental Site Assessment (ESA) conducted for the subject property indicates that there are no recognizable environmental conditions at the site (Law Engineering and Environmental Services, 1997).

WSC Campus

Since 2003, five independent Phase I ESAs were conducted for the parcels of land in the proposal. None of the reports indicate any hazardous materials or waste concerns, or required further investigation. The ESAs also state that the, “adjacent properties are not engaged in any environmentally suspect activities or operations that would adversely affect the environmental condition of the subject property” (Building Diagnostics, 2007).

Shady Grove LSC

The Phase I ESA conducted for the subject property in 2003 indicates that there are no hazardous substances located within the site (Engineering Consulting Services, LTD., 2003). Adjacent sites were observed during site reconnaissance, and no evidence of petroleum products use, treatment, storage, disposal, generation or recycling were found (Engineering

Consulting Services, LTD., 2003). Within the Shady Grove LSC, Blanchette Rockefeller Neuroscience Institute was identified as a Resource Conservation and Recovery Act (RCRA) small-quantity hazardous waste generator (SQG). The SQG would be located adjacent to the site and approximately 250 ft from the nearest NCI Campus building. Wastes produced from this building are handled by outside contractors. Specifically, radioactive wastes produced in the laboratories are handled by Ecology Services (ESI), biological wastes are handled by Stericycle and chemical wastes are handled by a licensed hauler.

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4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section will analyze potential impacts to natural, historic and cultural, and socioeconomic resources that may result from implementation of the Proposed Action at either Alternative I, Alternative II, Alternative III, or the No Action Alternative and identify measures to mitigate the degree to which resources are affected. Such an analysis entails detailing the potential impacts associated with the implementation of each of the Alternatives considered.

"Effects" refers to 1) direct effects, which are caused by the action and occur at the same time and place and 2) indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Effects and impacts as used in this document are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health.

Temporary impacts are defined as those that exist for a period of less than one year. 'Long-term' effects are defined as those that exist for a period of one year or longer. All impacts are considered long-term unless specifically labeled as a temporary impact. Intensity refers to the severity of the potential impact. This EA uses four degrees of intensity to qualify impacts: negligible, minor, moderate, and major. 'Negligible' refers to impacts at low levels of detection, 'minor' impacts are detectable, but small, 'moderate' impacts are readily apparent, while 'major' impacts are significantly adverse. Any impact described as less than 'major' is not considered a significant impact.

Table 5.1 provides a comparison of the potential environmental impacts related to the construction of the proposed consolidated NCI Campus at each of the alternatives. Table 5.2 provides a comparison of the potential environmental impacts related to the operation of the proposed consolidated NCI Campus for each of the action alternatives. With applicable mitigation measures, potential adverse impacts were deemed to be minor. Mitigation measures related to construction of the Proposed Action are provided in Table 5.3. Mitigations for operation of the Proposed Action are provided in Table 5.4. The developer would be responsible for all mitigation measures within their control.

4.1.1 Land Use

The Preserve at Tower Oaks

Construction and operation of the proposed consolidated NCI Campus is consistent with the governing Planned Development (PD) documents of Tower Oaks and all related City of Rockville planning and zoning regulations.

WSC Campus

The site was used as farmland until the early 1960s, when the property was cleared for commercial development. Proposed land use is consistent with local zoning and surrounding land use, and the development is consistent with the North Bethesda Garrett Park Master Plan.

Shady Grove LSC

The Montgomery County Planning Board approved a preliminary plan amendment for the site in 2007 that substantially complies with Montgomery County's current master plan for the area.

No Action

Each alternative location for the Proposed Action is consistent with current land use regulations; therefore, implementation of the No Action Alternative would have no impact.

4.1.2 Climate

None of the action alternatives or the no action alternative would have an impact the local climate.

4.1.3 Geology

None of the action alternatives or the no action alternative would have an impact on geology.

4.1.4 Soils

The Preserve at Tower Oaks

The impact on undisturbed soil resources resulting from construction of the Proposed Action would be temporary and minor. In accordance with the *Maryland Standards and Specifications for Soil Erosion and Sediment Control*, application of all relevant BMPs for erosion control and stormwater management would minimize erosion and escape of fugitive dust during construction due to wind or storm runoff, as noted in Section 2.2.3. During operation of the proposed NCI Campus, negligible impacts to soil due to erosion caused by stormwater runoff would be mitigated by implementation of the stormwater requirements discussed in Section 2.2.3.

WSC Campus

The impact on disturbed and undisturbed soil resources resulting from construction of the Proposed Action would be minor. In accordance with the *Maryland Standards and Specifications for Soil Erosion and Sediment Control*, application of all relevant BMPs for erosion control and stormwater management would minimize erosion and escape of fugitive dust during construction due to wind or storm runoff, as noted in Section 2.2.3. During operation of the proposed NCI Campus, negligible impacts to soil due to erosion caused by stormwater runoff would be mitigated by implementation of the stormwater requirements discussed in Section 2.2.3.

Shady Grove LSC

The impact on disturbed and undisturbed soil resources resulting from construction of the Proposed Action would be minor. In accordance with the *Maryland Standards and Specifications for Soil Erosion and Sediment Control*, application of all relevant BMPs for erosion control and stormwater management would minimize erosion and escape of fugitive dust during construction due to wind or storm runoff, as noted in Section 2.2.3. During operation of the proposed NCI Campus, negligible impacts to soil due to erosion caused by stormwater runoff would be mitigated by implementation of the stormwater requirements discussed in Section 2.2.3.

No Action

Under the No Action Alternative, the Proposed Action would not be implemented, and the potential minor impacts to soils would not occur.

4.1.5 Water Resources

The Preserve at Tower Oaks

No significant adverse impacts to water resources would result from implementation of the Proposed Action, provided BMPs are utilized. Construction activities related to the Proposed Action would not take place on identified wetland or floodplain areas on The Preserve at Tower Oaks site. Potential sediment impacts to surface waters could result during the construction phase if excessive runoff results in erosion from the site and sedimentation in Cabin John Creek. Adherence to BMPs during the construction phase would mitigate this potential impact. BMPs include a sedimentation and erosion control plan and stormwater management plan. The potential stormwater impacts of the construction and operation of the proposed NCI Campus to groundwater would be minor. Stormwater management practices and control measures would also be implemented to mitigate potential adverse impacts resulting from both the construction and operation phases of the proposed NCI Campus.

WSC Campus

There is no surface water located on the WSC Campus site; however, negligible impacts to nearby surface waters may occur due to sedimentation and increased stormwater runoff. Adherence to BMPs during the construction phase would mitigate this potential impact. BMPs include a sedimentation and erosion control plan and stormwater management plan. The potential stormwater impacts of the construction and operation of the proposed NCI Campus on groundwater would be minor. Stormwater management practices and control measures would also be implemented to mitigate potential adverse impacts resulting from both the construction and operation phases of the proposed NCI Campus.

Shady Grove LSC

Minor adverse impacts to water resources would result from implementation of the Proposed Action. While a SWM pond is located on the north side of the Shady Grove LSC site, construction activities related to the Proposed Action would not take place on identified wetland or floodplain areas. Minor impacts would be mitigated with the implementation of stormwater management BMPs. Additional sedimentation and stormwater runoff during construction may have a minor impact on the SWM pond currently located on the site. Adherence to BMPs during the construction phase would mitigate this potential impact. The potential stormwater impacts of the construction and operation of the proposed NCI Campus on groundwater would be minor. Stormwater management practices and control measures would also be implemented to mitigate potential adverse impacts resulting from both the construction and operation phases of the proposed NCI Campus.

No Action

Under the No Action Alternative, the Proposed Action would not be implemented, and the negligible and minor impacts to surface water, stormwater, groundwater and drinking water would not occur.

4.1.6 Wetlands and Floodplains

The Preserve at Tower Oaks

Construction activities related to the Proposed Action would not take place on an identified wetland or floodplain area on The Preserve at Tower Oaks; however, several wetlands and a 100-year floodplain are located off-site. Adherence to a sedimentation and erosion control plan and stormwater management plan would protect any adjacent wetland and floodplain areas from potential negligible impacts related to construction and operation of the NCI Campus.

WSC Campus

No wetlands or floodplains exist on the WSC Campus; therefore, construction and operation activities related to the Proposed Action would have no impact.

Shady Grove LSC

No wetlands or floodplains exist at the Shady Grove LSC site; therefore, construction and operation activities related to the Proposed Action would have no impact.

No Action

Under the No Action Alternative, the Proposed Action would not be implemented, and any potential negligible impact to wetlands and floodplains near The Preserve at Tower Oaks site would not occur.

4.1.7 Plant and Animal Ecology

The Preserve at Tower Oaks

Guidelines provided by the MDNR Wildlife and Heritage Service for minimizing the project's impacts on FIDS and other native forest plants and wildlife would be followed during construction and operation of the Proposed Action.

Moderate impacts to forested areas during construction of the NCI Campus would result from implementation of the Proposed Action. Impacts to plant and animal resources including the displacement of species through the destruction of habitat are expected to be moderate. Furthermore, impacts to plant and animal ecology related to the operation of the NCI Campus would be minor as some displacement of species is anticipated. Impacts would be mitigated by adherence to an approved forest conservation plan, which would designate areas adjacent to the existing forested sections of the site as the location for future plantings. The forests surrounding Cabin John Creek, as well as the floodplain communities around them, would remain undisturbed throughout the construction phase of the NCI Campus. The Preserve at Tower Oaks has an existing Revised Preliminary Forest Conservation Plan in place for the site. However, this plan is outdated and would need to be revised as part of the development review process. The required total area of woodland preservation for Phase I and Phase II of Tower Oaks is 28.30 acres. The developer has proposed a larger preservation area of 30.29 acres. Reforestation would take place within an area that has been established for reforestation resulting from development of the entire developer's properties. As the site is developed at The Preserve at Tower Oaks, a Final Forest Conservation Plan would be submitted to the City of Rockville for each of the parcels which would address the pro-rata share of the parcel under development. Significant trees in Phase II have not been identified. However, prior

to the start of construction and during the permitting process the applicant would be required to comply with the City's FTPO. The developer is also encouraged to adhere to guidelines provided by the MDNR Wildlife and Heritage Service for minimizing the Proposed Action's impacts on FIDS and other native forest plants and wildlife

WSC Campus

Some species would be temporarily displaced during construction and would likely return to the site once construction is complete. Operation of the campus would include maintenance of landscaping and would deter geese from returning to the site.

Negligible impacts to forested and developed areas during construction of the NCI Campus would be mitigated by adherence to an approved forest conservation plan. Because the WSC Campus site would disturb over 40,000 ft² of land, compliance with both the State Forest Conservation Program and the Montgomery County's Forest Conservation Law would be required. Impacts to plant and animal resources including the displacement of species through the destruction of habitat are expected to be minor. Furthermore, impacts to plant and animal ecology related to the operation of the NCI Campus would be negligible as minimal displacement of species is anticipated.

Shady Grove LSC

Species adapted to urban environment would be temporarily displaced during construction and would likely return to the site once construction is complete. Shady Grove LSC is exempt from the requirements of Montgomery County's Forest Conservation Law under the grandfathering provision because an approved plan was in effect between 1 July 1984 and 1 July 1991 [Maryland National Capital Park and Planning Commission (NCPPC), 2002].

Impacts to plant and animal resources including the displacement of species through the destruction of habitat are expected to be temporary and negligible. Furthermore, impacts to plant and animal ecology related to the operation of the NCI Campus would be negligible as minimal displacement of species is anticipated.

No Action

Under the No Action Alternative, the Proposed Action would not be implemented, and the negligible, minor, and moderate impacts discussed above would not occur.

4.1.8 Air Quality

All air emissions from the proposed NCI Campus would be within permit restrictions set forth by MDE, which are designed to be protective of human health. The air quality in the vicinity of the site could be impacted temporarily during construction by fugitive dust emissions from construction activities and by vehicular emissions of air pollutants from supplier deliveries and commuting activities of the workforce. Adherence to BMPs would mitigate fugitive dust emissions. Impacts to air quality due to vehicle emissions from commuting activities of the workforce during operation of the NCI Campus would be negligible relative to the total emissions in the Rockville area. Because NCI employees currently commute to facilities in Montgomery County, Maryland, additional regional impacts to air quality are not expected and the action would be in conformance with the State Implementation Plan for the region (a requirement of the CAA).

Impacts as described above are similar for all alternatives.

No Action

Under the No Action Alternative, the negligible and minor impacts to air quality associated with the implementation of the Proposed Action would continue. NCI employees currently commute to facilities in Montgomery County, Maryland; therefore, air quality impacts would occur regardless of implementation of the Proposed Action.

4.1.9 Historical and Cultural Resources

The Preserve at Tower Oaks

A Phase I Cultural Resources Investigation for 30 Acres within The Preserve at Tower Oaks was completed during October and November 2009 (see Appendix E). The cultural resources investigation suggests that no archeological sites or historic built resources are located within the approximately 30 acres surveyed for The Preserve at Tower Oaks. Archival research also indicates the project area historically has remained undeveloped. Therefore, the Proposed Action is unlikely to have an adverse impact on any historic or cultural resources.

WSC Campus

There are no historic or cultural resources listed or eligible to be listed in the NRHP or of locally designated significance on the WSC Campus site. The Maryland Historical Trust concurred that there are no historic properties within the WSC Campus; therefore, implementing the Proposed Action at this site would not result in an adverse effect on historic or cultural resources and further consultation under section 106 of the National Historic Preservation Act is not required for this alternative.

Shady Grove LSC

There are no historic or cultural resources listed or eligible to be listed in the NRHP or of locally designated significance on the Shady Grove LSC site. The Maryland Historical Trust concurred that there are no historic properties within the Shady Grove LSC; therefore, implementing the Proposed Action at this site would not result in an adverse effect on historic or cultural resources and further consultation under section 106 of the National Historic Preservation Act is not required for this alternative.

No Action

Implementation of the No Action Alternative would not have an impact on historical or cultural resources.

4.1.10 Socioeconomic Environment

The Preserve at Tower Oaks

The Preserve at Tower Oaks site is not located within a census tract that is considered a poverty area or a minority area, respectively. Lease construction and operation of the new consolidated NCI Campus at The Preserve at Tower Oaks would not result in any disproportionately high and/or disparate impacts to low income or minority populations in the City of Rockville or census tract 7010.01.

Positive minor impacts to the local economy would occur from the construction phase of the proposed NCI Campus. Implementation of the Proposed Action would not result in disproportionate impacts to minority and/or low-income communities. All vendors and contractors participating in the construction phase would be required to adhere to Equal Opportunity Employment and Affirmative Action considerations as identified in 29 CFR 1608.1. Local vendors also would positively benefit from implementation of the Proposed Action. The overall potential impact on the local socioeconomic environment during operation of the proposed NCI Campus would be beneficial. It is not likely that residential property values would be significantly impacted by operation of the proposed NCI Campus.

WSC Campus

The WSC Campus site is not located within a census tract that is considered a poverty area or a minority area, respectively. Lease construction and operation of the new consolidated NCI Campus at the WSC Campus would not result in any disproportionately high and/or disparate impacts to low income or minority populations in North Bethesda or census track 7012.04.

Impacts to the local economy and property values would be similar as described under the Preserve at Tower Oaks.

Shady Grove LSC

Shady Grove LSC site is not located within a census tract that is considered a poverty area or a minority area, respectively. Lease construction and operation of the new consolidated NCI Campus at the Shady Grove LSC site would not result in any disproportionately high and/or disparate impacts to low income or minority populations in the City of Rockville or census track 7008.17.

Impacts to the local economy and property values would be similar as described under the Preserve at Tower Oaks.

No Action

Under the No Action Alternative any potential positive and beneficial impacts to the socioeconomic environment discussed above would not occur.

4.1.11 Noise

The Preserve at Tower Oaks

Construction of the NCI Campus at The Preserve at Tower Oaks may temporarily increase the amount of noise at the site but any increase in dBA would be minor and mitigated by city and state noise level regulations. All activities associated with the Proposed Action would abide by the appropriate State of Maryland, OSHA and Montgomery County noise standards.

WSC Campus

Construction of the NCI Campus at the WSC Campus may temporarily increase the amount of noise at the site but any increase in dBA will be minor and mitigated by city and state noise level regulations. All activities associated with the Proposed Action would abide by the appropriate State of Maryland, OSHA and Montgomery County noise standards.

Shady Grove LSC

Construction of the NCI Campus at the Shady Grove LSC may temporarily increase the amount of noise at the site but any increase in dBA will be minor and mitigated by city and state noise level regulations. All activities associated with the Proposed Action would abide by the appropriate State of Maryland, OSHA and Montgomery County noise standards.

No Action

Under the No Action Alternative, any of the negligible and minor noise impacts associated with implementation of the Proposed Action would not occur.

4.1.12 Transportation

The Preserve at Tower Oaks

Minor adverse impacts to transportation are expected during construction and operation of the consolidated NCI Campus. Temporary construction traffic impacts would be localized at the work site. According to the traffic study prepared as part of this EA, no mitigation measures would be required based on Year 2012 background traffic forecasts (not including the NCI Campus) for the vicinity of The Preserve at Tower Oaks. However, operation of the consolidated NCI Campus would result in one intersection (northbound I-270 off-ramp and on-ramp with Tower Oaks Boulevard) not operating within the applicable CLV standards but can be mitigated by providing a recommended separate westbound left-turn lane, as well as utilizing available local public transportation and carpooling opportunities. Determination of the transportation mitigation measures to be implemented would be reevaluated and coordinated with the applicable local and/or state agencies.

WSC Campus

Minor adverse impacts to transportation are expected during construction and operation of the consolidated NCI Campus. Temporary construction traffic impacts would occur at the work site. Five intersections (Executive Boulevard/E. Jefferson Street and Montrose Parkway, Rockville Pike and Bou Avenue, Rockville Pike and Hubbard Drive, Rockville Pike and Old Georgetown Road, and Nebel Street and Randolph Road) are expected to not operate within CLV standards due to background projects occurring in the vicinity of the WSC Campus. All five intersections would not operate within CLV standards regardless of implementation of the proposed action (see Section 4.13). The majority of NCI personnel that would be relocated to the consolidated campus are currently located at 6116, 6120, and 6130 Executive Boulevard and therefore are already accounted for in the current and background conditions. Determination of the transportation mitigation measures to be implemented would be coordinated with the applicable local and/or state agencies. Mitigation measures recommended to lessen these impacts to the five intersections include utilization of available local public transportation and carpooling opportunities, as well as the following roadway improvements:

- At the intersection of Executive Boulevard and E. Jefferson Street, restripe the southbound through lane as a shared through left-turn lane and modify the signal phasing to provide split phasing operations for the northbound and southbound approaches.
- At the intersection of Bou Avenue and Rockville Pike, restripe Bou Avenue's westbound approach to provide two left turn lanes and one left-through-right lane onto Rockville Pike. Signal modifications would be required to provide additional signal heads, additional signage, and optimized phasing/timing operations.

- At the intersection of Rockville Pike and Hubbard Drive, restripe the westbound shared through-right-turn lane as a shared left-through-right-turn lane and modify the signal phasing to provide split phasing operations for the eastbound and westbound approaches.
- At the intersection of Randolph Road and Nebel Street, restripe the middle northbound left-turn lane as a shared left-right-turn lane and modify the signal phasing to provide split phasing operations for the northbound and southbound approaches.
- Due to right of way constraints, the additional trips impacting the intersection of Rockville Pike and Old Georgetown Road cannot be mitigated at this location.

Shady Grove LSC

Minor adverse impacts to transportation are expected during construction and operation of the consolidated NCI Campus. Minor temporary transportation impacts during construction of the consolidated NCI Campus would occur at the work site. Four intersections (Great Seneca Highway and Sam Eig Highway, Key West Avenue and Diamondback Drive, Key West Avenue and Shady Grove Road, and Darnes Road and Shady Grove Road) are not expected to operate within CLV standards. Montgomery County Planning Board required mitigation measures for the four intersections not operating within the congestion standard. Measures include:

- Install an additional westbound through lane on Great Seneca Highway, increasing from two lanes to three from Sam Eig Highway to Muddy Branch Road.
- At the Key West Avenue/Broschart Drive/Diamondback Drive intersection, fund the modification of the traffic signal operation to a split-phase for the northbound and southbound approaches. Re-stripe southbound Diamondback Drive approach to operate with a separate right-turn lane, a separate through lane, a shared through and left-turn lane, and a separate left-turn lane.
- Install a third left-turn lane for the eastbound approach at Key West Avenue onto northbound Shady Grove Road.
- At the Darnestown Road/Shady Grove Road intersection, fund the modification of traffic signal operation to the north and south phases concurrently. Modify the westbound approach to change the southern through lane to a shared through left-turn lane.
- Construct Blackwell Road along the property frontage to a two lane undivided business district street within 70 feet right-of-way per the Master Plan recommendation.
- Enter into a new or updated Traffic Mitigation Agreement with the Planning Board to participate in the Greater Shady Grove Traffic Management Organization. The Agreement must be executed prior to submission of the next Site Plan.

Two of the four intersections (Great Seneca Highway and Sam Eig Highway and Key West Avenue and Shady Grove Road) would not operate within CLV standards regardless of the proposed action. Operation of the consolidated NCI Campus would result in adverse impacts to traffic congestion with two of the four intersections (Key West Avenue and Diamondback Drive and Darnestown Road and Shady Grove Road) requiring mitigation due to the proposed action. The adverse impacts can be mitigated by the potential roadway improvements described above, as well as utilization of available local public transportation and carpooling opportunities. Determination of the transportation mitigation measures to be implemented would be coordinated with the applicable local and/or state agencies; however, the developer may be asked to contribute funds to Montgomery County's proposed road infrastructure improvements as part of their mitigation (see Appendix D).

No Action

Under the No Action Alternative, the intersection of the northbound I-270 off-ramp and on-ramp with Tower Oaks Boulevard, associated with Alternative I, would continue to operate within CLV standards. The five intersections in the vicinity of the WSC Campus, as discussed above, would continue to operate outside of CLV standards regardless of implementation of the No Action Alternative. On the Shady Grove LSC, only two of the four intersections (Great Seneca Highway and Sam Eig Highway and Key West Avenue and Shady Grove Road) would continue to not operate within CLV standards regardless of implementation of the No Action Alternative.

4.1.13 Energy Resources

The Preserve at Tower Oaks

Natural gas would be supplied to the proposed site at the Preserve at Tower Oaks by Washington Gas and electrical service would be provided by Potomac Electrical Power Company. Impacts to energy resources associated with construction of the proposed NCI Campus would be temporary and negligible relative to the total energy consumption in the Rockville area.

As described in Section 2.2.6, the NCI Campus would operate in a sustainable and energy efficient manner as per conservation requirements of GSA's SFO and by NCI's compliance with EO 13423 and EISA. The spaces currently leased by NCI do not operate in a sustainable and energy efficient manner; therefore, there would be a net positive impact on the regional supply of electricity and natural gas during operation of the consolidated NCI Campus. Energy consumption from commuting of the workforce and movement of equipment and materials associated with operation of the proposed NCI Campus is unlikely to significantly impact the total energy consumption of the Rockville area as NCI personnel currently commute to facilities in Montgomery County, Maryland.

WSC Campus

Natural gas is supplied to the WSC Campus by Washington Gas and electrical service is provided by Potomac Electrical Power Company. One exterior pad-mounted electrical transformer is located on-site and pipelines or utility easements, other than for domestic purposes, are not found at the site. Impacts to energy resources associated with construction of the proposed NCI Campus would be temporary and negligible relative to the total energy consumption in the North Bethesda area.

As described in Section 2.2.6, the NCI Campus would operate in a sustainable and energy efficient manner as per conservation requirements of GSA's SFO and by NCI's compliance with EO 13423 and EISA. The spaces currently leased by NCI do not operate in a sustainable and energy efficient manner; therefore, there would be a net positive impact on the regional supply of electricity and natural gas during operation of the consolidated NCI Campus. Energy consumption from commuting of the workforce and movement of equipment and materials associated with operation of the proposed NCI Campus is unlikely to significantly impact the total energy consumption of the North Bethesda area as NCI personnel currently commute to facilities in Montgomery County, Maryland.

Shady Grove LSC

Natural gas is supplied to the Shady Grove LSC by Washington Gas and electrical service is provided by Potomac Electrical Power Company. Impacts to energy resources associated with construction of the proposed NCI Campus would be temporary and negligible relative to the total energy consumption in the Rockville area.

As described in Section 2.2.6, the NCI Campus would operate in a sustainable and energy efficient manner as per conservation requirements of GSA's SFO and by NCI's compliance with EO 13423 and EISA. The spaces currently leased by NCI do not operate in a sustainable and energy efficient manner; therefore, there would be a net positive impact on the regional supply of electricity and natural gas during operation of the consolidated NCI Campus. Energy consumption from commuting of the workforce and movement of equipment and materials associated with operation of the proposed NCI Campus is unlikely to significantly impact the total energy consumption of the Rockville area as NCI personnel currently commute to facilities in Montgomery County, Maryland.

No Action

Under the No Action Alternative, the positive impacts to energy resources associated with implementation of the Proposed Action would not occur. The leased spaces currently utilized by NCI do not have the sustainability features of the new leased space and would likely be less energy efficient.

4.1.14 Pollution Prevention and Waste Management

The sewer system in Montgomery County is outdated and in need of maintenance. Currently, the WSSC provides sanitary sewer service to the WSC Campus and Shady Grove LSC, but there is no service provided to the proposed site located at The Preserve at Tower Oaks. Impacts resulting from connecting to the current sewer system located offsite at The Preserve at Tower Oaks are unclear. Furthermore, the developer may be required to fund a capacity study for the site where the Proposed Action is implemented, but such a requirement is undecided and cannot be discussed at this time.

Impacts to waste streams during construction of the Proposed Action would be negligible. As described in Section 2.2.6, the contractor would reduce construction waste by recycling and reusing materials whenever possible, consistent with the GSA SFO. Any non-recyclable waste generated during construction would be disposed of at a licensed facility and in accordance with Federal and state regulations.

The consolidated NCI Campus would operate in a sustainable and waste efficient manner as per conservation requirements of GSA's SFO and by NCI's compliance with EO 13423 and EISA. The spaces currently leased by NCI do not operate in a sustainable and waste efficient manner; therefore, implementation of the Proposed Action would have a positive impact on waste management.

No Action

Under the No Action Alternative, the positive impacts to pollution prevention and waste management would not occur. The leased spaces currently utilized by NCI do not have the sustainability features of the new leased space and would likely be less waste efficient.

4.1.15 Human Health and Safety

The health and safety of construction workers and Federal workers in the proposed consolidated NCI Campus would be protected by adherence to accepted work standards and regulations set forth by OSHA and COMAR. Impact on both construction workers and public health and safety would be negligible. Operation of the NCI Campus would have negligible impacts to human health and safety.

Impacts to human health and safety would be the same for all action alternatives.

No Action

Under the No Action Alternative, NCI employees are protected by adherence to accepted work standards and regulations set forth by OSHA, resulting in negligible impacts to human health and safety at the currently leased locations.

4.1.16 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low Income Populations*, requires Federal agencies to consider whether their projects would result in disproportionate adverse impacts on minority or low-income populations. The U.S. Census defines the poverty level as the income level (based on family size, age of householder, and the number of children less than 18 years of age) that is considered too low to meet essential living requirements, without regard to the local cost of living. The U.S. Census considers a poverty area as a location in which at least 20 percent of the population lives below the poverty level. As stated in Section 4.10, the City of Rockville and the census block areas surrounding the three proposed alternatives are not considered poverty areas. Therefore, it is not likely that any of the action alternatives or the no action alternative would have proportionately greater impact on disadvantaged (e.g., minority or low-income) populations.

4.1.17 Cumulative Impacts

The CEQ regulations implementing NEPA define cumulative impacts to the environment as those effects resulting from the impact of implementation of either Alternative I, II, III or IV when combined with past, present, and future actions (40 CFR 1508.7). Thus, cumulative impacts are the sum of all direct and indirect impacts, both adverse and positive, that result from the incremental impacts due to implementation of either Alternative I, II, III, or IV when added to other past, present, and reasonably foreseeable future actions regardless of source. Cumulative impacts may be accrued over time and/or in conjunction with impacts from other activities in the area (40 CFR 1508.25).

Activities qualitatively and quantitatively similar to the Proposed Action (i.e., construction and utilization) have occurred throughout the City of Rockville for many years without evidence of adverse cumulative impacts to the environment. Employees of NCI are currently located in the vicinity of Rockville in several leased spaces; therefore, it is unlikely that significant cumulative impacts will result from implementation of the Proposed Action as no increase in personnel will take place through consolidation. The potential cumulative impacts resulting from implementation of the Proposed Action will be negligible and mitigated through the implementation of the various mitigation measures that have been identified in this document.

Cumulative impacts, as described above, would be the same for all action alternatives and minor for the no action alternative.

Table 4-1. Summary of Potential Environmental Impacts Related to Construction of the Proposed Consolidated NCI Campus.

Environmental Attribute	Preserve at Tower Oaks	Washington Science Center Campus	Shady Grove Life Sciences Center	No Action Alternative
Land Use	No impacts to Land Use, the Proposed Action is consistent with land use planning and zoning ordinances.	No impacts to Land Use, the Proposed Action is consistent with land use planning and zoning ordinances.	No impacts to Land Use, the Proposed Action is consistent with land use planning and zoning ordinances.	No impact.
Climate	No impacts to climate.	No impacts to climate.	No impacts to climate.	No impact.
Geology	No impacts to geology.	No impacts to geology.	No impacts to geology.	No impact.
Soils	Minor impacts to undisturbed soil resources due to erosion resulting from disturbance during excavation of land and from installation of utility lines.	Minor impacts to undisturbed and disturbed soil resources due to erosion resulting from disturbance during excavation of land and from installation of utility lines.	Minor impacts to disturbed soil resources due to erosion resulting from disturbance during excavation of land and from installation of utility lines.	No impact.
Water Resources	Minor impacts to surface waters on and near the site due to sedimentation and increased stormwater runoff. Minor impacts to groundwater.	No surface water located on the site. Negligible impacts to nearby surface water due to sedimentation and increased stormwater runoff. Minor impacts to groundwater.	Minor impacts to an existing stormwater management pond due to sedimentation and increased stormwater runoff. Minor impacts to groundwater.	No impact.
Wetlands and Floodplains	No wetlands or floodplains exist on the site. Negligible impacts to nearby wetlands and floodplains, mitigated by adherence to BMPs.	No wetlands or floodplains exist on or immediately adjacent to the site.	No wetlands or floodplains exist on or immediately adjacent to the site.	No impact.
Plant and Animal Ecology	Moderate impacts to forested areas due to construction. Moderate impacts to plant and animal resources including displacement of species through destruction of habitat.	Minor impacts to forested and developed areas due to construction. Minor impacts to plant and animal resources including displacement of species through destruction of habitat.	Temporary minor impacts to plant and animal resources including minimal displacement of species.	No impact.
Air Quality	Temporary and minor impacts due to fugitive dust and vehicular emissions.	Temporary and minor impacts due to fugitive dust and vehicular emissions.	Temporary and minor impacts due to fugitive dust and vehicular emissions.	No impact.
Historical and Cultural Resources	No impacts to historic and cultural resources – no known historic resources located on or adjacent to the proposed site. Potential minor impacts to archeology due to excavation of undisturbed land.	No impacts to historic and cultural resources – no known historic resources located on or adjacent to the proposed site.	No impacts to historic and cultural resources – no known historic resources located on or adjacent to the proposed site.	No impact.
Socioeconomic Environment	Minor positive economic impact to the economy of Montgomery County.	Minor positive economic impact to the economy of Montgomery County.	Minor positive economic impact to the economy of Montgomery County.	No impact.
Noise	Temporary minor increased noise at the construction and demolition sites and adjacent areas.	Temporary minor increased noise at the construction and demolition sites and adjacent areas.	Temporary minor increased noise at the construction and demolition sites and adjacent areas.	No impact.
Transportation	Minor temporary impacts to traffic congestion localized at the work sites.	Minor temporary impacts to traffic congestion localized at the work sites.	Minor temporary impacts to traffic congestion localized at the work sites.	No impact.
Energy Resources	Temporary negligible impacts to depletable energy resources.	Temporary negligible impacts to depletable energy resources.	Temporary negligible impacts to depletable energy resources.	No impact.
Waste Management	Negligible impacts from waste streams.	Negligible impacts from waste streams.	Negligible impacts from waste streams.	No impact.
Human Health and Safety	Negligible impact to construction workers and negligible impact to public health and safety.	Negligible impact to construction workers and negligible impact to public health and safety.	Negligible impact to construction workers and negligible impact to public health and safety.	No impact.
Environmental Justice	No disproportionate impacts to minority or low-income populations are anticipated.	No disproportionate impacts to minority or low-income populations are anticipated.	No disproportionate impacts to minority or low-income populations are anticipated.	No impact.
Cumulative Impacts	Temporary negligible cumulative impacts to regional air quality, transportation, and energy resources.	Temporary negligible cumulative impacts to regional air quality, transportation, and energy resources.	Temporary negligible cumulative impacts to regional air quality, transportation, and energy resources.	No impact.

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Table 4-2. Summary of Potential Environmental Impacts Related to Operation of the Proposed Consolidated NCI Campus.

Environmental Attribute	Preserve at Tower Oaks	Washington Science Center Campus	Shady Grove Life Sciences Center	No Action Alternative
Land Use	The proposed NCI Campus will conform to local land use planning.	The proposed NCI Campus will conform to local land use planning.	The proposed NCI Campus will conform to local land use planning.	No impact.
Climate	No impacts to climate.	No impacts to climate.	No impacts to climate.	No impact.
Geology	No impacts to geology.	No impacts to geology.	No impacts to geology.	No impact.
Soils	Negligible impacts to soils.	Negligible impacts to soils.	Negligible impacts to soils.	No impact.
Water Resources	Minor impact on the local water supply source. Minor impacts to local groundwater recharge resulting from increased impervious surface area. Minor impacts from increased stormwater runoff due to impervious surfaces.	Minor impact on the local water supply source. Minor impacts to local groundwater recharge resulting from increased impervious surface area. Minor impacts from increased stormwater runoff due to impervious surfaces.	Minor impact on the local water supply source. Minor impacts to local groundwater recharge resulting from increased impervious surface area. Minor impacts from increased stormwater runoff due to impervious surfaces.	No impact.
Wetlands and Floodplains	No wetlands or floodplains exist on the site. Negligible impacts to nearby floodplains and wetlands.	No wetlands or floodplains exist on the site.	No wetlands or floodplains exist on the site.	No impact.
Plant and Animal Ecology	Minor impact to plant and animal ecology - displacement of some species anticipated.	Negligible impact to plant and animal ecology - minimal displacement of species anticipated.	Negligible impact to plant and animal ecology - minimal displacement of species anticipated.	No impact.
Air Quality	Negligible air quality impacts.	Negligible air quality impacts.	Negligible air quality impacts.	No impact.
Historical and Cultural Resources	No impacts to historic and cultural resources – no known historic resources located on or adjacent to the proposed site.	No impacts to historic and cultural resources – no known historic resources located on or adjacent to the proposed site.	No impacts to historic and cultural resources – no known historic resources located on or adjacent to the proposed site.	No impact.
Socioeconomic Environment	Beneficial impacts on local economy.	Beneficial impacts on local economy.	Beneficial impacts on local economy.	No impact.
Noise	Negligible noise impacts. Noise levels are not likely to increase over current levels.	Negligible noise impacts. Noise levels are not likely to increase over current levels.	Negligible noise impacts. Noise levels are not likely to increase over current levels.	No impact.
Transportation	Minor impacts to traffic congestion due to one intersection that is expected to not operate within CLV standards.	Minor impacts to traffic congestion due to five intersections that are expected to not operate within CLV standards. All five intersections will not operate within CLV standards regardless of the proposed action.	Adverse impacts to traffic congestion due to four intersections that are expected to not operate within CLV standards. Two of the four intersections will not operate within CLV standards regardless of the proposed action.	One intersection in the vicinity of Alternative I will continue to operate within CLV standards. Two intersections in the vicinity of Alternative III will continue to operate within CLV standards.
Energy Resources	Positive impacts to energy resources resulting from adherence to conservation requirements of GSA's SFO, EO 13423 and EISA.	Positive impacts to energy resources resulting from adherence to conservation requirements of GSA's SFO, EO 13423 and EISA.	Positive impacts to energy resources resulting from adherence to conservation requirements of GSA's SFO, EO 13423 and EISA.	Minor impacts to energy resources due to energy inefficient operations.
Waste Management	Positive impacts to waste streams resulting from adherence to conservation requirements of GSA's SFO, EO 13423 and EISA.	Positive impacts to waste streams resulting from adherence to conservation requirements of GSA's SFO, EO 13423 and EISA.	Positive impacts to waste streams resulting from adherence to conservation requirements of GSA's SFO, EO 13423 and EISA.	Minor impacts to waste streams due to waste inefficient operations.
Human Health and Safety	Negligible impacts to human health and safety.	Negligible impacts to human health and safety.	Negligible impacts to human health and safety.	No impact.
Environmental Justice	No disproportionate impacts to minority or low-income populations are anticipated.	No disproportionate impacts to minority or low-income populations are anticipated.	No disproportionate impacts to minority or low-income populations are anticipated.	No impact.
Cumulative Impacts	Negligible regional cumulative impacts. The Proposed Action would relocate employees already working in the Rockville area at other NCI leased spaces to the new NCI Campus.	Negligible regional cumulative impacts. The Proposed Action would relocate employees already working in the Rockville area at other NCI leased spaces to the new NCI Campus.	Negligible regional cumulative impacts. The Proposed Action would relocate employees already working in the Rockville area at other NCI leased spaces to the new NCI Campus.	Minor regional cumulative impacts.

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Table 4-3. Summary of Mitigation Measures Related to Construction of the Proposed Consolidated NCI Campus.

Environmental Attribute	Preserve at Tower Oaks	Washington Science Center Campus	Shady Grove Life Sciences Center	No Action Alternative
Land Use	Not required.	Not required.	Not required.	Not required.
Climate	Not required.	Not required.	Not required.	Not required.
Geology	Not required.	Not required.	Not required.	Not required.
Soils	Mitigated by implementation of soil and erosion control BMPs.	Mitigated by implementation of soil and erosion control BMPs.	Mitigated by implementation of soil and erosion control BMPs.	Not required.
Water Resources	Minor impacts to surface waters mitigated by adherence to BMPs and compliance with sediment and stormwater control requirements. Minor impacts to groundwater mitigated by BMPs and adherence to construction standards for containment of potential wastewater leakage.	Negligible impacts to nearby surface water mitigated by adherence to BMPs and compliance with sediment and stormwater control requirements. Minor impacts to groundwater mitigated by BMPs and adherence to construction standards for containment of potential wastewater leakage.	Minor impacts to an existing SWM pond mitigated by adherence to BMPs and compliance with sediment and stormwater control requirements. Minor impacts to groundwater mitigated by BMPs and adherence to construction standards for containment of potential wastewater leakage.	Not required.
Wetlands and Floodplains	Negligible impacts to nearby wetlands and floodplains, mitigated by adherence to BMPs.	Not required.	Not required.	Not required.
Plant and Animal Ecology	Minor impacts to plant and animal resources mitigated by BMPs. Positive impacts due to COMAR forestation requirements.	Minor impacts to plant and animal resources mitigated by BMPs. Positive impacts due to COMAR forestation requirements.	Temporary minor impacts to plant and animal resources mitigated by BMPs. Positive impacts due to COMAR forestation requirements.	Not required.
Air Quality	Fugitive dust mitigated by adherence to BMPs.	Fugitive dust mitigated by adherence to BMPs.	Fugitive dust mitigated by adherence to BMPs.	Not required.
Historical and Cultural Resources	Not required.	Not required.	Not required.	Not required.
Socioeconomic Environment	Not required.	Not required.	Not required.	Not required.
Noise	Temporary minor impacts mitigated by adherence to OSHA construction-noise standards and Montgomery County noise ordinances.	Temporary minor impacts mitigated by adherence to OSHA construction-noise standards and Montgomery County noise ordinances.	Temporary minor impacts mitigated by adherence to OSHA construction-noise standards and Montgomery County noise ordinances.	Not required.
Transportation	Mitigated by adherence to applicable local, state, and federal laws and regulations.	Mitigated by adherence to applicable local, state, and federal laws and regulations.	Mitigated by adherence to applicable local, state, and federal laws and regulations.	Not required.
Energy Resources	Not required.	Not required.	Not required.	Not required.
Waste Management	Mitigated by adherence to GSA's SFO.	Mitigated by adherence to GSA's SFO.	Mitigated by adherence to GSA's SFO.	Not required.
Human Health and Safety	Not required.	Not required.	Not required.	Not required.
Environmental Justice	Not required.	Not required.	Not required.	Not required.
Cumulative Impacts	Not required.	Not required.	Not required.	Not required.

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Table 4-4. Summary of Mitigation Measures Related to Operation of the Proposed Consolidated NCI Campus.

Environmental Attribute	Preserve at Tower Oaks	Washington Science Center Campus	Shady Grove Life Sciences Center	No Action Alternative
Land Use	The proposed NCI Campus will adhere to local land use planning.	The proposed NCI Campus will adhere to local land use planning.	The proposed NCI Campus will adhere to local land use planning.	Not Applicable
Climate	Not required.	Not required.	Not required.	Not Applicable
Geology	Not required.	Not required.	Not required.	Not Applicable
Soils	Not required.	Not required.	Not required.	Not Applicable
Water Resources	Impacts to groundwater mitigated by BMPs, adherence to construction standards and operational practices for containment of potential wastewater leakage (e.g., secondary containment). Minor impacts from increased stormwater runoff mitigated by adherence to stormwater requirements.	Impacts to groundwater mitigated by BMPs, adherence to construction standards and operational practices for containment of potential wastewater leakage (e.g., secondary containment). Minor impacts from increased stormwater runoff mitigated by adherence to stormwater requirements.	Impacts to groundwater mitigated by BMPs, adherence to construction standards and operational practices for containment of potential wastewater leakage (e.g., secondary containment). Minor impacts from increased stormwater runoff mitigated by adherence to stormwater requirements.	Not Applicable
Wetlands and Floodplains	Not required.	Not required.	Not required.	Not Applicable
Plant and Animal Ecology	Not required.	Not required.	Not required.	Not Applicable
Air Quality	Not required.	Not required.	Not required.	Not Applicable
Historical and Cultural Resources	Not required.	Not required.	Not required.	Not Applicable
Socioeconomic Environment	Not required.	Not required.	Not required.	Not Applicable
Noise	Not required.	Not required.	Not required.	Not Applicable
Transportation	Impacts mitigated by potential roadway improvements, carpooling, public transport, etc. Transportation mitigation measures to be implemented would be coordinated with the applicable local and/or state agencies.	Impacts mitigated by potential roadway improvements, carpooling, public transport, etc. Transportation mitigation measures to be implemented would be coordinated with the applicable local and/or state agencies.	Impacts mitigated by potential roadway improvements, carpooling, public transport, etc. Transportation mitigation measures to be implemented would be coordinated with the applicable local and/or state agencies.	Not Applicable
Energy Resources	Not required.	Not required.	Not required.	Not Applicable
Waste Management	Not required.	Not required.	Not required.	Not Applicable
Human Health and Safety	Not required.	Not required.	Not required.	Not Applicable
Environmental Justice	Not required.	Not required.	Not required.	Not Applicable
Cumulative Impacts	Not required.	Not required.	Not required.	Not Applicable

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5.0 CONCLUSIONS

The Proposed Action and subject of this EA is the lease construction and operation of a consolidated NCI Campus. The consolidated NCI Campus would consist of two to three low to mid-rise buildings with a minimum of 1,900 parking spaces. Potential locations for the proposed action are The Preserve at Tower Oaks in Rockville, Maryland (Alternative I), the Washington Science Center Campus (WSC) in North Bethesda, Maryland (Alternative II), or the Shady Grove Life Sciences Center (LSC) in Rockville, Maryland (Alternative III). It is understood that the Proposed Action includes the lease construction and operation of approximately 575,000 rsf of office space in Montgomery County, Maryland for use by NCI.

Implementation of the Proposed Action would allow for the consolidation of several existing leased spaces currently operating in Montgomery County, Maryland, while decreasing NIH's high market annual rental rate per rsf. The proposed consolidated NCI Campus would consist of relocating approximately 2,400 existing full time Federal employees to the new campus, resulting in a more efficient and contiguous work environment. In determining the quality of the building, consideration will be given to (1) quality of building architecture, building systems, construction, and finishes; (2) planning efficiency and flexibility; and (3) access to natural light. The following requirements were deemed important for the location of the proposed consolidated NCI Campus: (1) proximity to NIH Campus, (2) proximity to major highways, (3) proximity to public transportation, and (4) proximity to amenities. In determining the quality of the site, consideration will be given to (1) campus environment, (2) NCI Campus Image, (3) green space, and (4) pedestrian, bicycle and vehicular circulation.

Three reasonable action alternatives and a no action alternative were evaluated in detail in this EA. Although it would not satisfy the purpose and need for the project, the No Action Alternative does establish the baseline to which the proposed alternatives can be compared. This alternative was evaluated, as required under the Council on Environmental Quality regulations. Implementation of the No Action Alternative would not enhance NCI mission performance, and would not provide a consolidated and more efficient work environment.

Potential environmental issues associated with implementation of the Proposed Action at all three potential sites for the consolidated NCI Campus were identified during the preparation of this EA. These included impacts to land use, underlying soils, and increased traffic loading. Impacts from increased impervious surface area to stormwater management, surface water quality, and plant and animal ecology were also analyzed. With applicable mitigation measures, all of these potential adverse impacts were deemed to be minor. Impacts to energy resources and waste streams were analyzed and determined to be positive. Under Alternative IV (No Action), the potential adverse impacts resulting from implementation of the Proposed Action would not occur and the impacts to energy resources and waste management would continue to be minor.

The principal conclusions of this EA are: (1) Implementation of the Proposed Action, lease construction and operation of the consolidated NCI Campus at either The Preserve at Tower Oaks in Rockville, Maryland (Alternative I), the WSC Campus in North Bethesda, Maryland (Alternative II), or the Shady Grove LSC in Rockville, Maryland (Alternative III), would result in no significant, non-mitigable, adverse environmental, human health, or socioeconomic impacts. (2) The Proposed Action would consolidate NCI activities currently operating in various leased spaces in Montgomery County, Maryland into a NCI Campus, resulting in a more efficient, contiguous work environment for administrative staff. (3) Implementation of the Proposed Action would increase NCI's usable square feet while decreasing NIH's current high market annual

rental rate per rsf. (4) Implementation of Alternative IV (No Action) would not enhance NCI mission performance, would not provide a consolidated, more efficient work environment, and would not decrease NIH's annual rental rate per rsf.

6.0 REFERENCES

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7.0 ACRONYMS AND ABBREVIATIONS

AQI	Air Quality Index
BMPs	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CLV	Critical Lane Volume
COMAR	Code of Maryland Regulations
CO	carbon monoxide
dBA	decibels on an A-weighted scale
BMPs	Best Management Practices
DHHS	Department of Health and Human Services
EA	Environmental Assessment
EISA	Energy Independence and Security Act of 2007
EMS	Environmental Management Systems
EO	Executive Order
°F	degrees Fahrenheit
FCP	Forest Conservation Plan
FIDS	Forest Interior Dwelling Bird Species
ft	foot/feet
ft ²	square foot/feet
FTPO	Forest and Tree Preservation Ordinance
GAM	General Administration Manual
GSA	U.S. General Services Administration
gsf	gross square feet
HAPs	Hazardous Air Pollutants
JHU	Johns Hopkins University
LATR	Local Area Transportation Review
LEED	Leadership in Energy and Environmental Design
LSC	Life Sciences Center
MCLs	Maximum Contaminant Levels
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
mmBTU	million British Thermal Unit
MOU	Memorandum of Understanding
MSW	municipal solid waste
NAAQS	National Ambient Air Quality Standards
NCI	National Cancer Institute
NCPPC	Maryland National Capital Park and Planning Commission
NEPA	National Environmental Policy Act
NIH	National Institutes of Health
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NRI	Natural Resource Inventory
O ₃	ozone
OSHA	Occupational Safety & Health Act/Administration
Pb	lead
PD	Planned Development
PM	particulate matter

rsf	rentable square feet
SDWA	Safe Drinking Water Act
SFO	Solicitation for Offers
SO ₂	sulfur dioxide
SWM	stormwater management
TAPs	Toxic Air Pollutant
tpy	tons per year
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGBC	U.S. Green Building Council
VOCs	Volatile Organic Compounds
WSC	Washington Science Center
WSSC	Washington Suburban Sanitary Commission
WWTP	Waste Water Treatment Plant

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