Finding of No Significant Impact

For the

National Institute of Standards and Technology

Gaithersburg Campus Master Plan

Agency: National Institute of Standards and Technology (NIST)

Action: Finding of No Significant Impact (FONSI)

Introduction

NIST has developed a 20-year Master Plan for the NIST Gaithersburg Campus located in Gaithersburg, Maryland. The need for the Master Plan, and the campus improvements prescribed therein, is driven by both institutional policy and the inability of existing facilities and infrastructure to support current and projected mission requirements at the NIST Gaithersburg Campus. NIST is ever evolving and needs flexible, integrative, and collaborative facilities to effectively support scientific research. An Environmental Assessment (EA) has been conducted to evaluate environmental impacts arising from execution of the NIST Gaithersburg Campus Master Plan.

Scope

The EA was completed in accordance with the National Environmental Policy Act (NEPA) of 1969 (Public Law [P.L.] 90-190, 42 U.S. Code [U.S.C.] 4321 et seq.), as amended in 1975 by P.L. 94-83 and the regulations established by the Council on Environmental Quality (40 Code of Federal Regulations [CFR] 1500-1508). NIST determined that an EA was the appropriate level of NEPA review for the NIST Gaithersburg Campus Master Plan.

Alternatives Considered: This EA considered two alternatives: The Proposed Action and the No-Action Alternative.

Proposed Action: The Proposed Action is the implementation of a Master Plan to guide the physical development of the campus to advance the agency's mission-related goals over the next 20 years. The Master Plan emphasizes quality and collaborative research space in addition to sustainable and efficient operations. The Master Plan addresses current campus needs and delineates future development through broad phases guided by priorities and logical implementation sequencing. The Master Plan provides for the modernization of aging, inefficient buildings and accommodates the anticipated growth in research programs over the next 20 years. Full execution of the Master Plan will increase the employee population by approximately 27% from its current population of 4,007 to 5,106 and will result in a net increase in facility space by approximately 40%.

NIST will execute new construction, additions, renovation, demolition, landscape improvements, utility improvements, and circulation improvements under the Master Plan. It offers a framework for accomplishing NIST's goals of maintaining the attractive campus, providing appropriate facilities and infrastructure for scientific research, improving security, respecting and embracing the determination of the campus as a historic district, and advancing sustainable practices. The

emphasis is on research buildings—upgrading existing laboratory buildings and infrastructure to support current and future research, and adding new facilities needed for planned programs.

No-Action Alternative: The No-Action Alternative would not implement the Master Plan and would maintain the present course of action at the campus by continuing ongoing research, management, and maintenance activities. The No-Action Alternative would ultimately result in a site that would no longer support the advanced research requirements of NIST and would render much of the campus obsolete. The No-Action Alternative would not meet the purpose and need criteria for the campus.

Consultations

NIST held a public scoping meeting at the NIST National Cybersecurity Center of Excellence, located in Gaithersburg, MD, on May 11, 2017 to solicit public input on alternative concepts for the Master Plan and issues to be considered in the EA. The public scoping meeting was followed by a 31-day comment period during which written comments were accepted on the proposed Master Plan alternatives and issues for the EA. In addition, NIST held informational meetings on campus with campus staff on May 11, 2017 and May 15, 2017, and solicited staff comments during the same public comment period. Presentations of the Master Plan issues, alternatives, and the selected Master Plan concept were also made to representatives from the Maryland State Historic Preservation Officer (SHPO) on August 22, 2017 and to staff from the National Capital Planning Commission (NCPC) and the City of Gaithersburg on August 23, 2017.

A biological consultation letter was sent out to the U.S. Fish and Wildlife Service (USFWS) for the review of potential impacts to threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, as a result of this project. Correspondence confirmed that no rare, threatened, or endangered wildlife species or critical habitats are expected to occur within the campus. NIST also consulted with the Maryland Department of Natural Resources (MDNR) Wildlife and Heritage Service to obtain a list of state-protected species. The MDNR confirmed that there are no official state or federal records for listed animal species within the campus.

Prior to development of the Master Plan, NIST consulted with the Maryland SHPO, which determined that the entire 579-acre campus is eligible for listing on the National Register of Historic Places (NRHP) as a historic district. The Maryland SHPO also recommended that all 26 resources constructed between 1960 and 1969 were contributing resources to the NRHP-eligible district. The Master Plan embraces the campus status as an eligible historic district and proposes new buildings that would be architecturally compatible in scale, massing, and design approach with the original campus buildings. In accordance with Section 106 of the National Historic Preservation Act, NIST consulted with the Maryland SHPO to determine if any new construction, renovations, additions, or demolition under the Master Plan would cause adverse effects. On March 16, 2018, the Maryland SHPO agreed with NIST's determination that the Master Plan would have no adverse effect on historic properties. This finding is contingent on NIST submitting individual undertakings to the SHPO during the planning stage for review.

NIST initiated a public comment period on the Draft Master Plan and Draft EA on February 8, 2018 and accepted comments through March 31, 2018. The draft documents were available for review by federal, state, and local agencies as well as the interested public. The Maryland SHPO, City of Gaithersburg, and NCPC submitted comments that were supportive of the Draft Master Plan. NIST

received comments from approximately 25 NIST staff and one member of the general public. The majority of the comments relevant to the Master Plan pertained to the locations and adequacy of the proposed parking garage and lots; characterization of the existing utility infrastructure; recommendations related to bicycle racks, bicyclist entrances, and paths; and editorial comments. NIST considered all public and staff comments during development of the Final Master Plan and the Final EA.

Findings and Conclusions

Based on the analysis of baseline conditions and the anticipated impacts of the Proposed Action described in the EA, NIST has determined that no significant impacts to the environmental conditions of the NIST Gaithersburg Campus and/or the surrounding community will result from implementation of the Proposed Action. Table 1 attached summarizes the anticipated impacts and mitigation measures for the Proposed Action. Accordingly, this Finding of No Significant Impact statement is issued regarding NIST's intent to complete the Proposed Action. Further NEPA analysis may be required as new projects are identified and incorporated into the Master Plan, or if significant changes are made to the projects currently included in the Master Plan. As the proposed projects described in the EA enter the preliminary design stage, each will be reviewed individually to determine whether further NEPA analysis is warranted.

Determination

In view of the analysis contained in the EA prepared for the NIST Gaithersburg Campus Master Plan, and proposed mitigation measures summarized in Table 1, it is hereby determined that the projects included within the Master Plan will not significantly impact the quality of the human environment. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.

5/29/18

James Michael Blackmon
NEPA Coordinator
National Institute of Standards and Technology

Date

6/5/18

Robert C. Vaughn
Chief Facilities Management Officer
National Institute of Standards and Technology

Date

Attachment: Table 1. Summary of Environmental Effects and Mitigation Measures.

Table 1. Summary of Environmental Effects and Mitigation Measures

Resource	Proposed Action (Gaithersburg Campus Master Plan)
Land Use and Socioeconomics	
Land Use and Regional Planning	Effects: • Improved connectivity, stronger campus identity, and encouraged collaboration amongst employees. • No impact on land use designations on the campus. Continued preservation of open space and natural features. • No impact on zoning or regional planning outside the campus. Mitigation: • No mitigation necessary.
Social and Economic Resources	Effects: • Minor long-term impact on population, housing, and education trends because of the projected increase of approximately 1,099 staff over the course of 20 years. • Minor long-term economic benefits associated with improved productivity and available resources as well as a marginal improvement to employment levels associated with increased staff on the campus. Staff increases would likely benefit the local economy and job market. • Temporary minor impact on the population and availability of housing during construction (because of potential influx of construction workers). • Temporary economic benefits to the local community during construction activities (e.g., meals and incidentals for construction workers). • No significant disproportionate impact on children, minorities, or low-income populations, but potential minor effect on sensitive populations southeast of campus because of relocation of commercial vehicle entrance to Gate F. Mitigation: • Incorporation of design features at Gate F to separate commercial vehicle and visitor traffic and to limit queueing of commercial vehicles as they enter the campus.
Open Space and Recreation	Effects: • Expansion of active recreational areas and the network of walking paths through both open and wooded landscape. • Minor reduction in open areas because of new construction. Mitigation: • No mitigation necessary.
Biological Resources	
Vegetation	Effects: • Removal of vegetation because of construction in previously undeveloped areas. • No impact on rare, threatened, or endangered plant species or on vegetation in stream buffers or wetlands. • Improvement to urban landscape because of replacement of manicured lawns with no-mow meadows of native or adapted species (requiring less maintenance). • Expanded tree canopy cover because of reforestation efforts. Mitigation: • Reseeding native grasses and vegetative species in disturbed areas following completion of construction activities to the extent feasible. • Replacement of trees removed. • Implementation of trenchless methods where feasible to minimize vegetation removal associated with installation or relocation of underground utilities. • Management of hardwood trees to prevent the spread of the emerald ash borer.

Table 1. Summary of Environmental Effects and Mitigation Measures

Resource	Proposed Action (Gaithersburg Campus Master Plan)
Wildlife	Effects: • Minor reduction in potential wildlife and pollinator habitat because of reduction in vegetated areas. • Temporary minor impact on wildlife, migratory birds, and pollinators during construction activities. • No expected impact on rare, threatened, and endangered species or forest interior dweller species. • Potential minor impact on aquatic life because of runoff of sediment or other contaminants. • Minor improvement to wildlife and pollinator habitat due tree canopy expansion and increased native vegetation. Mitigation: • Avoidance of tree clearing until it is verified that no migratory bird eggs and/or young are present. • Consultation with the U.S. Fish and Wildlife Service and implementation of appropriate mitigation measures if threatened or endangered species are discovered on campus. • Implementation of stormwater management and pollution prevention measures to reduce impact on aquatic life.
Topography, Geology, and Soils	
Topography	Effects: • Minor impact on topography because of construction activities, which would require grading, excavation, and fill in previously disturbed areas. Mitigation: • No mitigation necessary.
Geology and Soils	Effects: • Moderate soil disturbance because of construction, demolition, and renovation projects. • Potential for surface and subsurface compaction during construction and demolition activities. Mitigation: • Performance of geotechnical surveys to confirm soil constructability prior to new construction. • Implementation of erosion and sediment control (ESC) measures during earth disturbance. • Preparation and adherence to a Stormwater Pollution Prevention Plan (SWPPP) to minimize risk of soil contamination during construction activities. • Reuse of excavated soils within the campus whenever feasible. • Minimization of fugitive dust emissions and wind-thrown hazards during construction activities.
Water Resources	
Surface Waters	Effects: • Potential impact on surface waters because of runoff from construction activities and changes in the quality and quantity of post-construction stormwater runoff. • Potential long-term improvement to surface water quality via implementation of the mitigation measures summarized below. Mitigation: • Implementation of approved ESC and stormwater management (SWM) plans during construction activities. • Installation of stormwater best management practices (BMPs) for both existing and new impervious surfaces, in accordance with the campus stormwater permit and state and federal requirements.

Table 1. Summary of Environmental Effects and Mitigation Measures

Resource	Proposed Action (Gaithersburg Campus Master Plan)
Wetlands	Effects: • No construction, demolition, or renovation within designated wetlands or wetland buffers. • Potential wetland impacts because of construction and renovation activities proposed near wetlands or areas demonstrating wetland characteristics. • During peak storm events, potential increase in the quantity of stormwater runoff discharged to wetlands on campus following construction of the Visitor Center and Vehicle Inspection Facility at Gate A, NCNR, High Bay Facility, Strong Facility, Wind/Fire Facility, and the Gate F Visitor Center. Mitigation: • Installation of approved ESC and SWM plans during construction activities. • Implementation of surveys in areas with wetland characteristics to evaluate if construction activities would occur within wetlands or their buffers. If construction in a buffer area is determined, NIST would evaluate opportunities to reduce or avoid these impacts.
Floodplains	Effects: • No construction, demolition, or renovation within the 100-year floodplain or floodway. • During peak storm events, potential increase in the quantity of stormwater runoff from the campus because of overflow of stormwater management features. Mitigation: • Incorporation of various post-construction stormwater BMPs to reduce flooding potential.
Groundwater	Effects: • No impact on groundwater consumption. • Potential impact on groundwater quality during construction and demolition activities. • Potential for enhanced stormwater infiltration and groundwater recharge. Mitigation: • Implementation of appropriate pollution prevention measures during construction and demolition activities to avoid spills and exposure of groundwater to contamination.
Utilities and Infrastructure	
Potable Water Supply	Effects: • Moderate increase in potable water demand. • Installation of new potable water lines to connect new facilities with the existing potable water infrastructure. • Potential relocation of existing water piping. Mitigation: • Installation of water-efficient fixtures and water conserving equipment in new and renovated buildings.
Wastewater	Effects: • Moderate increase in wastewater generation. • Installation of new sanitary sewer lines to connect new facilities with the existing sanitary sewer infrastructure. Mitigation: • Installation of water-efficient fixtures in new and renovated buildings.

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Resource	Proposed Action (Gaithersburg Campus Master Plan)
Stormwater Management	Effects: • Temporary impact on stormwater from sediment associated with renovation, demolition, and construction activities. • Increase in impervious areas within the campus by 16% with full implementation of the Master Plan. • Potential long-term improvement to stormwater quality and reduction in stormwater quantity via implementation of the mitigation measures summarized below. Mitigation: • Use of reforestation and approved SWM strategies to treat 20% of runoff from existing impervious surfaces. • Implementation of approved ESC and SWM plans during construction activities, including the use of Environmental Site Design BMPs in accordance with the campus stormwater permit and state and federal requirements. • Potential establishment of a Compensatory Stormwater Management program and Water Quality Bank through an agreement with MDE.
Energy Systems - Electricity	Effects: • Moderate increase in electrical demand because of operation of lighting systems, laboratory equipment, and HVAC systems associated with new buildings. Construction of a new electrical switching station to support this increase in demand. • Assessment and replacement of existing duct banks and feeders in the existing electrical distribution network. Mitigation: • Improved energy efficiency for new and renovated buildings, including potential net-zero facilities. • Installation of photovoltaic energy systems to reduce electrical demand from the grid.
Energy Systems - Heating and Cooling	Effects: • Moderate increase in cooling and heating demand. • Installation of additional chillers, a cooling tower, and a new chilled water and steam supply main to support campus growth and increase utility system reliability. Mitigation: • Improvement to insulation and efficiency of heating and cooling for new and renovated facilities. • Potential for stand-alone buildings to achieve net-zero energy consumption via geothermal systems.
Sustainable Development	
--	Effects: • Moderate overall improvement to campus sustainability through renovation of existing facilities and replacement of inefficient facilities, improved energy efficiency, improved stormwater management, and sustainable landscaping. • Short-term and continuing generation of waste and commitment of resources (e.g., raw construction materials, fossil fuels) to support facility construction and operation. Mitigation: • Achievement of LEED Gold certification (or higher) for each new or renovated building. • Recycling of construction and demolition debris to the extent practicable. • Continued purchase of renewable energy credits (electrical power from renewable sources) to meet EO 13693 targets.
Solid and Hazardous Waste	
--	Effects: • Temporary generation of construction and demolition waste, potentially including materials containing polychlorinated biphenyls, lead, asbestos, or ozone-depleting substances. • Minor long-term increase in operational waste because of increase in staff and operational space. Mitigation: • Recycling of construction and demolition debris to the extent practicable. • Handling and disposal of wastes in accordance with state regulations.

Table 1. Summary of Environmental Effects and Mitigation Measures

Resource	Proposed Action (Gaithersburg Campus Master Plan)
Circulation and Transportation	
Vehicle Circulation and Parking	Effects: • Moderate increase in vehicles entering and exiting the campus because of personnel increase. • Minor increase in commercial vehicle traffic along Muddy Branch Road because of relocation of commercial vehicle entrance to Gate F, with corresponding decrease in traffic congestion along Quince Orchard Road. • Improved vehicle circulation and maneuvering on the campus and at points of entry. • Minor reduction in vehicle use within the campus because of improved pedestrian connectivity. • Gradual reduction in parking availability across campus. • Temporary increase in traffic and decrease in parking availability during construction activities. Mitigation: • Implementation of additional Transportation Demand Management policies to further encourage use of public transportation and bicycles. • Creation of separate entrance driveways at Gate F to mitigate congestion along Muddy Branch Road. • Creation of temporary parking and staging areas to avoid parking overflow during construction and demolition activities.
Public and Alternative Transportation	Effects: • Moderate increase in public transit ridership because of increase in employees. • Improved access to the campus from bus stops because of improved pedestrian walkways. • Improved accessibility for bicycle commuters. Mitigation: • No mitigation necessary.
Pedestrian Circulation	Effects: • Improved pedestrian circulation on campus because of construction of new sidewalks, walkways, and a recreational walking path. • Increased emphasis on connectivity by focusing new laboratory and administrative space within the campus core. Mitigation: • No mitigation necessary.
Air Quality	
--	Effects: • Minor long-term increase in air emissions from boilers, emergency generators, and laboratory activities. • Moderate long-term increase in air emissions from mobile sources because of increase in campus population, which may be fully offset by continued improvements in vehicle emission standards. • Temporary increase in air emissions because of demolition, construction, and renovation activities. • Air emissions would be below the Clean Air Act General Conformity Rule *de minimis* thresholds. Mitigation: • Renovation and construction of more energy efficient facilities to reduce the amount of purchased electricity and the associated generation of greenhouse gas (GHG) emissions. • Continued use of low-NOx burners in new boilers. • Installation of pollution control devices at the proposed Wind/Fire Facility. • Configuration of Gate A and Gate F to reduce queuing and idling by commercial vehicles and other vehicles. • Minimization of fugitive dust emissions and wind-thrown hazards during construction activities. • Removal and disposal of lead-containing materials, asbestos-containing materials, and ozone-depleting substances in accordance with applicable regulations.

Table 1. Summary of Environmental Effects and Mitigation Measures

Resource	Proposed Action (Gaithersburg Campus Master Plan)
Climate Change	
--	Effects: • Minor long-term increase in direct and indirect GHG emissions from boilers, emergency generators, and operation of new facilities (including purchasing of electricity). • Temporary increase in GHG emissions because of construction, renovation, and demolition activities. • Potential contribution to effects of climate change through potential minor increase in cooling demand. • Improved resilience to intensified rainfall and drought events through reforestation and revegetation. Mitigation: • Renovation and construction of more energy efficient facilities and installation of photovoltaic systems to reduce the amount of purchased electricity and the associated generation of GHGs. • Continued purchase of renewable energy credits (electrical power from renewable sources) to meet EO 13693 targets.
Cultural and Historic Resources	
Architectural Resources	Effects: • Direct impact, but no adverse effect, to historic district and contributing resources because of construction and renovation. • New buildings would be architecturally compatible in scale, massing, and design approach with the original campus buildings to minimize adverse effects to the historic district. • No anticipated impacts on historic properties outside the campus. Mitigation: • Submittal of individual undertakings to the Maryland Historical Trust during the planning stage for Section 106 review. • Adherence to the *Secretary of the Interior's Standards for Rehabilitation* for future expansions and alterations.
Archeological Resources	Effects: • No adverse effects on known archeologically sensitive areas or previously identified archeological sites. • Potential to encounter archeological resources via earthwork in previously undisturbed areas. Mitigation: • Performance of a Phase I archeological survey.
Visual Impacts	
Aesthetics	Effects: • Improved aesthetics via reforestation and revegetation efforts. • New buildings are architecturally compatible with other buildings in the historic district. • Temporary impact on the viewscape from surrounding areas because of construction activities. Mitigation: • No mitigation necessary.
Light Pollution	Effects: • Installation of additional lighting systems for new and renovated facilities and pedestrian areas. • Potential increase in light trespass because of increased use of large windows for natural lighting. • Potential minor temporary light trespass from supplemental lighting during construction activities. • Potential increase in glare in the vicinity of the campus because of sunlight reflected from solar panels. Mitigation: • Compliance with current design guidance and city requirements for all new exterior lighting systems. • Screening with tree plantings on the campus to intercept light trespass outside the campus boundary. • Use of lighting control systems and tinted windows to mitigate light trespass from interior lighting. • Conducting construction work during daylight hours. • Incorporation of proper siting and glare reduction measures for solar panels.

Table 1. Summary of Environmental Effects and Mitigation Measures

Resource	Proposed Action (Gaithersburg Campus Master Plan)
Noise Levels	
--	Effects: • Minor impact on overall operational noise levels because of new laboratory activities, air handling units (including at the proposed Wind/Fire Facility), exhaust fans, emergency generators, and chillers. • Potential increase in off-campus noise near Gate F because of the added presence of commercial vehicles. • Temporary increase in noise during construction activities. Mitigation: • Continued evaluation of whether additional design and landscaping measures would be necessary to mitigate noise from the proposed Wind/Fire Facility, new chillers, and screening facilities at Gate F. • Expansion of the forest buffer around the campus perimeter and installation of vegetative screening at Gate F. • Configuration of Gate F to reduce queuing and idling by commercial vehicles and other vehicles. • Limitation of construction activities to normal daytime working hours.