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PRELIMINARY CONSTRAINTS SUMMARY

ENHANCED USE LEASE FOR
POWER PLANT
AND
DATA CENTER

NAVAL SUPPORT FACILITY, INDIAN HEAD
INDIAN HEAD, MARYLAND

Naval Facilities Engineering Command Washington
Public Works Department
NSF Indian Head
3972 Ward Road, Suite 101
Indian Head, MD 20640-5157

July 2010

FOR OFFICAL USE ONLY

EXECUTIVE SUMMARY

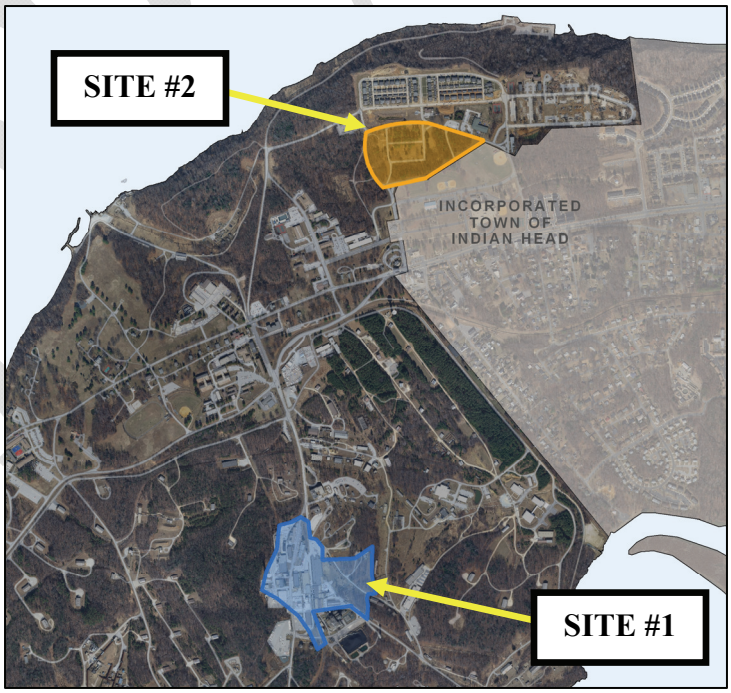
Under its Enhanced Use Leasing (EUL) program, the Department of the Navy is making available for lease non-excess real property at Naval Support Facility (NSF) Indian Head, located in Indian Head, Maryland. The property proposed for outleasing includes two sites (identified as Site #1 and Site #2 in the figure below) located at NSF Indian Head. The Navy is seeking a lessee to establish, operate and maintain a commercial-scale, natural gas-fired electrical power generation facility on Site #1, and to develop a compatible light industrial facility on Site #2, in exchange for cash and/or in-kind services.

This Preliminary Constraints Summary identifies potential constraints, impacts, and applicable permits and regulations associated with the following project elements:

- Power plant (Site #1);
- Light industrial facility (Site #2);
- Natural gas line;
- Power transmission lines;
- Facilities relocation; and
- U.S. Marine Corps Chemical Biological Incident Response Force (CBIRF) relocation.

The tables on the following two pages summarize the potentially significant constraints and potentially applicable permits associated with each project element.

The intent of this document is to identify and provide information about potential development constraints related to these properties, not to assign responsibility for actions. The contents of this document are in draft form and subject to change.



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Significant Constraints

Actions related to the NSF Indian Head EUL venture have the potential to impact a variety of local and regional resources. The table below lists resource constraints that this study identified as having a potentially significant impact on one or more of the project elements.

Project Element	Constraint	
Power plant	– Existing infrastructure limitations – Transmission of power from new plant to grid – Plant size and step-down facility – Land use – Quality of life and property values – Permit to construct (PTC) application – Permit to operate application – National Ambient Air Quality Standards (NAAQS) – National Emission Standards of Hazardous Air Pollutants (NESHAPs)	– New Source Performance Standards (NSPS) – Explosives decontamination – Reoccurring greenhouse gas (GHG) emissions – Surface waters – Stormwater – Coastal Zone Management – Groundwater – Archaeological resources – Architectural resources – Explosives site approval – Improvements within IR Site 24 – Soil contamination
Light industrial facility	– Aboveground utilities – Underground utilities – Surface waters	– Stormwater – Coastal Zone Management
Natural gas line	– Gas line route / pipeline location – Land use and future growth – Current land use and zoning – Surface waters – Floodplains	– Archeological resources – Vegetation removal – Active bald eagle nest – Soil contamination
Power transmission and distribution lines	– New transmission lines – Vegetation removal – Transmission line location – Land use and future growth – Residential and educational land uses – Private property and rights of way – Recreational resources	– Surface waters – Stormwater – Coastal Zone Management – Floodplains – Archeological resources – Bald eagles – Vegetation clearing – Visual impacts
Facilities relocation (P202)	– Demolition (historic resources) – Stormwater	– Architectural resources – Site location
CBIRF relocation	– Stormwater – Coastal Zone Management	– Archeological resources – Explosives site approval

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Applicable Permits

Actions related to the NSF Indian Head EUL venture are subject to all applicable local, state, and federal permits and regulations. This study identified the permits in the table below, which may be obtained, referenced, or modified for development of the EUL properties.

#	Applicable Permit	Regulating Agency
1	Construction Permits (various)	Indian Head Division, Naval Surface Warfare Center, Naval Support Facility Indian Head, Town of Indian Head, Charles County
2	District Permit	Maryland State Highway Administration
3	Transmission Line Permit	Maryland Public Service Commission
4	Permit to Construct	Maryland Department of the Environment
5	Permit to Operate	Maryland Department of the Environment
6	Certification of Public Convenience and Necessity	Maryland Public Service Commission
7	Industrial Discharge Certificate	Maryland Department of the Environment and NSF Indian Head
8	National Pollutant Discharge Elimination System (NPDES) Permit	United States Environmental Protection Agency
9	Joint Federal/State Application for Alteration of a Waterway Permit	Maryland Department of the Environment
10	Tidal and/or Non-tidal Wetlands Permit	Maryland Department of the Environment
11	Coastal Zone Consistency Determination	Maryland Department of the Environment
12	Floodplain Permit	Baltimore District of the United States Army Corps of Engineers
13	Eagle Nest Take Permit	Unites States Fish and Wildlife Service
14	Noise Permits	Town of Indian Head, Charles County
15	Erosion and Sediment Control Plan	Maryland Department of the Environment
16	Stormwater Management Plan	Maryland Department of the Environment
17	Sanitary Sewer Permit	Town of Indian Head
18	Controlled Hazardous Substance Permit	Maryland Solid Waste Program
19	Controlled Hazardous Substance Permit	Maryland Department of the Environment

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Preliminary Constraints Summary
Enhanced Use Lease for
Power Plant and Data Center

Naval Support Facility, Indian Head
Indian Head, Maryland

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Media Area #1: Utilities and Infrastructure

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Existing infrastructure limitations	A new power plant at NSF Indian Head would require the relocation/re-routing of existing utilities (electric, telephone/fiber optic, compressed air, steam, sanitary sewer, stormwater, potable water, river water, and industrial lines). All associated NSWC construction permits, NEPA documentation, and work approval processing by NSF Indian Head personnel would be required. A new power plant would require new utilities (electrical, telephone/fiber optic, compressed air, steam, sanitary sewer, stormwater, potable water, and river water lines). All associated NSWC permits and work approvals would be required. The Navy has the ability to provide utility services (including electricity, water, sewage, and wastewater) to the new power plant. If utility services are obtained from other providers, then separate utility connections and agreements of operation would be required.	Significant Impact: Many existing facilities and utilities would need to be relocated/re-routed. New underground utilities would require excavation. Depending on the re-use of existing utilities, re-routing and new utility installation could be significant.		Federal Energy Regulatory Commission (FERC). 2010a Jenkins, D. 2010 Bradshaw, H. 2010
	Transmission of power from new plant to grid	Depending on the capacity of the new power plant, new high voltage lines may be required to transmit higher voltage electricity from the plant to the grid. A new plant of up to approximately 30 MW most likely would not require upgrades to the existing transmission lines. A plant generating between 30 MW and up to approximately 600 MW may require larger and possibly higher utility poles with crossties. The footprint associated with new transmission lines and poles along the existing route would not significantly increase. A plant approaching 600 MW may require new high-voltage lines, rerouting, and expanded footprints, the impacts of which would require further evaluation. Installation of high voltage lines may require construction of new poles or renovation of existing poles and other infrastructure. Refer to the Socioeconomic Issues and Terrestrial and Aquatic Habitat sections for other impacts. Construction of new lines and associated infrastructure would require NSWC work permits for work taking place within NSF Indian Head. Approval for construction outside of NSF Indian Head would be required by Charles County, the Town of Indian Head, and other state or federal entities, depending on the size and extent of the construction activities.	Minimal to Significant Impact: Transmission line placement and construction would have a significant impact on utility infrastructure within NSF Indian Head and potentially the surrounding community (Charles County/Town of Indian Head). If new transmission lines are not required, the impact associated with upgrades would be minimal.		

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Media Area #1: Utilities and Infrastructure

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant (*Continued*)	Plant size and step-down facility for power distribution within NSF Indian Head	A step-down facility may be required for power distribution from the new plant to NSF Indian Head's distribution network, which has an existing capacity of 13,200 Volts. This step-down could potentially be carried out at the Mason Springs substation or at a new facility within NSF Indian Head.	Minimal to Significant Impact: A new step-down facility would require additional planning and construction that could further impact existing utilities and infrastructure. If the existing substation at Mason Springs can be used as a step-down facility, impacts would likely be minimal.		
	Physical and operational site constraints	The proposed power plant site has some limitations, including surrounding Explosives Safety Quantity Distance (ESQD) arcs, and other existing facilities in the vicinity. These constraints are discussed further in the Explosive Safety and Land Use sections.	Minimal Impact: ESQD and existing facility constraints would have to be considered during planning.		
Natural Gas Line (on and off NSF Indian Head)	Gas line route	A natural gas line would be required to supply the new power plant. The natural gas would likely be supplied from the closest source point, which is currently at Bryans Road, approximately 6 miles northeast of the Town of Indian Head. The route for a natural gas supply line would need to be identified and planned for based on constraint analysis (as discussed further in the Land Use section). NSWC work permits for line installation would be required within NSF Indian Head. Existing utility routes, existing operations, land use and socioeconomic constraints would need to be evaluated, as discussed further in the Land Use and Socioeconomic sections. Placement, permitting, and connection issues related to the natural gas line would be coordinated with the natural gas supplier, Charles County, the Town of Indian Head, and State of Maryland for installation outside of NSF Indian Head.	Significant Impact: Some possible impacts of gas line installation are traffic disturbance during installation and public opposition.	FERC regulates transmission of natural gas Maryland Department of Natural Resources (DNR)	Tran, O. 2010 Federal Energy Regulatory Commission. 2010b

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Media Area #1: Utilities and Infrastructure

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Natural Gas Line (on and off NSF Indian Head) *(Continued)*	Line size requirements and Excavation	The size of the required line is unknown at this time. Excavation requirements would depend on the size of the gas line supplying the plant.	Minimal Impact: Line size would depend on the size of the power plant. Excavation is not expected to vary significantly due to the size of the gas supply line.		
Power Transmission Lines (on and off NSF Indian Head)	New transmission lines	As discussed above, a new commercial-size power plant may require new high voltage transmission lines to transmit power from the new plant to the grid. The existing transmission lines serving NSF Indian Head may not be capable of transmitting power from a plant with a generating capacity greater than 30MW. New transmission lines would require NSWC work permits for construction, NEPA documentation, work approval processing by NSF Indian Head personnel, and land clearing. New transmission lines outside of NSF Indian Head would require coordination with the Town of Indian Head and Charles County for permits and construction approval. These constraints are discussed further in the Land Use and Socioeconomic sections.	Minimal to Significant Impact: New transmission lines would be costly, require public approval, and may impact wildlife and vegetation. If new transmission lines are not required, some pole straightening and other upgrades may be required.	FERC regulates transmission of electricity OSHA 1910.269 MD DNR	Bradshaw, H. 2010 Jenkins, D. 2010 NSF Indian Head GIS Federal Energy Regulatory Commission. 2010a
	Clearing requirements	Vegetation removal would be required to meet clearing requirements. Green space mitigation and replanting may also be required. These constraints are discussed further in the Terrestrial and Aquatic Habitat section.	Minimal to Significant Impact: The impact to vegetation and other resources could be minimal to significant, depending on the selected route.		

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Media Area #1: Utilities and Infrastructure

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Distribution Lines (on NSF Indian Head) *(Continued)*	New distribution lines	Additions to the distribution network at NSF Indian Head may be necessary to serve the new light industrial facility, Facilities Relocation (P202), and CBIRF Relocation sites. Requirements would include permits for new construction, new utility infrastructure, and work approvals by NSF Indian Head.	Minimal Impact: Impact should be limited to power pole installation, new distribution lines and other associated construction.	FERC regulates transmission of electricity MD Dept. of Natural Resources	Federal Energy Regulatory Commission. 2010a
Light Industrial Facility	Aboveground utilities	Current aboveground utilities at the site include secondary circuit electric lines. If the light industrial facility has higher electrical requirements than the infrastructure currently in place, new higher voltage lines may have to be run from the new power plant. Utility poles, distribution lines, and other related infrastructure would be required at the new facility. Depending on the type of facility, other aboveground utilities may be required (e.g. steam, compressed air). Coordination of all utilities and support services used in the operation and management of the leased property would be defined in the lease contract.	Minimal to Significant Impact: Level of impact would depend on electrical power requirements and specific utility needs of this facility.		NSF Indian Head GIS
	Underground utilities	Current underground utilities at the site include sanitary sewer, stormwater, potable water, and river water. A new light industrial facility would require underground utilities including, at a minimum: water, sewer, and stormwater lines. Other utilities may be required depending on specific facility requirements. All associated NSWC permits and work approvals would be required.	Minimal to Significant Impact: Level of impact would depend on excavation, re-use of existing lines, and facility requirements.		
Facilities Relocation (P202)	Aboveground utilities	Current aboveground utilities at the site include secondary circuit electric, telephone/fiber optic, and steam lines. Some new utility poles, distribution lines, and other related infrastructure would be required at the new facility.	Minimal Impact		NSF Indian Head GIS
	Underground utilities	Current underground utilities at the site include sanitary sewer, stormwater, potable water, and river water. The Facilities Relocation (P202) site would require new underground utilities including: water, sewer, and stormwater lines which may be tied into existing utilities. All associated NSWC permits and work approvals would be required.	Minimal Impact		

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Media Area #1: Utilities and Infrastructure

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
CBIRF Relocation	Aboveground utilities	Current aboveground utilities at the site include secondary circuit electric to nearby buildings. Utility poles, distribution lines, and other related infrastructure would be required at the new facility. All associated NSWC permits and work approvals would be required.	Minimal Impact		NSF Indian Head GIS
	Underground utilities	Current underground utilities at the site include river water, potable water, and sanitary sewer lines nearby. The CBIRF Relocation site would require new underground utilities including: water, sewer, and stormwater lines. All associated NSWC permits and work approvals would be required.	Minimal Impact		

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Media Area #2: Facilities and Land Use

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Demolition	In order to clear the site of the proposed power plant, a total of 33 buildings would need to be demolished. Current buildings would need to be inspected for asbestos-containing material (ACM), lead-based paint (LBP), polychlorinated biphenyls (PCBs), and other potential sources of contamination. Demolition and remediation plans would be necessary, in addition to NEPA evaluation to determine if any historical resources exist on-site. Existing personnel would be relocated to the proposed Facilities Relocation (P202) and CBIRF Relocation sites.	Minimal Impact: Demolition can be completed with minimum disruption and the chance of historic resources restrictions is minimal.	National Environmental Policy Act (NEPA) Resource Conservation and Recovery Act (RCRA) Toxic Substances Control Act (TSCA) State of Maryland regulations Local regulations – Charles County, Town of Indian Head	Naval Support Activity South Potomac. 2010b
	Hazardous materials	Several buildings on-site generate, collect, or store hazardous material. All regulations apply for actions involving removal, transporting, and disposal of hazardous material, including work plan development, state/federal agency notification, execution of abatement, waste management, and manifest documentation in accordance with current environmental and safety procedures. The site should be surveyed prior to demolition to determine potential contamination.	Minimal Impact		
	Land use	The proposed site is used as an industrial area and is zoned for future industrial use. However, the power plant is expected to generate excess electricity that would be transmitted off of NSF Indian Head to the power grid. Surrounding land areas in proximity to NSF Indian Head and the power plant may undergo land use and zoning changes to reap the benefits of increased local power supply. Increased development, especially for energy-intensive industrial uses, can be expected.	Minimal to Significant Impact: Level of impact would depend on size of power plant and demand by the industry.		

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Media Area #2: Facilities and Land Use

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Natural Gas Line (on and off NSF Indian Head)	Pipeline location	To provide fuel to the power plant, a natural gas pipeline is needed to deliver a reliable and constant flow of natural gas. A utility corridor along MD Route 210 from the Bryans Road area to NSF Indian Head is the most likely location. If placed along this corridor, the pipeline would run adjacent to several land uses, including town center mixed use, residential, institutional/public, and public open space. Impacts would vary depending on whether the pipeline is above or underground, with impacts to adjacent land uses expected to be much greater if aboveground. To construct a natural gas pipeline, basic requirements would include a utility designation study to determine what utilities are present in the corridor, a District Permit from the Maryland State Highway Administration to access the corridor, and obtaining limited property rights in lands privately held, if applicable.	Minimal to Significant Impact: Level of impact would depend on location of the pipeline.	Maryland Department of Transportation (MDOT) State Highway Access Manual	Georgia Power. 2010 Maryland Department of Transportation. 2010 Town of Indian Head. 2009 Charles County Planning Commission. 2006a
	Land use and growth	In addition to where and how the natural gas pipeline is built, the presence of natural gas would affect land use and growth in the Town of Indian Head and Charles County. The likely location of the natural gas pipeline would allow the Town of Indian Head and Charles County to easily take advantage of its presence and associated benefits. Nearby land uses may be approved for greater densities and growth would likely follow the pipeline.	No Impact to Significant Impact: Level of impact would depend on the availability of natural gas to consumers and demand.		

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Media Area #2: Facilities and Land Use

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Transmission Lines (on and off NSF Indian Head)	Transmission line location	To supply power to the grid, high voltage transmission lines would be necessary. These lines would transmit power from the power plant to a substation, where the power would be further distributed. Existing transmission lines from NSF Indian Head follow the Indian Head Rail Trail until they reach a right-of-way outside of the Town of Indian Head. The existing power plant generates about 23 MW, and for a new power plant generating up to 30 MW, there would likely be little or no upgrade necessary to the existing transmission lines and the current right-of-way would remain viable. From 30 MW to approximately 600 MW, a larger and possibly taller utility pole (either wood or aluminum) with crossties may be required, but the transmission line footprint would not expand and current right-of-way would remain viable. For power plants approaching 600 MW, new transmission lines with an expanded footprint and lattice style construction may be necessary. If this is the case, rerouting the transmission lines or expanding the existing right-of-way may have to be evaluated. Associated permits for transmission lines from state and federal authorities, including Federal Energy Regulatory Commission (FERC), would be required.	Minimal to Significant Impact: Level of impact would depend on location of transmission lines.	Code of Charles County, Maryland - Zoning Regulations Town of Indian Head Draft 2009 Comprehensive Plan (Includes zoning regulations)	MD Energy Administration. 2010 Jenkins, D. 2010 FERC. 2010a Town of Indian Head. 2009 Charles County Planning Commission. 2006a Georgia Power. 2010
	Land use and growth	Existing transmission lines are unobtrusive and run adjacent to single family residential and public/institutional zoned areas in the Town of Indian Head and residential and rural conservation zones in Charles County. Improvements that do not expand the footprint of the existing transmission lines, such as taller poles or added cross ties, would have minimal impact, if any, on adjacent land uses. New transmission lines may need to be installed to support a new power plant with a capacity approaching 600 MW. These lines would have a larger footprint and require expansion beyond the existing rights of way. Acquiring additional land or selecting a new path to route the transmission lines would likely involve eminent domain and/or significant development constraints on land owners whose property is part of or adjacent to the right-of-way.	Minimal to Significant Impact: Level of impact would depend on size of transmission lines.		

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Media Area #2: Facilities and Land Use

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Distribution Lines	Land use	A new distribution line through NSF Indian Head serving the light industrial facility could impact land use between the power plant and new light industrial facility. Depending on the power needs of the light industrial facility, the new line could be a high-voltage transmission line instead of the distribution lines that currently service NSF Indian Head. Regardless, affected land uses include: office and administrative, inert storage, inert RDT&E, and community support. The extent of the impact to these land uses would depend on the route, type (above or below ground), and size of the new distribution line. There would be minimal or no impact to other land uses on NSF Indian Head if existing power distribution lines are either left unchanged or replaced in-kind and along the current distribution routes.	Minimal Impact: Level of impact would depend on location and type of distribution line (above or underground)		Naval Support Activity South Potomac. 2010b
Light Industrial Facility	Land use and growth	The proposed site for the light industrial facility is currently zoned for Office and Administrative use, but has also been identified as an Administrative Development Area within NSF Indian Head. The site borders the Town of Indian Head on two sides, with adjacent land used as open space and an elementary school located nearby. Special attention should be given to selecting an appropriate use for the light industrial facility to ensure compatible adjacent land uses.	Minimal Impact		Naval Support Activity South Potomac. 2010b Naval Facilities Engineering Command (NAVFAC). 2010 Town of Indian Head. 2009

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Media Area #2: Facilities and Land Use

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Facilities Relocation (P202)	Demolition	A new site has been identified to relocate the buildings found on the site of the proposed power plant. Buildings currently at the Facilities Relocation (P202) site would need to be demolished. Prior to demolition, these buildings would need to be inspected for ACM, LBP, PCBs, and other potential sources of contamination. Demolition and remediation plans would be necessary, in addition to a NEPA evaluation to determine if any historical resources exist on-site. Existing personnel would be relocated to the proposed Facilities Relocation (P202) site.	Minimal to Significant Impact: Demolition can be completed with minimum disruption, but the chance of historic resources restrictions is high.	National Environmental Policy Act (NEPA) National Historic Preservation Act (NHPA)	MILCON P202 Naval Support Activity South Potomac. 2010b OPNAVINST
	Land use	The relocation site is zoned for Office and Administrative use and classified as an Administrative Development Area. However, existing development, including historic and residential uses, and open green space surround it. Due to the industrial nature of the facilities, development should strive to minimize the impact on these adjacent land uses. As mentioned, the site is adjacent to open space and encroaches on the abandoned golf course. There is no established plan for the reuse of golf course, but NSF Indian Head residents consider it a desired source of open green space. Development should strive to minimize the impact on this resource.	Minimal Impact		
	Facility size	The facilities selected to be relocated to the Facilities Relocation (P202) area were sized with an assumption that administrative space is replaced at 100%, and shop space is replaced at 60% of its original square footage. If these assumptions are not followed, the proposed site configuration may change and the size of each building may be increased or decreased. If additional space is required, greater impacts from development can be expected.	Minimal to Significant Impact: Level of impact would depend on space assumption accuracy.		
CBIRF Relocation	Land use	The CBIRF Relocation site is part of the larger 14-acre CBIRF Training Area, part of which would be lost if CBIRF relocates to the site. Despite this, the identified relocation site is consistent with proposed future land uses at NSF Indian Head. In addition, the CBRIF Relocation site is adjacent to Explosive Safety Quantity Distance (ESQD) arcs. If building footprints and site layout are expanded to encroach on the ESQD arcs, a site approval would be required and facilities would need to incorporate safety measures.	Minimal to Significant Impact	NAVSEA OP 5	Naval Support Activity South Potomac. 2010b

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Media Area #3: Socioeconomic Issues

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Transmission Lines (on and off NSF Indian Head)	Residential and educational land uses	The Town of Indian Head has above-average levels of minority and low-income households compared to County and State averages. Impacts to quality of life, property values, nearby recreational areas, and General Smallwood Elementary School need to be evaluated for environmental justice concerns as part of the NEPA documentation and overall project planning.	Significant Impact: Potential environmental justice issues.	Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994) Code of Charles County, Maryland Zoning Regulations Town of Indian Head 2009 Draft Comprehensive Plan (Includes zoning regulations)	American Medical Association. 1994 American Physical Society. 2005 Charles County, Maryland. 2008 Charles County Planning Commission. 2001 Charles County Planning Commission. 2006a Charles County Planning Commission. 2006b Clinton. 1994 U.S. Department of Commerce. 2000
	Private property and rights of way	Property values are generally lower near high-voltage transmission lines due to disrupted views and perceived health impacts. Thus, the installation of new transmission lines could negatively impact property values in the Town and County. The Town of Indian Head, Charles County, the State of Maryland, Southern Maryland Electric Cooperative (SMECO), the Federal Energy Regulatory Commission, and potentially other entities should be consulted to establish rights of way and address personal property issues related to the new transmission lines.	Significant Impact: Potentially lower property values for residents near the utility lines.		
	Recreation	The path of the transmission lines could impact open space and recreational areas in the Town of Indian Head. Nearby recreational areas include the Mattawoman Creek, Potomac River, and Indian Head Town Green. General Smallwood State Park is on the other side of the Mattawoman Creek from NSF Indian Head and the Town of Indian Head. Prior to impacting any of these resources, SMECO, Charles County, and the Town of Indian Head should be consulted to address any impacts to recreational resources.	Minimal to Significant Impact: Extent of the impact depends on the route chosen and recreational resources affected.		

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Media Area #3: Socioeconomic Issues

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Transmission Lines (on and off NSF Indian Head) (*Continued*)	Future development and growth	In general, providing additional infrastructure capacity and utilities services to an area results in higher levels of future development and more intense land use (i.e. "development follows the pipe"). Depending on the path of the transmission lines, immediate impacts could include rezoning and new utility corridors, which could impact nearby land uses. Long term, the addition of new electricity distribution lines and capacity could increase the likelihood for future zoning changes that would accommodate increased levels of development. Because the power plant would contribute electricity to the local grid, it could increase the likelihood for higher-intensity zoning and higher levels of growth in the surrounding community. These issues would be directly addressed many years in the future, as Charles County and the Town of Indian Head revise their development planning documentation and zoning laws.	Minimal to Significant Impact: Extent of impact depends on the future development, zoning, and land use decisions of the Town of Indian Head and Charles County, which are many years in the future and beyond the scope of this study.		Department of Defense. 1995 Maryland Mapping Resource Guide. 2004 National Institute of Environmental Health Sciences. 2002 Naval Support Activity South Potomac. 2010b Town of Indian Head. 2009 World Health Organization. 2005 World Health Organization. 2007
	Land use and zoning	The chosen route of the transmission lines is likely to impact land use and zoning in the Town of Indian Head and Charles County. A variety of land uses may be cleared or otherwise impacted by the new transmission lines. The Charles County General Zoning Map shows primarily residential and rural conservation zones in the areas around the Town of Indian Head. The Indian Head Town Plan includes residential, mixed use, public/institutional, and open space zoning districts.	Minimal Impact: Extent of the impact depends on the route chosen and extent of disturbance.		
	Public health	The public may have concerns regarding negative health effects caused by close proximity to high-voltage power lines (including increased risk of childhood leukemia). Although most studies indicate no health risks associated with living near power transmission lines, this topic may be addressed during public meetings and in the required environmental documentation. (For additional information, see the *Electromagnetic Radiation and Health* article listed under References.)	No Impact: Most studies and government policies indicate no associated health risks.		

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Media Area #3: Socioeconomic Issues

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Quality of life and property values	If the new plant is significantly larger than the current plant or has additional environmental impacts, then it could negatively impact quality of life for residents and personnel both on and off NSF Indian Head. Potential direct impacts include air quality, water quality, noise, transportation, and views. These constraints are discussed further in the Air Quality, Water Requirements and Source, Noise, Transportation, and Visual Impacts Sections. Cumulatively, these impacts could result in reduced quality of life for NSF Indian Head employees; NSF Indian Head residents; residents in the Town of Indian Head; users of nearby recreational areas (Town Green, Potomac River, Mattawoman Creek, General Smallwood State Park, etc.); and children attending General Smallwood Elementary School. A secondary result could include reduced property values in the Town of Indian Head and other nearby areas. In addition, the Town has below-average household income and a higher-than-average minority population compared to Charles County and the State of Maryland, which also raise environmental justice concerns associated with these impacts.	Minimal to Significant Impact: Extent of impact depends on the plant size and other specifications. If the size (height) and/or other environmental impacts of the proposed plant are larger than those of the current plant, then potential negative impacts to quality of life and property values are possible, which could raise environmental justice concerns. Minimal impacts are expected if the physical size and environmental impacts of the new plant are similar to those of the existing plant.	Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994) Code of Charles County, Maryland - Zoning Regulations Town of Indian Head 2009 Draft Comprehensive Plan (Includes zoning regulations)	Charles County Planning Commission. 2006a Charles County, Maryland. 2008 Clinton. 1994 U.S. Department of Commerce. 2000 Department of Defense. 1995 Maryland Mapping Resource Guide. 2004 Naval Support Activity South Potomac. 2010b Town of Indian Head. 2009
	Future development, land use, and zoning	The presence of the new plant and associated electricity supply could increase the possibility for growth in energy-intensive land uses in the Town and County by making the area more attractive to certain industries.	Minimal Impact: Potential long-term increase in energy-intensive industries and land uses.		

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Media Area #3: Socioeconomic Issues

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant *(Continued)*	Local economy	Because the new power plant would replace a similar existing facility, no permanent change in the number of jobs associated with the facility is expected. Temporary jobs and associated economic benefits (e.g. increased restaurant sales) are expected to result from construction and demolition activities.	Minimal Impact: No net increase in local jobs and associated economic benefits. Temporary economic benefits may result from construction activities.		
Natural Gas Line (on and off NSF Indian Head)	Current zoning and land use	A potential route for the natural gas line is via an existing utility corridor along MD Route 210. The new line would pass adjacent to open spaces, commercial, residential, and institutional land uses, including, General Smallwood Elementary School. If the new natural gas line is buried and falls within existing utility rights of way, then the short-term impacts on adjacent land uses are expected to be minimal. If the new natural gas line is above ground or located outside of existing utility corridors, then the impacts to adjacent land uses could be significant.	Minimal to Significant Impact: Extent of impacts depends on chosen path and size of the natural gas line.	Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994) Code of Charles County, Maryland - Zoning Regulations Town of Indian Head 2009 Draft Comprehensive Plan (Includes zoning regulations)	Charles County, Maryland. 2008 Charles County Planning Commission. 2006a Clinton. 1994 Department of Commerce. 2000 Department of Defense. 1995 Maryland Mapping Resource Guide. 2004 Naval Support Activity South Potomac. 2010b Town of Indian Head. 2009
	Future development, land use, and zoning	In general, providing additional infrastructure capacity and utilities services to an area results in higher levels of future development and more intense land use (i.e., "development follows the pipe"). Thus, bringing new natural gas services and capacity into the area could increase the likelihood for future land use and zoning changes towards increased development and more intense land use. Significant long-term changes in land use could prompt personal property and environmental justice concerns.	Minimal to Significant Impact: Extent of impact depends on the future development, zoning, and land use decisions of the Town and County.		

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Media Area #3: Socioeconomic Issues

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Distribution Lines (on NSF Indian Head)	Land use at NSF Indian Head	A new power distribution line at NSF Indian Head serving the light industrial facility could impact land uses located between the new power plant and the new light industrial facility. In addition, the new power distribution line could be a high-voltage transmission line instead of the typical distribution lines that are currently on NSF Indian Head. The land uses that could be impacted include: office and administrative, inert storage, inert RDT&E, and community support. The extent of the impact to these land uses would depend on the route, type (above or below ground), and size of the new distribution line. There would be minimal or no impact to other land uses at NSF Indian Head if existing power distribution lines are either left unchanged or replaced in-kind and along the current distribution routes.	Minimal Impact: The extent of impact would depend on the route and type (above or below ground) of distribution line.		Naval Support Activity South Potomac. 2010b
Light Industrial Facility	Community resources	Due to its location along NSF Indian Head's boundary with the Town, the light industrial facility could impact land and community resources in the Town, including the adjacent Town Green (open and recreational space) and General Smallwood Elementary School. The potential impacts on these resources and the value of those resources to the community is expected to be minimal; however, the extent of the impacts would depend on the size and design of the new facility as well as the specific functions being conducted. These constraints are discussed further in the Noise, Transportation, and Visual Impacts sections.	Minimal Impact: The impact on the Town Green and General Smallwood Elementary School are expected to be minimal, although the extent of the impacts would depend on the facility size, function, and design.		Charles County Planning Commission. 2010 Naval Support Activity South Potomac. 2008b Naval Support Activity South Potomac. 2010b Town of Indian Head. 2009
	Local economy	The new light industrial facility would contribute to the local economy by adding jobs and increasing sales at local businesses. However, because the number of new personnel associated with the new facility is expected to be low and the support services associated with the new facility are expected to be few, the significance of the local economic impacts is expected to be minimal. Additional temporary jobs and associated economic benefits (e.g. restaurant sales) are expected during construction activities.	Minimal Impact: Small number of additional jobs and associated local economic benefits. Temporary economic benefits from construction activities.		

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Media Area #3: Socioeconomic Issues

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Facilities Relocation (P202)	NSF Indian Head residential and open space	The Facilities Relocation (P202) site is located in an existing open space (former golf course) and adjacent to housing. The project should be designed to minimize impacts to the housing area and other nearby open space. The Facilities Relocation (P202) site is consistent with the NSF Indian Head Master Plan. Note: The relocation of facilities to this site would have no impact to areas outside of NSF Indian Head.	Minimal Impact: New construction would reduce the amount of open space. Design should minimize impacts to the adjacent residential area.		Naval Support Activity South Potomac. 2008b Naval Support Activity South Potomac 2010b
CBIRF Relocation	NSF Indian Head residential and open space	The CBIRF Relocation site is located in an existing open space (former golf course), near the CBIRF barracks, and near a family housing area. The project should be designed to minimize impacts to these housing areas. The CBIRF Relocation site is consistent with the NSF Indian Head Master Plan. Note: The relocation of facilities to this site would have no impact to areas outside of NSF Indian Head.	Minimal Impact: New construction would reduce the amount of open space and be located near existing CBIRF living quarters. Design should minimize impacts to nearby residential and historic areas.		Naval Support Activity South Potomac. 2008b Naval Support Activity South Potomac. 2010b

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Media Area #4: Air Quality

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Permit to construct (PTC) application	The Clean Air Act (CAA) requires that any owner or operator proposing a new source (i.e., a new major stationary source of criteria air pollutants or performing major modifications to an existing stationary source of criteria pollutants) enter into the New Source Review (NSR) program. Under the NSR program the owner or operator proposing a new source (i.e., a new major stationary source of criteria air pollutants or performing major modifications to an existing stationary source of criteria pollutants) is required prior to construction or modification of buildings, structures, and installations that emit, or may emit pollutants into the air apply for an air quality PTC. The submitted PTC must meet certain preconstruction review requirements and mitigation. A PTC and approval from Maryland Department of the Environment (MDE) is expected to be required before construction of the power plant. If the new power plant receives a certificate of public convenience and necessity (CPCN), it would be eligible for exemption from PTC requirements; however, the exemption is unlikely to be granted.	Significant Impact	The CAA requires that federal agencies comply with federal, state and local air quality requirements in the same manner as any governmental entity per 42 U.S.C. 7418. The NSR is promulgated under 40 Code of Federal Regulations (CFR) 51 Subparts I and P, and 40 CFR 52.10. Maryland requires that stationary sources of emissions must comply with all applicable air pollution control regulations and permit requirements specified in Code of Maryland Regulations (COMAR) 26.11, *Air Quality* The NSR program is also implemented in Maryland under COMAR 26.11.02, *Permits, Approvals, and Registration*.	Department of the Navy. 2009 Naval Support Activity South Potomac. 2010b U.S. Environmental Protection Agency. 2009a Code of Maryland Regulations. 2010

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Media Area #4: Air Quality

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant (*Continued*)	Permit to construct (PTC) application *(Continued)*	The new power plant would likely have to obtain a nonattainment NSR PTC. This permit applies to new major sources or major modifications at existing sources for pollutants where the area the source is located is not in attainment with the National Ambient Air Quality Standards (NAAQS). Nonattainment NSR requirements are customized for the nonattainment area. All nonattainment NSR programs have to require the installation of the lowest achievable emission rate (LAER), emission offsets, and an opportunity for public involvement.	Significant Impact	Maryland's list of sources exempt from PTC requirements are listed under COMAR 26.11.02.10, *Sources Exempt from Permits to Construct and Approvals*.	
	Permit to operate application	After construction is complete, federal and state regulations require that any owner or operator apply for an air quality permit to operate in order to conduct routine operation of a stationary source that emits, or may emit pollutants into the air. Title V of the CAA establishes an operating permit program that requires all air quality requirements for a source to be combined into one comprehensive permit document. NSF Indian Head requires a Title V operating permit because it meets the definition of a major source (i.e., has the potential to emit over 100 tons per year of a criteria pollutant). Generally, a newly constructed stationary source is incorporated into the Title V permit during the permit renewal process (NSF Indian Head applies for a Title V permit renewal every five years). However, due to the size of the proposed power plant, it would likely need to be incorporated into the Title V permit before the close of the five-year period.		Major stationary sources are regulated under Title V of the CAA. Maryland implements Title V permitting requirements under COMAR 26.11.03, *Permits, Approvals, and Registration – Title V Permits*.	Naval Support Activity South Potomac. 2010b Naval Support Activity South Potomac. 2008b

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Media Area #4: Air Quality

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant *(Continued)*	National Ambient Air Quality Standards (NAAQS)	The CAA divides the United States into geographic areas called air quality control regions (AQCR) that are monitored to meet the health–based NAAQS for criteria pollutants. If the AQCR meets the standards, the region is designated in attainment. If the AQCR does not meet the standards, the region is designated in nonattainment for the exceeding pollutant. However, if the AQCR was once designated in nonattainment but is reclassified as in attainment, the region is called a maintenance area.	Significant Impact	EPA has established the NAAQS for the criteria pollutants under the authority of Title I, Part A, Section 109 of the CAA per 42 U.S.C. 7409.	Department of the Navy. 2009 Naval Support Activity South Potomac. 2010b U.S. Environmental Protection Agency. 2009b
		Nonattainment AQCRs are responsible for submitting a State Implementation Plan (SIP), which specifies the manner in which NAAQS would be achieved and maintained. Charles County is located in a nonattainment area for particulate matter $(PM)_{2.5}$ and a moderate nonattainment area for ozone. Therefore, a General Conformity Rule (GCR) applicability analysis is required for any Navy actions at NSF Indian Head that result in emissions of $PM_{2.5}$ and ozone.		Designation of areas for air quality planning purposes is codified in 40 CFR Part 81. Federal GCR is codified in 40 CFR Parts 51 and 93. Maryland implements GCR requirements under COMAR 26.11.26, *Conformity*.	U.S. Environmental Protection Agency. 2010a Code of Federal Regulations. 2010a

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Media Area #4: Air Quality

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant *(Continued)*	National Ambient Air Quality Standards (NAAQS) (*Continued*)	Under the GCR, federal agencies must work with state, tribal, and local governments in a nonattainment or maintenance area to ensure that federal actions conform to the air quality plans established in the applicable state or tribal implementation plan. Therefore, a GCR applicability analysis would have to be conducted to determine if the new plant would result in increased concentrations of $PM_{2.5}$ and ozone. The new power plant may impact the designation of the AQCR by either increasing or decreasing the plant's emissions. The plant's emissions may increase concentrations of a criteria pollutant that is currently designated as in attainment. If so, the increased concentrations may exceed the NAAQS; therefore, designating the region in nonattainment for the specific pollutant. If a region is newly designated as nonattainment, the state is responsible for submitting a SIP within three years of the declared designation. The plant's emissions may also decrease concentrations of a criteria pollutant that is currently designated as nonattainment. If so, the decreased concentrations may comply with the NAAQS; therefore, the region would be designated a maintenance area.	Significant Impact		
	National Emission Standards of Hazardous Air Pollutants (NESHAPs)	The CAA regulates emissions of hazardous air pollutants (HAPs) through the NESHAPs. The technology-based standards establish maximum achievable control technology (MACT) standards for each source category. These MACT standards are based on the best control technologies that have been demonstrated within each source category, taking into account the cost of achieving emission reductions and any non-air-quality health and environmental impacts and energy requirements. Emissions from the power plant would likely be subject to the MACT standards.		HAPs are regulated under Title I, Part A, Section 112 of the CAA (42 U.S.C 7412). NESHAPs are promulgated under 40 CFR Parts 61 and 63.	Naval Support Activity South Potomac. 2008a Naval Support Activity South Potomac. 2010a U.S. Environmental Protection Agency. 2010b

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Media Area #4: Air Quality

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant *(Continued)*	New Source Performance Standards (NSPS)	The CAA requires that EPA develop technology-based standards of performance for new stationary sources of air emissions, known as NSPS. These standards are nationally uniform standards that apply to specific categories of stationary sources that are constructed, modified, or reconstructed after the standard is proposed. Regulated pollutants typically include one or more criteria pollutants but may include non-criteria pollutants that are known to be prevalent in a particular source category. Emissions from the power plant would likely be subject to the NSPS standards.	Significant Impact	NSPS are regulated under Title I, Part A, Section 111 of the CAA (40 U.S.C 7411). NSPS are promulgated under 40 CFR Part 60. Maryland implements its NSPS regulations under COMAR 26.11.06.12, *Control of NSPS Sources*.	Naval Support Activity South Potomac. 2008a Code of Federal Regulations. 2010b
	Maryland's toxic air pollutant (TAP) program	The CAA affords states the authority to adopt and enforce their own air emission standards for stationary sources, as long as the state standards are not less stringent than federal standards. In accordance with this policy, Maryland has implemented its own toxic air pollutant (TAP) program. Emissions from the power plant would likely be subject to the TAP regulations.	Minimal Impact	Maryland implements its TAP regulations under COMAR 26.11.15*, Toxic Air Pollutants*, and COMAR 26.11.16, *Procedures Related to Requirements for Toxic Air Pollutants*.	Naval Support Activity South Potomac. 2008a Maryland Department of the Environment. 2010a
	Explosives decontamination	All materials that have come into direct contact with energetics or explosives must be decontaminated prior to sending the materials for recycle or disposal. These explosives wastes and explosives-contaminated materials are treated by high-pressure hot water washing, chemical treatment, or thermal decontamination, depending on the type of material and level of contamination. If the buildings being demolished have the potential to contain explosives contamination, the most likely method of decontamination would be to use a high-pressure, hot water power wash.	Minimal to Significant Impact: Extent of impact depends on the levels of explosives contamination.		Department of the Navy. 2009

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Media Area #4: Air Quality

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant *(Continued)*	Explosives decontamination (*Continued*)	Buildings with significant and reactive levels of explosives contamination would need to be thermally decontaminated (i.e., burned) in-place to remove the residue prior to demolition. If this has the potential to cause significant emissions, it must be performed in accordance with all applicable state and federal permit requirements and restrictions. In some cases, certain building components or equipment may exhibit explosives contamination that cannot be completely removed by the power wash method. If so, the building components or equipment must be thermally decontaminated at waste treatment site(s), depending on the relative size and composition of the equipment, and what sites are operational.			
	Transportation	Construction and demolition activities may result in temporary emissions of nitrogen oxides (NO_x), volatile organic compounds (VOC), carbon monoxide (CO), PM, and sulfur dioxide (SO_2) from heavy-duty construction vehicles (e.g., steel track loaders, excavators, pneumatic hammers, backhoes, cranes, and bulldozers) and privately-owned vehicles (POVs). These emissions must be below d*e minimis* levels in accordance with the GCR. *De minimis* levels are emission rates that cannot be exceeded by federal actions taking place in nonattainment and maintenance areas. These emissions would likely need to be evaluated in the GCR Applicability Analysis. Additional constraints related to transportation are discussed in the Transportation section.	Minimal Impact	Federal GCR is codified in 40 CFR Parts 51 and 93. Required emission rates are specified in 40 CFR 93.153(b).	Department of the Navy. 2009

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Media Area #4: Air Quality

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant *(Continued)*	Particulate matter (PM)	Construction and demolition activities may result in fugitive dust (i.e., PM) emissions that could have a temporary impact on local air quality. Reasonable precautions must be taken to prevent PM from becoming airborne. These precautions may include a number of air quality best management practices, which would limit fugitive dust impacts to temporary, minimal health, or environmental effects.	Minimal Impact: The quantity of dust emissions is proportional to the area of land where the activity is taking place, as well as the level of activity.	Maryland implements PM emission best management practices under COMAR 26.11.06.03D, *Particulate Matter from Materials Handling and Construction*.	Department of the Navy. 2009
	Asbestos decontamination	If buildings proposed for demolition have regulated asbestos-containing materials, all asbestos air quality hazards must be removed from these buildings prior to demolition. All asbestos-containing items must be handled and disposed of off site in accordance with Toxic Substances Control Act (TSCA) labeling and disposal procedures.	Minimal Impact	Demolition of asbestos-containing buildings would be performed in accordance with 40 CFR Part 61 Subpart M. Maryland implements the control of asbestos under COMAR 26.11.21, *Control of Asbestos*.	Department of the Navy. 2009
	Reoccurring greenhouse gas (GHG) emissions	Operation of the new power plant would result in reoccurring emissions of GHG due to electricity usage. GHG emissions may potentially contribute to climate change.	Minimal to Significant Impact: Extent of impact depends on the generating capacity of the new power plant.		Department of the Navy. 2009

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Media Area #4: Air Quality

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant (*Continued*)	Temporary greenhouse gas (GHG) emissions	Construction and demolition activities may result in temporary emissions of carbon dioxide (CO_2) from fossil fuels for energy, transportation, and industry; nitrous oxide (N_2O) from combustion of fossil fuels; and methane (CH_4) from fossil fuel production and combustion of fossil fuels. These emissions are considered GHG and would potentially contribute to climate change.	Minimal Impact: These emissions are generally minor in comparison to other ongoing activities associated with NSF Indian Head.		Department of the Navy. 2009
Natural Gas Line (on and off NSF Indian Head), Power Transmission Lines (on and off NSF Indian Head), Power Distribution Lines, Light Industrial Facility, Facilities Relocation (P202), and CBIRF Relocation	Transportation	Construction activities may result in temporary emissions of NO_x, VOC, CO, PM, and SO_2 from heavy-duty construction vehicles (e.g., steel track loaders, excavators, pneumatic hammers, backhoes, cranes, and bulldozers) and POVs. These emissions must be below d*e minimis* levels in accordance with the GCR. *De minimis* levels are emission rates that cannot be exceeded by federal actions taking place in nonattainment and maintenance areas. These emissions would likely need to be evaluated in the GCR Applicability Analysis. Additional constraints related to transportation are discussed in the Transportation section.	Minimal Impact	Federal GCR is codified in 40 CFR Parts 51 and 93. Required emission rates are specified in 40 CFR 93.153(b).	Department of the Navy. 2009

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Media Area #4: Air Quality

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Natural Gas Line (on and off NSF Indian Head), Power Transmission Lines (on and off NSF Indian Head), Power Distribution Lines, Light Industrial Facility, Facilities Relocation (P202), and CBIRF Relocation (*Continued*)	Particulate matter (PM)	Construction activities may result in fugitive dust (i.e., PM) emissions that could have a temporary impact on local air quality. Reasonable precautions must be taken to prevent PM from becoming airborne. These precautions may include a number of air quality best management practices, which would limit fugitive dust impacts to temporary, minimal health, or environmental effects.	Minimal Impact: The quantity of dust emissions is proportional to the area of land where the activity is taking place, as well as the level of activity.	Maryland implements PM emission best management practices under COMAR 26.11.06.03D, *Particulate Matter from Materials Handling and Construction*.	Department of the Navy. 2009
	Greenhouse gas (GHG) emissions	Construction activities may result in temporary emissions of carbon dioxide (CO_2) from fossil fuels for energy, transportation, and industry; nitrous oxide (N_2O) from combustion of fossil fuels; and methane (CH_4) from fossil fuel production and combustion of fossil fuels. These emissions are considered GHG and would potentially contribute to climate change.	Minimal Impact: These emissions are generally minor in comparison to other ongoing activities associated with NSF Indian Head.		Department of the Navy. 2009
Light Industrial Facility	Reoccurring greenhouse gas (GHG) emissions	Operation of the light industrial facility would result in reoccurring emissions of GHG due to electricity usage. GHG emissions may potentially contribute to climate change.	Minimal Impact		Department of the Navy. 2009

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Media Area #5: Water Requirements and Sources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Surface waters	Construction of a new power plant would require submission of a Certification of Public Convenience and Necessity (CPCN) permit to the Public Services Commission (PSC), who authorizes construction of new generating stations or high-voltage transmission lines. The CPCN would summarize all aspects of the power plant project, including the project specifics, its impacts, and requirements (e.g., environmental assessment, hydro geological evaluations of the site, wastewater and water permits). Consultation with the Power Plant Research Program (PPRP), under the Department of Natural Resources, would also be required to obtain the necessary guidance documents for approval procedure and the application. The new power plant would require significant quantities of water (domestic and operational), which would cause a significant increase in water demand from NSF Indian Head and/or the Town of Indian Head. The operation of the power plant would generate large quantities of wastewater and non-contact cooling water (NCCW), which would be discharged from NSF Indian Head and could impact surface waters (e.g., streams, Mattawoman Creek, Potomac River, Chesapeake Bay). Consultation with the operators of NSF Indian Head's Sewage Treatment Plant and possibly the Town of Indian Head's Municipal Sewage Treatment Plant may be required, based on estimated discharge quantities and ability to meet current permit allowances. A National Pollutant Discharge Elimination System (NPDES) permit would be required for any wastewater and NCCW discharges from the new power plant. In addition, an Industrial Discharge Certificate (IDC) would need to be obtained from NSF Indian Head for discharge of any waste to the sanitary sewer system.	Significant Impact	Public Utility Companies (PUC) Articles 7-207 and 7-208 Section 402 of the Clean Water Act (CWA) NSASPINST 5090.1 (IDC program) Safe Drinking Water Act (SDWA) Code of Maryland Regulations (COMAR) Executive Order (EO) 11990: Protection of Wetlands Section 404 of the CWA (Wetlands)	Frey, M. 2010 Maryland Public Service Commission. 2010 Naval Support Activity South Potomac. 2010a

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Media Area #5: Water Requirements and Sources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant (*Continued*)	Surface waters (*Continued*)	The construction of the new power plant would not likely disturb any waterways, floodplains, or wetlands. However, if construction does disturb any waterways or floodplains (as discussed in the Floodplains section), a Joint Federal/State Application for Alteration of a Waterway permit would need to be submitted to MDE. If construction disturbs any wetlands, a Tidal and/or Non-tidal Wetlands Permit would need to be submitted to MDE. In addition, the Navy has a "no net loss" policy requiring the replacement of any wetlands destroyed or eliminated through a project, which may be required if the new power plant disturbs wetlands. The new power plant would disturb over 5,000 square feet of earth which would require consultation with MDE and USACE to prepare a Sediment and Erosion Control (SEC) and stormwater management plan (as discussed in the Stormwater section below).			
	Stormwater	New power plant construction would disturb over 5,000 square feet of land, which could have significant impacts on stormwater. Consultation with MDE and USACE would be required to prepare a SEC and stormwater management plan. Low-impact development (LID) measures would have to be incorporated into the design of the new power plant to minimize stormwater impacts. New power plant must also adhere to NSF Indian Head's Storm Water Pollution Prevention Plan (SWPPP) and Institutional Management Plan (IMP) to reduce stormwater impacts.	Minimal to Significant Impact	COMAR 26.17.02 Storm Water Management Act of 2007 Navy LID Policy	Naval Support Activity South Potomac. 2010a

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Media Area #5: Water Requirements and Sources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant (*Continued*)	Coastal Zone Management	New power plant construction and operation would require submission of a Coastal Zone Consistency Determination, along with MDE and State Clearinghouse consultations to determine impacts to the Coastal Zone. Construction of the new power plant would not likely occur within the Chesapeake Bay Critical Area. However, if construction were to occur within this area, consultation with the Critical Area Commission would be required and would be subject to special development regulations.	Minimal to Significant Impact	Section 307 of Federal Coastal Zone Management Act of 1972 NOAA regulations (15 CFR part 930) Coastal Zone Reauthorization Amendments of 1990 (CZARA) Chesapeake Bay Critical Area Protection Act of 1984 COMAR 21.01.02.00	Maryland Department of Natural Resources. 2004 Town of Indian Head. 2009
	Groundwater	Operation of the new power plant could require groundwater usage which, depending on the demand, could significantly impact groundwater usage at NSF Indian Head.	Minimal to Significant Impact		Town of Indian Head. 2009
	Floodplains	Construction of the new power plant would not occur within the 100-year floodplain.	No Impact	EO 11988: Floodplain Management	Town of Indian Head. 2009

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Media Area #5: Water Requirements and Sources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Natural Gas Line (on and off NSF Indian Head), Transmission Lines (on and off NSF Indian Head), and Power Distribution Lines (collectively, "lines")	Surface waters	Construction of the new lines on and off NSF Indian Head could disturb waterways (e.g., streams), floodplains, or wetlands. Therefore, a Joint Federal/State Application for Alteration of a Waterway permit would need to be submitted to MDE. Construction of the new lines off NSF Indian Head could disturb wetlands which would require a wetlands survey. In addition, if construction disturbs any wetlands, a Tidal and/or Non-tidal Wetlands Permit would need to be submitted to MDE. Also, the Navy has a "no net loss" policy requiring the replacement of any wetlands destroyed or eliminated through a project, which may be required if the new lines disturb any wetlands. Construction of the new lines would disturb over 5,000 square feet of earth and therefore consultation with MDE and USACE would be required for preparation of a SEC and stormwater management plan (as discussed in the Stormwater section below).	Minimal to Significant Impact	Section 404 of the CWA Executive Order 11990 (Wetland Protection) Maryland Non-Tidal Protection Act Maryland Tidal Wetlands Act Waterway and 100-Year Floodplain Construction Regulations (COMAR 26.23 and 26.24)	Naval Support Activity South Potomac. 2010a

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Media Area #5: Water Requirements and Sources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Natural Gas Line (on and off NSF Indian Head), Transmission Lines (on and off NSF Indian Head), and Power Distribution Lines (collectively, "lines") (*Continued*)	Stormwater	Construction of the new lines would disturb over 5,000 square feet of earth, which would significantly impact stormwater. Therefore, consultation with MDE and USACE would be required to prepare a SEC and stormwater management plan. Construction of lines on NSF Indian Head must adhere to the NSF Indian Head SWPPP and IMP.	Minimal to Significant Impact		
	Coastal Zone Management	Construction of lines would require submission of a Coastal Zone Consistency Determination, along with consultation with MDE and the State Clearinghouse to determine impacts to the Coastal Zone. Construction of the new lines could occur within the Chesapeake Bay Critical Area which would require consultation with the Critical Area Commission and would be subject to special development regulations (e.g., utility installation).	Minimal to Significant Impact		
	Groundwater	New lines would not likely impact any groundwater resources.	No Impact		
	Floodplains	New lines may be constructed within the 100-year floodplain. If construction does occur within a floodplain, the Navy would need to consult with USACE to determine appropriate mitigation measures and obtain a permit from the Baltimore District of the USACE.	No Impact to Significant Impact		
Light Industrial Facility	Surface Waters	The new light industrial facility would require water for domestic and industrial uses, which would cause a minimal to moderate increase in water demand to NSF Indian Head and/or the Town of Indian Head. The operation of the light industrial facility would generate minimal quantities of wastewater, which would be discharged from NSF Indian Head and could impact surfaces waters (e.g., streams, Mattawoman Creek, Potomac River, Chesapeake Bay). Consultation with the operators of NSF Indian Head's Sewage Treatment Plant and possibly the Town of Indian Head's Municipal Sewage Treatment Plant may be required, for discharge quantities and ability to meet current permit allowances. A NPDES permit would be required for any wastewater discharges from the new light industrial facility. In addition, an IDC would need to be obtained from NSF Indian Head for discharge of any waste to the sanitary sewer system.	Minimal to Significant Impact		

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Media Area #5: Water Requirements and Sources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Light Industrial Facility (*Continued*)	Surface Waters (*Continued*)	The construction of the new light industrial facility would not disturb any waterways, floodplains, or wetlands. Construction of the new light industrial facility would likely disturb over 5,000 square feet of earth which would require consultation with MDE and USACE to prepare a SEC and stormwater management plan (as discussed in the Stormwater section below).			
	Stormwater	Construction of the new light industrial facility would likely result in over 5,000 square feet of earth disturbance, which could impact stormwater. Consultation with MDE and USACE would be required to prepare a SEC and stormwater management plan. LID measures would have to be incorporated into the design of the new light industrial facility to minimize stormwater impacts. Construction of the new light industrial facility would also be required to adhere to NSF Indian Head's SWPPP and IMP to reduce stormwater impacts.	Minimal to Significant Impact		
	Coastal Zone Management	Construction of the new light industrial facility would require submission of a Coastal Zone Consistency Determination and consultation with MDE and the State Clearinghouse.	Minimal to Significant Impact		
	Groundwater	Operation of the new light industrial facility could require groundwater usage, which would impact groundwater supply at NSF Indian Head.	No Impact to Minimal Impact		
	Floodplains	Construction of the new light industrial facility would not occur within the 100-year floodplain.	No Impact		
Facilities Relocation (P202)	Surface Waters	Demolition of existing facilities and construction of the Public Works Complex, which would be subject to LEED Silver criteria, would most likely result in a decrease in the quantity of wastewater (sewer) discharged from NSF Indian Head. This would positively impact surfaces waters including local streams, the Mattawoman Creek, Potomac River, and Chesapeake Bay. Construction would not disturb any streams; however, a drainage ditch is located within the site. Therefore, a Joint Federal/State Application for Alteration of a Waterway permit could be required.	Minimal Impact		
		Construction at the Facilities Relocation (P202) site would require consultation with MDE and USACE for a SEC and stormwater management plan (as discussed in the Stormwater section below).			

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Media Area #5: Water Requirements and Sources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Facilities Relocation (P202) (*Continued*)	Stormwater	Construction at the Facilities Relocation (P202) site would result in over 5,000 square feet of earth disturbance (total of 265,000 square feet of additional impervious surfaces), which could impact stormwater. Consultation with MDE and USACE would be required to prepare a SEC and stormwater management plan. LID measures would have to be incorporated into the design of the Facilities Relocation (P202) site to minimize stormwater impacts. Construction would also be required to adhere to NSF Indian Head's SWPPP and IMP to reduce stormwater impacts.	Minimal Impact to Significant		
	Coastal Zone Management	Construction at the Facilities Relocation (P202) site could require submission of a Coastal Zone Consistency Determination and consultation with MDE and the State Clearinghouse.	Minimal Impact		
	Groundwater	Operations at the Facilities Relocation (P202) site could require groundwater usage. However, demolition of existing facilities being consolidated and construction at the Facilities Relocation (P202) site (LEED Silver criteria) would likely result in an overall decrease in potable water consumption and would therefore positively impact groundwater.	No Impact to Minimal Impact		
	Floodplains	Construction at the Facilities Relocation (P202) site would not take place within the 100-year floodplain.	No Impact		
CBIRF Relocation	Surface waters	Operation of the new CBIRF facilities would result in the discharge of wastewater. However, demolition of existing facilities and construction of new CBIRF facilities, which would be subject to LEED Silver criteria, would result in a decrease in the quantity of wastewater (sewer) discharged from NSF Indian Head. This would positively impact surfaces waters including local streams, the Mattawoman Creek, Potomac River, and Chesapeake Bay. Construction of the CBIRF facilities would not likely disturb any waterways. However, if construction were to disturb any waterways (e.g., streams), a Joint Federal/State Application for Alteration of a Waterway permit would need to be submitted to MDE.	Minimal Impact		

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Media Area #5: Water Requirements and Sources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
CBIRF Relocation (*Continued*)	Surface waters (*Continued*)	Construction of CBIRF facilities would not disturb any wetlands or floodplains. Construction of CBIRF facilities would require consultation with MDE and USACE to prepare a SEC and stormwater management plan (as discussed in the Stormwater section below).			
	Stormwater	Construction of the CBIRF facilities would likely result in over 5,000 square feet of earth disturbance, which could impact stormwater. Consultation with MDE and USACE would be required to prepare a SEC and stormwater management plan. LID measures would have to be incorporated into the design of the CBIRF facilities to minimize stormwater impacts. Construction of the CBIRF facilities would also be required to adhere to NSF Indian Head's SWPPP and IMP to reduce stormwater impacts.	Minimal Impact to Significant		
	Coastal Zone Management	Construction of CBIRF facilities could require submission of Coastal Zone Consistency Determination and consultation with MDE and the State Clearinghouse.	Minimal Impact to Significant		
	Groundwater	Operation of the CBIRF facilities could require groundwater usage. However, demolition of existing facilities being consolidated and construction of CBIRF facilities (LEED Silver criteria) could result in an overall decrease in potable water consumption which would positively impact groundwater.	No Impact to Minimal Impact		
	Floodplains	Construction of the CBIRF facilities would not take place within the 100-year floodplain.	No Impact		

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Media Area #6: Security

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Antiterrorism Force Protection (AT/FP) standards	Construction of a new power plant would require consideration and planning in accordance with DoD AT/FP guidelines. Site planning must integrate operational, logistic, and security requirements into the overall design of buildings, equipment, landscaping, roads, parking, and other features.	Minimal Impact: Planning for new buildings within NSF Indian Head must abide by AT/FP standards.	DoD AT/FP	Department of Defense. 2007
	Controlled perimeter	Distance from the NSF Indian Head controlled perimeter fence line for inhabited buildings is 25 meters (82 feet). The proposed EUL power plant boundary is located significantly more than 82 feet from the perimeter.	No Impact		
Natural Gas Line (on and off NSF Indian Head)	Protection of natural gas lines	New gas lines would most likely be underground, preventing unauthorized access to the natural gas supply.	No Impact		Department of Defense. 2007
Power Transmission Lines (on and off NSF Indian Head)	Protection of power transmission lines	Security measures, such as fences, may be necessary to limit access to the transmission lines and substations.	Minimal Impact		Department of Defense. 2007
Power Distribution Lines	Protection of power distribution lines	New power distribution lines at NSF Indian Head would be subject to the same security standards as the existing power distribution lines.	No Impact		Department of Defense. 2007
Light Industrial Facility	AT/FP standards	Construction of a new light industrial facility would require consideration and planning in accordance with DoD AT/FP guidelines. Site planning must integrate operational, logistic, and security requirements into the overall design of buildings, equipment, landscaping, roads, parking, and other features.	Minimal Impact: Planning for new buildings within NSF Indian Head must abide by AT/FP standards.	DoD AT/FP	Department of Defense. 2007
	Controlled perimeter	Distance from the NSF Indian Head controlled perimeter fence line for inhabited buildings is 25 meters (82 feet). Development of facilities within the proposed light industrial area would have to meet AT/FP perimeter standoff distances.	Minimal Impact: New facilities would have to be at least 25 meters from the controlled perimeter fence.		

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Media Area #6: Security

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Facilities Relocation (P202)	AT/FP standards	Construction of new facilities would require consideration and planning in accordance with DoD AT/FP guidelines. Site planning must integrate operational, logistic, and security requirements into the overall design of buildings, equipment, landscaping, roads, parking, and other features.	Minimal Impact: Planning for new buildings within NSF Indian Head must abide by AT/FP standards.	DoD AT/FP	Department of Defense. 2007
CBIRF Relocation	AT/FP standards	Construction of new CBIRF facilities would require consideration and planning in accordance with DoD AT/FP guidelines. Site planning must integrate operational, logistic, and security requirements into the overall design of buildings, equipment, landscaping, roads, parking, and other features.	Minimal Impact	DoD AT/FP	Department of Defense. 2007

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Media Area #7: Cultural and Historic Resources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Archeological resources	The proposed power plant would be located within the site of existing public works facilities and adjacent to the existing Goddard Power Plant and Water Treatment Plant. This area was disturbed during the construction of the existing facilities and therefore is unlikely to contain any undisturbed archeological resources. However, according to both the updated Berger Archeological Sensitivity Model and the original Goodwin Archeological Sensitivity Model, the southeastern portions of the site require a Phase I archeological survey (4.05 acres). In addition, the original Goodwin Archeological Sensitivity Model identified the eastern portion (0.68 acres) of this proposed development site (near Building 490) as potentially containing archeological resources. Surveys at the southeastern portion are scheduled to be completed by early Fall 2010. In addition, Phase I archeological surveys would likely need to be conducted at the eastern portion of the site. If the results of the survey indicate the area has been previously disturbed and no archeological resources are present, no further action would be required. However, if the surveys determine this site is potentially eligible, then a Phase II survey (and potentially a Phase III survey) would likely be required and SHPO Consultation would be necessary.	No Impact to Significant Impact	Section 106 of National Historic Preservation Act (NHPA) 1966, 1976, 1980, and 199	Naval Support Activity South Potomac. 2010a
	Architectural resources	The proposed site of construction for the new power plant does not contain any historic buildings. However, the southern portion of this site (Water Treatment Plant area) overlaps and the eastern portion of the site borders the Naval Powder Factory Historic District. Construction and demolition activities within this area could result in an adverse effect to the historic district by affecting the viewscape; therefore, SHPO consultation would be required to determine if any mitigation measures are necessary.	No Impact to Significant Impact		R. Christopher Goodwin & Associates, Inc. 1998 NSF Indian Head GIS Charles County Planning Commission. 2001

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Media Area #7: Cultural and Historic Resources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Natural Gas Line (on and off NSF Indian Head)	Archeological resources	The proposed locations for the natural gas lines are unknown. However, Phase I archeological surveys would be necessary for disturbance of any areas that have not been previously surveyed and have the potential to contain undisturbed archeological resources. Archeological sites and areas with high potential for containing archeological resources at NSF Indian Head would be easily identified via GIS. Based on the assumption that the lines outside of NSF Indian Head would run along MD Route 210, the lines would not likely impact any undisturbed archeological sites because these areas were likely disturbed during road construction. There are no known archeological sites located along MD Route 210 between NSF Indian Head and the nearest gas line connection at Bryans Road. However, as of 2001, there is one area (south of Potomac Heights) near MD Route 210 that contains two identified archeological sites (CH-25 and CH-175), east of Lower Wharf Road, west of Hawthorne Road (Rte 225), and south of MD Route 210. If construction in this area could not be avoided, consultation with SHPO and mitigation measures would be required.	No Impact to Significant Impact		
	Architectural resources	The construction of the gas line would not affect any architectural resources.	No Impact		
Power Transmission Lines (on and off NSF Indian Head) and Power Distribution Lines	Archeological resources	The potential impacts are the same as the natural gas line discussion above, except that the power transmission lines would likely require less earth disturbance and therefore have less potential to disturb any buried archeological resources.	No Impact to Significant Impact		R. Christopher Goodwin & Associates, Inc. 2004
	Architectural resources	Construction of power transmission lines would not affect any historic buildings. However, installation of power transmission lines within historic districts could affect the overall appearance, resulting in an adverse affect. Therefore, SHPO consultation would be required to determine if any mitigation measures are necessary.	No Impact to Minimal Impact		

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Media Area #7: Cultural and Historic Resources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Light Industrial Facility	Archeological resources	The proposed location of the light industrial facility does not contain any known archeological sites and does not require any additional archeological surveys. Consultation with SHPO would not be required unless archeological artifacts are discovered during construction, in which case work would need to stop and SHPO would need to be consulted for mitigation. Note: Archeological site 18CH704 is located within the proposed light industrial facility area; however, this site was determined to be ineligible for listing on the National Register of Historic Places and no further action is required. In addition, the eastern portion of the site was recently surveyed, based on the updated Berger Archeological Sensitivity Model. Preliminary input from surveyors indicated that the eastern portion did not contain any archeological resources; therefore, no further action would be required. This information should be confirmed after the Survey Report is completed.	No Impact to Minimal Impact		
	Architectural resources	Construction of the proposed light industrial facility would not affect any historic buildings and would not be located within any historic districts.	No Impact		
Facilities Relocation (P202)	Archeological resources	The proposed Facilities Relocation (P202) site is located within an area that underwent a Phase I survey, which determined that the site was highly disturbed and not eligible for listing on the National Register of Historic Places. Therefore, no additional surveys or SHPO consultation would be required, unless archeological artifacts are discovered during construction, in which case SHPO would need to be consulted for mitigation.	No Impact to Minimal Impact		
	Architectural resources	The proposed Facilities Relocation (P202) site has two historic buildings (83 and 185) located within its boundaries. Building 83 would likely be demolished and 185 would be relocated off of NSF Indian Head. In addition, this site overlaps the historic golf course, which is part of the Indian Head Residential Historic District. Therefore, SHPO consultation would be required to mitigate potential impacts to historic buildings and the historic district, which would likely result in the preparation of a Memorandum of Agreement (MOA) and a Historic American Building Survey (HABS).	Minimal to Significant Impact		

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Media Area #7: Cultural and Historic Resources

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
CBIRF Relocation	Archeological resources	The central-western portion of the proposed CBIRF Relocation site (0.21 acres) has the potential for archeological resources, based on the updated Berger Archeological Sensitivity Model; therefore, a Phase I survey of this site is required prior to development. The remainder of the site has not been surveyed but was not identified on the Archeological Sensitivity Model as having potential for containing archeological resources.	No Impact to Significant Impact		
	Architectural resources	The proposed CBIRF Relocation site does not contain any historic buildings; however, the CBIRF Relocation site overlaps the historic golf course, which is part of the Indian Head Residential Historic District. Therefore, SHPO Consultation would be required to determine if any mitigation measures are necessary for impacts to the historic district.	Minimal Impact		

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Media Area #8: Solid and Hazardous Waste

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Remediation of contaminated areas	The existing coal-fired power plant has a coal yard and waste containment areas that may be contaminated due to prior and current operations. These sites would require due diligence, including soil and groundwater sampling, to determine the extent of contamination and develop proper remediation procedures in accordance with all applicable federal, state and local regulations.	Minimal Impact	Resource Conservation and Recovery Act (RCRA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Maryland Department of Transportation (MDOT) Department of Transportation (DOT) (49 CFR Parts 171-172)	U.S. Environmental Protection Agency. 2010c Maryland Department of the Environment. 2010b Naval Support Activity South Potomac. 2010a
	Demolition and construction waste	Demolition and construction waste generated by the demolition of existing buildings and construction of the power plant must be managed in accordance with NSF Indian Head's demolition and construction waste management programs, which include packaging waste minimization, salvage and reuse of waste, and salvage for resale or donation, recycling, and disposal. Waste must first be evaluated for salvage and reuse, salvage for resale or donation, and recycling potential. Waste that presents no explosives hazard and cannot be reused, salvaged, or recycled is removed from the installation by a contractor and disposed of off site. The hauling and disposal of demolition debris, including hazardous wastes containing lead, asbestos, and air conditioner refrigerant, must be performed in compliance with local, state, and federal codes and requirements. Non-explosive hazardous waste must be transported to an approved, off-site hazardous waste treatment, storage, or disposal facility in accordance with Department of Transportation regulations.	Minimal Impact		

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Media Area #8: Solid and Hazardous Waste

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Natural Gas Line (on and off NSF Indian Head)	Construction waste	Construction within NSF Indian Head would be subject to NSF Indian Head's construction waste management program, which includes packaging waste minimization, salvage and reuse of waste, and salvage for resale or donation, recycling, and disposal. Only those materials that cannot be economically salvaged or recycled, as determined by NSF Indian Head, are to be transported to a landfill, incinerator, or a hazardous waste disposal facility, in accordance with Maryland Department of the Environment (MDE) regulations. For construction outside of NSF Indian Head, all construction waste must be removed from the site and disposed of properly through a landfill, incineration, or recycling. MDE permits depositing construction waste in solid waste landfills or using incineration. Alternatively, construction waste can be recycled by the State of Maryland at Montgomery Park in Montgomery County, MD.	Minimal Impact	Resource Conservation and Recovery Act (RCRA) Emergency Planning and Community Right-to-Know Act (EPCRA) Oil Pollution Act State of Maryland Solid Waste Program (SWP)	U.S. Environmental Protection Agency. 2010c Maryland Department of the Environment. 2010b Naval Support Activity South Potomac. 2010a
Power Transmission Lines (on and off NSF Indian Head) and Power Distribution Lines	Construction waste	Construction within NSF Indian Head would be subject to NSF Indian Head's construction waste management program, which includes packaging waste minimization, salvage and reuse of waste, and salvage for resale or donation, recycling, and disposal. Only those materials that cannot be economically salvaged or recycled, as determined by NSF Indian Head, are to be transported to a landfill, incinerator, or a hazardous waste disposal facility, in accordance with MDE regulations.	Minimal Impact	Resource Conservation and Recovery Act (RCRA) State of Maryland Solid Waste Program (SWP)	Maryland Department of the Environment. 2010b Naval Support Activity South Potomac. 2010a

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Media Area #8: Solid and Hazardous Waste

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Light Industrial Facility	Construction waste	Construction within NSF Indian Head would be subject to NSF Indian Head's construction waste management program, which includes packaging waste minimization, salvage and reuse of waste, and salvage for resale or donation, recycling, and disposal. Only those materials that cannot be economically salvaged or recycled, as determined by NSF Indian Head, are to be transported to a landfill, incinerator, or a hazardous waste disposal facility, in accordance with MDE regulations.	Minimal Impact	Resource Conservation and Recovery Act (RCRA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) State of Maryland Solid Waste Program (SWP)	Maryland Department of the Environment. 2010b U.S. Environmental Protection Agency. 2010c Naval Support Activity South Potomac. 2010a
	Facility waste	Hazardous and non-hazardous solid wastes generated by the light industrial facility are regulated by federal, state, and county laws in an effort to minimize the risk posed to public health and the environment. The disposal of solid waste should adhere to the State of Maryland's Solid Waste Program (SWP). If the light industrial facility generates any hazardous waste, it should be properly stored, transported off-site and disposed of in accordance with the Controlled Hazardous Substance (CHS) permit for NSF Indian Head. The permit allows for the production and storage of hazardous waste on-site, but only in selected buildings. The new light industrial facility would need to be approved and added to the permit if hazardous waste is generated.	Minimal Impact		
Facilities Relocation (P202)	Demolition and construction waste	Demolition and construction waste generated by the demolition of existing buildings and construction of new facilities must be managed in accordance with NSF Indian Head's demolition and construction waste management programs, which include packaging waste minimization, salvage and reuse of waste, and salvage for resale or donation, recycling, and disposal. Waste must first be evaluated for salvage and reuse, salvage for resale or donation, and recycling potential. Waste that presents no explosives hazard and cannot be reused, salvaged, or recycled is removed from the installation by a contractor and disposed of off site. The hauling and disposal of demolition debris, including hazardous wastes containing lead, asbestos, and air conditioner refrigerant, must be performed in compliance with local, state, and federal codes and requirements. Non-explosive hazardous waste must be transported to an approved, off-site hazardous waste treatment, storage, or disposal facility in accordance with Department of Transportation regulations.	Minimal Impact	Resource Conservation and Recovery Act (RCRA) Toxic Substances Control Act (TSCA) Maryland Department of Transportation (MDOT)	Maryland Department of the Environment. 2010b Naval Support Activity South Potomac. 2010a

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Media Area #8: Solid and Hazardous Waste

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Facilities Relocation (P202) (*Continued*)	Demolition and construction waste (*Continued*)			Department of Transportation (DOT) (49 CFR Parts 171-172) State of Maryland Solid Waste Program (SWP)	
CBIRF Relocation	Construction waste	Construction within NSF Indian Head would be subject to NSF Indian Head's construction waste management program, which includes packaging waste minimization, salvage and reuse of waste, and salvage for resale or donation, recycling, and disposal. Only those materials that cannot be economically salvaged or recycled, as determined by NSF Indian Head, are to be transported to a landfill, incinerator, or a hazardous waste disposal facility, in accordance with MDE regulations.	Minimal Impact	Resource Conservation and Recovery Act (RCRA) State of Maryland Solid Waste Program (SWP)	Maryland Department of the Environment. 2010b U.S. Environmental Protection Agency. 2010c Naval Support Activity South Potomac. 2010a

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Media Area #9: Terrestrial and Aquatic Habitat

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Vegetation removal	Some tree removal would be required for the development of a new power plant. Based on the proposed location, tree removal would be minimal and involve primarily red maple, sweet gum, and American elm forest. Vegetation removal may involve NSWC work approvals and/or replanting in other areas.	Minimal Impact: Most of the proposed power plant location is currently developed, so tree removal would be minimal.	NSF Indian Head Bald Eagle Management Plan (2007) National Bald Eagle Management Guidelines Migratory Bird Treaty Act OSHA 1910.269 Bald Eagle Management Plan (2007) The Bald and Golden Eagle Protection Act	Department of the Navy. 2006 Naval Support Activity South Potomac. 2010a U.S. Fish and Wildlife Service. 2010
Natural Gas Line (on and off NSF Indian Head)	Vegetation removal	The route of a new gas supply line to the NSF Indian Head power plant is unknown at this time and vegetation removal would be dependent on the route selected. Vegetation removal may involve NSWC work approvals and/or replanting in other areas. If the NG pipeline is constructed outside of a public utility right-of-way, a Forest Stand Delineation and a Forest Conservation Plan would be required by Charles County. These constraints are discussed further in the Visual Impact section.	Minimal to Significant Impact: Vegetation removal is dependent on route of natural gas line.		
	Rare, threatened and endangered (RT&E) species	Impacts to RT&E species would be unlikely at NSF Indian Head if the natural gas line runs along Patterson Road and Farnum Road. However, consultation with Maryland DNR and USFWS would be necessary to determine if the proposed route for the natural gas line outside of NSF Indian Head would impact any RT&E species.	Minimal Impact: Wildlife affected by natural gas line installation would be minimal if the line is run along existing roadways or infrastructure.		

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Media Area #9: Terrestrial and Aquatic Habitat

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Transmission Lines (on and off NSF Indian Head)	Bald eagles	Overhead utility lines pose a significant threat to bald eagles. Two potential routes for the transmission lines are along the Indian Head Rail Trail and across the Mattawoman Creek. New lines along the Indian Head Rail Trail may require some tree removal and would be in the vicinity of existing bald eagle nests near the sewage treatment plant. Transmission lines crossing the Mattawoman Creek would require more tree clearing and potentially disturb existing nest sites. Consultation with USFWS may be necessary to address potential impacts to bald eagles as a result of the new transmission lines. Disturbance to eagles from tree removal near existing sites, bald eagle line strikes, and electrocution are currently a problem at NSF Indian Head. Lines in areas with a high risk for conflicts with eagles could require specialized design to reduce the chance of electrocution (e.g., Bird Flight Diverters (BFDs), phase covers).	Minimal to Significant Impact: New transmission lines may adversely affect bald eagle populations at NSF Indian Head.		
	Vegetation removal	Vegetation removal may be required for transmission line installation which may involve NSWC work approvals and/or replanting in other areas. Transmission lines would require vegetation removal to meet clearance requirements based on line type and voltage.	Minimal to Significant Impact: Vegetation removal would be dependent route of transmission lines and clearance requirements.		
Power Distribution Lines	Vegetation removal	Minimal vegetation removal associated with connecting new distribution lines from existing electrical lines may be necessary to accommodate the CBIRF Relocation and Facilities Relocation (P202) sites, new power plant, and light industrial facility. NSWC work approvals and/or replanting in other areas may be required.	Minimal Impact: Based on existing utilities at these site locations, vegetation removal associated with distribution lines would be minimal.		
	Bald eagles	Consultation with USFWS may be necessary to address potential impacts to bald eagles as a result of the new distribution lines. Lines in areas with a high risk for conflicts with eagle would require retro-fitting to reduce the chance of electrocution (e.g., BFDs, phase covers).	Minimal to Significant Impact: Since there are existing distribution lines within the development areas, impacts to bald eagles from new distribution lines would likely be minimal.		

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Media Area #9: Terrestrial and Aquatic Habitat

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Light Industrial Facility	Active bald eagle nest	Fish and Wildlife consultation may be necessary for work involving construction noise and potential disturbance to the active bald eagle nest. If construction activities are determined detrimental to the bald eagle nest site, work may have to be done during the off-season. If removal of the nest is necessary, an eagle nest take permit would be required under the Bald and Golden Eagle Act. Mitigation may be required within NSF Indian Head, which would include the preservation of nesting habitat from future development. Mitigation at an off-site location (i.e. conservation easement) may be necessary, depending on the level required by USFWS.	Minimal to Significant Impact: Potentially significant if the nest has to be removed.		
	Vegetation removal	Vegetation removal would need to occur in the proposed development area. NSWC work approvals and/or replanting in other areas may be necessary.	Minimal Impact		
Facilities Relocation (P202)	Inactive bald eagle nest	Fish and Wildlife consultation may be necessary for work involving construction noise and potential disturbance to a bald eagle nest within ¼ mile of the planned relocation site. If construction activities are determined to be detrimental to bald eagle nesting activities at this site, work may have to be done during the off-season.	Minimal Impact: Unless the nest site becomes active, there wouldn't be any significant impact to facility relocation.		
	Vegetation removal	Minor vegetation removal would need to occur in the proposed relocation area. NSWC work approvals and/or replanting in other areas may be necessary.	Minimal Impact: The proposed sites are located primarily in developed areas.		
CBIRF Relocation	Vegetation removal	Vegetation removal would need to occur in the proposed relocation area. NSWC work approvals and/or replanting in other areas may be necessary. Vegetation within the 1,000-foot Critical Area of the shoreline would require mitigation.	Minimal Impact: Some vegetation removal would be required at the relocation site and may require mitigation.		

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Media Area #10: Noise

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Noise from demolition and construction activities	Demolition and construction activities would generate elevated noise levels. Both the Charles County and Maryland Noise Control Programs limit construction noise levels to 90 dBA during daytime hours on weekdays. However, both programs provide exemptions for construction and repairs on public property and government-sponsored activities. Due to the proposed location of the power plant, it is unlikely that demolition and construction noise will reach exceed 90 dBA outside of NSF Indian Head.	No Impact to Minimal Impact	Noise Control Act Town of Indian Head Noise Code Charles County, Maryland Noise Ordinance	U.S. Environmental Protection Agency. 2009c Town of Indian Head. 2010 Charles County, Maryland. 2007 Energy Facility Site Evaluation Council. 2010
	Operational noise	The Noise Control Act states that Federal performance standards shall be incorporated into the design of the actions taken by federal agencies to reduce noise emissions. Natural gas-fired power plants generate ambient noise levels in the adjacent land areas in the range of 50-70 dBA, depending on proximity, power plant design, and weather conditions. However, the proposed site of the power plant is far enough beyond the property line with the Town of Indian Head that it is unlikely noise due to the operation of the power plant would reach areas outside of NSF Indian Head. In the event that noise does reach adjacent privately owned property, the power plant would be subject to the Town of Indian Head Noise Code, Charles County Noise Ordinance and Maryland Noise Control Program. The Town of Indian Head Noise Code states noises must not reasonably interfere with residents or the working of an institution or disturb or unduly annoy citizens, unless a permit is obtained. In addition, noise in the Town of Indian is regulated through the Maryland Noise Control Program, which sets the following maximum noise levels depending on the land use of the receiving land: • Residential – 65 dBA daytime, 55 dBA nighttime • Commercial – 67 dBA daytime, 62 dBA nighttime • Industrial – 75 dBA day and night	No Impact to Minimal Impact		

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Media Area #10: Noise

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant (*Continued*)	Operational noise (*Continued*)	Noise entering Charles County must not exceed the following noise levels, depending on the land use of the receiving land: • Residential – 60 dBA daytime, 50 dBA nighttime • Commercial – 67 dBA daytime, 62 dBA nighttime • Industrial – 75 dBA day and night The Maryland Noise Control Program and Charles County Noise Ordinance have an exemption for government-sponsored activities; therefore, the operation of the power plant may be exempt from all enforceable noise control regulations.			
Natural Gas Line (on and off NSF Indian Head)	Construction noise	Construction activities would generate temporary elevated noise levels. NSF Indian Head has no noise ordinance regulating ambient noise levels throughout the Installation. However, the Town of Indian Head and Charles County are both subject to the Maryland Noise Control Program which restricts construction noise levels above 90 dBA. In addition, the Town of Indian and Charles County have established further restrictions for construction noise outlined below: *Town of Indian Head Noise Code:* The excavation, grading, paving, erection, demolition, alteration or repair of any premises, street, building or structure at any time on Sundays or other than between the hours of 8:00 a.m. and 6:00 p.m. on Saturdays or between the hours of 7:00 a.m. and 6:00 p.m. on all other days is prohibited unless in the case of an emergency. *Charles County Noise Ordinance:* Noise from any construction related activity may not exceed 90 dBA from 7:00 a.m. to 10:00 p.m., weekdays. Construction of the natural gas pipeline must to adhere to these noise restrictions. However, if the natural gas pipeline is constructed on public property, such as a right-of-way, the work is exempt from state and local noise restrictions.	No Impact to Minimal Impact	Town of Indian Head Town Code, Noise Code Charles County Noise Ordinance	Town of Indian Head. 2010 Charles County, Maryland. 2007

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Media Area #10: Noise

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Transmission Lines (on and off NSF Indian Head)	Construction noise	Construction activities would generate temporary elevated noise levels. NSF Indian Head has no noise ordinance regulating ambient noise levels throughout the Installation. However, the Town of Indian Head and Charles County are both subject to the Maryland Noise Control Program which restricts construction noise levels above 90 dBA. In addition, the Town of Indian and Charles County have established further restrictions for construction as discussed previously in the Noise section. Construction of the transmission lines would need to adhere to State and local noise restrictions. However, if transmission lines are constructed on public property, such as a right-of-way, the work is exempt from state and local noise restrictions.	No Impact to Minimal Impact	Maryland Noise Control Program Town of Indian Head Town Code, Noise Code Charles County Noise Ordinance	Town of Indian Head. 2010 Charles County, Maryland. 2007 California Public Utilities Commission. 2010
	Operational noise	Active high-voltage transmission lines emit noise, referred to as Corona noise. This type of noise varies depending on weather conditions and voltage of the line. Studies show that under humid conditions and peak transmission, noise levels can reach anywhere between 40-60 dBA and are easily heard at the edge of right-of-ways and beyond. It remains to be determined how, if at all, this noise would be regulated by the State and local jurisdictions. At the minimum, adjacent land uses and noise levels should be considered when determining the location of transmission lines.	Minimal Impact		
Power Distribution Lines	Construction noise	Construction activities would generate temporary elevated noise levels. NSF Indian Head has no noise ordinance regulating ambient noise levels throughout the Installation. However, the Town of Indian Head and Charles County are both subject to the Maryland Noise Control Program which restricts construction noise levels above 90 dBA. Therefore, noise levels due to the construction of power distribution lines at NSF Indian should not reach or exceed 90 dBA on receiving lands within the Town of Indian Head or Charles County.	No Impact to Minimal Impact	Maryland Noise Control Program	Charles County, Maryland. 2007
Light Industrial Facility	Construction noise	Construction activities would generate temporary elevated noise levels. NSF Indian Head has no noise ordinance regulating ambient noise levels throughout the Installation. However, the Town of Indian Head is subject to the Maryland Noise Control Program which restricts construction noise levels above 90 dBA. In addition, the Town of Indian has established further restrictions for construction outlined below:	No Impact to Minimal Impact	Maryland Noise Control Program	Naval Support Activity South Potomac. 2010b

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Media Area #10: Noise

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Light Industrial Facility (*Continued*)	Construction noise (*Continued*)	*Town of Indian Head Noise Code:* The excavation, grading, paving, erection, demolition, alteration or repair of any premises, street, building or structure at any time on Sundays or other than between the hours of 8:00 a.m. and 6:00 p.m. on Saturdays or between the hours of 7:00 a.m. and 6:00 p.m. on all other days is prohibited unless in the case of an emergency. Due to the location of the light industrial facility and its close proximity to the Town of Indian Head, construction of the light industrial facility will need to adhere to these noise restrictions. In addition, the site of the light industrial facility falls within a bald eagle protection zone, which could restrict noise generating construction work to certain times of the year. All actions within the bald eagle protection zone would be subject to review and approval by the U.S. Fish and Wildlife Service		Town of Indian Head Town Code, Noise Code The Bald and Golden Eagle Protection Act OPNAVISNT	Town of Indian Head. 2010
		The site of the light industrial facility shares two sides with the Town of Indian Head. Adjacent uses in the Town include recreation fields and an elementary school, both of which are sensitive to noise. The final use and design of the light industrial facility should restrict noise and adhere to the Town of Indian Head's Noise Code, which states that the creation of any excessive noise which reasonably interferes with residents or the working of an institution or which disturbs or unduly annoys citizens is prohibited, unless a permit is obtained. In addition, noise in the Town of Indian is regulated through the Maryland Noise Control Program, which sets the following maximum noise levels depending on the land use of the receiving land:	Minimal Impact		
		• Residential – 65 dBA daytime, 55 dBA nighttime • Commercial – 67 dBA daytime, 62 dBA nighttime • Industrial – 75 dBA day and night			

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Media Area #10: Noise

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Light Industrial Facility (*Continued*)	Operational noise	Additional vehicle traffic is expected in the Town of Indian Head as a result of the light industrial facility. Currently, the only vehicle access to the site is through NSF Indian Head's main gate. If another access point to the site is developed, increased noise in the adjacent areas due to vehicle traffic would be expected. The site of the light industrial facility falls within a bald eagle protection zone. All operations that generate noise within the bald eagle protection zone would be subject to review and approval by the U.S. Fish and Wildlife Service.			
Facilities Relocation (P202)	Construction noise	The Facilities Relocation (P202) site is within NSF Indian Head and is not in close proximity to the Town of Indian Head or Charles County; therefore, it is unlikely that any noise due to construction would impact these adjacent communities. However, the site is adjacent to several single family residential units used to house military personnel and families. Although no specific noise ordinance regulates noise at NSF Indian Head, it is Navy policy to protect these resources by locating major noise sources away from housing. In addition, the Facilities Relocation (P202) site falls within a bald eagle protection zone, which could restrict noise generating construction work to certain times of the year. All actions within the bald eagle protection zone would be subject to review and approval by the U.S. Fish and Wildlife Service.	No Impact to Minimal Impact	OPNAVISNT The Bald and Golden Eagle Protection Act	Naval Support Activity South Potomac. 2010b P202 Preliminary Planning Documents
CBIRF Relocation	Construction noise	The CBIRF Relocation site is within NSF Indian Head and is not in close proximity to the Town of Indian Head or Charles County; therefore, it is unlikely that any noise due to construction would impact these adjacent communities. However, the site is adjacent to single family residential units and barracks used to house military personnel and families. Although no specific noise ordinance regulates noise at NSF Indian Head, it is Navy policy to protect these resources by locating major noise sources away from housing.	No Impact to Minimal Impact	OPNAVISNT	Naval Support Activity South Potomac. 2010b P202 Preliminary Planning Documents

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Media Area #11: Visual Impacts

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Site location	The visual impact of the power plant is dependent upon the size of the power plant, which is closely linked to the type of natural gas-fired power plant desired and its maximum generating capacity. However, the site is presently occupied by a power plant and the overall visual impact of the new power plant is not expected to differ significantly from the existing plant.	No Impact to Minimal Impact		Naval Support Activity South Potomac. 2010b U.S. Environmental Protection Agency. 2010c Natural Gas. 2010
	Power plant design	There are three primary types of natural gas-fired power plants, which are categorized according to how they generate electricity. Depending on which type is chosen, the visual impact would vary. The three types and visual impacts are outlined below. *Steam Generation Units –* This type of gas-fired boiler uses significant amounts of water; therefore, it requires cooling towers to release thermal pollution prior to discharging the water. Cooling towers can be tall and release a plume of steam into the atmosphere that could be visible throughout NSF Indian Head, into the Town of Indian Head, and across the Mattawoman Creek into Charles County. *Centralized Gas Combustion Units –* This type of gas-fired turbine does not use a significant amount of water and has no need for a cooling tower. *Combined Cycle Units –* Similar to Steam Generation units, this type of gas-fired boiler and turbine mixture uses significant amounts of water; therefore, it requires cooling towers to release thermal pollution prior to discharging water. Cooling towers can be tall and release a plume of steam into the atmosphere that could be visible throughout NSF Indian Head, into the Town of Indian Head and across the Mattawoman Creek into Charles County.	No Impact to Minimal Impact		

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Media Area #11: Visual Impacts

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Natural Gas Line (on and off NSF Indian Head)	Vegetation clearing	Construction of the natural gas pipeline would require clearing some trees and vegetation in order to make additional space in the utility right-of-way. This may reduce the tree coverage in the affected areas, particularly within the Town of Indian Head, and expose private property to undesirable features. If the natural gas pipeline is constructed outside of a public utility right-of-way, a Forest Stand Delineation and a Forest Conservation Plan would be required by Charles County.	Minimal Impact	Charles County Forest Conservation Ordinance	Charles County, Maryland. 2004
	Natural gas pipeline informational signs	Along the route of the natural gas pipeline, informational signs identifying the buried pipeline would be placed at regular intervals. These signs, although small and generally unobtrusive, may be visible from adjacent private property and interrupt viewscapes.	No Impact to Minimal Impact		
Power Transmission Lines (on and off NSF Indian Head)	Vegetation clearing	Construction of the power transmission lines would require clearing some trees and vegetation. The amount of clearing required would depend on the final location and size of the power transmission lines. However, it can be expected that tree and vegetation clearing would reduce the tree coverage in the affected areas, particularly within the Town of Indian Head, and expose private property to undesirable features. If the power transmission lines are constructed outside of a public utility right-of-way, a Forest Stand Delineation and a Forest Conservation Plan would be required by Charles County.	Minimal to Significant Impact	Charles County Forest Conservation Ordinance	Charles County, Maryland. 2004
	Location and design	The height and location of the power transmission lines are dependent on the generating capacity of the new power plant. If existing transmission lines are considered adequate, no additional visual impacts would be expected. If the existing transmission lines need to be upgraded with taller poles and added crossties, the lines would become more visible from surrounding properties, many of which are private residences. If existing transmission lines need to be replaced with new and expanded lines, significant visual impacts can be expected throughout the area of the transmission lines. The land surrounding NSF Indian Head is heavily populated and there is a common dislike of transmission lines by citizens due their impacts on viewscapes. Residents of the Town of Indian Head and Charles County would likely provide input regarding location of the power transmission lines after plans have been developed.	Significant Impact		
Power Distribution Lines	Vegetation clearing	In order to construct a new power distribution line from the power plant to the new light industrial facility, some tree and vegetation clearing would be required. Depending on the location and type of distribution lines constructed, tree and vegetation clearing could reduce natural screening and expose sensitive properties to adjacent land uses.	Minimal Impact		

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Media Area #11: Visual Impacts

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Light Industrial Facility	Vegetation clearing	The light industrial facility site is partially vegetated and construction would require additional clearing of trees and vegetation. The amount of clearing required would depend on the final location and size of the facility. However, it can be expected that tree and vegetation clearing would reduce the tree coverage of the site and could expose adjacent property in the Town of Indian Head to the light industrial facility.	Minimal Impact	NSF Indian Head Installation Appearance Plan	NSF Indian Head Installation Appearance Plan
	Facility design	The light industrial facility would be visible from adjacent properties in the Town of Indian Head and the facility design should be sensitive to existing viewscapes of the community. The light industrial facility must adhere to architectural standards found in the NSF Indian Head Installation Appearance Plan. The final design of facility would need to be reviewed and approved before construction may proceed.	No Impact to Minimal Impact		
Facilities Relocation (P202)	Facility design	The Facilities Relocation (P202) site is adjacent to historic buildings D2, D6, D7 and D8. As such, development may require consultation with SHPO to assess the potential for adverse effect to the viewscape around the historic buildings. During this consultation, SHPO may provide input on design considerations for any new development in order to reduce visual impacts to the historic property. In addition, the facilities must adhere to architectural standards found in the NSF Indian Head Installation Appearance Plan. The final design of the facility would need to be reviewed and approved before construction may proceed.	Minimal to Significant Impact	National Historic Preservation Act (NHPA) NSF Indian Head Installation Appearance Plan	OPNAVISNT NSF Indian Head Installation Appearance Plan
	Site location	The Facilities Relocation (P202) site would be visible from adjacent single-family residential homes used to house military personnel and families and would significantly impact the viewscape these homes have of the abandoned golf course and associated open space. Site layout should strive to consolidate the facilities and locate buildings to minimize viewscape impact.	Minimal to Significant Impact		
CBIRF Relocation	Vegetation clearing	The CBIRF Relocation site is partially vegetated and construction would require additional clearing of trees and vegetation. The amount of clearing required would depend on the final location and size of the facilities. However, it can be expected that tree and vegetation clearing would reduce the tree coverage of the site and could expose adjacent properties at NSF Indian Head to the CBIRF facilities.	No Impact to Minimal Impact	NSF Indian Head Installation Appearance Plan	NSF Indian Head Installation Appearance Plan
	Facility design	The CBIRF facilities must adhere to architectural standards found in the NSF Indian Head Installation Appearance Plan. The final design of facilities would need to be reviewed and approved before construction may proceed.	No Impact to Minimal Impact		

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Media Area #12: Explosive Safety and Site Approval Requirements

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Window specifications	Windows in facilities near inhabited building distance (IBD) arcs [a] may be susceptible to fragmentation if an incident were to occur at a nearby explosives facility and window fragmentation can pose serious hazards to the building's occupants. Therefore, occupied facilities near IBD arcs must be designed to mitigate hazards resulting from window fragmentation.	Minimal Impact	NAVSEA OP 5 Paragraphs 8-1.2.1.a.(4) and 8-3.1.11. NAVFACINST 11010.45 Paragraph 5.2 NOSSAINST 8020.15B Paragraph 5.b	
	Explosives site approval	An explosives safety site approval is required for facilities within 110% of IBD, which has taken up to 16 months to obtain at NSF Indian Head.	Minimal to Significant Impact		
	Improvements within IR Site 24	Within IR Site 24, there may be drain lines connected to abandoned nitrocellulose production buildings and these drain lines may be contaminated with nitrocellulose residue. Because of the safety hazards of disturbing these drain lines, Naval Safety and Security Activity (NOSSA) must approve any earth disturbance within IR Site 24. For other NSF Indian Head projects, NOSSA required unexploded ordnance (UXO)-qualified personnel to oversee excavation within IR Site 24. Additional restrictions, and Department of Defense Explosives Safety Board (DDESB) approval, would be required to remove any of these drain lines. Documentation requirements for NOSSA approval can take approximately one to two months; documentation requirements for DDESB approval can take approximately six to nine months.	Minimal to Significant Impact		
	Installation of radio transmitters and antennae	An electromagnetic radiation safety site approval is required for any permanent installation of radio transmitters and antennae, which is expected to take up to six months.	Minimal Impact		
Natural Gas Line (on and off NSF Indian Head)	Utility location	Gas lines must be buried and no closer than 80 feet to explosives facilities. An alternative utility run may be required to meet this constraint.	Minimal Impact	NAVSEA OP 5 Paragraph 7-13.11	
Power Transmission Lines (on and off NSF Indian Head)	Utility location	Electrical transmission lines carrying more than 69 kV must be outside IBD, excluding hazardous fragment requirements [b], of surrounding explosives facilities [c]. An alternative utility run may be required to meet this constraint.	Minimal Impact	NAVSEA OP 5 Paragraph 5-10.1.d	

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Media Area #12: Explosive Safety and Site Approval Requirements

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Distribution Lines	Utility location	Electrical distribution lines must be outside IBD if carrying 69 kV or more, excluding hazardous fragment requirements, of surrounding explosives facilities. Electrical distribution lines carrying less than 69 kV must be outside public traffic route distance (PTRD), excluding hazardous fragment requirements, of surrounding explosives facilities. An alternative utility run may be required to meet this constraint.	Minimal Impact	NAVSEA OP 5 Paragraphs 5-10.1.d and Paragraph 5-10.1.c	
Light Industrial Facility and Facilities Relocation (P202)	Installation of radio transmitters and antennae	An electromagnetic radiation safety site approval is required for any permanent installation of radio transmitters and antennae, which is expected to take up to six months.	Minimal Impact	NAVFACINST 11010.45 Paragraph 5.2	
CBIRF Relocation	Window specifications	Windows in facilities near inhabited building distance (IBD) arcs [a] may be susceptible to fragmentation if an incident were to occur at a nearby explosives facility and window fragmentation can pose serious hazards to the building's occupants. Therefore, occupied facilities near IBD arcs must be designed to mitigate hazards resulting from window fragmentation.	Minimal Impact	NAVSEA OP 5 Paragraphs 8-1.2.1.a.(4) and 8-3.1.11. NAVFACINST 11010.45 Paragraph 5.2	
	Explosives site approval	An explosives safety site approval is required for facilities within 110% of IBD, which has taken up to 16 months to obtain at NSF Indian Head.	Minimal to Significant Impact		
	Installation of radio transmitters and antennae	An electromagnetic radiation safety site approval is required for any permanent installation of radio transmitters and antennae, which is expected to take up to six months.	Minimal Impact		

Notes:
a – Inhabited building distance is a standoff distance requirement from explosives facilities, used to ensure a degree of safety in the event of mishap at an explosives facility.
b – For Class 1 Division 1 (C/D 1.1) materials (*i.e.*, materials capable of producing a mass explosion), IBD is based on the greater of two hazards: overpressure and fragmentation. In most situations, the overpressure separation requirement is calculated using a K40 factor and the fragmentation separation requirement is 1,250 feet. Public Traffic Route Distance for C/D 1.1 materials is 60% of IBD.
c – This constraint can be loosened if power can be re-routed such that there would not be an interruption in service if the electrical transmission/distribution lines were broken. If this is the case, then electrical transmission/distribution lines must be run such that a broken energized line could not come into contact with an explosives facility with a combustible exterior finish.

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Media Area #13: Transportation

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Demolition and construction	Traffic in the vicinity of the power plant and through the Town of Indian Head would increase while demolition and construction activities are ongoing. Of particular concern is truck traffic carrying demolition and construction waste and delivery of construction materials. Heavy loads, traffic congestion, and increased wear and tear on roads are expected.	Minimal Impact	Maryland Department of Transportation (MDOT)	
	Operations	Roads leading to the power plant would be critical to allow the necessary personnel, such as operators, technicians, and service providers to access the power plant. Traffic volumes on these roads would vary depending on the number of staff needed to operate the power plant In addition, truck traffic may decrease since coal deliveries would no longer be necessary for the new power plant.	No Impact to Minimal Impact		
Natural Gas Line (on and off NSF Indian Head)	Construction	Construction of the natural gas pipeline would result in road and lane closures, traffic congestion, and possible repaving of road shoulders. All impacts from construction would be temporary, but minimal impacts would recur for pipeline maintenance.	Minimal Impact	MDOT	
Power Transmission Lines (on and off NSF Indian Head)	Construction	Construction of power transmission lines would likely cross state and county roads and cause road and lane closures and traffic congestion during construction, line inspections, and line repairs. All impacts from construction and maintenance would be temporary.	Minimal Impact	MDOT	
	Maintenance	Power transmission lines require a service road to allow access to lines for maintenance and repairs. The adjacent properties to the power transmission lines would be subject to dust and debris and noise from vehicle traffic.	No Impact to Minimal Impact		
Power Distribution Lines	Construction	Construction of power distribution lines would result in road and lane closures, traffic congestion, and possible repaving of road shoulders. All impacts from construction would be temporary, but minimal impacts would recur for power distribution line maintenance.	Minimal Impact	MDOT	
Light Industrial Facility	Construction	Traffic in the vicinity of the light industrial facility and through the Town of Indian Head would increase while construction activities are ongoing. Of particular concern is truck traffic carrying construction waste and delivery of construction materials. Heavy loads, traffic congestion, and increased wear and tear on roads are expected.	Minimal Impact	MDOT	
	Site Location	To access the light industrial facility directly from the Town of Indian Head, a new road would be needed. The new road would cause permanent traffic changes to the areas adjacent to the light industrial facility, including increased traffic flow and vehicle noise and light pollution.	Minimal Impact		

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Media Area #13: Transportation

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Facilities Relocation (P202)	Demolition and Construction	Traffic in the vicinity of the Facilities Relocation (P202) site and through the Town of Indian Head would increase while demolition and construction activities are ongoing. Of particular concern is truck traffic carrying demolition and construction waste and delivery of construction materials. Heavy loads, traffic congestion, and increased wear and tear on roads are expected.	Minimal Impact	MDOT	
	Site Location	The Facilities Relocation (P202) site would create high volumes of traffic, including truck deliveries, traveling from the entrance of NSF Indian Head along Strauss Avenue to the site. This would increase traffic congestion at the corner of Patterson Road and Strauss Avenue. The access road to the back-side of the Facilities Relocation (P202) site may need to be improved to accommodate truck deliveries.	Minimal Impact		
CBIRF Relocation	Construction	Traffic in the vicinity of CBRIF relocation facilities and through the Town of Indian Head would increase while construction activities are ongoing. Of particular concern is truck traffic carrying construction waste and delivery of construction materials. Heavy loads, traffic congestion, and increased wear and tear on roads are expected.	Minimal Impact	MDOT	

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Media Area #14: Health and Safety

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Compliance with current OSHA standards	The construction of the new power plant and operation would need to comply with applicable OSHA standards, including the following: • Toxic and hazardous materials handling; • Explosives safety (See Explosives Safety Section); • Fire protection; • Electrical safety; • Personal Protective Equipment (PPE); • Occupational health and environmental controls; • Medical and first aid; • Compressed gas and compressed air equipment; • Materials handling and storage; • Machinery and machine guarding; • Signs, signals, and barricades; • Welding and cutting; • Scaffolding; • Fall protection; • Excavation; • Steel erection; and • Demolition. Note: The eastern portion of the proposed power plant site (near Building 490) overlaps IR Site 24, which has potential nitrocellulose (NC) contamination. See the Explosive Safety and Site Approval Requirements section for discussion of potential NC contamination and the explosives safety requirements that could affect Health and Safety.	Minimal Impact	OSHA, Safety and Health Regulations for Construction in 29 CFR Part 1926 General Industry Occupational Safety and Health Standards in 29 CFR Part 1910 OPNAVINST 5100.23 Navy Occupational Safety and Health Program Manual	
	Exposure to OSHA risks	Demolition of existing facilities at the Goddard Power Plant and construction of the new power plant would result in temporary exposure of contractors and Navy personnel to OSHA risks.	Minimal Impact		
	Presence of lead and asbestos	Prior to demolition of any existing facilities, hazardous materials surveys (lead, asbestos, etc.) would need to be conducted to determine the presence of lead and asbestos. Survey results should be used to develop an appropriate abatement program.	Minimal Impact		

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Media Area #14: Health and Safety

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Natural Gas Line (on and off NSF Indian Head)	OSHA constraints	In addition to the OSHA standards related to demolition and construction addressed in the Power Plant discussion above, construction of the natural gas line also requires compliance with OSHA Regulations for "Underground Construction, Caissons, Cofferdams, and Compressed Air" including, but not limited to, air monitoring, ventilation, illumination, communication, mechanical equipment, PPE, explosives, fire prevention and protection, emergency procedures, and notification.	Minimal Impact	29 CFR Part 1926.800	NSF Indian Head GIS
Power Transmission Lines (on and off NSF Indian Head) and Power Distribution Lines	OSHA constraints	In addition to the OSHA standards related to demolition and construction addressed in the Power Plant discussion above, construction of the transmission lines and power distribution lines must comply with 29 CFR 1910.269 "Electric Power Generation, Transmission, and Distribution."	Minimal Impact	29 CFR Part 1910.269	
Light Industrial Facility	OSHA constraints	Construction of the light industrial facility must comply with OSHA standards as addressed in the Power Plant discussion above.	Minimal Impact		
Facilities Relocation (P202) and CBIRF Relocation	OSHA constraints	Construction of the Facilities Relocation (P202) and CBIRF Relocation facilities must comply with OSHA standards as addressed in the Power Plant discussion above. Health and safety would be improved by relocating personnel outside of explosives safety arcs.	Minimal Impact		

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Media Area #15: Geology and Soils

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Earth Disturbance	Construction of the new power plant would result in major earth disturbance, which would require minor grading and stormwater management implementation. Development of a SEC and stormwater management plan is required (as discussed in the Water Requirements and Sources section).	Minimal to Significant Impact		
	Soil Contamination	The proposed location for the new power plant is outside of any Munitions Response Program (MRP) sites. However, the eastern portion of the proposed power plant area is within IR Site 24 (Abandoned Drain Lines), which has suspected buried drain lines containing nitrocellulose (NC). See the Explosive Safety and Site Approval Requirements section for discussion of contamination concerns. In addition, the northern portion of the proposed development site is adjacent to the "Lab Area," which also has soil contamination concerns associated with mercury, lead, and other contaminants disposed of in the sewer lines. Earthwork within this area would require additional regulations for handling/disposal of soil. Note: The existing Goddard Power Plant area may have soil contamination and may require site investigation and/or clean-up.	Minimal to Significant Impact		
Natural Gas Line (on and off NSF Indian Head), Power Transmission Lines (on and off NSF Indian Head), and Power Distribution Lines (collectively, "lines")	Earth Disturbance	Construction of the new lines would result in earth disturbance; however, estimates and grading requirements are unknown at this time. If earth disturbance is over 5,000 square feet a SEC and stormwater management plan would need to be developed (as discussed in the Water Requirements and Sources section).	Minimal to Significant Impact		
	Soil Contamination	The proposed line locations are unknown at this time. However, if any of the proposed lines are located within contaminated sites, appropriate mitigation measures for each individual site would need to be developed, which may include a site investigation and/or clean-up. Consultation with the NSF Indian Head Environmental Office's Installation Restoration Manager would be necessary to determine appropriate measures for construction within contaminated sites at NSF Indian Head.	Minimal to Significant Impact		

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Media Area #15: Geology and Soils

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Light Industrial Facility	Earth Disturbance	Construction of the new light industrial facility would result in moderate earth disturbance, which would require minor grading and stormwater management implementation. If earth disturbance is over 5,000 square feet, a SEC and stormwater management plan would need to be developed (as discussed in the Water Requirements and Sources section).	Minimal to Significant Impact		
	Soil Contamination	There are no soil contamination concerns at this site.	No Impact		
Facilities Relocation (P202)	Earth Disturbance	Construction of the Facilities Relocation (P202) site would result in moderate earth disturbance (site is 15 acres), which would require minor grading and stormwater drainage implementation. If earth disturbance is over 5,000 square feet, a SEC and stormwater management plan would need to be developed (as discussed in the Water Requirements and Sources section).	Minimal to Significant Impact		
	Soil Contamination	There are no soil contamination concerns at this site. Note: The northern portion of the site overlaps IR Site 4 (Lloyd Oil Spill Site); however, this site does not require any further remediation and there are no soil contamination concerns.	No Impact		
CBIRF Relocation	Earth Disturbance	Construction of the CBIRF Relocation facility would result in moderate earth disturbance (2.93 acre site), which would require minor grading and stormwater drainage implementation. If earth disturbance is over 5,000 square feet, a SEC and stormwater management would need to be developed (as discussed in the Water Requirements and Sources section).	Minimal to Significant Impact		
	Soil Contamination	There are no soil contamination concerns at this site.	No Impact		

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Media Area #16: Topography

Project Element	Constraint	Impacts	Anticipated Level of Impact	Applicable Regulations	References
Power Plant	Slope	The majority of the proposed power plant site is gently sloped because it has already been developed and graded. However, the Water Treatment Facility area to the southeast and the eastern-central portion may require some grading due to rolling slope.	Minimal Impact		NSF Indian Head GIS
Natural Gas Line, Power Distribution Lines, and Power Transmission Lines (on and off NSF Indian Head)	Slope	The proposed natural gas line, power distribution line, and transmission line locations are not known, but minor alterations may be required to grade areas with steeper slopes both on and off NSF Indian Head.	Minimal Impact		
Light Industrial Facility	Slope	The proposed light industrial facility location is gently sloped because it has been previously developed and graded in the past; however, minor grading may be required.	Minimal Impact		
Facilities Relocation (P202)	Slope	The proposed Facilities Relocation (P202) site is mostly flat and gently sloped because it was previously developed and graded; however, minor grading may be required. Note: Steep slopes are located outside of the northern boundary of the proposed location.	Minimal Impact		
CBIRF Relocation	Slope	The proposed CBIRF Relocation site is gently sloped, but may require some minor grading.	Minimal Impact		

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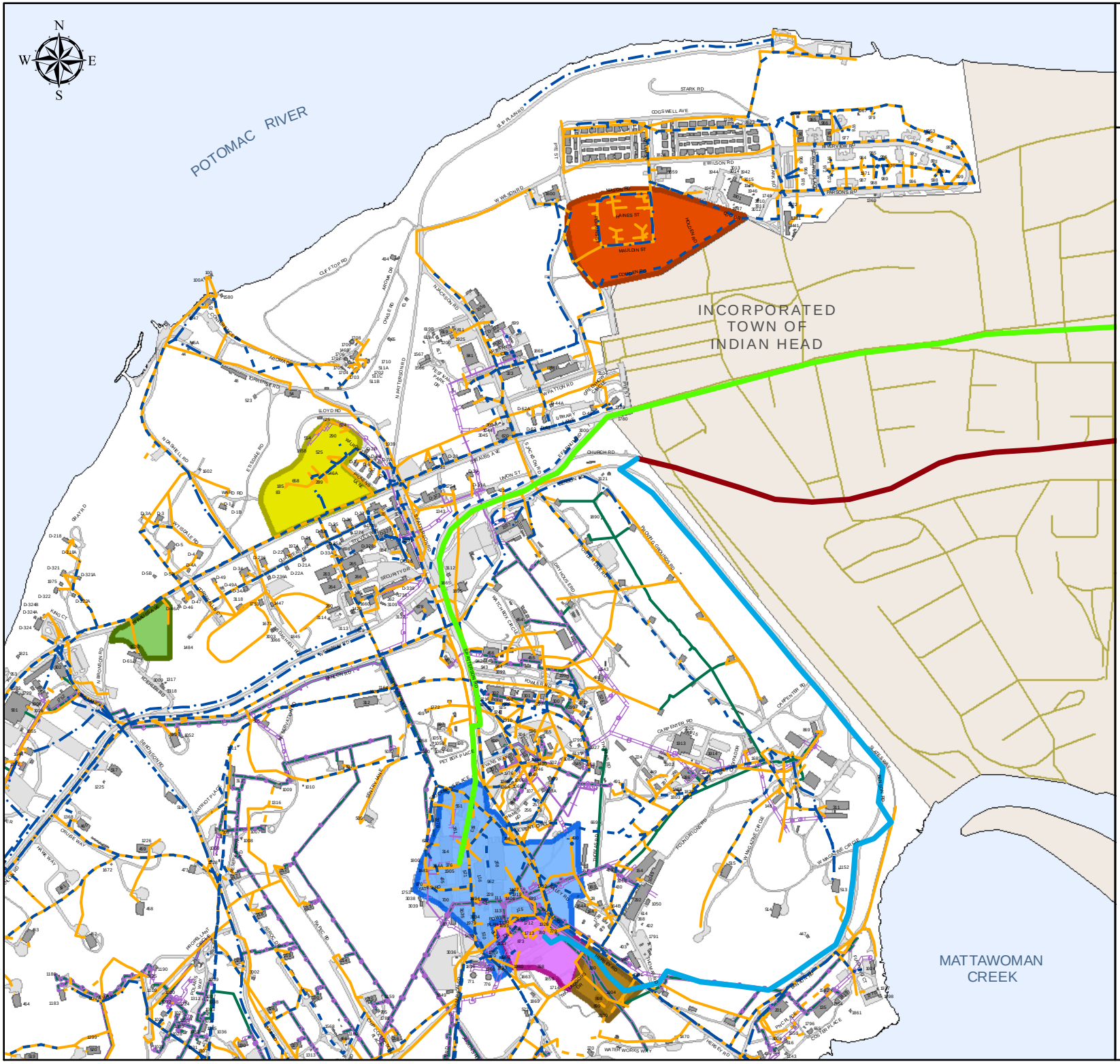
Appendix A

EUL PROJECT ELEMENT MAPS



EUL Power Generation

Figure 1: Existing Utilities

NSF Indian Head

Naval Support Activity South Potomac

Legend

Proposed Development Areas

- EUL Site #1 (Power Plant)
- EUL Site #2 (Light Industrial Facility)
- CBIRF Relocation
- Facilities Relocation (P202)
- Existing Power Plant
- Existing Water Treatment

Existing Utilities

Electric

- Aboveground
- Underground
- Existing Transmission Lines (Inside NSF Indian Head)
- Existing Transmission Lines (Outside NSF Indian Head)

Communications

- Aboveground
- Underground

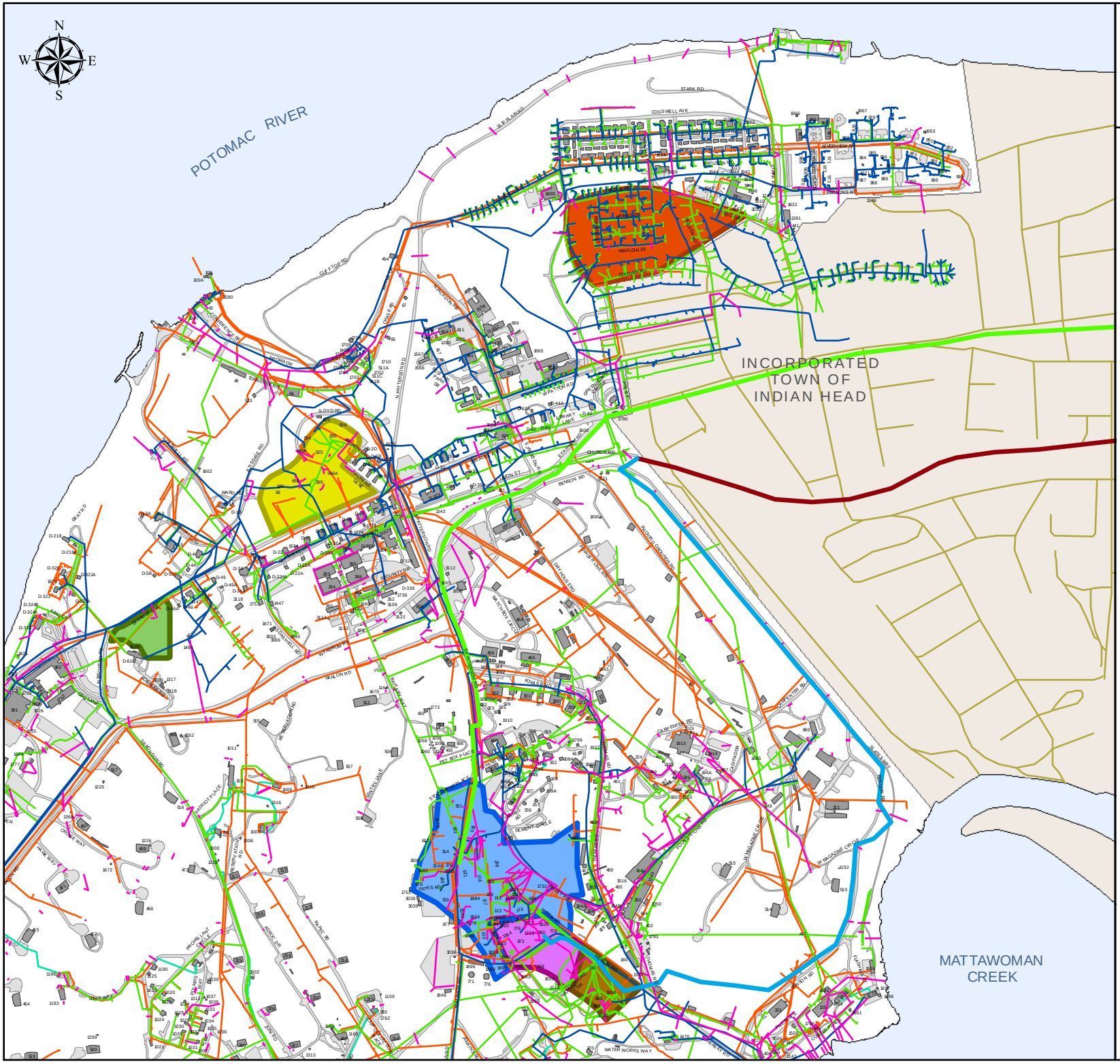
Steam

- Aboveground
- Underground
- Compressed Air
- Proposed Natural Gas Line Route

Other Features

- Buildings
- Roads, Parking Lots
- Charles County Roads

0 500 1,000 1,500 Feet



EUL Power Generation

Figure 2: Existing Water Utilities

NSF Indian Head

Naval Support Activity South Potomac

Legend

Proposed Development Areas

- EUL Site #1 (Power Plant)
- EUL Site #2 (Light Industrial Facility)
- CBIRF Relocation
- Facilities Relocation (P202)
- Existing Power Plant
- Existing Water Treatment

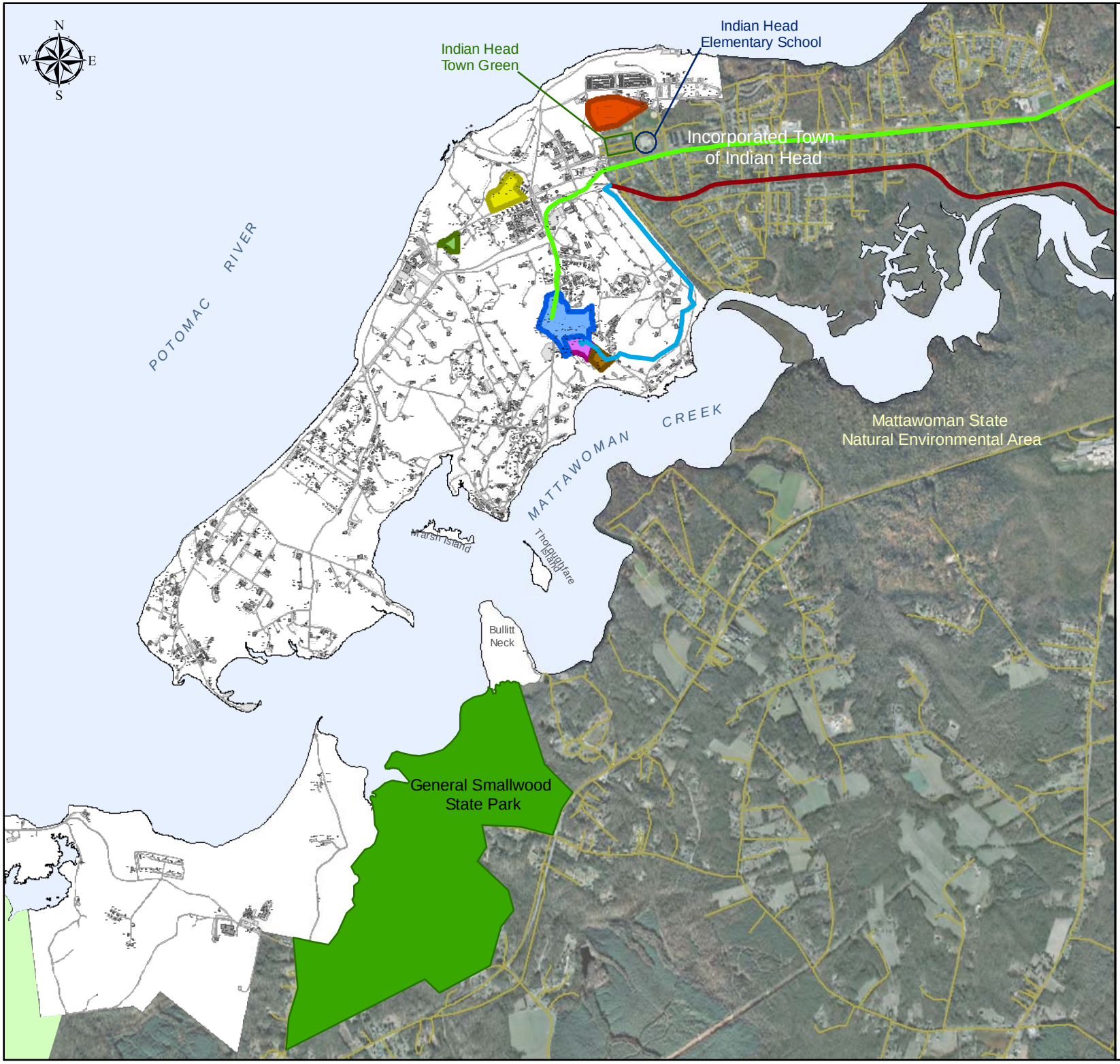
Existing Water Utilities (Underground)

- Stormwater
- Sanitary Sewer
- Potable Water
- River Water
- Industrial

Other Features

- Buildings
- Roads, Parking Lots
- Existing Transmission Lines (Inside NSF Indian Head)
- Existing Transmission Lines (Outside NSF Indian Head)
- Potential Natural Gas Line Route
- Charles County Roads

0 500 1,000 1,500 Feet



EUL Power Generation

Figure 3: Surrounding Land Use

NSF Indian Head

Naval Support Activity South Potomac

Legend

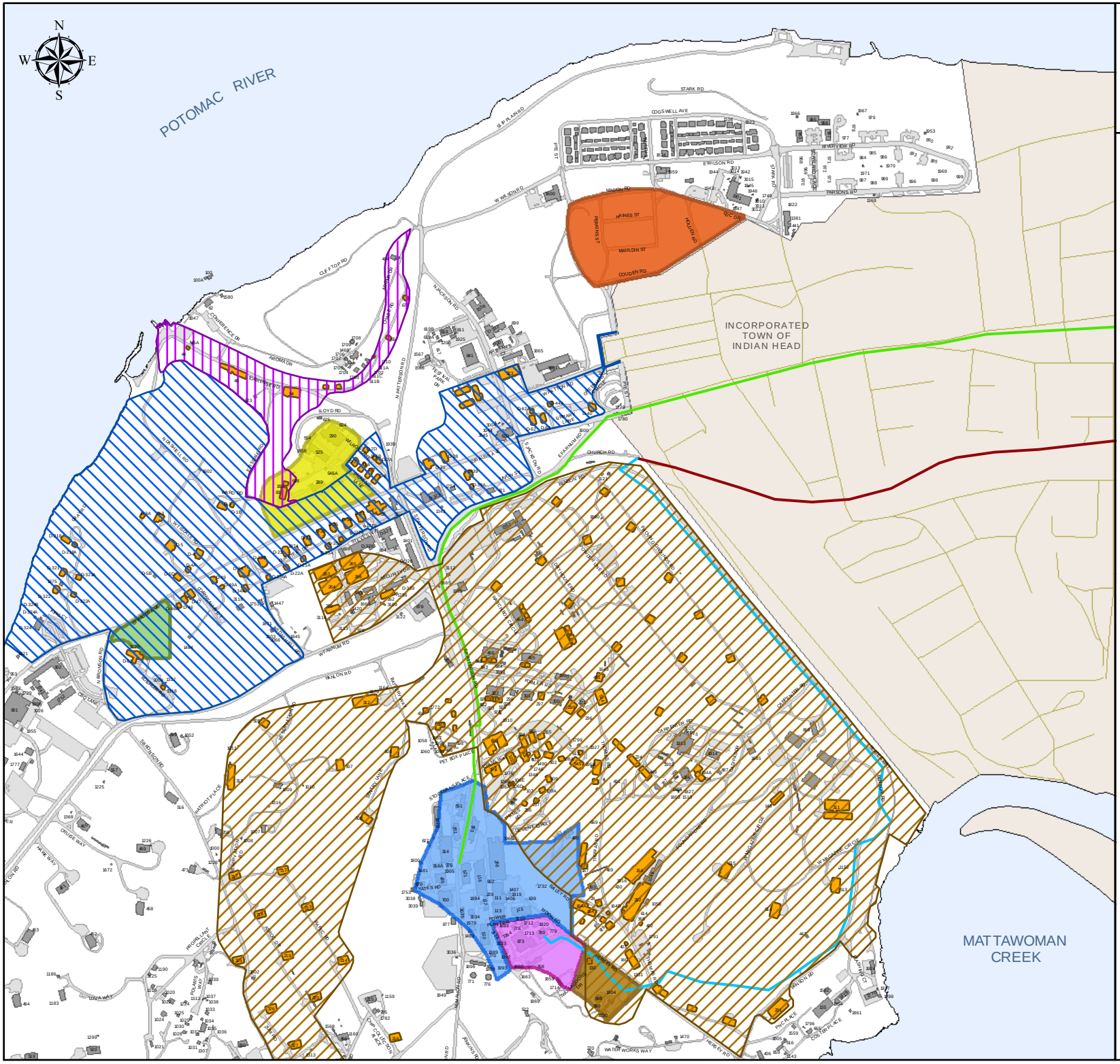
Proposed Development Areas

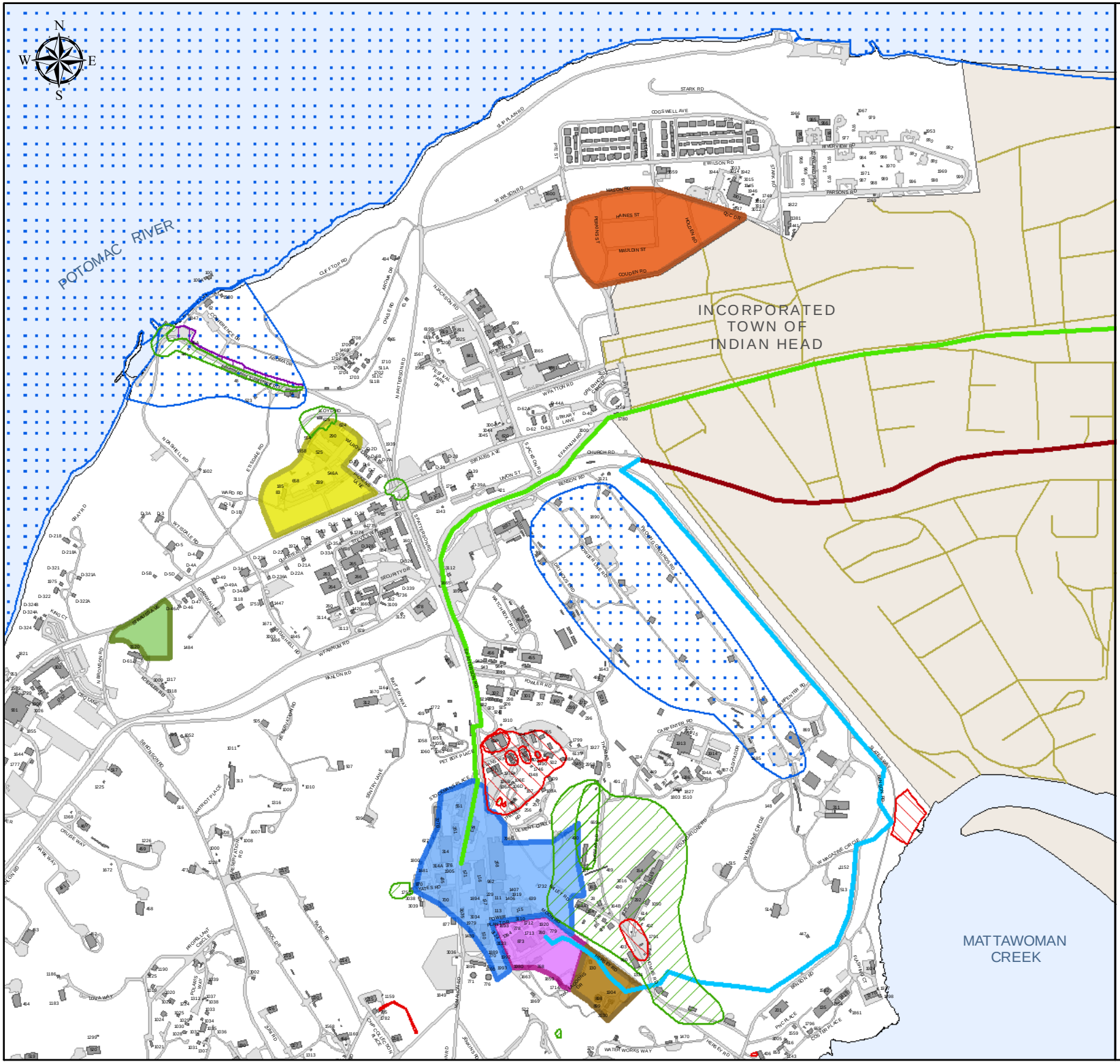
- EUL Site #1 (Power Plant)
- EUL Site #2 (Light Industrial Facility)
- CBIRF Relocation
- Facilities Relocation (P202)
- Existing Power Plant
- Existing Water Treatment

Other Features

- Buildings
- Roads, Parking Lots
- Existing Transmission Lines (Outside NSF Indian Head)
- Existing Transmission Lines (Inside NSF Indian Head)
- Potential Natural Gas Line Route
- Charles County Roads

0 1,000 2,000 3,000 4,000 Feet


N
W
E
S
POTOMAC RIVER
INCORPORATED TOWN OF INDIAN HEAD
MATTAWOMAN CREEK
STARK RD
COGSWELL AVE
EWILSON RD
PARSONS RD
RIVERVIEW RD
WAGON RD
HAINES ST
MAULDIN ST
COUGEN RD
HOLDEN RD
GLEN ROAD
CONFERENCE DR
AROMA DR
LLOYD RD
CHURCH RD
WATER WORKS WAY
HERB RD
PACIFIC AVE
COLLIER PLACE
WVIRGINIA CIRCLE
MAIN ST
POWER PLANT
VAUGHN RD
BAILEY RD
MOORE RD
STORMS PLACE
PET BOX PLACE
CRUISE WAY
HAWK WAY
LOYA WAY
PROPELLANT CIRCLE
POLARIS WAY
OLD COLLIER PLACE
SHEDVOVER
CARPETT PLACE
N BROMSON RD
OLD OLIVE
W WANNUM RD
HALDON RD
N PATTERSON RD
W WILSON RD
S PLAIN RD
JACKSON RD
EARNUM RD
ROBERTS RD
OLD HAYES RD
OLD HAYES PLACE
OLD HAYES CIRCLE
OLD HAYES WAY
OLD HAYES ROA



EUL Power Generation

Figure 5: Contaminated Areas

NSF Indian Head

Naval Support Activity South Potomac

Legend

Proposed Development Areas

- EUL Site #1 (Power Plant)
- EUL Site #2 (Light Industrial Facility)
- CBIRF Relocation
- Facilities Relocation (P202)
- Existing Power Plant
- Existing Water Treatment

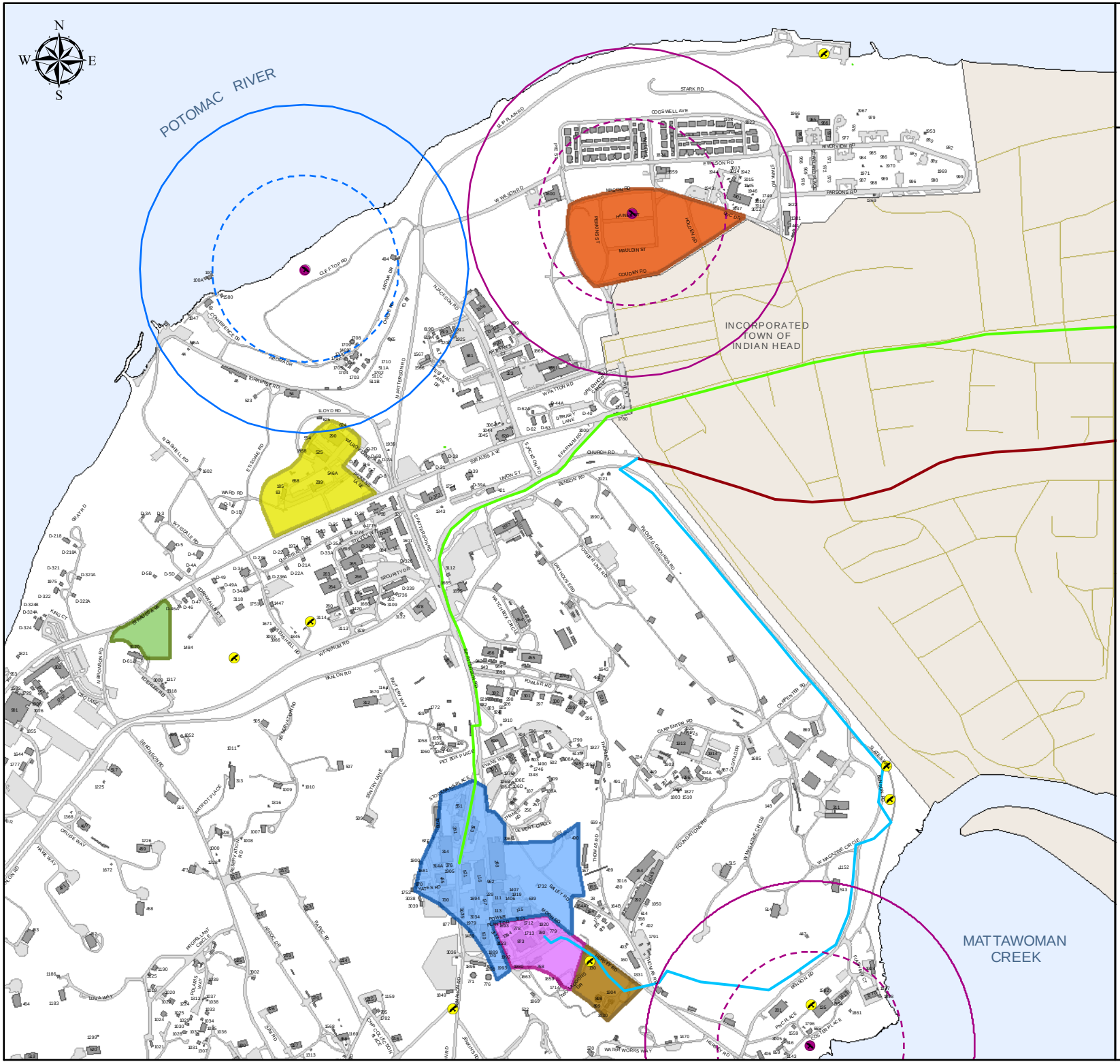
Installation Restoration (IR) Sites

- Remediation Required
- Remediation Not Required
- Remediation Unknown
- Munitions Response Program (MRP) Sites

Other Features

- Buildings
- Roads, Parking Lots
- Existing Transmission Lines (Inside NSF Indian Head)
- Existing Transmission Lines (Outside NSF Indian Head)
- Potential Natural Gas Line Route
- Charles County Roads

0 500 1,000 1,500 Feet



EUL Power Generation

Figure 6: Fish and Wildllife

NSF Indian Head

Naval Support Activity South Potomac

Legend

Proposed Development Areas

- EUL Site #1 (Power Plant)
- EUL Site #2 (Light Industrial Facility)
- CBIRF Relocation
- Facilities Relocation (P202)
- Existing Power Plant
- Existing Water Treatment

Nests

- Eagle
- Osprey

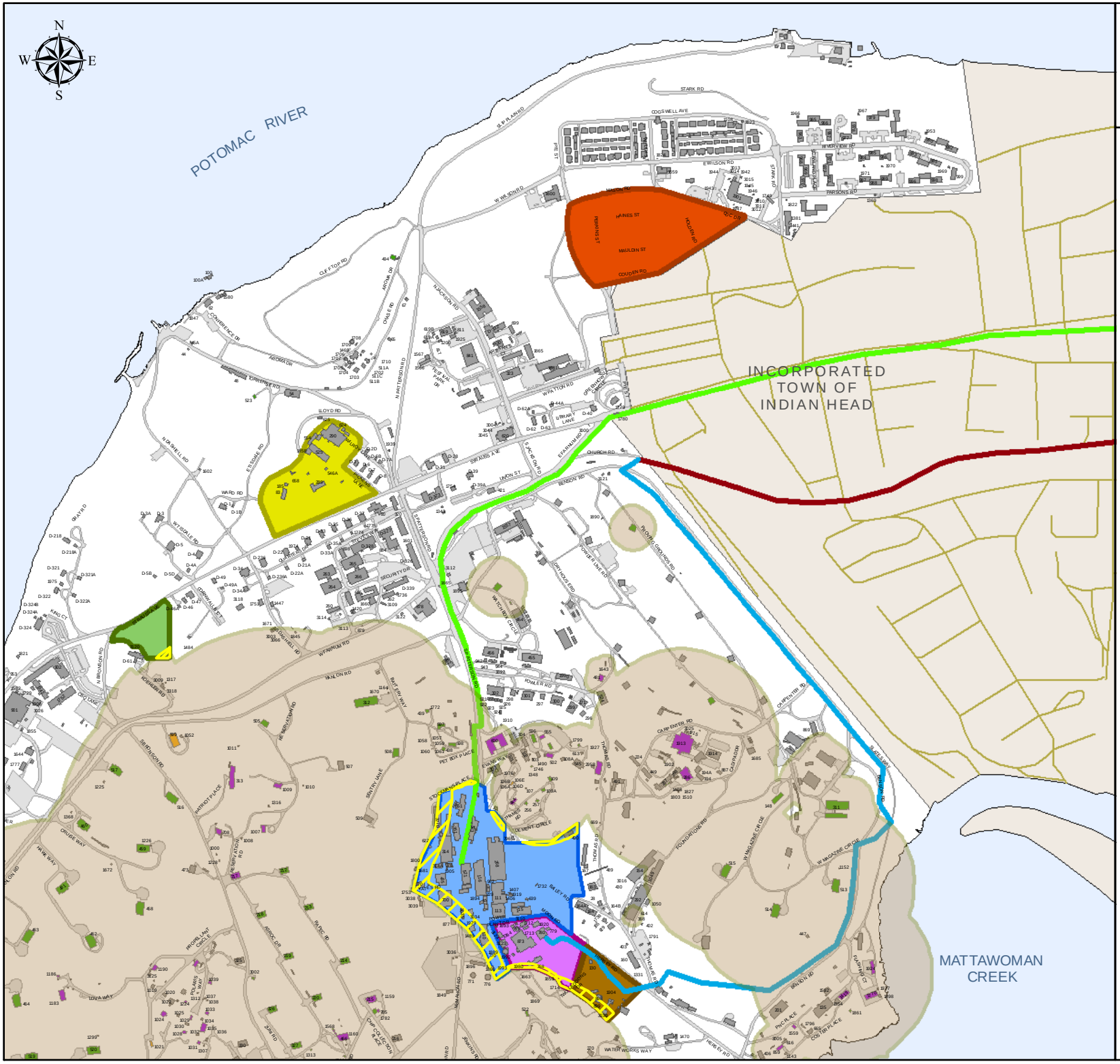
Bald Eagle Protection Areas

- 1/4 Mile (Active)
- 750 Feet (Active)
- 1/4 Mile (Inactive)
- 750 Feet (Inactive)
- Flora Protection Areas

Other Features

- Buildings
- Roads, Parking Lots
- Existing Transmission Lines (Inside NSF Indian Head)
- Existing Transmission Lines (Outside NSF Indian Head)
- Potential Natural Gas Line
- Charles County Roads

0 500 1,000 1,500 Feet



EUL Power Generation

Figure 7: Explosives Safety

NSF Indian Head

Naval Support Activity South Potomac

Legend

Proposed Development Areas

- EUL Site #1 (Power Plant)
- EUL Site #2 (Light Industrial Facility)
- CBIRF Relocation
- Facilities Relocation (P202)
- Existing Power Plant
- Existing Water Treatment

Structures

- Aboveground Magazines
- Earth-Covered Magazines
- Explosives Operating Locations

ESQD Arcs

- Composite IBD
- Site Approval Submission Zone Inside EUL Site 1

Other Features

- Buildings
- Roads, Parking Lots
- Existing Transmission Lines (Inside NSF Indian Head)
- Existing Transmission Lines (Outside NSF Indian Head)
- Potential Natural Gas Line Route
- Charles County Roads

Note: The composite Inhabited Building Distance (IBD) arc is currently drawn with Hazardous Fragment Distance (HFD) values included. IBD arcs without HFD will result in a reduced composite IBD arc.