



**Utility Heat System Replacement
US Coast Guard Yard, Baltimore, Maryland**

**DRAFT ENVIRONMENTAL ASSESSMENT
February 2020**

**Provided by:
TranSystems**

**Environmental Management &
Planning Solutions, Inc.**



**US COAST GUARD
ENVIRONMENTAL ASSESSMENT FOR THE
UTILITY HEAT SYSTEM REPLACEMENT AT
US COAST GUARD YARD, BALTIMORE, MARYLAND**

This environmental assessment (EA) for the proposed replacement of the utility heat system at the US Coast Guard Yard in Baltimore, Maryland was prepared in accordance with Department of Homeland Security Management Directive 5100.1 and Coast Guard Commandant Instruction M16475.1D and is in compliance with the National Environmental Policy Act of 1969 and the Council on Environmental Quality implementing regulations dated November 28, 1978 (40 Code of Federal Regulations 1500-1508).

This EA serves as a concise public document to provide sufficient evidence and analysis for determining the need to prepare an environmental impact statement or a finding of no significant impact.

This EA succinctly describes the proposed action, the need for the proposed action, the alternatives, and the environmental impacts of the proposed action and alternatives. This EA also contains a comparative analysis of the proposed action and alternatives and a list of the agencies and persons consulted during EA preparation.

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ACRONYMS	Full Phrase or Definition
°F	degrees Fahrenheit
ACM	asbestos-containing material
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalents
COMDTINST	Commandant Instruction
CWA	Clean Water Act
CZMP	Coastal Zone Management Program
dB	decibel
dBA	A-weighted decibel
DHS	Department of Homeland Security
EA	Environmental Assessment
EFH	Essential Fish Habitat
EPA	US Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding Of No Significant Impact
ICAM	Inventory Condition Assessment and Mapping
IDA	Intensely Developed Area
kWh	kilowatt-hours
LF	linear feet
MBTA	Migratory Bird Treaty Act
MES	Maryland Environmental Services
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List

OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
ppm	parts per million
SF	square feet
SHPO	State Historic Preservation Officer
TMDL	Total Maximum Daily Load
US	United States
USC	United States Code
USFWS	United States Fish and Wildlife Service

CHAPTER 1

PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

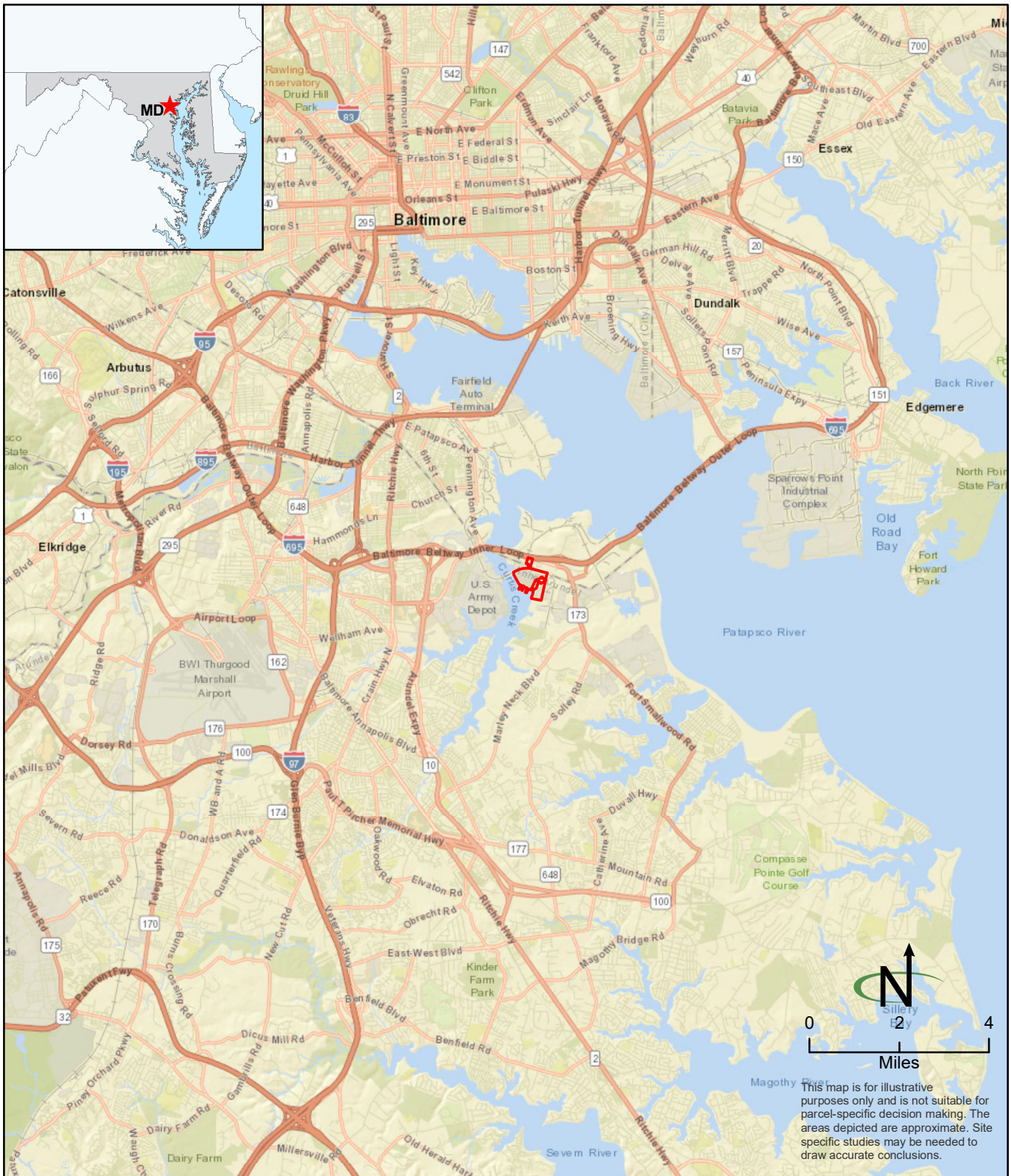
This Environmental Assessment (EA) evaluates the environmental and socioeconomic effects of the US Coast Guard's proposal to replace the utility heat system at Coast Guard Yard (CG Yard) in Baltimore, Maryland. This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA; 42 United States Code [USC] §4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] §1500 *et seq.*); and Department of Homeland Security (DHS) Management Directive 023-01 and Coast Guard Commandant Instruction (COMTDINST) M16475.1D. The information and analysis contained in this EA will determine whether implementing the alternatives for replacing the utility heat system would result in a significant impact on the environment, requiring the preparation of an environmental impact statement (EIS), or if no significant impacts would occur and a finding of no significant impact (FONSI) would be appropriate.

1.2 BACKGROUND

CG Yard is a 113-acre Government-owned facility located predominantly in Anne Arundel County, approximately 10 miles south of downtown Baltimore, Maryland (Figure 1-1). It was established in 1899 as a Coast Guard academy and boat repair facility, and by 1910 had become a fully operational shipbuilding and repair facility. CG Yard's mission is to renovate, maintain, and repair the Coast Guard's fleet of cutters. It is the Coast Guard's sole shipbuilding and major repair facility and an essential part of the Coast Guard's core industrial base and fleet support operations.

CG Yard houses depot-level industrial assets, including thirteen marine maintenance shops and three corrosion control facilities, as well as numerous Coast Guard tenant units, including the Surface Forces Logistic Center. Containing 97 buildings with just under one million total square feet, CG Yard is a densely developed industrial facility with significant marine and shipbuilding facilities, numerous administration buildings, industrial shops, equipment staging areas, piers, bulkheads, and parking lots. Secondary uses include unaccompanied personnel housing, a medical clinic, and morale, welfare, and recreation support facilities (Figure 1-2).

1. Purpose and Need for Action



Project Vicinity

 CG Yard

Figure 1-1



Project Site


 CG Yard

Figure 1-2

The source of heat for many of the CG Yard facilities is steam. This steam is produced by boilers in the central steam plant in Building 15 and distributed to 45 buildings via a combination of underground piping and a small quantity of aboveground piping.

A steam boiler operates through a combustion reaction between fuel and air, which ignites a flame into tubes that are submerged in water. The heat from this combustion is transferred from the tube to the water, and the water is evaporated into steam. This steam is then distributed via piping to the heating units within the individual buildings. After the heat from the steam is transferred into the building heating units, the steam condenses back into water as condensate. Condensate can be collected and returned to the boiler through a condensate return line, which conserves water use. If water is not returned to the boiler, new water (called makeup water) must be added. Water used in steam boiler systems contains naturally dissolved solids that can produce scale and corrosion in the system and affect its overall condition and operating efficiency; this is managed through the use of chemical inhibitors that treat the water to reduce the risk of scale and corrosion. The amount of chemicals that must be used depends on the amount of makeup water needed to be added to the system.

The existing steam boiler plant consists of one large and two smaller boilers. The large boiler, which is a 50,000 pounds per hour boiler that is approximately 40 years old, is the main heating boiler and the primary heat source during the winter months (generally October to May). The two smaller boilers, which are each 13,000 pounds per hour boilers that are approximately 10 years old, are used during the shoulder seasons to provide heat when the large boiler is not operational. While the boilers are in adequate operating condition, the steam distribution system is in very poor condition, and interruptions in the system are negatively impacting CG Yard operations in the form of providing inadequate heat to CG Yard buildings and inadequate steam for some industrial activities. The Coast Guard is proposing to replace the current system with a new centralized steam system, or remove the centralized system and install decentralized heating equipment, or a combination thereof.

1.3 PURPOSE AND NEED FOR ACTION

The purpose of the proposed action is to recapitalize the utility heat system at CG Yard to enable the Yard to provide a reliable and efficient source of heat and steam to support depot-level maintenance and tenant operations.

The need for the proposed action is to address the findings of the Inventory Condition Assessment and Mapping (ICAM) report of CG Yard's steam system (Tetra Tech 2017). This assessment indicated that the system is in poor condition, with numerous leaks. These leaks are a major source of energy loss throughout the facility. They also present personnel safety issues by creating high-temperature conditions where pipes and shore-tie steam blocks are uninsulated and where high-temperature steam enters steam pits and manholes. In addition to the steam leaks, the condensate return lines are nonfunctional. This is a major source of water loss, as condensate return water is generally discharged onto the ground adjacent to the buildings instead of being returned to the boiler plant. The failure to capture condensate return water requires the Coast Guard to use large quantities of makeup water and chemicals to treat this incoming water. This increases the cost of operating the system and increases the likelihood that the water is not properly balanced or treated, as evidenced by the fact that many of the steam lines are corroding from the inside out.

1.4 SCOPE OF THE EA

This EA evaluates the potential direct, indirect, and cumulative environmental and socioeconomic impacts of implementing the proposed action and reasonable alternatives to the proposed action, as described in Chapter 2 of this EA. In accordance with NEPA and CEQ implementing regulations, this EA evaluates three alternatives for recapitalizing the utility heat system. These alternatives were developed based on planning factors provided by the Coast Guard. All viable alternatives must satisfy the planning factors to the greatest extent practicable, and those that do not are eliminated from further consideration. The no action alternative is also evaluated, as required by CEQ regulations and COMDTINST M16475.1D.

In accordance with CEQ implementing regulations, the Coast Guard conducted internal and external scoping to identify and eliminate from detailed study those issues that are not significant (40 CFR 1506.3). This EA narrows the discussion of those issues eliminated from detailed study to a brief presentation of why they will not have a significant effect on the environment (40 CFR Part 1501.7). This approach is consistent with NEPA and CEQ regulations.

Through scoping, the Coast Guard determined that the resources requiring in-depth evaluation within this EA are coastal resources, biological resources, water resources, cultural resources, geology and soils, climate and air quality, noise, hazardous materials and wastes, and utilities. These resources are described and evaluated in Chapter 3. Resource areas not expected to experience meaningful effects and not evaluated in detail include land use and zoning, visual resources, local economy, housing, community and medical services, emergency services, schools, recreation, environmental justice, and transportation. A brief discussion of these resources is provided at the beginning of Chapter 3.

1.5 REGULATORY REQUIREMENTS

As described in Section 1.1, Introduction, this EA has been prepared in accordance with NEPA, CEQ regulations implementing NEPA, DHS Management Directive 023-01, and COMDTINST M16475.1D. The primary legislation affecting the decision-making process is NEPA. This and other pertinent federal, state, and local laws and regulations related to the proposed action are summarized below.

National Environmental Policy Act

NEPA established the broad national framework for protecting the environment. The act requires federal agencies to assess the environmental, social, and economic effects of their actions, with public input, prior to making decisions. CEQ was established under NEPA for the purpose of implementing and overseeing federal policies as they relate to this process. CEQ issued *Regulations for Implementing the Procedural Provisions of the NEPA* (40 CFR Parts 1500-1508). These regulations specify that an EA be prepared to:

- Briefly provide sufficient analysis and evidence for determining whether to prepare an EIS or a FONSI;
- Aid in an agency's compliance with NEPA when no EIS is necessary; and
- Facilitate preparation of an EIS when one is necessary.

This EA has been prepared in accordance with NEPA and CEQ regulations.

Coastal Zone Management Act

The federal Coastal Zone Management Act (CZMA) requires that federal agency activities on federal property that may affect resources within the coastal zone be consistent to the maximum extent practicable with the enforceable policies of approved state coastal zone management programs. Because CG Yard is within the Maryland coastal zone, a federal consistency determination has been prepared as part of this EA.

Clean Air Act

The Clean Air Act (CAA) directs the US Environmental Protection Agency (EPA) to establish national ambient air quality standards to protect public health and welfare. The CAA also requires that each state prepare a state implementation plan for maintaining and improving air quality and eliminating violations of the national standards. Under the CAA amendments of 1990, federal agencies are required to determine whether their undertakings are in conformance with the applicable state implementation plan and demonstrate that their actions will not cause or contribute to a new violation of the national standards, increase the frequency or severity of any existing violation, or delay timely attainment of any standard, emission reduction, or milestone contained in the state implementation plan. Conformity is evaluated in Chapter 3 of this EA.

Clean Water Act and Wetlands and Floodplain Executive Orders

The Clean Water Act (CWA) regulates pollutant discharges that could affect aquatic life forms or human health and safety. Section 404 of the CWA and Executive Order 11990, Protection of Wetlands, regulate development activities in or near streams or wetlands; Section 404 also requires a permit from the US Army Corps of Engineers for dredging and filling in wetlands. Executive Order 11988, Floodplain Management, as revised by Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, requires federal agencies to take action to reduce the risk of flood damage, minimize the impacts of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within floodplains. A portion of CG Yard is within the 100-year floodplain. There are no wetlands in the portions of CG Yard subject to the proposed action.

Cultural Resource Laws and Guidance

The National Historic Preservation Act (NHPA) requires federal agencies to consider potential impacts on cultural resources that are listed, nominated to, or eligible for listing on the National Register of Historic Places. Section 106 of the NHPA requires federal agencies to consult with the appropriate State Historic Preservation Office (SHPO) if their undertaking may affect such resources. Because CG Yard is listed as a Historic District on the National Register of Historic Places, consultation with the Maryland Historical Trust is being undertaken to determine the potential for the proposed action to affect the historic district or contributing elements of that district.

Endangered Species Act

The Endangered Species Act (ESA), as amended, established measures for the protection of plant and animal species that are federally listed as threatened and endangered, and for the conservation of habitats that are critical to the continued existence of those species. Section 7 of the ESA applies to federal agency actions and sets forth requirements for consultation with the US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries, as

applicable, to determine if the proposed action may affect an endangered or threatened species. No threatened or endangered species have been identified at CG Yard.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act of 1934, as amended, requires that wildlife, including fish, receive equal consideration and be coordinated with other aspects of water resource development. This is accomplished by requiring consultation with USFWS, NOAA Fisheries, and appropriate state agencies whenever any body of water is proposed to be modified in any way and a federal permit or license is required. The proposed action would not result in a modification to any water body.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act, passed in 1976 and reauthorized in 2006, is the primary law governing marine fisheries management in the US. The Magnuson-Stevens Act requires federal agencies to consult with NOAA Fisheries when any activity proposed to be permitted, funded, or undertaken by a federal agency may have adverse effects on designated Essential Fish Habitat (EFH). The Chesapeake Bay contains EFH habitat for the life stages of a number of fish species; there is no mapped habitat of primary concern for any of these species in the waters adjacent to CG Yard.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 is the domestic law that affirms, or implements, the United States' commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. Each of the conventions protect selected species of birds that are common to both countries (i.e., species occur in both countries at some point during their annual life cycle). Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, directs federal agencies to take certain actions to further implement the MBTA and to conserve migratory birds. The order prohibits the take of migratory birds, their eggs, feathers, or nests.

1.6 AGENCY AND PUBLIC INVOLVEMENT

CEQ regulations implementing NEPA require federal agencies to “involve environmental agencies, applicants, and the public, to the extent practicable, in preparing [environmental] assessments” (40 CFR 1501.4[b]).

1.6.1 Public Scoping

The Coast Guard published a Notice of Intent in the Baltimore Sun on Sunday, September 29, 2019, announcing its intent to prepare this EA and inviting the public to comment on the scope of the action to be evaluated in this EA. No scoping comments were received.

1.6.2 Public Review

The Coast Guard, as the proponent of the proposed action, will publish and distribute the Draft EA for a 30-day public review and comment period, as announced by a Notice of Availability published in the Baltimore Sun. If it is determined that implementation of the proposed action would result in significant impacts, the Coast Guard will either not implement this action as proposed, or will publish in the *Federal Register* a Notice of Intent to prepare an environmental impact statement.

1.6.3 Agency Coordination and Consultation

Interagency and intergovernmental coordination is a federally mandated process for informing and coordinating with other governmental agencies regarding federally proposed actions. Executive Order 12372, Intergovernmental Review of Federal Programs, superseded by Executive Order 12416 and subsequently supplemented by Executive Order 13132, requires federal agencies to cooperate with and consider state and local views in implementing a federal proposal. This Draft EA has been submitted to the agencies listed in Chapter 5. Copies of this correspondence and agency responses will be included in the Final EA.

1.6.4 Native American Tribal Consultation

Native American tribes are being invited to participate in the EA and NHPA Section 106 processes as Sovereign Nations in accordance with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments. The Coast Guard determined that the Delaware Nation is the only federally recognized tribe with possible ancestral ties to the project area. The Delaware Nation was provided this Draft EA and invited to consult on this action.

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

NEPA, CEQ regulations, and COMDTINST M16475.1D require a reasonable range of alternatives be explored and objectively evaluated. This EA analyzes three action alternatives for recapitalizing the utility heat system and a no action alternative. This chapter describes the alternatives development process, alternatives carried forward for detailed evaluation, and alternatives eliminated from further consideration.

2.2 PROPOSED ACTION AND ALTERNATIVES DEVELOPMENT

The proposed action is to recapitalize the utility heat system at CG Yard to support industrial and tenant activities. The Coast Guard has undertaken a number of studies to evaluate the condition of the existing utility heat system and to develop preliminary alternatives for replacing the system. These include replacing the current system with a new centralized system, removing the centralized system and installing decentralized heating equipment, or a combination of these two approaches.

2.2.1 Criteria Used to Develop the Action Alternatives

Coast Guard personnel identified eleven planning factors to be used in developing and evaluating potential alternatives. These planning factors included the following:

1. Each facility currently supplied by the centralized steam system shall be evaluated to determine the extent of heating required, as well as identify all Coast Guard processes that require steam.
2. Every facility and operational process determined to require heat or steam (if not for heating purposes) will be satisfied by the proposed utility heat solution with the necessary heating requirements to carry out its mission.
3. All proposed heating solutions will comply with American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings.
4. Heat (temporary or new) will be supplied where necessary during the recapitalization of the utility heat system.

5. Building energy and control systems located on the site should be uniform and serviceable by local vendors.
6. Consider vulnerability to natural and manmade disasters as it pertains to critical infrastructure as identified by the initial findings of the Coast Guard's Shore Infrastructure Vulnerability Assessment.
7. Locate building-critical systems and supporting infrastructure (e.g., heat exchangers, storage tanks, transformers, switchgears, electrical, mechanical and communication closets) at least 3 feet above the base flood elevation levels to ensure operational continuation and safety after a flood event.
8. Consideration for sustainable, renewable energy sources will be given and incorporated in the new proposed heating system(s) to the extent possible.
9. Proposed solutions will consider routine and corrective maintenance. To the extent possible, ensure continued heating operations to nonaffected facilities.
10. Proposed solutions will consider and provide for expanded heating capacity for future building construction, building renovations, improvements or expansions, and new equipment.
11. Each proposed solution will capture all upfront and recurring costs, including, but not limited to, operational, maintenance, capital, and utility costs.

2.2.2 Alternatives Development Process

Planning factors are the key assumptions and project parameters that guide the development of viable alternatives. Once established and approved, the planning factors become the criteria against which alternatives can be evaluated for viability and compared to arrive at a preferred alternative. The planning factors were used to fully develop the Coast Guard's three preliminary alternatives for satisfying the proposed action. These alternatives were described in the planning proposal and form the basis of the alternatives carried forward for detailed review in this EA. These alternatives are described in detail in Section 2.4. The no action alternative, which serves as a baseline against which to compare the action alternatives, is discussed in Section 2.3. The alternatives eliminated from detailed consideration are discussed in Section 2.5.

2.3 NO ACTION ALTERNATIVE

Under the no action alternative, the existing utility heat system would be maintained in its current state. Repairs to the system would continue to be made on an as-needed basis to provide heat to CG Yard facilities. While this alternative would not satisfy the purpose and need for action described in Section 1.3 or the planning factors described in Section 2.2.1, CEQ regulations implementing NEPA require inclusion of a no action alternative to serve as a baseline against which the impacts of the proposed action and alternatives can be evaluated.

2.4 DESCRIPTION OF ACTION ALTERNATIVES

The Coast Guard is evaluating three alternatives for recapitalizing the utility heat system at the Yard. Table 2-1, Comparison of Action Alternatives, and Table 2-2, Heating System by Building, provide a comparison of the three action alternatives. Appendix B includes detailed engineering drawings for each alternative.

**Table 2-1
Comparison of Alternatives**

	No Action	Alternative 1	Alternative 2	Alternative 3
Underground Steam Lines to be Replaced ¹ (LF)	0	10,166	0	4,678
Aboveground Steam Lines to be Replaced (LF)	0	689	0	0
New Natural Gas Lines (LF)	0	0	3,594	1,241
Steam Heat				
Number of Buildings	43	43	0	22
Total Building Square Footage (SF)	737,377	737,377	0	298,809
Natural Gas Heat				
Number of Buildings	2	2	33	14
Total Building Square Footage (SF)	128,060	128,060	601,317	447,224
Electric Heat				
Number of Buildings	0	0	12	9
Total Building Square Footage (SF)	0	0	133,042	119,404
Renewable Energy (optional)				
Number of Buildings	0	0	4	4
Total Building Square Footage (SF)	0	0	105,501	105,501
Estimated Energy Use				
Est. Annual Natural Gas Usage (Therms)	1,273,500	260,695	182,064	204,876
Est. Electricity Usage (kWh)	NA	1,358,154	1,666,555	1,684,753
Estimated Energy Efficiency (%)	25–30	65	80–90	65 / 80–90*

LF=linear feet; SF=square feet; kWh=kilowatt hours

¹ Under each action alternative, old steam lines would either be demolished or abandoned in place, or a combination of the two

*Estimated efficiency for buildings heated with steam / buildings heated with natural gas or electricity

**Table 2-2
Building Heating System Type by Alternative**

Building Number	Building Name	Year Constructed	Building Size (SF)	No Action	Alternative 1	Alternative 2	Alternative 3
1	Yard Administration Building	1942	14,596	S	S	NG	S
3	ELC Offices/Drydock Club	1934	23,299	S	S	NG	S
4	Facilities/Fiscal/Wood Shop	1939	15,051	S	S	NG	S
5	Boat Building/Fiberglass Shop	1931	23,653	S	S	NG	S
5A	Small Boat Shop Annex	1943	5,256	S	S	E	S
6A	Pipe Degreasing/Acid Shop	1991	1,120	S	S	NG	S
8	Pipe Shop	1942	28,064	S	S	NG	S
8A	Machine Shop	1994	13,708	S	S	NG	S
11	Machine Shop	1932	15,380	S	S	NG	S
12	Facilities Maintenance Shops	1911	10,450	S	S	NG	S
15	Power House	1914	8,772	S	S	NG	S
16	Small Boat Shop	1932	6,332	S	S	E	S
20	Flammable Storage Building	1994	8,231	S	S	E	E
27	Classrooms	1932	2,050	S	S	E	S
28A	Berry Hall	1973	8,800	S	S	NG/R*	NG/R*
28B	Clinic Out Patient	1973	9,544	S	S	NG/R*	NG/R*
29	Materials Handling Shop	1992	6,456	S	S	NG	S
31	ELC Offices	1939	39,139	S	S	NG	S
32	Painted Products	1968	18,538	S	S	NG	NG
33	Barracks/Exchange/MSO	1939	55,276	S	S	NG/R*	NG/R*
34	Paint & Sandblast Shop	1959	7,429	S	S	NG	NG
35	Activities Engineering Depot	1958	7,600	S	S	E	E
36	Sector Balt Buoy Shed	1958	4,100	S	S	E	E
40	Electrical Shop	1968	11,369	S	S	NG	S

Building Number	Building Name	Year Constructed	Building Size (SF)	No Action	Alternative 1	Alternative 2	Alternative 3
40A	Electronics	1972	16,665	S	S	NG	S
40B	Electrical Shop	1973	12,291	S	S	NG	S
40C	Ordnance/ Electronics Shop	1977	4,628	S	S	NG	NG
42	Ordnance Building	1990	12,350	S	S	NG	NG
58	Outside Machine Shop/INDS Office	1939	25,723	S	S	NG	S
58A	Infill Alleyway	1994	10,880	S	S	NG	S
62A	Electronics Storage	1974	1,820	S	S	E	E
62B	Pipe Shop	1974	1,820	S	S	E	E
66	Mobile Equipment Maint. Shop	1939	3,000	S	S	NG	S
68	DDHH#1/CIV Café	1941	5,555	S	S	NG	S
70	Sector Baltimore Admin/Ops	1937	31,881	S	S	NG/R*	NG/R*
71	Central Tool Room	1968	6,057	S	S	E	E
75	DDHH#2/Temp Services	1943	3,312	S	S	E	E
77	Central Locker and Toilet	1943	4,060	NG	NG	NG	NG
78	Fabricating Shop	1943	121,628	S	S	NG	NG
79	Fire House/Safety/Auto Hobby	1942	8,269	S	S	E	E
85D	Warehouse Addition - Eng. Logistics	1983	78,195	S	S	E	E
88	ELC Offices/Electronics Lab	2003	27,360	S	S	NG	NG
88A	Warehouse/Shipping & Receiving	2003	124,000	NG	NG	NG	NG
90	Paint Spray Booth	1962	4,800	S	S	NG	NG
143	Columbus Recreation Center	1983	16,930	S	S	NG	NG

SF=square feet; S=steam; NG=natural gas; E=electric; R=renewable

*Alternatives 2 and 3 contain a geothermal renewable energy option using ground-coupled heat pump systems for Buildings 28A, 28B, 33, and/or 70.

2.4.1 Alternative 1

Under Alternative 1, the Coast Guard would recapitalize the utility heat system to bring it into proper working condition. The buildings that currently rely on steam for heat would continue to utilize steam heat. This would entail replacing the main boiler in Building 15, replacing most of the existing underground steam lines and condensate piping with new lines (existing lines would be demolished, abandoned in place, or a combination of the two), replacing a minor amount of aboveground steam lines (Building 85D), and installing a minor amount of new aboveground steam lines to replace the steam lines under Building 32 (Figure 2-1). In addition, the steam lines on Piers 1, 2, and 3 and along the bulkhead of the cove would be removed and not replaced, while the steam lines under the shiplift would be abandoned in place. Steam system components at each building, such as air handlers, unit heaters, control valves, and condensate pipes and pumps, would be repaired or replaced as needed. This alternative would result in few exterior modifications apart from replacement of equipment and piping that is currently housed next to, along, or on the rooftops of some buildings. Most replacement work would occur outside of the heating season (October-May); the duration of construction would depend on whether the project was fully funded as one project or conducted in phases over time. Much of the underground steam line replacement would occur under the built environment (parking lots and roadways). Natural gas use would be less than under the no action alternative because of the increased efficiencies on the recapitalized steam system. Diesel fuel use may also decrease because agreements with the local natural gas utility provider currently require CG Yard to switch to diesel fuel for the boiler plant during winter peak usage times.

2.4.2 Alternative 2

Under Alternative 2, the Coast Guard would replace the steam heat system with decentralized heating systems for each building. Most buildings would be outfitted with natural gas-fired systems (gas-fired boilers, heaters, radiators, or air handlers), while smaller buildings would use electric heat systems (heat pumps, electric furnaces, or electric heaters). Existing underground natural gas lines in the western and northern portions of CG Yard would service the buildings in these areas; this service would be extended to areas of CG Yard without natural gas service (primarily in the industrial shipyard portion of the facility). Table 2-2 and Figure 2-2 indicate the type of heat system proposed for each building and the location of existing and proposed natural gas lines, respectively. New gas-fired heat system components would be installed at each building. This would result in minor exterior modifications. Apart from replacement of equipment and piping that is currently housed next to, along, or on the rooftops of some buildings, new gas flues may require exterior routing up the side of some buildings. Electric systems would be installed within each building (or outside the building depending on the system type). Alternative 2 would have more flexibility as to when the work occurs; like Alternative 1, the duration of construction would depend on whether the project was fully funded or phased over time.

The existing underground steam lines (as shown on Figure 2-1) would be removed, abandoned in place, or a combination of the two. As described under Alternative 1, most of the underground steam lines are under the built environment.

Natural gas use under Alternative 2 would be less than under Alternative 1 and the no action alternative because the decentralized equipment would be more efficient than the centralized steam system. In addition, diesel fuel would not be required as a back-up heating fuel.



Figure 2-1

- Alternative 1** CG Yard
- Building heated with steam heat
 - Below ground steam lines to be abandoned under building
 - Below ground steam lines to be replaced, existing to be demolished or abandoned
 - Above ground steam lines to be replaced, existing to be demolished or abandoned
 - Above ground steam lines to remain
 - Below ground steam lines to remain
 - New above ground steam lines to replace below ground steam lines under building
 - Below ground steam lines to be removed and not replaced

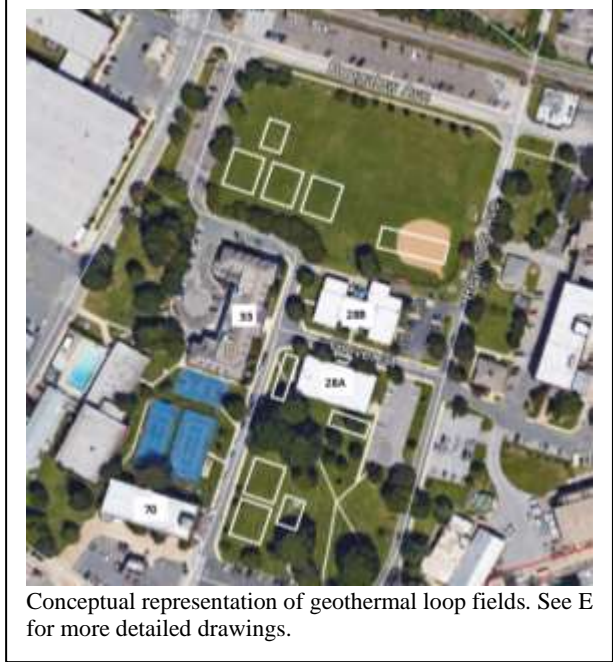


Alternative 2

- CG Yard
- Building heated with electric heat
- Building heated with gas heat
- Existing below ground natural gas piping
- New below ground natural gas piping

Figure 2-2

Renewable Energy Option. Under Alternative 2, geothermal systems potentially could be installed to heat Buildings 28A (Berry Hall), 28B (the outpatient clinic), 33 (Barracks/Exchange/MSO), and 70 (Sector Baltimore Admin/Ops). Each system would consist of a ground-coupled heat pump system containing a geothermal heat exchanger with 300-foot-deep vertical bores and piping, pumps, and a water-to-water heat pump. The heat pumps would produce hot water and replace the boilers in each building. The heat pumps could also potentially produce chilled water to assist with air conditioning needs. The systems would be installed in the open space areas adjacent to the buildings (see inset to the right and Appendix B). Information on each system is as follows:

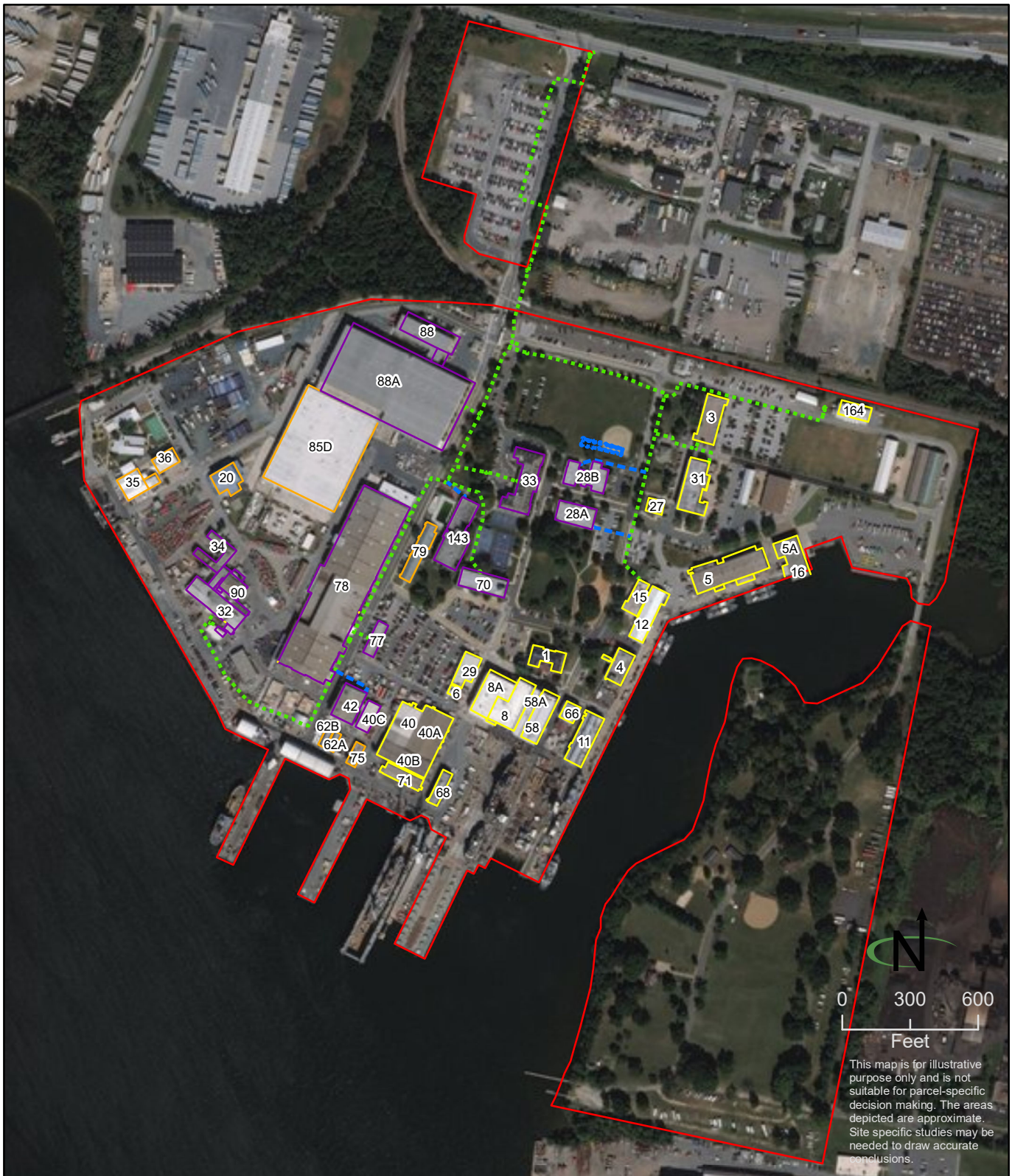


- **Building 28A:** Two geothermal loop fields would be developed; one loop west of Building 28A would include 9 bore holes, and one loop south of the building would include 8 bore holes.
- **Building 28B:** One geothermal loop field consisting of 16 bore holes would be developed in the open lawn area north of Building 28B.
- **Building 33:** Four geothermal loop fields would be developed north of Building 33 in the same open lawn area as Building 28B. Three loops would contain 20 bore holes and one would contain 14 bore holes.
- **Building 70:** Three geothermal loop fields would be developed in the open space area east of Building 70. Two loops would contain 20 bore holes and one would contain 14 bore holes.

Bore holes would be spaced approximately 20 feet apart. For Buildings 28A and 70, some mature trees may need to be removed.

2.4.3 Alternative 3

Under Alternative 3, the Coast Guard would use a combination of steam, natural gas, and electric systems to provide heat to individual buildings. Buildings that are already served by existing natural gas lines or that are in proximity to these lines would be heated by natural gas-fired systems (see Figure 2-3). As described for Alternative 2, installation of new gas-fired heat system components would result in minor exterior modifications.



Alternative 3- Natural Gas Routing

- CG Yard
- Building heated with electric heat
- Building heated with gas heat
- Building heated with steam heat
- Existing below ground natural gas piping
- New below ground natural gas piping

Figure 2-3

The steam system would be retained for most of the other buildings (see Figure 2-4). This would entail replacing the main boiler in Building 15, replacing underground steam lines and condensate piping in the areas shown on Figure 2-4, and replacing a minor amount of aboveground steam lines (Building 85D). Steam system components at each building to be heated by steam would be repaired or replaced as needed, as described for Alternative 1. Most buildings identified for electric heat in Alternative 2 would be heated with electric systems under Alternative 3, with installation as described under Alternative 2. Under Alternative 3, steam system work would occur outside of the heating season (October-May) and natural gas- and electric-system work would have more flexibility as to when work occurs. The duration of construction would depend on whether the project was fully funded or phased over time.

As described for the other alternatives, the existing underground steam lines (as shown on Figure 2-1) would be removed, abandoned in place, or a combination of the two.

Renewable Energy Option. Alternative 3 includes the same renewable energy option as described for Alternative 2.

2.4.4 Best Management Practices

Under all action alternatives and as a standard condition of the contract design and specifications, the Coast Guard would require all contractors and subcontractors to employ best management practices (BMPs) to minimize impacts on the environment. BMPs that are part of the proposed action are described for each resource below. Because the proposed action evaluates a planning proposal that would not be implemented until the later part of 2020 at the earliest, the Coast Guard would not apply for permits and approvals until the project is approved and funded for detailed design. Additional terms and conditions to avoid or reduce impacts may be required as conditions of these permits or approvals.

Biological Resources

The following preliminary measure is included in the proposed action to avoid significant adverse effects on listed bird species:

- If construction activities occur during special status migratory bird breeding season (spring to early summer), prior to project implementation conduct a survey to determine if there are any nests of migratory birds within the construction area. If one or more nests of migratory birds are present in the project area, halt construction activities until appropriate mitigation measures are determined.

Water Resources

Water Quality. The Coast Guard, or the contractor on behalf of the Coast Guard, would obtain a Maryland General Permit for Stormwater Associated with Construction Activity for all land-disturbing activities that result in the disturbance of one or more acres of total land, if applicable. Contractors would be required to comply with stormwater pollution prevention plan requirements such as the following BMPs:

- Install run-off control measures that surround the perimeter of disturbed areas, including silt fencing, sediment traps, or buffer strips
- Protect stormwater inlets and drains



Alternative 3- Steam Routing

- CG Yard
- Building heated with electric heat
- Building heated with gas heat
- Building heated with steam heat
- Below ground steam lines to be replaced, existing to be demolished or abandoned
- Above ground steam lines to be demolished or abandoned
- Above ground steam lines to remain

Figure 2-4

- Properly store, cover, or dispose of any construction debris or soil piles to minimize or prevent its exposure to stormwater
- Cover soil stockpiles during inclement weather conditions
- Minimize track-out of mud and dirt onto asphalt roadway surfaces
- Ensure construction equipment is in good repair, without leaks of hydraulic or lubricating fluids, and use drip pans when vehicles are parked
- Perform fueling and maintenance of vehicles off-site or at designated areas with secondary containment and stocked with spill response sorbent pads and equipment
- Adhere to the spill prevention response plan and spill control and countermeasures plan in the event of contaminant release

Additional BMPs discussed under *Soils* and *Hazardous Materials and Waste* would also protect water quality.

Floodplains. The Coast Guard would comply with Anne Arundel County requirements during the design phase of the proposed action to ensure adequate flood protection. New and replacement systems and supporting infrastructure would be placed at least 3 feet above the base flood elevation levels to ensure operational continuation and safety after a flood event.

Cultural Resources

Construction contracts would include standard protocols for the treatment of unanticipated discoveries. Standard contract provisions for Coast Guard construction projects require that if previously unknown resources are encountered during construction, all construction and ground-disturbing activities would be immediately halted until a proper archaeological assessment can be made. The Coast Guard would notify the Maryland Historical Trust within 24 hours.

Soils

Proper soil erosion control measures would be implemented by all contractors during construction, as required by standard Coast Guard contract provisions. Such measures may include the following:

- Use erosion control techniques such as mulching, filter fences, straw bales, or diversion terracing around disturbed areas
- Seed or repave disturbed areas as soon after disturbance as possible

Air Quality

Proper dust control and other measures would be implemented by all contractors during construction, as required by standard Coast Guard contract provisions. Such measures may include the following:

- Minimize fugitive dust emissions through measures such as minimizing the area of disturbance; covering stockpiled soils or applying water, soil stabilizers, or vegetation; using enclosures, covers, silt fences, or wheel washers; suspending surface-disturbing activities during high wind conditions; and minimizing track-out of soil on vehicles and equipment

- Minimize exhaust-related emissions through measures such as limiting diesel vehicle and equipment idling to two minutes or less; using electricity to power equipment, where feasible, instead of portable generators; using construction equipment with modified combustion/fuel injection systems for emission control; and ensuring equipment is maintained to manufacturer standards

In addition to construction BMPs, Title V permit modifications would be obtained by the Coast Guard for new or modified equipment, as needed.

Noise

Noise control measures would be implemented by contractors during construction to minimize the impact of steam line replacement activities in portions of CG Yard. Such measures may include the following:

- Limit construction activities to regular business hours (8 AM to 5 PM)
- Operate equipment per manufacturer's recommendations
- Shut down noise-generating equipment when not needed

Hazardous Materials and Waste

The following BMPs and compliance with federal, state, Coast Guard, and local laws and regulations pertaining to hazards and hazardous materials and wastes would be adhered to as follows:

- Ensure all construction contractors comply with Occupational Safety and Health Administration regulations regarding safety measures and precautions on the job site
- Ensure all construction activities are performed by qualified personnel trained in the proper use of equipment, including all appropriate materials handling and safety procedures
- Minimize the risks of spills and address spills that do occur in accordance with Marine Environmental Response and Preparedness Manual (COMDTINST M16000.14A)
- Test suspected soils for contaminants and remediate or dispose of the soils in accordance with applicable federal, state, and local regulations
- Handle and dispose of any hazardous materials generated or used during construction in accordance with applicable federal, state, and local regulations
- Ensure solid waste generated from construction is properly disposed of at permitted waste facilities or recycled

2.5 ALTERNATIVES ELIMINATED FROM DETAILED CONSIDERATION

As part of the planning proposal process, the Coast Guard evaluated the potential for incorporating renewable energy options for recapitalizing the utility heat system at CG Yard. No alternatives that met the planning factors were identified with the exception of the geothermal field identified as an option in Alternatives 2 and 3.

CHAPTER 3

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the existing environmental conditions of CG Yard, focusing on those resources potentially affected by the proposed action. Following a discussion of the affected environment for each resource is a discussion of the environmental impacts that could result from implementing the alternatives described in Chapter 2, Proposed Action and Alternatives. Replacing the utility heat system would not result in operational changes over current and planned conditions. Replacement of the utility heat system is intended to improve the Coast Guard’s ability to conduct its mission and provide services to tenant units at CG Yard.

CEQ recommends agencies “identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (40 CFR § 1506.3), narrowing the discussion of these issues to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere” (40 CFR § 1501.7(a)(3)). Table 3-1 provides the resources considered for analysis, whether they were analyzed in detail, and the rationale for those resources eliminated from further review.

**Table 3-1
Resource Areas Evaluated in this EA**

Resource Area	Evaluated In Detail?	Location in EA for Evaluated Resources/Rationale for Resources Not Included for Detailed Analysis
Natural Environment		
Coastal Resources	Yes	Section 3.2
Biological Resources	Yes	Section 3.3
Water Resources	Yes	Section 3.4
Cultural Environment		
Cultural Resources	Yes	Section 3.5
Physical Environment		
Geology and Soils	Yes	Section 3.6

Resource Area	Evaluated In Detail?	Location in EA for Evaluated Resources/Rationale for Resources Not Included for Detailed Analysis
Climate and Air Quality	Yes	Section 3.7
Noise	Yes	Section 3.8
Hazardous Materials and Wastes	Yes	Section 3.9
Socioeconomic Environment		
Land Use and Zoning	No	Effects on land use would be significant if project-related actions substantially altered existing land uses or land use patterns or conflicted with existing land use or development plans. Recapitalizing the utility heat system would not change existing land uses or land use patterns at CG Yard. The area of proposed upgrades would occur in the Anne Arundel County portion of CG Yard and would be consistent with the County's zoning classification of CG Yard as a Heavy Industrial District. Upgrades also would be consistent with the CG Yard land use plan (2007) and master plan (2019). Therefore, recapitalizing of the utility heat system would have no effect on land use or zoning.
Visual Resources	No	Effects on visual resources would be significant if project-related actions substantially altered the scale or the character of the existing area or substantially degraded the views from recognized sensitive viewpoints or receptors in the area. Recapitalizing the utility heat system, once completed, would result in no visual change and thus would have no effect on visual resources.
Local Economy; Housing; Community and Medical Services; Fire, Rescue, and Police Services; Schools	No	Effects on local services and the economy would be considered significant if project-related actions produced conditions that exceeded the capacity of local services or changed the economic base of the project area. Recapitalizing the utility heat system under all alternatives would have minor, short-term beneficial impacts from temporary expenditures in goods and services from replacing the heat system components. The proposed action would result in no change in employment at CG Yard and therefore would have no effect on local housing, community and medical services, emergency services, or schools.
Recreation	No	CG Yard is a controlled-access facility and provides no access for recreational use. Therefore, there would be no effect on recreational opportunities.
Environmental Justice	No	Significant environmental justice effects would occur if project-related actions had a disproportionately high and adverse effect on minority or low-income populations, in accordance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. No minority populations or low-income populations would be affected by recapitalizing the utility heat system. No minority or low-income populations

Resource Area	Evaluated In Detail?	Location in EA for Evaluated Resources/Rationale for Resources Not Included for Detailed Analysis
		have been identified adjacent to CG Yard, and effects would be contained entirely within CG Yard, a controlled-access facility.
Utilities	Yes	Section 3.10
Transportation	No	Effects on transportation would be significant if project-related actions degraded level of service on a project area roadway or intersection to below acceptable levels, conflicted with local or regional transportation plans, or substantially affected vessel traffic or navigation. Recapitalizing the utility heat system would have temporary and intermittent short-term effects on roadways, intersections, and parking lots at CG Yard during underground utility replacement (steam) or installation (natural gas). It would result in a short-term increase in traffic on local roadways associated with construction worker commute traffic and delivery of supplies. There would be no long-term effect on roadways, intersections, or parking capacity because the proposed action would not change employment levels at CG Yard. No in-water work would occur; therefore, the proposed action would have no effect on vessel traffic or navigation. Recapitalizing the utility heat system would not conflict with local or regional transportation plans.

3.2 COASTAL ZONE RESOURCES

3.2.1 Affected Environment

The federal Coastal Zone Management Act of 1972 provides for management of the nation's coastal resources and balances economic development with environmental conservation. The act, as amended, established a federal-state partnership that encourages states to develop individual state programs for managing coastal resources. In accordance with the CZMA, federal lands are excluded from the state-designated coastal zones; however, federal actions that may affect non-federal lands, waters, and natural resources in the coastal zone must be consistent, to the maximum extent practicable, with the enforceable policies of the state's coastal zone management program. CG Yard is entirely within the boundaries of the Maryland coastal zone.

The Maryland Coastal Zone Management Program (CZMP), approved in 1978, is a network of state laws and policies designed to protect coastal and marine resources. This program is administered by the Maryland Department of Natural Resources. The Chesapeake Bay Critical Area Act, enacted by the Maryland General Assembly in 1984, established the Chesapeake Bay Critical Area Protection Program to safeguard the Chesapeake Bay from the negative impacts of intense development and to control future land use development in the Chesapeake Bay watershed. The act established a 1,000-foot buffer zone along the bay and tidal tributaries, referred to as the critical area. Development in the critical area must adhere to a certain set of criteria to ensure that land within the critical area is managed, used, and developed in a manner that will achieve the goals of the Chesapeake Bay Critical Area Protection Program.

Anne Arundel County has developed three classifications for lands within the critical area. The majority of CG Yard, including the area where recapitalization of the utility heat system will occur, has been classified as an Intensely Developed Area (IDA). In IDAs, industrial land use and impervious surfacing predominate the setting. Because little natural habitat occurs within IDAs, the improvement of water quality is of key importance. Anne Arundel County requires that development in these areas maintain a high quality of runoff and reduce pollution levels when there is new development. In IDAs, a 100-foot buffer must be maintained for new development. CG Yard is exempt from this requirement; however, new development within the buffer is not allowed to be closer to the water than the existing development line unless it is a water-dependent use (Critical Area Commission 2008).

3.2.2 Environmental Consequences

Effects on coastal zone resources would be significant if they were not consistent to the maximum extent practicable with the enforceable policies of the Maryland CZMP (Maryland Department of Natural Resources 2011).

Actions under the proposed action, including all action alternatives, would occur within the Maryland coastal zone and would be subject to federal coastal consistency review. A federal consistency determination has been prepared and submitted [*note: to occur after the 65% Draft EA*] to the Maryland Department of the Environment for concurrence that the proposed action, including all action alternatives, would be consistent to the maximum extent practicable with the enforceable policies of the Maryland CZMP (see Appendix C for the draft federal consistency determination).

No Action Alternative

Under the no action alternative, the Coast Guard would continue to maintain and repair the existing utility heat system. These ongoing activities would result in no change in effects on coastal resources or the coastal zone over current conditions.

Alternative 1

Alternative 1 was compared against the enforceable policies of the Maryland CZMP. Of these policies, all were determined to be not applicable to the action of replacing the current system with a new centralized steam system apart from the following:

- Policy A.1.1. Maintain air resources. Alternative 1 would have a long-term beneficial impact on air quality by replacing the main boiler and many of the current utility heat system components with more energy efficient equipment. Alternative 1 may also reduce the amount of diesel fuel required to be burned as a backup fuel for the boiler plant compared with existing conditions. Short-term adverse impacts would be minimized through the implementation of BMPs described in Section 2.4.4.
- Policy A.1.2. Noise environment. Alternative 1 would cause no long-term change in the existing noise environment. Alternative 1 would have short-term adverse noise impacts during installation of the new utility heat system components, particularly the underground steam lines that are mostly under existing paved areas. These impacts would be limited to CG Yard and the surrounding uses, all of which are industrial. Short-term adverse impacts would be minimized through the implementation of BMPs described in Section 2.4.4.

- Policy A.1.11. Soil erosion. Alternative 1 would have no long-term impact related to soil erosion. Steam system components are primarily within buildings or under impervious surfacing; any vegetated areas disturbed during underground steam line replacement would be revegetated per the BMPs described in Section 2.4.4 to prevent long-term erosion impacts. Alternative 1 would have short-term adverse impacts during underground steam line replacement from removal of pavement and disturbance of the underlying soils to install these new lines. BMPs described in Section 2.4.4 would be implemented to control erosion around all work sites.
- Policy A.2.1. Protection of water quality and waters of the state. Alternative 1 would have beneficial long-term impacts on Curtis Creek and Arundel Cove and the resources that use these waters. Recapitalizing the steam system would return it to a closed loop system whereby condensate water is no longer discharged onto the ground at individual building locations but is instead returned to the boiler plant. Alternative 1 would have short-term adverse impacts during underground steam line replacement that would be minimized through the BMPs described in Section 2.4.4 to prevent any construction-related sediment, debris, oil, fuels, or lubricants from entering adjacent waters.
- Policy A.3.1. Projects in floodplains. Alternative 1 would have no long-term impact on floodplains. Under Alternative 1, only a limited portion of the underground steam line replacement would occur in the 100-year floodplain. This area is covered with impervious surfacing and would continue to be covered after steam line replacement. Limited aboveground replacement systems would be required in the 100-year floodplain. Any replacement system in the 100-year floodplain would be placed at least 3 feet above the base flood elevation levels. Because Alternative 1 would not result in an increase in impervious areas, it would have no impacts on the floodplain. It also would not have an adverse impact on water quality for the reasons described under Policy A.2.1.
- Policy B.1.26. Soil and erosion control plan. If required, a soil and erosion control plan would be prepared prior to construction activities that resulted in surface disturbance. BMPs described in Section 2.4.4 would be implemented to control erosion around all work sites.
- Policy B.2.1. Protection of tidal wetlands. Alternative 1 would have no long-term impact on tidal waters, marshes, or wetlands. Under Alternative 1, no work would occur in, on, or over the tidal waters adjacent to CG Yard. Steam line replacement would occur approximately 200 feet from tidal wetlands at the nearest point. Short-term adverse impacts during underground steam line replacement on tidal wetlands in this area would be avoided through the soil erosion and water quality BMPs described in Section 2.4.4 to prevent any construction-related sediment, debris, oil, fuels, or lubricants from entering tidal wetlands. Short-term adverse impacts on tidal waters and wetlands related to stormwater runoff would be minimized through the BMPs described in Section 2.4.4 and any required permits and approvals required for construction activities related to recapitalizing the utility heat system.

With the implementation of BMPs and other conditions of permits and approvals to minimize adverse impacts on the coastal zone and coastal zone resources, Alternative 1 would be consistent to the maximum extent practicable with the enforceable policies of the Maryland CZMP.

Alternative 2

The same policies described for Alternative 1 were determined to be applicable to the action of removing the centralized steam system and installing decentralized heating equipment, particularly if existing steam lines are removed rather than abandoned in place. Long-term and short-term impacts on the coastal zone and coastal zone resources would be as described for Alternative 1 for each policy.

If steam lines are abandoned in place, little to no underground utility work would occur in the 100-year floodplain, and the nearest underground work for extending natural gas service would occur approximately 1,000 feet from the nearest tidal wetlands. Potential short-term adverse impacts on the coastal zone or coastal zone resources would be less than described under Alternative 1 for those related policies.

With the implementation of BMPs and other conditions of permits and approvals to minimize adverse impacts on the coastal zone and coastal zone resources, Alternative 2 would be consistent to the maximum extent practicable with the enforceable policies of the Maryland CZMP.

Alternative 3

The same policies described for Alternative 1 were determined to be applicable to the action of installing a new centralized steam heat system in the eastern portion of CG Yard and installing decentralized electric or natural-gas fired equipment in the rest of the CG Yard facilities currently heated by steam. Long-term and short-term impacts on the coastal zone and coastal zone resources would be as described for Alternative 1 for each policy, particularly if all existing steam lines are removed rather than abandoned in place.

If steam lines that are not being replaced are abandoned in place, little to no underground utility work would occur in the 100-year floodplain, and the nearest underground work would occur approximately 1,000 feet from the nearest tidal wetlands. Potential short-term adverse impacts on the coastal zone or coastal resources would be less than described under Alternative 1 for those related policies.

With the implementation of BMPs and other conditions of permits and approvals to minimize adverse impacts on the coastal zone and coastal zone resources, Alternative 3 would be consistent to the maximum extent practicable with the enforceable policies of the Maryland CZMP.

3.3 BIOLOGICAL RESOURCES

Biological resources, as described in this section, include native or naturalized plants and animals and their habitats. Protected and sensitive biological resources include specific habitats and the plant and animal species listed as threatened or endangered by the USFWS, NOAA Fisheries, or a state regulatory agency, or that are otherwise protected under federal or state law.

3.3.1 Affected Environment

Vegetation

The majority of CG Yard is used for industrial purposes and is covered by impervious surface. Heat system replacement activities that would occur under the proposed action would occur primarily within the developed shipyard area. Vegetation at CG Yard is composed of landscape species, weeds, and other plant species common to developed habitats.

Fish and Wildlife

Fish and wildlife resources include indigenous or migratory animal species. These resources include wildlife individuals and populations, as well as their relationship to habitat, including aquatic, wetland, and riparian ecosystems. The industrial environment of CG Yard does not provide high-quality wildlife habitat. Wildlife species found at CG Yard are representative of those found in urban-suburban environments due to the heavily developed nature of the Yard and include white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciototho grigio*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), Eastern chipmunk (*Tamias striatus*), and field mouse (*Apodemus sylvaticus*).

Common bird species could include American robin (*Zenaida macroura*), catbird (*Dumetella carolinensis*), mockingbird (*Mimus polyglottos*), common flicker (*Colaptes auratus*), European starling (*Sturnus vulgaris* L.), house sparrow (*Passer domesticus*), rock dove (*Columba livia*), mourning dove (*Zenaida acroua*), and song sparrow (*Melospiza melodia*).

NOAA trust resources are resources associated with coastal, marine, and Great Lakes habitats, including rivers and estuaries. NOAA trust resources include commercial and recreational fishery resources; anadromous and catadromous species (species that migrate between fresh water and the sea); marine mammals; endangered and threatened marine species and their habitats; marshes, mangroves, seagrass beds, coral reefs, and other coastal habitats; and resources associated with National Marine Sanctuaries and National Estuarine Research Reserves.

Essential Fish Habitat is an area containing habitat essential to the long-term survival and health of the nation's fisheries, including the water and seafloor. When considering an action in EFH, federal agencies are required to consult with NOAA Fisheries about actions if they may damage EFH. The NOAA Fisheries Essential Fish Habitat mapper shows that adjacent EFH in the Chesapeake Bay has been designated for eggs or larvae of the red hake (*Urophycis chuss*) and summer flounder (*Paralichthys dentatus*). The project area is adjacent to EFH for juvenile and adults or spawning adults of Atlantic herring (*Clupea harengus*), black sea bass (*Centropristis striata*), bluefish (*Pomatomus saltatrix*), clearnose skate (*Raja eglanteria*), little skate (*Leucoraja erinacea*), red hake, scup (*Stenotomus chrysops*), summer flounder, and window pane flounder (*Scophthalmus aquosus*). The project area is also adjacent to EFH for adults or spawning adults of winter skate (*Leucoraja ocellata*) (NOAA Fisheries 2019). There is no mapped Habitat of Primary Concern for these or other species within or adjacent to the project area (NOAA Fisheries 2019).

NOAA Fisheries has the authority under the Fish and Wildlife Coordination Act to make recommendations to conserve trust resources. Several species of fish and crab having the potential to occur in the surface waters and associated bottom substrates of Curtis Creek, including Arundel Cove, are NOAA trust resources (Table 3-2). Curtis Creek, including Arundel Cove, provides spawning, nursery, and adult habitat for anadromous fish, such as alewife, blueback herring, and

white and yellow perch. The catadromous American eel is also found in Curtis Creek, which provides adult habitat for the eels. Curtis Bay provides spawning, nursery, and adult habitat for numerous marine and estuarine species of fish as well as Atlantic rangia, which are a type of clam, and blue crab (NOAA Fisheries 2019).

**Table 3-2
NOAA Trust Resources Occurring Adjacent to the Project Area**

Common Name	Scientific Name
Anadromous Fish	
Alewife	<i>Alosa pseudoharengus</i>
Blueback herring	<i>Alosa aestivalis</i>
Striped bass	<i>Morone saxatilis</i>
Yellow perch	<i>Perca flavescens</i>
Catadromous Fish	
American eel	<i>Anguilla rostrata</i>
Marine/Estuarine Fish	
American shad	
Atlantic croaker	<i>Micropogonias undulatus</i>
Atlantic menhaden	<i>Brevoortia tyrannus</i>
Atlantic silverside	<i>Menidia</i>
Bay anchovy	<i>Anchoa mitchilli</i>
Gizzard shad	<i>Dorosoma cepedianum</i>
Hogchoker	<i>Trinectes maculatus</i>
Mummichog	<i>Fundulus heteroclitus</i>
Spot croaker	<i>Leiostomus xanthurus</i>
Striped killifish	<i>Fundulus majalis</i>
Invertebrates	
Blue crab	<i>Callinectes sapidus</i>
Blue mussel	<i>Mytilus edulis</i>
Eastern oyster	<i>Crassostrea virginica</i>
Horseshoe crab	<i>Limulus polyphemus</i>
Quahog	<i>Mercenaria</i>
Soft-shell clams	<i>Mya arenaria</i>

Source: NOAA Fisheries 2019

Commercial fisheries in the Patapsco River include American eel, Atlantic menhaden, striped bass, and white perch. Atlantic rangia (a clam) and blue crabs are present in the Patapsco River; however, the river and Curtis Bay are closed to shellfish harvesting because of high levels of pollution (Maryland Department of Natural Resources 2019a). Recreational fishing for Yard employees occurs at select locations on the piers and marina at CG Yard. Fish species caught from these waters include but are not limited to rockfish, perch, and catfish (Maryland Department of Natural Resources 2019a). It should be noted that the area surrounding CG Yard has existing contamination and high levels of disturbance and is therefore not likely to represent ideal habitat for aquatic species. The Maryland Department of the Environment has issued fish consumption advisories for several of these species due to the elevated levels of polychlorinated biphenyls (PCBs), arsenic, and selenium found in fish tissues (Maryland Department of the Environment 2019).

Special Status Species

Protected and sensitive biological resources include specific habitats and the plant and animal species listed as threatened or endangered by the USFWS or the Maryland Department of Natural Resources or are otherwise protected under federal or state law.

The principal relevant statutes pertaining to the protection of plants and animals are the following:

- Endangered Species Act of 1973, as amended, which requires protection of federally listed threatened and endangered species and their habitats. The ESA is administered by the USFWS.
- The Migratory Bird Treaty Act of 1918 is the domestic law that affirms, or implements, the United States' commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. The MBTA is also administered by the USFWS.

A list of federally protected flora and fauna (with respective state listing status) for Anne Arundel County is shown in Table 3-3. Only two federally listed plant species are known to occur in Anne Arundel County. There are no known federally listed animal species occurring in Anne Arundel County (Maryland Department of Natural Resources 2019b, USFWS 2019).

Table 3-3
Threatened and Endangered Species in the Project Area

Location	Common Name	Scientific Name	Likelihood of Occurrence	Federal Status	State Status
Anne Arundel County (Maryland)	Chaffseed	<i>Schwalbea americana</i>	None	Endangered	Endangered Extirpated
	Swamp pink	<i>Helonias bullata</i>	None	Threatened	Endangered

Source: Maryland Department of Natural Resources 2019b; None = no habitat present

Numerous state-listed current and historical rare, threatened, and endangered species are found in Anne Arundel County (Maryland Department of Natural Resources 2019b). State-listed rare, threatened, and endangered animal species that may occur in the greater area of the project include the black rail (*Laterallus jamaicensis*) and the least tern (*Sterna antillarum*). The black rail occurs in herbaceous marine and freshwater wetlands (NatureServe 2019). The least tern occurs along seacoasts, bays, lakes, and rivers (NatureServe 2019). As the habitat for black rail or least tern does not exist within the area of the proposed action, neither of these species are likely to be found in the areas where recapitalization activities would occur.

3.3.2 Environmental Consequences

Impacts on special status species, including fish, migratory birds, or federally or state-listed species, would be significant if the effect would permanently displace or take a threatened or endangered species, aquatic wildlife, or their habitats. Impacts would be considered less than significant if they could be adequately avoided, minimized, or mitigated, in consultation with federal and state agencies.

Communications with federal natural resource agencies were initiated in October 2019 to confirm that no threatened or endangered species would be affected by the proposed action (USFWS 2019). Based on initial information, there is no indication that any federally listed endangered or threatened species occur within the area of the proposed action; therefore, no threatened or endangered species nor any critical habitat is likely to be adversely affected by the proposed action.

No Action Alternative

Under the no action alternative, the Coast Guard would continue to maintain and repair the existing utility heat system. The proposed recapitalization of the heat system would not occur. Ongoing repair and maintenance activities could indirectly affect aquatic wildlife by introducing contaminants vis runoff. However, these impacts are anticipated to be negligible due to measures in place to prevent hazardous materials and waste from entering the marine environment. Thus, no significant impacts on biological resources would result from the no action alternative.

Alternative 1

As discussed above, no federally or state-listed threatened or endangered species are anticipated to be present within the project area. Therefore, no effect on ESA-listed or state-listed threatened and endangered species would occur under Alternative 1. As the proposed heat system modifications would occur within the industrial portion of CG Yard on lands covered by impervious surfacing, or within landscaped vegetation areas, impacts on biological resources are not anticipated. Some removal of landscape vegetation may occur due to trenching activities, but disturbance of landscaped areas would be unlikely to affect wildlife. These impacts would be the same whether underground steam lines were removed or abandoned in place, as ground disturbance would still occur to install the new steam lines.

As there would be no in-water activities associated with Alternative 1, there would be no direct impacts on NOAA trust resources. There is a low potential for short-term adverse impacts on water quality due to increased erosion as well as the risk of potential for fuel and oil spills from vehicles and equipment used during construction. The potential for impacts on water quality would be minimized by measures to control runoff and prevent hazardous materials and waste from entering the marine environment, as described in Section 2.4.4 and in Section 3.4, Water Resources.

Impacts on migratory birds and special status bird species that may use the area would be minimized for construction activities occurring outside of the breeding and nesting season (spring to early summer). Because steam system replacement activities would occur primarily from May to September to avoid disruption in providing heat to CG Yard facilities, a survey is recommended prior to project construction to determine if there are any nests of migratory or special status bird species within the project area. If one or more nests are present in the project area, construction would be halted until appropriate mitigation measures were determined.

Alternative 1 would have no effect on threatened or endangered species. With adherence to BMPs, Alternative 1 would result in short-term, less-than-significant effects on biological resources, including aquatic species, migratory and special status bird species, and their habitat.

Alternative 2

Construction and operation of a decentralized heat system under Alternative 2 would result in the same type of impacts on biological resources as those described under Alternative 1. If underground steam lines are abandoned in place, disturbance to install the natural gas lines would

be limited to areas of impervious surfacing; if steam lines are removed, areas impacted by ground disturbance would be as described for Alternative 1. Outfitting buildings with decentralized heating systems would result in minor modifications to building exteriors and would not impact any terrestrial or aquatic habitat for wildlife species.

Alternative 2 would have no effect on threatened or endangered species, as no federally or state-listed threatened or endangered species are anticipated to be present within the project area.

Development of geothermal systems for heating Buildings 28A, 28B, 33, and 70 would have impacts similar to those described above for replacement of the underground steam lines. Installation of the geothermal fields would disturb this area temporarily but would be unlikely to affect wildlife. Potential removal of some mature landscaping trees would reduce nesting opportunities but would be a minor impact given the presence of other mature trees in these areas.

With adherence to BMPs, Alternative 2 would result in short-term, less-than-significant effects on biological resources, including aquatic species, migratory and special status bird species, and their habitat.

Alternative 3

Construction and operation of Alternative 3 would result in the same type of impacts on biological resources as those described under Alternative 1 for replacement of the steam lines. Outfitting buildings with decentralized electrical or natural gas heating systems would result in minor modifications to building exteriors and would not impact any terrestrial or aquatic habitat for wildlife species.

Alternative 3 would have no effect on threatened or endangered species, as no federally or state-listed threatened or endangered species are anticipated to be present within the project area.

Development of geothermal systems for heating Buildings 28A, 28B, 33 and 70 would have the same impacts as described for Alternative 2.

With adherence to BMPs, Alternative 3 would result in short-term, less-than-significant effects on biological resources, including aquatic species, migratory and special status bird species, and their habitat.

3.4 WATER RESOURCES

3.4.1 Affected Environment

Surface Water

CG Yard lies within the larger Chesapeake Bay watershed, which covers 64,000 square miles in Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia, and the District of Columbia. CG Yard lies primarily within the Patapsco River Sub-Watershed. CG Yard sits on Curtis Creek and a small inlet off of Curtis Creek, known as Arundel Cove, that partially bisects the Yard. Curtis Creek flows northward from the site for approximately two miles and empties into Curtis Bay, which flows eastward for approximately 0.7 miles and empties into the Patapsco Bay. The Patapsco Bay enters the Chesapeake Bay approximately 11 miles southeast of CG Yard (Agency for Toxic Substances and Disease Registry 2004).

Surface water flow from rainfall runs in a generally southerly direction toward Curtis Creek and Arundel Cove due to the slope of the land. All streets within CG Yard that run in a north-south direction carry large quantities of runoff during and after rainstorms. A system of inlets throughout the site picks up this runoff and diverts it to outfalls. A series of belowground tanks are used to manage release of stormwater (Coast Guard 2007).

Section 303(d) of the Clean Water Act requires states to develop a list of waters not meeting water quality standards or which have impaired uses. Based on the 2018 Section 303(d) list for the state of Maryland, Curtis Bay/Curtis Creek has degraded water quality, including elevated levels of zinc and PCBs in fish tissue and sediment (Maryland Department of the Environment 2018a).

CG Yard operates under Maryland General Permit (12-SW) for Discharges of Stormwater Associated with Industrial Activity in accordance with the National Pollutant Discharge Elimination System (NPDES) requirements. The permit requires industrial activities to install stormwater control measures to reduce nutrients from reaching the waters of the Chesapeake Bay watershed and meet the total maximum daily load (TMDL) for total suspended solids and nutrients.

Floodplains

A floodplain is any land area susceptible to being inundated by flood waters from any source. The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Maps that delineate flood hazard areas. The spatial extent of a floodplain is frequently described in terms of statistical flood frequency; the 100-year floodplain is land that has a 1 percent chance of flooding each year.

Portions of CG Yard are within the 100-year floodplain of Curtis Creek and Arundel Cove and therefore subject to FEMA flood zone regulations. The 100-year floodplain extends into CG Yard approximately 250 to 500 feet in the vicinity of the piers (Figure 3-1). Flood zone regulations are administered by Anne Arundel County. According to the Anne Arundel County Department of Planning and Code Enforcement, the portions of CG Yard that are within the floodplain are designated as “Zone A-10, Elevation 9.” To receive county approval, all new construction in the floodplain must be at least 10 feet above sea level (one foot above the 9-foot floodplain level).

Wetlands and Waters of the US

The US Army Corps of Engineers regulates the discharge of dredged or fill material into waters of the United States, including wetlands, pursuant to Section 404 of the CWA (33 USC 1251). Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support (and that under normal circumstances do support) a prevalence of vegetation typically adapted for life in saturated soil conditions. National Wetlands Inventory mapping indicates there are no regulated wetlands in the developed portion of CG Yard. Curtis Creek and Arundel Cove are classified as estuarine open water. Tidal wetlands are present along the eastern shoreline of Arundel Cove and on the shoreline of Curtis Creek north of CG Yard (Figure 3-2). The State of Maryland requires that a 100-foot buffer be maintained around all areas of tidal wetlands, regardless of size.

Groundwater

CG Yard is within the Northern Atlantic Coastal Plain aquifer system, which underlies approximately 50,000 square miles from New Jersey to South Carolina. The Northern Atlantic Coastal Plain aquifer system is composed of unconsolidated to partly consolidated sediments.



Floodplains



-  CG Yard
-  100-year floodplain

Figure 3-1



Wetlands

- | | | |
|---|--------------------------------|---|
|  CG Yard | Wetland Type |  Freshwater Forested/Shrub Wetland |
|  | Estuarine and Marine Deepwater |  Freshwater Pond |
|  | Estuarine and Marine Wetland |  Riverine |
|  | Freshwater Emergent Wetland | |

Figure 3-2

These sedimentary layers progressively thicken and deepen seaward from the Fall Line, to the Atlantic Coast, where sediments reach a maximum thickness of about 10,000 feet in North Carolina. A series of clay and silt confining layers separate 10 regional aquifers (six regional aquifers separated by four regional confining units) that are used for water supply. Recharge enters the aquifer mostly from the outcrop and subcrop areas in the landward part of the aquifer system, but some recharge comes from downward leakage through confining units (USGS 2016).

Groundwater in the area of CG Yard occurs within the unconsolidated sediments of the Coastal Plain. Groundwater recharges by infiltration of precipitation and subsurface flow from adjacent areas, and discharges to Curtis Creek and Arundel Cove following a gentle sloping groundwater gradient. The Patapsco Formation, which underlies CG Yard, is one of the most productive water-yielding formations in Maryland and the most extensively developed in Anne Arundel County (Tetra Tech 2019).

Historic industrial activities at CG Yard resulted in groundwater contamination. Remedial action to treat groundwater began in 2009, and groundwater treatment and monitoring are ongoing (EPA 2019a). Local water users obtain their water from the City of Baltimore and not from the local groundwater aquifers (Agency for Toxic Substances and Disease Registry 2004).

Stormwater

The NPDES was developed under the CWA to help control pollution by regulating and permitting facilities that discharge into US waters. CG Yard holds a General NPDES Stormwater Discharge Permit, which allows the discharge of stormwater from industrial facilities. This permit addresses nonpoint source pollution that is typically stormwater runoff. CG Yard is currently permitted to discharge water that has altered temperature, hardness, or pH; elevated levels of copper or zinc; or that is chlorinated into nearby waters (EPA 2019b).

3.4.2 Environmental Consequences

Impacts on water resources would be significant if a project-related release of sediments or contaminants caused local water resources to not attain water quality standards or meet permit conditions, or if the project reduced water availability or interfered with the water supply of existing users. If effective BMPs are implemented that reduce the impacts so that water quality standards and permit conditions could be met, then the alternative would not exceed significance thresholds.

No Action Alternative

Under the no action alternative, the Coast Guard would continue to operate the existing utility heat system in its current state. Repairs would continue on an as-needed basis to provide heat to CG Yard facilities; this may include repair or replacement of steam lines in limited areas.

Under the no action alternative the condensate return lines would continue to be nonfunctional. This would continue to be a major source of water loss, as condensate return water is discharged on the ground adjacent to the buildings instead of being returned to the boiler plant. This discharge includes the chemicals used to treat the makeup water and would continue to have the potential to enter Curtis Creek and Arundel Cove as runoff or enter groundwater.

Alternative 1

Surface Water

Alternative 1 would have no short- or long-term direct impacts on surface water. No in-water work would occur in Curtis Creek or Arundel Cove. Potential indirect effects on surface water quality would occur from construction activities to replace underground steam lines. These impacts would be temporary and short term and would include the following:

- Increased risk of erosion and stormwater runoff during utility replacement activities
- Increased risk of fuel and oil spills from vehicles and equipment used for construction that could contaminate receiving water bodies through surface water runoff

Under the federal NPDES stormwater program, a General Permit is required for all construction activity in Maryland with a planned total disturbance of one acre or more. This permit requires preparation of an approved Stormwater Pollution Prevention Plan and implementation of BMPs as outlined in the General Permit. Adherence to the stormwater permit, if Alternative 1 would disturb more than 1 acre, and the soil erosion and water quality BMPs described in Section 2.4.4 would minimize the potential for sediments or pollutants from entering Curtis Creek or Arundel Cove and impacting water quality. Impacts would be less than significant.

Replacement of the steam and condensate return lines would have a potential beneficial impact on water quality compared with the no action alternative because condensate return water would no longer be discharged onto the ground at individual buildings.

Floodplains

Alternative 1 would have no long-term impact on floodplains. Under Alternative 1 only a limited portion of the underground steam line replacement would occur in the 100-year floodplain. This area is covered with impervious surfacing and would continue to be covered after the steam lines are replaced. Limited aboveground utility heat system equipment may be required in the 100-year floodplain. Any replacement system in the 100-year floodplain would be placed at least 3 feet above the base flood elevation levels. Because Alternative 1 would not result in an increase in impervious areas, it would have no impacts on the floodplain.

Wetlands

Alternative 1 would have no long-term impact on wetlands. Steam line replacement would occur approximately 200 feet from tidal wetlands at the nearest point. Short-term adverse impacts during construction in this area would be avoided through the soil erosion and water quality BMPs described in Section 2.4.4 to prevent any construction-related sediment, debris, oil, fuels, or lubricants from entering tidal wetlands. Short-term adverse impacts on tidal waters and wetlands related to stormwater runoff would be minimized through the BMPs described in Section 2.4.4 and any required permits and approvals required for construction activities related to recapitalizing the utility steam system. Impacts would be less than significant.

Groundwater

Alternative 1 would have no long-term adverse impacts on groundwater. Potential short-term adverse impacts from construction would occur from the increased risk of fuel, oil, and petroleum products from vehicles and construction equipment permeating exposed soils during underground

utility replacement. Adherence to the water quality BMPs described in Section 2.4.4 would minimize the potential for pollutants from entering groundwater. Short-term adverse impacts would be less than significant.

Geothermal Heat System

Development of geothermal systems for heating Buildings 28A, 28B, 33, and 70 would have no long-term adverse effects on water resources. Conditions of permits and approvals for installation would include measures to minimize impacts.

Alternative 2

Impacts on water resources under Alternative 2 would be similar to those described for Alternative 1, particularly if existing underground steam lines were removed rather than abandoned in place.

If steam lines were abandoned in place, little to no underground utility work would occur in the 100-year floodplain, and the nearest underground work for extending natural gas service would occur approximately 1,000 feet from the nearest tidal wetlands.

Potential short-term adverse impacts on surface water and groundwater during construction would be the same as described for Alternative 1. Adherence to the stormwater permit, if required, and the soil erosion and water quality BMPs described in Section 2.4.4 would minimize potential impacts on water quality. Short-term adverse impacts would be less than significant. Beneficial impacts would be as described for Alternative 1 because no condensate water would be required under decentralized heating conditions.

Alternative 3

Impacts on water resources under Alternative 3 would be similar to those described for Alternative 1, particularly if existing underground steam lines were removed rather than abandoned in place.

As with Alternative 2, if unused steam lines were abandoned in place, little to no underground utility work would occur in the 100-year floodplain, and the nearest underground utility work would occur approximately 1,000 feet from the nearest tidal wetlands.

Potential short-term adverse impacts on surface water and groundwater during construction would be the same as described for Alternatives 1 and 2. Adherence to permit conditions and soil erosion and water quality BMPs would minimize potential impacts on water quality. Short-term adverse impacts would be less than significant, and beneficial impacts would be as described for Alternative 1.

Geothermal Heat System

Impacts would be the same as described for Alternative 2.

3.5 CULTURAL RESOURCES

Cultural resources are districts, buildings, sites, structures, areas of traditional use, or objects with historical, architectural, archaeological, cultural, or scientific importance. They include archaeological resources (both prehistoric and historic), historic architectural resources (physical properties, structures, or built items), and traditional cultural resources (those important to living Native Americans for religious, spiritual, ancestral, or traditional reasons).

The National Historic Preservation Act established a national policy for protecting significant cultural resources that are defined as “historic properties” under 36 CFR 60.4. NHPA Section 106 (36 CFR §800) requires that federal agencies consider and evaluate the effect that federal projects may have on historic properties under their jurisdiction. As part of the Section 106 process, agencies are required to consult with the State Historic Preservation Officer and other consulting parties, as appropriate, including federally recognized Native American tribes.

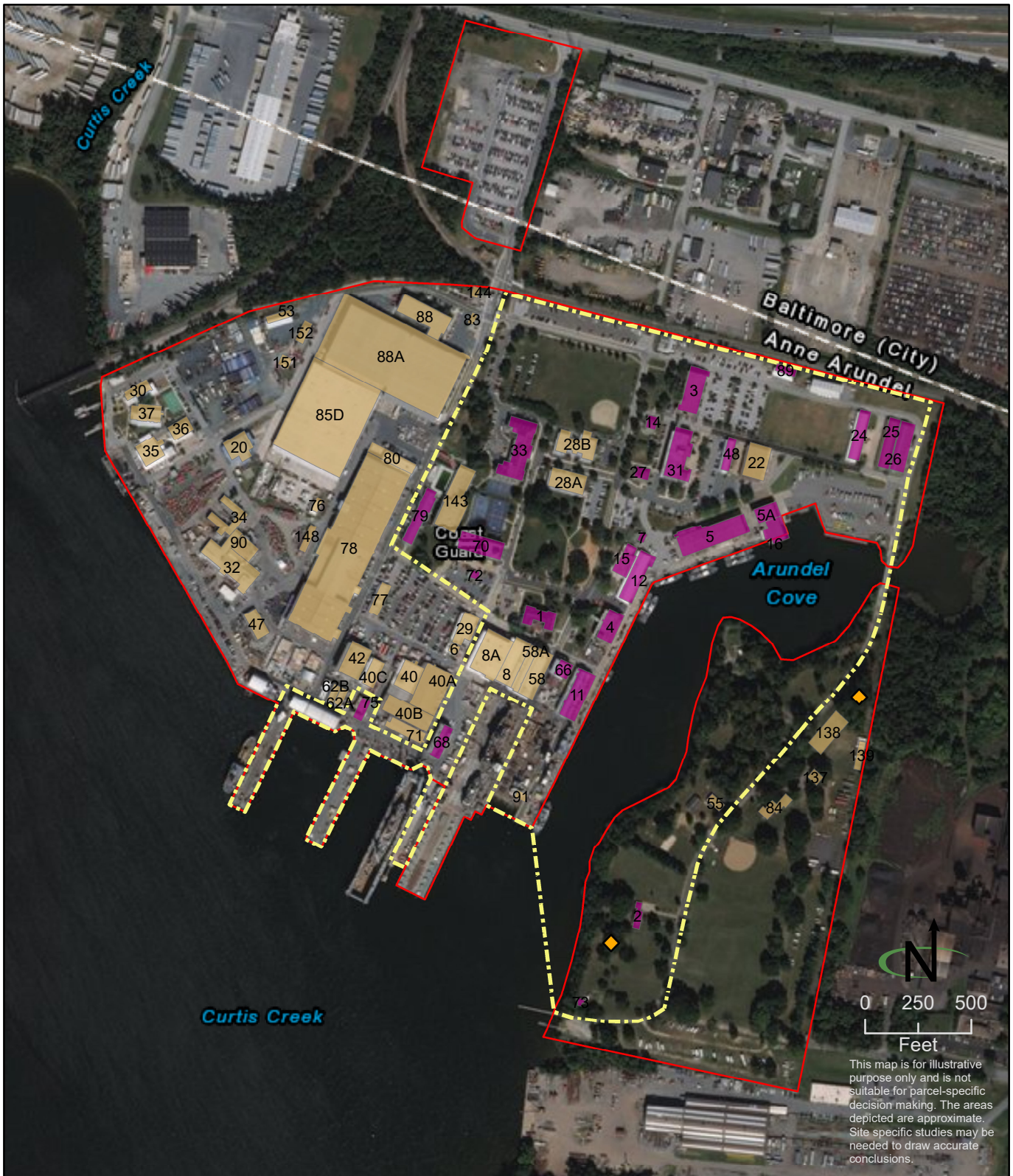
NEPA requires consideration of “important historic, cultural, and natural aspects of our natural heritage.” Consideration of cultural resources under NEPA includes complying with the applicable procedures and requirements of the NHPA, the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, Executive Order 13007, Indian Sacred Sites, and other laws, regulations, and guidance pertaining to the protection of these resources.

3.5.1 Affected Environment

CG Yard was listed as a Historic District on the National Register of Historic Places in 1983; the District was expanded in 1999 (Coast Guard 2007). The District encompasses nearly a third of CG Yard and contains 28 contributing and 13 non-contributing structures (Figure 3-3). CG Yard is mainly a collection of metal or brick utilitarian structures that have been modified, expanded, or otherwise altered to meet evolving demands of production and technology. Some of the Yard’s architecture, particularly the administrative buildings, makes a distinct stylistic reference; however, efficiency and function were the motivating factors in the design of most CG Yard buildings, more so than aesthetics (Maryland Historical Trust 2019).

CG Yard is the Coast Guard’s largest modern industrial plant and has been building and servicing the vessels of the Coast Guard (and its predecessor, the Revenue Cutter Service) since 1899. The Yard is associated with changes and developments in the military shipbuilding industry, as it was established as a result of the Spanish American War and experienced its most significant periods of expansion during subsequent World Wars. Shipbuilding also has traditionally been a key industry in the southeast Baltimore area, and while CG Yard did not play a paramount role in the area’s economy, it was part of an important industry that defined the region. CG Yard is significant for its design and construction in that the historic resources at the Yard embody the distinctive characteristic of industrial and military/government buildings of the World War II period. The overwhelming majority of historic structures at CG Yard date to the 1930s and 1940s. Taken as a district, the ensemble of Yard buildings represents a significant and distinguishable entity, although most components lack individual distinction. Furthermore, vestiges of pre-World War II building arrangement and use patterns still remain (Maryland Historical Trust 2019).

The proposed action would include modification of heat systems in 45 buildings at CG Yard (see Table 2-2). Potentially affected buildings within the Historic District are listed in Table 3-4.



This map is for illustrative purpose only and is not suitable for parcel-specific decision making. The areas depicted are approximate. Site specific studies may be needed to draw accurate conclusions.

Historic Resources

- ◆ Archaeological sites
- Buildings
- - - Historic district boundary
- CG Yard
- Contributing historic buildings

Figure 3-3

**Table 3-4
Status of Historic District Structures Potentially Affected by Proposed Action**

Building Number	Building Name	Year Built	Size (SF)	Contributing Structure?
1	Yard Administration Building	1942	14,596	Yes
3	ELC Offices/Drydock Club	1934	23,299	Yes
4	Facilities/Fiscal/Wood Shop	1939	15,051	Yes
5	Boat Building/Fiberglass Shop	1931	23,653	Yes
5A	Small Boat Shop Annex	1943	5,256	Yes
8	Pipe Shop	1942	28,064	No
8A	Machine Shop	1994	13,708	No
11	Machine Shop	1932	15,380	Yes
12	Facilities Maintenance Shops	1911	10,450	Yes
15	Power House	1914	8,772	Yes
16	Small Boat Shop	1932	6,332	Yes
27	Classrooms	1932	2,050	Yes
28A	Berry Hall	1973	8,800	No
28B	Clinic Out Patient	1973	9,544	No
31	ELC Offices	1939	39,139	Yes
33	Barracks/Exchange/MSO	1939	55,276	Yes
58	Outside Machine Shop/INDS Office	1939	25,723	No
58A	Infill Alleyway	1994	10,880	No
66	Mobile Equipment Maint. Shop	1939	3,000	Yes
68	DDHH#1/CIV Café	1941	5,555	Yes
70	Sector Baltimore Admin/Ops	1937	31,881	Yes
75	DDHH#2/Temp Services	1943	3,312	Yes
79	Fire House/Safety/Auto Hobby	1942	8,269	Yes
143	Columbus Recreation Center	1983	16,930	No

The 2007 Coast Guard Yard Land Use Plan Update included the development of a Historic Preservation Plan, the purpose of which was to establish processes for integrating the preservation and use of historic properties with the current and future missions and programs of the Coast Guard and the Yard in a manner appropriate to the nature of the historic properties (Coast Guard 2007). As described in the Historic Preservation Plan, projects affecting the Yard's contributing structures consisted primarily of repairs and replacements of major systems, such as HVAC and interior renovations; that those upgrades had not generally altered the historic character of the buildings; and that future projects would be similar in nature as buildings and building systems were upgraded for comfort, efficiency, and safety. The recapitalization of the utility heat system is a continuation of these upgrade efforts described in the Historic Preservation Plan.

3.5.2 Environmental Consequences

Effects on cultural resources would be considered significant if the proposed action resulted in adverse effects on any site listed or potentially eligible for listing on the National Register of Historic Places.

No Action Alternative

The no action alternative would result in no direct alteration of contributing buildings and structures; therefore, there would be no effects on historic resources.

Alternative 1

The majority of the recapitalization work would occur under the built environment (parking areas, streets, and sidewalks) to replace steam lines or install natural gas lines and would have no effect on historic resources. Under Alternative 1, the Coast Guard would replace the centralized steam heat system. The majority of the work affecting contributing and non-contributing structures would occur on the interior of buildings with minimal to no modifications of the interior structure (e.g., replacement of old heating equipment with new equipment). Minor exterior modifications may be required for some buildings, consisting mainly of in-kind replacement of existing piping or equipment. These modifications would be in keeping to the existing element and style and would have no adverse effect on the contributing and non-contributing structures of the Historic District.

Alternative 1 would have no effect on the two archeological sites in the Grove, nor would it disturb any previously undisturbed shoreline or submerged areas. It also would be consistent with the 2007 Land Use Plan and Historic Preservation Plan.

Replacement of the underground steam lines would occur primarily in areas of previously disturbed soils, limiting the potential for inadvertent discovery of archeological resources. As described in Section 2.4.4, standard contract provisions for Coast Guard construction projects require that if previously unknown resources are encountered during construction, all construction and ground-disturbing activities would be immediately halted until a proper archaeological assessment can be made.

Because of the limited potential changes to structures within or adjacent to the Historic District, Alternative 1 would have no adverse effect on historic resources.

Alternative 2

The majority of the recapitalization work would occur under the built environment (parking areas, streets, and sidewalks) to install natural gas lines and would have no effect on historic resources. Under Alternative 2, the Coast Guard would install decentralized heating equipment in each of the buildings currently heated by steam, with the potential to affect the contributing and non-contributing structures listed in Table 3-4. Most of the updates would occur within the interior of the buildings and would consist of removing steam-based heating equipment and installing decentralized heating equipment. In limited cases, interior modifications may be required to enlarge the area in which new equipment is being installed. Minor exterior modifications would be required for some buildings to accommodate the conversion from steam heat to natural gas or electric heat (such as installing heat pumps or installing piping up the sides of some buildings or on the roof to vent natural gas equipment). Measures would be taken to minimize these effects. For example, installation of equipment or piping would be done along existing piping and on the rooftops to the extent possible, which would allow the new piping and equipment to blend into the existing structures. With these measures, Alternative 2 would have no adverse effects on contributing and non-contributing structures in the Historic District.

Like Alternative 1, Alternative 2 would have no effect on the two archeological sites in the Grove, nor would it disturb any previously undisturbed shoreline or submerged areas. It also would be consistent with the 2007 Land Use Plan and Historic Preservation Plan.

Installation of the natural gas lines would occur primarily in areas of previously disturbed soils, limiting the potential for inadvertent discovery of archeological resources. As described in Section 2.4.4, standard contract provisions for Coast Guard construction projects require that if previously unknown resources are encountered during construction, all construction and ground-disturbing activities would be immediately halted until a proper archaeological assessment can be made.

Under Alternative 2, geothermal systems could be installed in the open lawn areas adjacent to Buildings 28A, 28B, 33, and 70. As described for installation of natural gas lines, installation of geothermal loop fields would occur in areas of previously disturbed soils, limiting the potential for inadvertent discovery of archeological resources. Once installed, these areas would be re-landscaped, resulting in no long-term visual change to these open space areas or associated adverse impacts on the Historic District or its contributing structures. Minor exterior modifications would be required to accommodate the conversion from steam heat to geothermal heat (such as installing heat pumps outside of these buildings). Measures would be taken to minimize these effects. With these measures, Alternative 2 would have no adverse effects on contributing and non-contributing structures in the Historic District.

Alternative 3

Under Alternative 3, most contributing buildings in the Historic District would remain on steam heat, with minimal to no exterior modifications and no adverse effect on these historic properties. A few buildings, including Buildings 33 and 79, may be converted to natural gas or electric heat. These buildings would have the potential for minor exterior modifications as described under Alternative 2. Measures would be taken to minimize these effects and with these measures, Alternative 3 would have no adverse effects on contributing and non-contributing structures.

Like Alternative 1, Alternative 3 would have no effect on the two archeological sites in the Grove, nor would it disturb any previously undisturbed shoreline or submerged areas. It also would be consistent with the 2007 Land Use Plan and Historic Preservation Plan.

Replacement of the steam lines and extension of the natural gas service would occur primarily in areas of previously disturbed soils, limiting the potential for inadvertent discovery of archeological resources. BMPs described under Alternative 1 would mitigate this potential impact.

Impacts from installing geothermal systems would be as described for Alternative 2.

3.6 GEOLOGY AND SOILS

3.6.1 Affected Environment

CG Yard is in the Atlantic Coastal Plain, a region characterized by deep alluvial and marine deposits of layered and mixed sediments formed by the transgression and regression of the sea and adjacent tributaries. The formation is composed primarily of well-sorted sands containing clay or clay minerals. In addition, varying amounts of gravel, silt, and clay may be encountered. The most recent soil survey of Anne Arundel County, published in 1973, identified the soil series within CG Yard and its vicinity as Rumford-Urban Land, Urban Land, Cut and Fill Land, Evesboro-Urban

Land, and Loamy and Clayey Land (Coast Guard 2007). Most of CG Yard is industrially developed and covered with impervious surfacing.

Historic industrial activities at CG Yard resulted in soil and groundwater contamination and the listing of CG Yard on the National Priorities List. Remedial action, including excavation and removal of contaminated soil, began in 2009 and was completed in 2013 (EPA 2019a). The potential exists for additional areas of soil contamination to be discovered during surface-disturbing activities such as those required under the proposed action.

3.6.2 Environmental Consequences

A project would have significant adverse effects if the proposed action were to substantially increase soil erosion or the loss of topsoil in the project area.

No Action Alternative

Under the no action alternative, the Coast Guard would continue to operate the existing utility heat system in its current state. Repairs would continue on an as-needed basis to provide heat to CG Yard facilities. This may include repair or replacement of underground steam lines in limited areas, with the potential for short-term increases in erosion during utility line replacement. Standard terms and conditions of construction contracts would include measures to minimize erosion.

Alternative 1

Alternative 1 would have no long-term impacts related to soil erosion. Steam system components are primarily within buildings or under impervious surfacing and would remain so upon completion of construction. Any vegetated areas disturbed during underground steam line replacement would be revegetated per the BMPs described in Section 2.4.4 to prevent long-term erosion impacts.

Alternative 1 would have short-term adverse impacts during underground steam line replacement from removal of pavement and disturbance of the underlying soils to install these new lines. BMPs described in Section 2.4.4 would be implemented to control erosion around all work sites. Adherence to these soil erosion BMPs and to any conditions of permits, such as a Maryland General Permit for Stormwater Associated with Construction Activity if more than one acre would be disturbed, would ensure that erosion-related impacts are less than significant.

Due to the history of industrial use at CG Yard, the possibility of encountering contaminated soil exists during underground steam line replacement. As described by the BMPs for hazardous materials in Section 2.4.4, any soils suspected of being contaminated would be tested and handled or disposed of in accordance with applicable federal, state, and local regulations.

Alternative 2

Long-term impacts related to soil erosion would be the same as described for Alternative 1. Potential short-term impacts on soils would be greater those described for Alternative 1 if existing underground steam lines are removed rather than abandoned in place; under this scenario, a greater level of soil disturbance would occur from both removing existing underground steam lines and extending the natural gas service to other areas of CG Yard. If steam lines are abandoned in place, less surface disturbance would be required than under Alternative 1. Under either scenario, BMPs described in Section 2.4.4 and conditions of any required permits would minimize soil erosion and ensure that erosion-related impacts are less than significant.

Developing systems for heating Buildings 28A, 28B, 33, and 70 would require drilling over one hundred and fifty 300-foot-deep vertical bores in the open spaces next to the buildings. Installation activities would result in potential impacts from soil erosion; these impacts would be minimized through BMPs similar to those described in Section 2.4.4. Geotechnical surveys may be required to identify the feasibility of operating such systems.

Alternative 3

Long-term impacts related to soil erosion would be the same as described for Alternative 1. Potential short-term impacts on soils would be greater those described for Alternative 1 if existing steam lines are removed rather than abandoned in place; under this scenario, a greater level of soil disturbance would occur from both removing existing underground steam lines and extending the natural gas service to other areas of CG Yard. If steam lines are abandoned in place, less surface disturbance would be required than under Alternative 1. BMPs described in Section 2.4.4 and conditions of any required permits would minimize soil erosion and ensure that erosion-related impacts are less than significant.

Impacts from developing geothermal systems for heating Buildings 28A, 28B, 33, and 70 would be the same as described for Alternative 2.

3.7 CLIMATE AND AIR QUALITY

3.7.1 Affected Environment

Air Quality

The Clean Air Act of 1970, as amended (42 USC 7401 et seq.), regulates emissions from stationary, mobile, and area sources and establishes national ambient air quality standards (NAAQS) for pollutants that can harm human health or the environment. Under the CAA, the EPA is responsible for revising these standards as new air quality data and related impacts on the human environment become available.

NAAQS have been adopted for six criteria pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, two forms of particulate matter (PM less than 10 microns in diameter [PM₁₀] and PM less than 2.5 microns in diameter [PM_{2.5}]), and airborne lead. NAAQS may include primary or secondary standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. Averaging periods vary by criteria pollutants based on potential health and welfare effects of each pollutant. NAAQS are enforced by the states through local air quality agencies. States may choose to adopt their own air quality standards, but state standards must be as stringent as federal standards. Table 3-5 lists the NAAQS.

Table 3-5
National Ambient Air Quality Standards

Pollutant	Averaging Time	Ambient Concentration Standard¹	Primary (P) or Secondary (S) standard²
Ozone	8 hours	0.070 ppm	P, S
Carbon monoxide	1 hour	35 ppm	P
	8 hours	9 ppm	P
PM ₁₀	24 hours	150 µg/m ³	P, S
PM _{2.5}	24 hours	35 µg/m ³	P, S
	Annual	15 µg/m ³	S
	Annual	12 µg/m ³	P
Nitrogen dioxide	Annual	53 ppb	P, S
	1 hour	100 ppb	P
Sulfur dioxide	3 hours	0.5 ppm	S
	1 hour	75 ppb	P
Lead	Rolling 3-month average	0.15 µg/m ³	P, S

Source: EPA 2019d

¹ mg/m³ = milligrams per cubic meter; µg/m³ = micrograms per cubic meter

² P = primary standard (health-based); S = secondary standard (welfare-based)

Areas that violate air quality standards are designated as nonattainment areas for relevant criteria pollutants. Areas that comply with air quality standards are designated as attainment areas for relevant criteria pollutants. Areas of questionable status are generally designated as unclassifiable and treated as attainment areas for regulatory purposes. CG Yard is in a moderate nonattainment area for the 2008 federal ozone standard, a marginal nonattainment area for the 2015 federal ozone standard, a nonattainment area for SO₂, a maintenance area for PM_{2.5}, and attainment or unclassified areas for the rest of the NAAQS (EPA 2019c). The Maryland Department of the Environment carries out CAA mandates and administers monitoring, planning, and control programs to maintain and improve air quality.

CG Yard is considered a major source and operates under a Title V Operating Permit (Permit No. 24-003-0316). The EPA defines a major source as stationary sources, or groups of stationary sources, with a potential to emit more than 100 tons per year of any criteria pollutant, 10 tons per year of any hazardous air pollutant, or 25 tons per year of any combination of hazardous air pollutants. Air emission sources at CG Yard include boilers and furnaces, painting operations, fiberglass fabrication, abrasive blasting operations, degreasing, welding, and cleaning operations, as well as personal and Coast Guard vehicles and lawn maintenance equipment.

Maryland, Washington, DC, and northern Virginia are part of the Northeast Ozone Transport Region. As part of an ozone transport region, the EPA set CAA conformity de minimis thresholds for ozone at 50 tons per year of volatile organic compounds and 100 tons per year of nitrogen oxides (40 CFR Part 51.853). As part of an SO₂ nonattainment area the EPA set the CAA conformity de minimis thresholds at 100 tons per year. As part of a PM_{2.5} maintenance area, the EPA set the CAA conformity de minimis thresholds at 100 tons per year each of directly emitted PM_{2.5} and its precursor emissions (ammonia, volatile organic compounds, sulfur dioxide, and nitrogen oxides) (40 CFR Part 91.153). However, volatile organic compounds and ammonia

emissions are only considered PM_{2.5} precursors where either a state or the EPA has made a finding that these emissions significantly contribute to the PM_{2.5} problem in a given area (EPA 1998); the EPA and the State of Maryland have found that volatile organic compounds and ammonia emissions do not contribute to PM_{2.5} in the area.

Climate and Greenhouse Gases

The climate at CG Yard is characteristic of the Mid-Atlantic region. Average annual precipitation is 45 inches, with an average of 20 inches of snowfall per year. The average annual temperature is approximately 55 degrees Fahrenheit (°F), while the average annual low is approximately 53°F and the average annual high is 77°F. The first freeze usually occurs at the end of October and the last freeze is typically around early April (NRCS 2019).

Greenhouse gases are compounds that contribute to climate change by trapping heat in the atmosphere. Greenhouse gases absorb infrared radiation and re-radiate a portion of that radiation back to the earth's surface, thus trapping heat and warming the atmosphere. The most important naturally occurring greenhouse gas compounds are carbon dioxide (CO₂), methane, nitrous oxide, ozone, and water vapor. Although naturally present in the atmosphere, concentrations of carbon dioxide, methane, and nitrous oxide are also produced by industrial processes, transportation technology, urban development, agricultural practices, and other human activity.

The three principal sources of greenhouse gas emissions in Maryland are electricity consumption; transportation; and residential, commercial, and industrial fossil fuel use. Electricity consumption accounted for 29 percent of gross greenhouse gas emissions in 2017, transportation accounted for 38 percent, and residential, commercial, and industrial fossil fuel use accounted for 22 percent. Annual greenhouse gas emissions in 2017 were approximately 82.87 million metric tons carbon dioxide equivalent (CO_{2e}) emissions, an approximately 22.72 percent reduction since 2006 (Maryland Department of the Environment 2018b).

The Maryland Commission on Climate Change has issued greenhouse gas mitigation goals. Under this plan the state is required to reduce emissions to 40 percent of 2006 levels by 2030 (Maryland Commission on Climate Change 2018).

3.7.2 Environmental Consequences

Effects on air quality would be considered significant if project-related emissions contributed to a violation of the NAAQS or exceeded the CAA de minimis threshold values for nonattainment and maintenance pollutants and their precursors.

No Action Alternative

Under the no action alternative, the Coast Guard would continue to operate the existing utility heat system in its current state, with limited repairs made on an as-needed basis. There would be no long-term change in air pollutant emissions over current conditions. Minor, short-term, adverse impacts would be associated with any emergency underground steam line repairs.

Average annual natural gas usage by the boiler plant for 2017 and 2018 was 1,273,500 therms. EPA's greenhouse gas calculator indicates that natural gas burned as fuel emits 0.0053 metric tons of CO₂ per therm (EPA 2019e). This equates to 6,750 metric tons of CO₂ per year under current conditions.

Alternative 1

Alternative 1 would have a long-term beneficial impact on air quality by replacing the main boiler and many of the current utility heat system components with more energy efficient equipment, resulting in less natural gas burned per year and fewer air pollutants emitted. Because long-term air pollutant emission levels from operating the recapitalized steam system would likely decrease compared with current conditions, the change in emission levels would be below de minimis levels for all nonattainment and maintenance pollutants. The Title V Operating Permit would be modified to reflect the change in stationary emission sources.

The planning proposal estimated that under Alternative 1, approximately 260,695 therms per year would be required to operate the recapitalized steam system. This would equate to 1,382 metric tons of CO₂ per year, an 80 percent reduction over current conditions. Recapitalizing the steam system also may reduce the amount of diesel fuel required to be burned as a backup fuel for the boiler plant compared with existing conditions, which would further reduce greenhouse gas emissions. This would contribute to Maryland's greenhouse gas reduction goals described above.

Construction activities would have short-term adverse impacts on air quality from surface-disturbing activities that increase fugitive dust and from combustion-related emissions from operating construction equipment and vehicles associated with construction activities. Construction-related emissions would be minimized by implementing the BMPs described in Section 2.4.4, resulting in less than significant impacts on air quality during construction activities associated with Alternative 1.

Alternative 2

Long-term impacts under Alternative 2 would be similar to those described for Alternative 1. Replacing the three boilers with decentralized heating systems would reduce the amount of natural gas burned per year and reduce air pollutant emissions. The change in emission levels compared with current conditions would be below de minimis levels and the Title V Operating Permit would be modified to reflect the change in stationary emission sources, primarily the decommissioning of the boilers.

The planning proposal estimated that under Alternative 2, approximately 182,064 therms per year would be required to operate the decentralized heating systems. This would equate to 965 metric tons of CO₂ per year, an 85 percent reduction over current conditions.

Short-term impacts from construction activities and BMPs used to minimize these emissions would be as described for Alternative 1.

Developing geothermal systems for heating Buildings 28A, 28B, 33, and 70 would have short-term adverse impacts from drilling equipment emissions and fugitive dust from soil disturbance in the open spaces next to the buildings. These impacts would be minimized through the implementation of BMPs such as those described in Section 2.4.4 to reduce impacts to less than significant levels. Long-term impacts would be beneficial, as geothermal heat systems do not produce air pollutant or greenhouse gas emissions.

Alternative 3

Long-term impacts under Alternative 3 would be similar to those described for Alternative 1, as the recapitalized steam system in some areas combined with decentralized systems in other areas

would burn less natural gas and reduce air pollutant emissions compared with current conditions. The change in emission levels would be below de minimis levels, and the Title V Operating Permit would be modified to reflect the changes in stationary emission sources.

The planning proposal estimated that under Alternative 3, approximately 204,875 therms per year would be required to operate the decentralized heating systems. This would equate to 1,085 metric tons of CO₂ per year, an 84 percent reduction over current conditions.

Short-term impacts from construction activities and BMPs used to minimize these emissions would be as described for Alternative 1.

Impacts from developing geothermal systems for heating Buildings 28A, 28B, 33, and 70 would be the same as described for Alternative 2.

3.8 NOISE

3.8.1 Affected Environment

Noise is defined as unwanted sound and can be intermittent or continuous, steady or impulsive. The decibel (dB) is the accepted unit of measurement for noise. Human response to noise is extremely diverse and varies according to the type of noise source, the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source and the receptor. The sensitivity of the human ear to sounds of different frequencies is measured by the A-weighted decibel scale (dBA). The smallest change in noise level that a human ear can perceive is about 3 dBA, increases of 5 dBA or more are clearly noticeable, and a 10 dBA change in noise levels is judged by most people as a doubling of sound level.

Sensitive noise receptors are land uses that are more sensitive to noise and include residences, hospitals, schools, churches, parks, and outdoor recreational areas. There are no sensitive receptors on or within one mile of CG Yard. The nearest sensitive receptors are scattered residences over 1 mile from CG Yard and one church approximately 2 miles from CG Yard. The proposed action would not produce noise over the short or long terms that is discernible at these distances.

Coast Guard facilities at CG Yard are in a campus format, with green spaces and parking lots between individual buildings. Background noises in these medium-density areas are generally limited to low-speed vehicle movements, HVAC systems, human voices, and overhead air traffic. The noise environment of the industrial portion of CG Yard is greater and dominated by noise from ship repair and maintenance activities, heating and ventilation systems, vehicles and equipment such as forklifts, and vessel traffic. Interstate 695 is the major highway contributing to background traffic noise in this area.

Code of Maryland Regulations, Title 26.02.03, sets maximum day and night sound level limits for industrial, commercial, and residential land uses. Per Code of Maryland Regulations (COMAR) 26.02.03, the maximum allowable noise level for areas zoned for Industrial use is 75 dBA during the daytime (8 AM to 5 PM) and nighttime hours. Local jurisdictions are encouraged to establish more restrictive standards where circumstances so require, and specific noise issues are referred to local governments for action.

3.8.2 Environmental Consequences

Noise effects would be considered significant if project-related noise resulted in a permanent increase in noise levels above the land use community noise standards.

No Action Alternative

Under the no action alternative, the Coast Guard would continue to operate the existing utility heat system in its current state. There would be no long-term change in the existing noise environment. Repairs would continue on an as-needed basis, with temporary and intermittent noise impacts in the vicinity of the repairs.

Alternative 1

Recapitalizing the steam system under Alternative 1 would have no long-term noise impacts, as it would not produce a noticeable change in the existing noise environment once replacement of the system is complete. Construction equipment used to replace the underground steam lines and other exterior system components would be temporary and intermittent sources of noise. Table 3-6 lists noise levels associated with the construction equipment that could be used during construction; concrete saws and jackhammers would be the greatest sources of noise.

**Table 3-6
Construction Equipment Noise Levels**

Equipment	Equipment Noise Levels at Varying Distances (dBA)						
	50 feet	100 feet	200 feet	400 feet	1,000 feet	1,500 feet	2,500 feet
Air Compressor	80	74	68	62	54	50	46
Backhoe	80	74	68	62	54	50	46
Concrete Mixer Truck	85	79	73	67	58	55	51
Concrete Saw	90	84	78	72	64	60	56
Drill-Rock	85	79	73	67	58	55	51
Drill-Soil Mix	80	74	68	62	54	50	46
Drum Mixer	80	74	68	62	54	50	46
Dump Truck	84	78	72	66	58	54	50
Excavator	85	79	73	67	58	55	51
Front End Loader	80	74	68	62	54	50	46
Generator	82	76	70	64	56	52	48
Jackhammer	85	79	73	67	58	55	51
Paver	85	79	73	67	58	55	51
Welder/Torch	73	67	61	55	47	43	39

Source: FHWA 2006

Elevated noise levels would directly affect the areas immediately adjacent to the construction activity and extend out a distance from the noise source. As shown in Table 3-6, all anticipated construction equipment would attenuate to below 75 dBA within 400 feet of the work area and below 60 dBA within 1,500 feet. Given the industrial land uses surrounding CG Yard and the distance to any off-site sensitive noise receptors, short-term noise impacts would be less than

significant. The noise BMPs listed in Section 2.4.4 would be implemented to reduce potential impacts from noise generation.

Alternative 2

Long-term and short-term noise impacts under Alternative 2 would be similar to those under Alternative 1.

Developing geothermal systems for heating Buildings 28A, 28B, 33, and 70 would have short-term adverse noise impacts during drilling of the over 150 bore holes. Drilling equipment produces noise levels of 80 to 85 dBA 50 feet from the source. This noise would be noticeable to on-site personnel during the times the drills are operational. Because this would be a short-term and temporary elevation in noise levels, impacts would be less than significant.

Alternative 3

Long-term and short-term noise impacts under Alternative 3 would be similar to those under Alternative 1.

Impacts from developing geothermal systems for heating Buildings 28A, 28B, 33, and 70 would be the same as described for Alternative 2.

3.9 HAZARDS AND HAZARDOUS MATERIALS AND WASTE

3.9.1 Affected Environment

CG Yard is regulated as a large-quantity generator under the Resource Conservation and Recovery Act. Prior to disposal, hazardous wastes are stored in a hazardous waste storage facility (Building 151). Non-hazardous solid waste generated at CG Yard is transported by a private contractor to the Quarantine Road Landfill north of the Yard.

A hazardous materials survey was prepared as part of the utility heat system replacement planning process (NDN Companies, Inc. 2019). Known and potential asbestos-containing materials (ACMs) were observed in components of the utility steam heat system, including aboveground steam piping and air duct insulation, boiler and boiler stack insulation (Building 15 only), and water heater insulation (Building 78 only) (NDN Companies, Inc. 2019). Lead-based paint was not observed on any component of the steam heat utility system surveyed; however, potential lead-based paint was observed on the walls of the mechanical rooms in Buildings 28A and 78 (NDN Companies, Inc. 2019).

In 1993, the Coast Guard prepared a preliminary assessment of chemical contamination at CG Yard and in 1998 it supplied supplemental information to the EPA. Sampling from soil and groundwater indicated the following contaminants of concern: 2,3,7,8-Tetrachlorodibenzo-p-dioxin, 2-Methylnaphthalene, Antimony, Arsenic, Barium, Benzene, Benzopyrene, Chloroform, Chromium, Copper, Iron, Lead, Mercury, PCBs, and Vanadium (EPA 2019f). On September 5, 2002, the EPA added CG Yard to the National Priorities List of sites to be investigated, primarily due to concerns about surface water and fishery contamination (Agency for Toxic Substances and Disease Registry 2004). The National Priorities List is a part of the federal government's Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as "Superfund." The Agency for Toxic Substances and Disease Registry has determined that potential exposures associated with groundwater, surface soil, surface water/sediment, and biota at CG Yard

do not pose past, current, or future public health hazards (Agency for Toxic Substances and Disease Registry 2004). The EPA did identify risks involved for people at the site, including people interacting with chemicals or contaminants from ingesting or touching the soil and groundwater (EPA 2019g).

3.9.2 Environmental Consequences

Effects would be considered significant if project-related activities were to increase the risk of soil or groundwater contamination or created new or substantial human or environmental health risks.

No Action Alternative

Under the no action alternative, the Coast Guard would continue to operate the existing utility heat system in its current state. Repairs would continue on an as-needed basis to provide heat to CG Yard facilities. Standard terms and conditions of construction contracts would ensure health and safety of workers and proper handling and disposal of any hazardous materials or wastes.

Alternative 1

Alternative 1 would have adverse impacts if on-land soil disturbance associated with the replacement of steam and condensate lines revealed the presence of contaminated soils. BMPs described in Section 2.4.4 would be followed if soil suspected of being contaminated was encountered.

Alternative 1 could have minor adverse impacts on worker health and safety during construction activities. Workers could be exposed to risk of injury from on-the-job risks, including falling, slipping, tripping, falling objects, incidents with moving equipment and machinery with moving parts, exposure to hazardous substances, and exposure to excessive noise. All construction contractors would be required to comply with Occupational Safety and Health Administration (OSHA) regulations regarding safety measures and precautions on the job site, reducing the potential impact from construction-related accidents.

Alternative 1 could have minor adverse impacts from the release of, and human exposure to, small amounts of hazardous materials and wastes, including fuel, oil, lubricants, and other substances used in construction. Even without major release events, multiple minor releases could have potential effects on the environment. Releases could potentially lead to soil, surface water, and/or groundwater contamination, and thus require some form of remediation. Standard BMPs described in Section 2.4.4 would be employed to reduce the likelihood of accidental spills occurring and to respond effectively and efficiently should an accidental spill occur.

ACMs would likely be encountered when replacing or removing components of the utility heat system. All hazardous and toxic substances that would be used or generated during construction and demolition activities, including ACMs, would be handled and disposed of in compliance with federal, state, Coast Guard, and local regulations. During construction activities, the Coast Guard would follow all applicable laws, regulations, and policies pertaining to the handling and disposal of ACMs. It is unlikely that lead-based paint would be encountered during system replacement; however, BMPs in Section 2.4.4 would be followed and any potential lead-based paints would be tested prior to removal. Further, all construction contractors would be required to comply with OSHA regulations regarding safety measures and precautions. Overall impacts associated with encountering and removing potential ACMs would be minimal through implementing and adhering to standard BMPs.

With the implementation of BMPs, impacts on human health and the environment from use or handling of hazardous substances would be less than significant. Impacts from operating a recapitalized steam system would have a long-term beneficial impact from proper operation of condensate return lines.

Alternative 2

Short-term adverse impacts from potential soil contamination, worker health and safety, and use and generation of hazardous substances would be similar to those described under Alternative 1. Operating decentralized systems would have a long-term beneficial impact from decommissioning steam system and condensate return lines.

Impacts from installing geothermal heating systems for Buildings 28A, 28B, 33, and 70 would be similar to those described above for underground utility line replacement. Impacts would be minimized through the use of BMPs, resulting in less than significant adverse impacts.

Alternative 3

Short-term adverse impacts from potential soil contamination, worker health and safety, and use and generation of hazardous substances would be similar to those described under Alternative 1. Long-term impacts would be the same as Alternative 1.

Impacts from developing geothermal systems for heating Buildings 28A, 28B, 33, and 70 would be the same as described for Alternative 2.

3.10 UTILITIES

3.10.1 Affected Environment

Utilities at CG Yard include potable water, sewerage, steam, natural gas, and electricity; of these, only steam, natural gas, and electricity would be affected by the proposed action.

CG Yard purchases its electricity and natural gas through the US Department of Defense, Defense Energy Supply Center. Electricity used at CG Yard is provided by Pepco Energy Services under the Defense Energy Supply Center contract. Electricity is distributed through an existing electrical substation and utility distribution system that is owned and operated by Baltimore Gas and Electric. Electricity enters CG Yard through a high voltage line and is stepped down at the CG Yard substation before being further distributed to the Yard's facilities.

Natural gas supplied to CG Yard is primarily combusted into steam at the boiler plant and is then distributed to CG Yard buildings for heating and hot water uses. Building 15 houses three boilers that burn natural gas to provide steam heating to CG Yard facilities. Due to agreements with Baltimore Gas and Electric, during peak usage times during the winter, the CG Yard is required to stop natural gas usage and run independently on diesel fuel for the boiler plant.

3.10.2 Environmental Consequences

Effects on utilities would be considered significant if the proposed action created a demand that exceeded the capacity of the service provider.

No Action Alternative

Under the no action alternative there would be no change in demand for utilities. Average annual natural gas usage by the boiler plant for 2017 and 2018 was 1,273,500 therms. Average annual electricity use by CG Yard in 2017 and 2018 was 8,306,633 kilowatt-hours.

Alternative 1

Under Alternative 1, recapitalizing the utility steam system would not result in an increase in demand for natural gas or electricity. The planning proposal estimated that under Alternative 1, approximately 260,695 therms per year of natural gas and 1,358,154 kilowatt-hours per year of electricity would be required to operate the recapitalized steam system. This would be a reduction in demand for natural gas compared with current conditions and would not exceed the capacity of the electricity provider. Impacts on utilities would be less than significant.

Alternative 2

Under Alternative 2, replacing the utility steam system with decentralized heating systems would not result in an increase in demand for natural gas or electricity. The planning proposal estimated that under Alternative 2, approximately 182,064 therms per year of natural gas and 1,666,555 kilowatt-hours per year of electricity would be required to operate the recapitalized steam system. This would be a reduction in demand for natural gas compared with current conditions and would not exceed the capacity of the electricity provider. Impacts on utilities would be less than significant.

Developing geothermal systems for heating Buildings 28A, 28B, 33, and 70 would further decrease demand for conventional energy sources.

Alternative 3

Under Alternative 3, recapitalizing a portion of the utility steam system combined with decentralized systems in other areas would not result in an increase in demand for natural gas or electricity. The planning proposal estimated that under Alternative 3, approximately 204,875 therms per year of natural gas and 1,616,831 kilowatt-hours per year of electricity would be required to operate the recapitalized steam system. This would be a reduction in demand for natural gas compared with current conditions and would not exceed the capacity of the electricity provider. Impacts on utilities would be less than significant.

Impacts from developing geothermal systems for heating Buildings 28A, 28B, 33, and 70 would be the same as described for Alternative 2.

3.11 BMPs AND MITIGATION MEASURES

The Coast Guard would implement BMPs and comply with all applicable regulatory requirements associated with the proposed action. As described in Section 2.4.4, BMPs are standard terms and conditions that are incorporated into the action alternatives. BMPs are measures that the Coast Guard regularly implements as part of their activities, as applicable to the specific action.

Mitigation measures are project-specific requirements identified through the NEPA process to reduce potentially significant environmental impacts to less-than-significant levels. Mitigation measures are additional measures that are not routinely implemented by the Coast Guard as standard terms and conditions. No mitigation measures necessary to reduce potentially significant adverse impacts were identified in this EA.

With implementation of the BMPs described in Section 2.4.4, the proposed action would have no significant adverse impacts on the current environmental setting.

3.12 CUMULATIVE IMPACTS

A cumulative impact is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions (40 CFR Part 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR §1508.7).

Given the limited scope of the proposed action being evaluated in this EA and the industrial nature of the surrounding area, the geographic scope for this cumulative effects analysis is limited to CG Yard and the surrounding land uses for most resources. The geographic scope for air quality and water resources is the air basin and watershed, respectively, as air and water pollutants may affect these larger areas through pollutant transport. The temporal scope is 10 years based on the planning horizon for the 2019 Master Plan (Coast Guard 2019).

No reasonably foreseeable future actions were identified for the areas immediately surrounding CG Yard. A review of recent EAs (AECOMM 2019, AMEC 2019) and the 2019 Master Plan for CG Yard (Coast Guard 2019) identified a number of recent or foreseeable future actions on CG Yard, including the following:

- The Coast Guard converted all of the lights on the installation to LED to improve energy efficiency
- The Coast Guard reduced impervious surface on the Yard by 20 percent
- The Coast Guard plans to construct a new maintenance facility for the Fast Response Cutter in the vicinity of the west bulkhead along Curtis Creek, near Pier 2
- The Coast Guard plans to develop a stormwater treatment plant
- The Coast Guard plans to demolish several buildings at CG Yard to consolidate facilities and operations in an effort to minimize the Yard’s total footprint
- The Coast Guard will continue to perform ongoing repair and maintenance of aging CG Yard infrastructure and facilities

3.12.1 Impacts of Past, Present, and Reasonably Foreseeable Future Actions

The development of CG Yard as a major shipbuilding facility has resulted in the intensely developed nature of the Yard, and past activities have contributed to the contamination of soils and sediments in the area. Onshore pollutants have been transported into adjacent waters through stormwater runoff, and surrounding industrial uses have contributed to these conditions. Increasingly stringent environmental regulations have reduced the release of contaminants into the environment, and future regulatory controls are anticipated to continue this trend. The reasonably foreseeable action of developing a stormwater treatment plant would reduce the discharge of pollutants into Curtis Creek and Arundel Cove to meet existing and emerging pollutant discharge regulations. Reducing the amount of impervious surfacing reduces the volume of stormwater runoff and minimizes the transport of water, nutrients, and sediments downstream. Remediation

of known areas of contamination was performed from 2009 to 2013 (EPA 2019a), and future remediation would occur as new areas of contamination are discovered.

CG Yard is a major source of air pollutant emissions and has contributed to the nonattainment status for multiple criteria pollutants in the area. National ambient air quality standards have become more stringent over time, resulting in the need to reduce air pollutant emissions for sources within the air basin. Actions to increase energy efficiency indirectly affect air pollutant emissions by decreasing the amount of electricity consumed by CG Yard facilities.

Future actions requiring construction and demolition would have short-term adverse impacts on soils, water quality, and air quality. These impacts would be minimized through adherence to mitigation measures and BMPs. Because these actions would be temporary and intermittent, they would not have a cumulatively significant impact on the environment.

3.12.2 Cumulative Impacts of the No Action Alternative

Under the no action alternative, the utility heat system would continue to operate inefficiently, consume a large volume of water as makeup water, and discharge condensate return water onto the ground instead of returning it to the boiler plant. This would contribute to existing cumulative impacts on air quality, soils, and water quality.

3.12.3 Cumulative Impacts of the Proposed Action

The proposed action would contribute short-term adverse impacts on coastal resources, biological resources, water resources, cultural resources, soils, air quality, and noise across all three action alternatives. While some differences in the level of impact may occur, overall cumulative impacts would be less than significant when considered together with past, present, and reasonably foreseeable future actions. Construction-related actions under the proposed action and cumulative actions must incorporate BMPs and conditions of permits and approvals to minimize the effect of construction-related actions.

Replacement of the utility heat system under all three action alternatives would have beneficial impacts on air quality, soils, water quality, and utility demand. Combined with past, present, and reasonably foreseeable actions that improve energy efficiency, reduce stormwater runoff, and improve water quality, the proposed action would contribute to cumulative improvements in environmental resources at CG Yard and in the geographic scope of analysis.

3.13 COMPARISON OF THE ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

This EA evaluated the potential physical, natural, cultural, transportation, and cumulative effects of the proposed action to recapitalize the utility heat system at CG Yard. The Coast Guard evaluated three action alternatives in addition to the no action alternative. A comparison of the environmental consequences of these alternatives is provided in Table 3-7. All impacts would be reduced to less than significant levels with implementation of BMPs described in Section 2.4.4.

**Table 3-7
Summary of Environmental Effects by Alternative**

Environmental Resource	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Coastal Zone Resources	No impact.	<p>Short-term, less than significant adverse impacts on coastal zone resources from construction-related actions. Limited work would occur in the 100-year floodplain; steam line replacement would occur approximately 200 feet from tidal wetlands at the nearest point.</p> <p>No long-term adverse impacts (noise, soil erosion, floodplains, tidal wetlands) or beneficial long-term impacts (air quality, water quality) on coastal zone resources from operation of the recapitalized steam system.</p>	Same as Alternative 1, except little to no underground utility work would occur in the 100-year floodplain, and the nearest underground work for extending natural gas service would occur approximately 1,000 feet from the nearest tidal wetlands.	Same as Alternative 2.
Biological Resources	No impact.	<p>No impact on threatened and endangered species due to lack of presence at the Yard.</p> <p>No direct impact on NOAA trust resources; indirect adverse impacts would be less than significant with implementation of BMPs.</p> <p>Impacts on migratory birds and sensitive status birds that may use the area would be minimized if construction activities occurred outside of the breeding season (spring to early summer). If construction would occur during the breeding season, a survey is recommended prior to project implementation.</p>	Same as Alternative 1.	Same as Alternative 1.
Water Resources	No new impact. Leaking steam lines and nonfunctional condensate return lines would continue to be a major source of water loss. Condensate	Short-term, less than significant adverse impacts on surface water, groundwater, and tidal wetlands from construction-related	Same as Alternative 1, except little to no underground utility work would occur in the 100-year floodplain, and the nearest underground work for extending	Same as Alternative 2.

Environmental Resource	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
	return water would continue to be discharged on the ground rather than returned to the boiler plant.	actions. Use of BMPs would minimize sedimentation and water quality impacts. No long-term impact on floodplains or groundwater. Only a limited portion of the underground steam line replacement would occur in the 100-year floodplain.	natural gas service would occur approximately 1,000 feet from the nearest tidal wetlands.	
Cultural Resources	No effect.	No effect on historic resources. The majority of the work would be performed within the interior of the buildings and underneath paved areas. Outside utility infrastructure repairs would be minor and limited to replacement of some existing piping and equipment. Replacement of the steam lines would occur primarily in areas of previously disturbed soils, limiting the potential for inadvertent discovery of archeological resources.	Potential to affect some contributing structures in the Historic District from installing decentralized heating equipment to replace the steam systems. Some minor exterior modifications may be required to accommodate the conversion from steam heat to natural gas or electric heat. Measures would be applied to minimize these effects. Same as Alternative 1 for archeological resources.	Most contributing buildings in the Historic District would remain on steam heat, with no exterior modifications and no effect on these historic properties. A few buildings may be converted to natural gas or electric heat, with minor exterior modifications as described under Alternative 2. Same as Alternative 1 for archeological resources.
Geology and Soils	Potential erosion impacts during emergency repairs.	Short-term, less than significant adverse impacts on soils during construction activities due to potential for increased erosion. BMPs would minimize impacts. The potential for adverse impacts from the disturbance of potentially contaminated soil would be controlled through the use of BMPs. No long-term adverse impacts on soils.	Same as Alternative 1, except short-term adverse impacts would be greater than Alternative 1 if existing steam lines are removed rather than abandoned in place. If steam lines are abandoned in place, less surface disturbance would be required than under Alternative 1.	Same as Alternative 2.

Environmental Resource	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Climate and Air Quality	Minor, short-term adverse impacts would be associated with any emergency underground steam line repairs.	<p>Short-term, less than significant adverse impacts on air quality during construction activities from fugitive dust and combustion-related vehicle and equipment emissions. Use of BMPs would minimize impacts.</p> <p>Long-term beneficial impact from replacing the main boiler and utility heat system components with more energy efficient equipment, resulting in less natural gas burned per year and fewer air pollutants emitted.</p> <p>Alternative 1 would have an approximately 80 percent reduction in CO₂ emissions over operating the system under current conditions.</p>	<p>Short-term impacts would be the same as Alternative 1.</p> <p>Long-term beneficial impacts would be greater than Alternative 1.</p> <p>Alternative 2 would have an approximately 85 percent reduction in CO₂ emissions over current conditions.</p>	<p>Short-term impacts would be the same as Alternative 1.</p> <p>Long-term beneficial impacts would be similar to Alternative 2.</p> <p>Alternative 3 would have an approximately 84 percent reduction in CO₂ emissions over current conditions.</p>
Noise	No impact.	<p>Short-term, less than significant adverse noise impacts during construction, primarily during underground utility replacement. Use of BMPs would minimize impacts.</p> <p>No long-term impacts, as new heat utility system would not result in an overall increase in the ambient noise levels at the Yard or in the surrounding areas.</p>	Same as Alternative 1.	Same as Alternative 1.

Environmental Resource	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Hazardous Materials and Waste	Short-term, less than significant adverse impacts from emergency repairs would be minimized by standard terms and conditions of construction contracts.	Short-term, less than significant adverse impacts on worker safety, potential for encountering contaminated soils, and release of small amounts of fuels, oil, lubricants, or other substances during utility line replacement would be minimized by applying BMPs. Operating a recapitalized steam system would have a long-term beneficial impact from proper operation of condensate return lines.	Same as Alternative 1. Operating decentralized systems would have a long-term beneficial impact from decommissioning of steam system and condensate return lines.	Same as Alternative 1.
Utilities	No impact.	No impact. Alternative 1 would reduce demand for natural gas compared with current conditions and would not exceed the capacity of the electricity provider.	Same as Alternative 1.	Same as Alternative 1.

CHAPTER 4

LIST OF PREPARERS

4.1 COAST GUARD

Staff Member	Project Role
Ronald Baron	Civil Engineering Unit Cleveland, Contracting Officer's Representative
LCDR John Adams	US Coast Guard Yard, Facilities Engineering, Environmental Reviewer
LT Avery Weston, PE, PMP	US Coast Guard Yard, Facilities Engineering, Environmental Reviewer

4.2 TRANSYSTEMS, PRIME CONTRACTOR

Staff Member	Project Role
Randall Schmidt	Project Manager

4.3 ENVIRONMENTAL MANAGEMENT AND PLANNING SOLUTIONS, INC.

Staff Member	Project Role	Education
Amy Cordle	EA Project Manager	BS, Civil Engineering
Theresa Ancell	Cultural Resources	BA, Environmental Population
Derek Holmgren	Geology and Soils	MS, Environmental Science BS, Environmental Science
Jenna Jonker	GIS, Graphics	BA, Geography
Lexi Kantor	Air and Climate, Coastal Resources	BA, Ecology
Dan Morta	Biological Resources	MS, Botany BS, Biology

Staff Member	Project Role	Education
Matthew Smith	Water Resources, Noise Hazardous Materials and Waste, Utilities	MS, Ecology BA, Environmental Biology
Randy Varney	Technical Editor	BA, Technical and Professional Writing

CHAPTER 5

LIST OF AGENCIES AND PERSONS CONTACTED

The following agencies were contacted over the course of EA preparation, either directly or through scoping and public review of the Draft EA. Copies of all correspondence is included in Appendix A.

Resource Agency or Individual	Contact Information
Federal Agencies	
US Environmental Protection Agency Region 3, Office of Environmental Programs (3EA30) POC: Barbara Rudnick, NEPA Program Manager	1650 Arch Street Philadelphia, PA 19103-2029
US Fish and Wildlife Service, Chesapeake Bay Ecological Services Field Office POC: Genevieve LaRouche, Project Leader	177 Admiral Cochrane Drive Annapolis, MD 21401-7307
NOAA National Marine Fisheries Service Greater Atlantic Regional Office POC: Michael Pentony, Regional Administrator	55 Great Republic Drive Gloucester, MA 01930
USDA Natural Resources Conservation Service POC: Terron L. Hillsman, PhD, State Conservationist	John Hanson Business Center 339 Busch's Frontage Road, Suite 301 Annapolis, MD 21409-5543
Federal Emergency Management Agency Region III POC: Stephanie Everfield, Environmental and Historical Preservation	615 Chestnut Street One Independence Mall, 6th Floor Philadelphia, PA 19106-4404
US Army Corps of Engineers, Baltimore District POC: Dave Morrow, Deputy District Engineer for Program and Project Management	2 Hopkins Plaza Baltimore, MD 21201
Native American Tribes	
Delaware Nation, Oklahoma POC: Deborah Dotson, President Sonnie Allen, Director of Cultural Preservation	P.O. Box 825 Anadarko, OK 73005

Resource Agency or Individual	Contact Information
State Agencies	
Maryland Historical Trust POC: Elizabeth Hughes, Director/ State Historic Preservation Officer Anne Raines, Deputy Director/ State Historic Preservation Officer	100 Community Place, 3rdFloor Crownsville, MD 21032-2023
Maryland Department of Natural Resources, Wildlife and Heritage Service POC: Paul A. Peditto, Director	Tawes State Office Building 580 Taylor Avenue Annapolis, MD 21401
Maryland Department of Natural Resources, Environmental Review Program POC: Lori Byrne, Environmental Review Specialist	Tawes State Office Building 580 Taylor Avenue Annapolis, MD 21401
Maryland Department of Natural Resources, Chesapeake and Coastal Service, MD CZMP POC: Matt Fleming, Director	Tawes State Office Building, E-2 580 Taylor Avenue Annapolis, MD 21401
Maryland Department of Natural Resources Chesapeake and Coastal Service POC: Joe Abe, Coastal Policy Coordinator	580 Taylor Avenue, E-2 Annapolis Maryland 21401
Maryland Department of Natural Resources, Critical Area Commission for the Chesapeake & Atlantic Coastal Bays POC: Nick Kelly, PhD, Regional Program Chief POC: Lisa Hoerger, Regulations and Mapping Coordinator	1804 West Street, Suite 100 Annapolis, MD 21401
Maryland Department of the Environment POC: Ben Grumbles, Secretary	1800 Washington Boulevard Baltimore, MD 21230
Maryland Department of the Environment, Tidal Wetlands Division POC: Rick Ayella, Division Chief	1800 Washington Boulevard Baltimore, MD 21230
Maryland Department of the Environment Wetlands and Waterways Program POC: Elder Ghigiarelli, Federal Consistency Coordinator	1800 Washington Boulevard, Suite 430 Baltimore, MD 21230
Maryland Department of Planning POC: Chuck Boyd, Director of Planning Coordination	301 W. Preston Street, Suite 1101 Baltimore, MD 21201
Local Agencies	
Anne Arundel County Department of Planning & Zoning POC: Steve Kaii-Ziegler, Planning and Zoning Officer	2664 Riva Road Annapolis, MD 21401
Anne Arundel County Department of Planning & Zoning POC: C. Jane Cox, Chief of Cultural Resources	2664 Riva Road Annapolis, MD 21401

CHAPTER 6

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Appendix A
Agency Consultation and Public
Involvement

LEGAL NOTICES

Notice of Intent to Prepare an Environmental Assessment for Utility Heat System Replacement at Coast Guard Yard, Baltimore, Maryland

Per the requirements of the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations implementing NEPA, the US Coast Guard (CG) announces its intent to prepare an Environmental Assessment (EA) for replacing the heat utility system at CG Yard in Baltimore, MD.

CG Yard is the only Coast Guard facility dedicated to the maintenance and repair of Coast Guard cutters and is essential in supporting fleet operations. Activities are dependent on the steam infrastructure, which includes boilers and an underground steam distribution system, for heat. The system is in poor condition, and interruptions in the system are negatively impacting CG Yard operations. The Coast Guard is proposing to replace the current system with a new centralized system, or remove the centralized system and install decentralized heating equipment, or a combination thereof. The EA will evaluate the environmental and socioeconomic effects of these alternatives.

Interested parties are invited to submit concerns or comments on this action to LCDR John Adams at John.C.Adams2@uscg.mil or to Commanding Officer, USCG Yard (Mailstop 5), 2401 Hawkins Point Road, Baltimore, MD 21226 Attn: LCDR John Adams. The deadline for comment is 30 days from the publication of this notice.

9/29/2019 6456814



300 E. Cromwell Street
Baltimore, Maryland 21230
tel: 410/332-6000
800/829-8000

WE HEREBY CERTIFY, that the annexed advertisement of Order No 6456814

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Bill To:

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Sep 29, 2019

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By S. Wilkinson
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Subscribed and sworn to before me this 30 day of Sept

By Michele Elaine

Notary Public

My commission expires 10/27/23

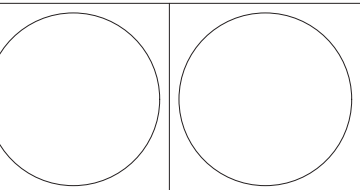


Appendix B

Engineering Drawings

CONSULTANTS

95%
CONCEPT DESIGN
01/24/2020



U. S. COAST GUARD
CIVIL ENGINEERING UNIT
CLEVELAND



1240 EAST NINTH STREET
CLEVELAND, OHIO 44199

ISSUE		
MARK	DATE	DESCRIPTION

A/E PROJECT NO:	219-082
CAD FILE NAME:	
DESIGNED BY:	
DRAWN BY:	
EDITED BY:	JAS
CHECKED BY:	JAS

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
UTILITY HEAT SYSTEM REPLACEMENT
UNITED STATES COAST GUARD
CURTIS BAY MARYLAND
CG YARD
ALTERNATIVE 1, 2, AND 3
STEAM DEMOLITION PLAN

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

APPROVING OFFICER: DATE: 01/24/20

PROJECT NUMBER	DRAWING NUMBER
11861939	
DISCIPLINE/SHT NO	SHEET 01 OF 04
M-100	



LEGEND

- BUILDINGS SHADED BROWN INCLUDE STEAM SERVICE.
- BELOW GROUND STEAM LINES TO BE DEMOLISHED OR ABANDONED.
- BELOW GROUND STEAM LINES TO BE DEMOLISHED OR ABANDONED AND NOT REPLACED UNDER ANY ALTERNATIVE.
- BELOW GROUND STEAM LINES TO BE DEMOLISHED OR ABANDONED EXCEPT ALTERNATIVE 1.
- ABOVE GROUND STEAM LINES TO BE DEMOLISHED OR ABANDONED.
- ABOVE GROUND STEAM LINES TO BE DEMOLISHED OR ABANDONED EXCEPT ALTERNATIVE 1.



(A1) STEAM DEMOLITION PLAN
Scale: 1: 100

JOHN:R:\DWGS\219-082\DRAWINGS\MECHANICAL\219-082_M-100 - DEMOLITION.DWG LAYOUT: M-100 1/25/2020 11:55AM DIMSCALE: 1 R20.1

95%
CONCEPT DESIGN
01/24/2020

U. S. COAST GUARD
CIVIL ENGINEERING UNIT
CLEVELAND



1240 EAST NINTH STREET
CLEVELAND, OHIO 44199

MARK	DATE	DESCRIPTION

A/E PROJECT NO: 219-082
 CAD FILE NAME:
 DESIGNED BY:
 DRAWN BY:
 EDITED BY: JAS
 CHECKED BY: JAS

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
 UTILITY HEAT SYSTEM REPLACEMENT
 UNITED STATES COAST GUARD
 CURTIS BAY MARYLAND
 CG YARD
 ALTERNATIVE 1 - STEAM REPAIR
 OVERALL SITE PLAN

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

APPROVING OFFICER DATE 01/24/20

PROJECT NUMBER DRAWING NUMBER
11861939

DISCIPLINE/SHT NO SHEET 02 OF 04
M-101



- LEGEND**
- BUILDINGS SHADED BROWN INCLUDE STEAM SERVICE.
 - NEW UNDERGROUND STEAM LINES.
 - EXISTING UNDERGROUND STEAM LINES TO REMAIN.
 - NEW ABOVE GROUND STEAM LINES.
 - EXISTING ABOVE GROUND STEAM LINES TO REMAIN.
 - NEW ABOVE GROUND STEAM LINES TO REPLACE UNDERGROUND STEAM LINES UNDER THE BUILDING.

A1 ALTERNATIVE 1 - OVERALL SITE PLAN
Scale: 1: 100



JOHN:R:\DWGS\219-082\DRAWINGS\MECHANICAL\219-082_M-101_ALTERNATIVE 1.DWG LAYOUT: W-101 1/25/2020 11:54AM DIMSCALE: 1 R20.1

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CONCEPT DESIGN
01/24/2020

U. S. COAST GUARD
CIVIL ENGINEERING UNIT
CLEVELAND



1240 EAST NINTH STREET
CLEVELAND, OHIO 44199

MARK	DATE	DESCRIPTION

A/E PROJECT NO:	219-082
CAD FILE NAME:	
DESIGNED BY:	
DRAWN BY:	
EDITED BY:	JAS
CHECKED BY:	JAS

SCALE: AS SHOWN PLOT SCALE: 1:1
SHEET TITLE

UTILITY HEAT SYSTEM REPLACEMENT
UNITED STATES COAST GUARD
CURTIS BAY MARYLAND
CG YARD
ALTERNATIVE 2 - DECENTRALIZATION
OVERALL SITE PLAN

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

APPROVING OFFICER: _____ DATE: 01/24/20

PROJECT NUMBER: 11861939 DRAWING NUMBER: _____

DISCIPLINE/SHT NO: M-102 SHEET 03 OF 04



LEGEND

- BUILDINGS SHADED BLUE ARE TO BE HEATED BY NATURAL GAS SERVICE.
- BUILDINGS SHADED RED ARE TO BE HEATED BY ELECTRIC.
- EXISTING BELOW GROUND NATURAL GAS PIPING.
- NEW BELOW GROUND NATURAL GAS PIPING.



Know what's below.
Call before you dig.



A1 ALTERNATIVE 2 - OVERALL SITE PLAN
Scale: 1: 100



JOHN:R:\DWGS\219-082\DRAWINGS\MECHANICAL\219-082_M-102_ALTERNATIVE_2.DWG LAYOUT: W-102 1/25/2020 11:53AM DIMSCALE: 1 R20.1

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CONCEPT DESIGN
01/24/2020

U. S. COAST GUARD
CIVIL ENGINEERING UNIT
CLEVELAND



1240 EAST NINTH STREET
CLEVELAND, OHIO 44199

MARK	DATE	DESCRIPTION

A/E PROJECT NO: 219-082
CAD FILE NAME:
DESIGNED BY:
DRAWN BY:
EDITED BY: JAS
CHECKED BY: JAS

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
UTILITY HEAT SYSTEM REPLACEMENT
UNITED STATES COAST GUARD
CURTIS BAY MARYLAND

CG YARD
ALTERNATIVE 3 - HYBRID
OVERALL SITE PLAN

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

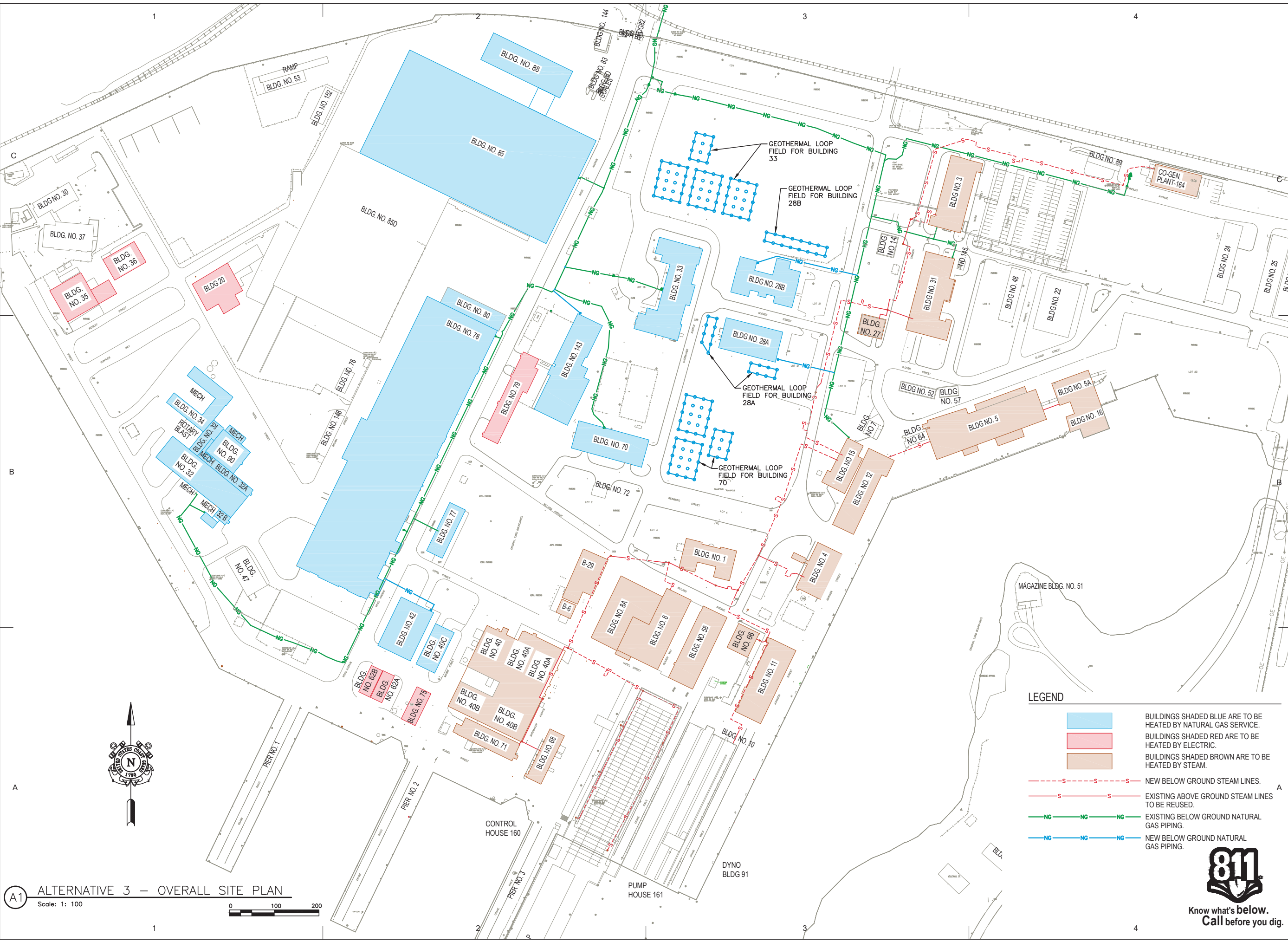
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PROJECT NUMBER DRAWING NUMBER

11861939

DISCIPLINE/SHT NO SHEET 04 OF 04

M-103



LEGEND

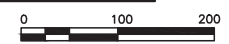
- BUILDINGS SHADED BLUE ARE TO BE HEATED BY NATURAL GAS SERVICE.
- BUILDINGS SHADED RED ARE TO BE HEATED BY ELECTRIC.
- BUILDINGS SHADED BROWN ARE TO BE HEATED BY STEAM.
- NEW BELOW GROUND STEAM LINES.
- EXISTING ABOVE GROUND STEAM LINES TO BE REUSED.
- EXISTING BELOW GROUND NATURAL GAS PIPING.
- NEW BELOW GROUND NATURAL GAS PIPING.



Know what's below.
Call before you dig.



A1 ALTERNATIVE 3 - OVERALL SITE PLAN
Scale: 1: 100



JOHN:R:\DWGS\219-082\DRAWINGS\MECHANICAL\219-082_M-103_ALTERNATIVE_3.DWG LAYOUT: M-103 1/25/2020 11:52AM DIMSCALE: 1 R20.1

Appendix C
Federal Consistency
Determination

**Federal Consistency Determination
United States Coast Guard
Utility Heat System Replacement
Anne Arundel County, Maryland**

In accordance with Section 307(d) of the Coastal Zone Management Act (CZMA) of 1972 and 15 Code of Federal Regulations (CFR) Part 930 Subpart F, this document provides the State of Maryland with a federal consistency determination for the action described below.

FEDERAL AGENCY ACTION

The Coast Guard is proposing to replace the utility heat system to support industrial and tenant activities at Coast Guard Yard (proposed action). CG Yard is located predominantly in Anne Arundel County, approximately 10 miles south of downtown Baltimore, Maryland. The 113-acre facility lies along Curtis Creek, a tributary of the Patapsco River (Figure 1). CG Yard and its surrounding area are characterized by intensive industrialized development (Figure 2).

Anne Arundel County is within Maryland's designated coastal zone. The proposed action would have the potential to affect Maryland's coastal uses or resources. Therefore, the Coast Guard is required to determine the proposed action's consistency with the enforceable policies of Maryland's federally approved Coastal Zone Management Program (CZMP).

To analyze impacts on the environment potentially resulting from the proposed action, the Coast Guard is preparing an Environmental Assessment (EA) in accordance with the requirements of the National Environmental Policy Act (NEPA; 42 United States Code [USC] §4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] §1500 *et seq.*); and Department of Homeland Security (DHS) Management Directive 023-01 and Coast Guard Commandant Instruction (COMTDINST) M16475.1D, National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts.

PURPOSE AND NEED

The purpose of the proposed action is to replace the utility heat system at CG Yard to enable the Yard to provide a reliable and efficient source of heat and steam to support depot-level maintenance and tenant operations.

The need for the proposed action is to address the findings of the Inventory Condition Assessment and Mapping report of CG Yard's steam system. This assessment indicated that the system is in poor condition, with numerous leaks. These leaks are a major source of energy loss throughout the facility. They also present personnel safety issues by creating high-temperature conditions where pipes and shore-tie steam blocks are uninsulated and where high-temperature steam enters steam pits and manholes. In addition to the steam leaks, the condensate return lines are nonfunctional. This is a major source of water loss, as condensate return water is generally discharged onto the ground adjacent to the buildings instead of being returned to the boiler plant. The failure to capture condensate return water requires the Coast Guard to use large quantities of makeup water and chemicals to treat this incoming water. This increases the cost of operating the system and increases the likelihood that the water is not properly balanced or treated, as evidenced by the fact that many of the steam lines are corroding from the inside out.

SUMMARY OF PROPOSED ACTION AND ANTICIPATED EFFECTS

The proposed action is to replace the utility heat system at CG Yard. The source of heat for many of the CG Yard facilities is steam. This steam is produced by boilers in the central steam plant in Building 15 and distributed to 45 buildings via a combination of underground piping and a small amount of aboveground piping. The existing steam boiler plant consists of one large and two smaller boilers. The large boiler, which is a 50,000 pounds per hour boiler that is approximately 40 years old, is the main heating boiler and the primary heat source during the winter months (generally October to May). The two smaller boilers, which are each 13,000 pounds per hour boilers that are approximately 10 years old, are used during the shoulder seasons to provide heat when the large boiler is not operational. While the boilers are in adequate operating condition, the steam distribution system is in very poor condition, and interruptions in the system are negatively impacting CG Yard operations in the form of providing inadequate heat to CG Yard buildings and inadequate steam for some industrial activities.

The Coast Guard has undertaken a number of studies to evaluate the condition of the existing utility heat system and to develop alternatives for replacing the system. Alternatives include 1) replacing the current steam system with a new centralized steam system, 2) removing the centralized steam system and installing decentralized electric and natural gas-fired heating equipment, or 3) a combination of these two approaches. All work would occur in previously disturbed areas within the Yard's existing boundaries; no in-water work or work in tidal wetlands would occur.

Under the first alternative, the Coast Guard would recapitalize the existing steam system to bring it into proper working condition. This would entail replacing the main boiler, replacing most of the existing underground steam lines and condensate piping with new lines (existing lines would be demolished, abandoned in place, or a combination of the two), replacing a minor amount of aboveground steam lines, and installing a minor amount of new aboveground steam lines (Figure 3). Steam system components at each building, such as air handlers, unit heaters, control valves, and condensate pipes and pumps, would be repaired or replaced as needed.

Under the second alternative, the Coast Guard would replace the steam heat system with decentralized heating systems for each building. Most buildings would be outfitted with natural gas-fired systems (gas-fired boilers, heaters, radiators, or air handlers), while smaller buildings would use electric heat systems (heat pumps, electric furnaces, or electric heaters). Existing underground natural gas lines in the western and northern portions of CG Yard would service the buildings in these areas; this service would be extended to areas of the shipyard without natural gas service (primarily in the industrial shipyard portion of the facility; see Figure 4).

Under the third alternative, the Coast Guard would use a combination of steam, natural gas, and electric systems to provide heat to individual buildings. Buildings that are already served by existing natural gas lines or that are in proximity to these lines would be heated by natural gas-fired systems (Figure 5), while the steam system would be retained for most of the other buildings (see Figure 6). This would entail replacing the main boiler, replacing underground steam lines and condensate piping in the areas shown on Figure 6, and replacing a minor amount of aboveground steam lines.

Construction-related impacts on the human and natural environment are expected to be minor. Construction contractors would adhere to best management practices (BMPs) to minimize construction-related impacts on soils, water quality, air quality, and other resources. Following the completion of construction activities, conditions in the project area would be similar to pre-disturbance conditions. Therefore, construction-related impacts associated with the proposed action would be temporary and minor. Replacement of the existing heat system would have no long-term adverse impacts on natural resources. Beneficial impacts would occur from replacing existing heat system components with more energy efficient equipment and, if all or a portion of the steam system is replaced, operating the steam system with functional steam lines and condensate water return lines that use less water.

The applicable enforceable policies of the Maryland CZMP are described below, followed by an explanation of how the proposed action would be consistent to the maximum extent practicable with those policies.

ENFORCEABLE POLICIES

The State of Maryland has developed and implemented a federally approved CZMP, encompassing enforceable policies for the coastal area pertaining to:

General Policies

- Core policies
- Water quality
- Flood hazards

Coastal Resources

- The Chesapeake and Atlantic Coastal Bays Critical Area
- Tidal wetlands
- Non-tidal wetlands
- Forests
- Historical and archaeological sites
- Living aquatic resources

Coastal Uses

- Mineral extraction
- Electrical generation and transmission
- Tidal shore erosion control
- Oil and natural gas facilities
- Dredging and disposal of dredged material
- Navigation
- Transportation

- Agriculture
- Development
- Sewage treatment

A. General Policies

A.1 Core Policies

Policy A.1.1—*It is State policy to maintain that degree of purity of air resources which will protect the health, general welfare, and property of the people of the State.*

The proposed action would have a long-term beneficial impact on air quality by replacing the main boiler and many of the current utility heat system components with more energy efficient equipment, resulting in less natural gas burned per year and fewer air pollutants emitted. Construction activities would have short-term adverse impacts on air quality from surface-disturbing activities that increase fugitive dust and from combustion-related emissions from operating construction equipment and vehicles associated with construction activities. Short-term adverse impacts would be minimized through the implementation of BMPs. For this reason, effects on air quality would be negligible and the proposed action is consistent to the maximum extent practicable with this enforceable policy.

Policy A.1.2—*The environment shall be free from noise which may jeopardize health, general welfare, or property, or which degrades the quality of life.*

The proposed action would have no long-term noise impacts, as it would not produce a noticeable change in the existing noise environment once replacement of the utility heat system is complete. The proposed action would have short-term adverse noise impacts during installation of the new utility heat system components, particularly the underground steam lines or natural gas lines that are mostly under existing paved areas. These impacts would be limited to CG Yard and the surrounding uses, all of which are industrial. Short-term adverse impacts would be minimized through the implementation of BMPs. Therefore, the proposed action is consistent to the maximum extent practicable with this enforceable policy.

Policy A.1.11—*Soil erosion shall be prevented to preserve natural resources and wildlife; control floods; prevent impairment of dams and reservoirs; maintain the navigability of rivers and harbors; protect the tax base, the public lands, and the health, safety and general welfare of the people of the State, and to enhance their living environment.*

The proposed action would have no long-term impact related to soil erosion. Heat system components are primarily within buildings or under impervious surfacing and would remain so after the system is replaced; any vegetated areas disturbed during underground steam line replacement would be revegetated per required BMPs to prevent long-term erosion impacts. The proposed action would have short-term adverse impacts during underground steam line replacement or natural gas line installation from removal of pavement and disturbance of the underlying soils to install these new lines. BMPs would be implemented to control erosion around all work sites. Adherence to these soil erosion BMPs and to any conditions of permits, such as a

Maryland General Permit for Stormwater Associated with Construction Activity if more than one acre would be disturbed, would ensure that erosion-related impacts are minimized. Therefore, the proposed action is consistent to the maximum extent practicable with this enforceable policy.

A.2 Water Quality

Policy A.2.2—*All waters of the State shall be protected for water contact recreation, fish, and other aquatic life and wildlife. Shellfish harvesting and recreational trout waters and waters worthy of protection because of their unspoiled character shall receive additional protection.*

The proposed action would have beneficial long-term impacts on Curtis Creek and Arundel Cove and the resources that use these waters. Recapitalizing the steam system would return it to a closed loop system whereby condensate water is no longer discharged onto the ground at individual building locations but is instead returned to the boiler plant. If a decentralized system is selected, no steam lines requiring condensate return lines would be required. The proposed action would have short-term adverse impacts during construction that would be minimized through BMPs to prevent any construction-related sediment, debris, oil, fuels, or lubricants from entering adjacent waters. Consequently, the proposed action is consistent to the maximum extent practicable with this enforceable policy.

A.3. Flood Hazards

Policy A.3.1—*Projects in coastal tidal and non-tidal flood plains which would create additional flooding upstream or downstream, or which would have an adverse impact upon water quality or other environmental factors, are contrary to State policy.*

The proposed action would have no long-term impact on floodplains. Only a limited portion of the proposed system replacement would occur in the 100-year floodplain. This area is covered with impervious surfacing and would continue to be covered after the utilities are replaced. Any heat system equipment installed in the 100-year floodplain would be placed at least 3 feet above the base flood elevation levels. Because the proposed action would not result in an increase in impervious areas, it would have no impacts on the floodplain. BMPs to minimize and avoid short-term, adverse impacts on water quality during construction would be as described under Policy A.2.2. Therefore, the proposed action is consistent to the maximum extent practicable with this enforceable policy.

B. Coastal Resources

B.1 The Chesapeake and Atlantic Coastal Bays Critical Area

Policy B.1.26—*A soil erosion and sedimentation control plan shall be required whenever development within the Critical Area will involve any clearing, grading, transporting, or other form of disturbance to land by the movement of earth. This plan shall be appropriately designed to reduce adverse water quality impacts.*

If required, a soil and erosion control plan would be prepared prior to construction activities that resulted in surface disturbance. BMPs would be implemented to control erosion around all work sites. Adherence to erosion and sedimentation control measures would minimize adverse water

quality impacts. For that reason, the Proposed Action is consistent to the maximum extent practicable with this enforceable policy.

B.2 Tidal Wetlands

Policy B.2.1—*Any action which alters the natural character in, on, or over tidal wetlands; tidal marshes; and tidal waters of Chesapeake Bay and its tributaries, the coastal bays adjacent to Maryland's coastal barrier islands, and the Atlantic Ocean shall avoid dredging and filling, be water-dependent, and provide appropriate mitigation for any necessary and unavoidable adverse impacts on these areas or the resources associated with these areas.*

A proponent of an action described above shall explain the actions impact on:

- *Habitat for finfish, crustaceans, mollusks, and wildlife of significant economic or ecologic value;*
- *Potential habitat areas such as historic spawning and nursery grounds for anadromous and semi-anadromous fisheries species and shallow water areas suitable to support populations of submerged aquatic vegetation;*
- *Marine commerce;*
- *Recreation, and aesthetic enjoyment;*
- *Flooding;*
- *Siltation;*
- *Natural water flow, water temperature, water quality, and natural tidal circulation;*
- *Littoral drift;*
- *Local, regional, and State economic conditions;*
- *Historic property;*
- *Storm water runoff;*
- *Disposal of sanitary waste;*
- *Sea level rise and other determinable and periodically recurring natural hazards;*
- *Navigational safety;*
- *Shore erosion;*
- *Access to beaches and waters of the State;*
- *Scenic and wild qualities of a designated State scenic or wild river; and*
- *Historic waterfowl staging areas and colonial bird-nesting sites.*

Under the proposed action, no in-water work would occur as part of replacing the utility heat system at CG Yard. Therefore, there would be no alteration of aquatic habitat, no effect on marine commerce or navigational safety, no change in water flow, temperature, quality, or tidal circulation, no potential for siltation, and no impacts related to shore erosion or littoral drift. CG Yard is a controlled-access facility with no recreational uses and no public-access beaches or waters of the State. There are also no scenic or wild rivers and no waterfowl staging areas or colonial bird nesting sites in the area of the proposed action. The project would not cause a change in local, regional, or State economic conditions or result in the disposal of sanitary waste.

The proposed action would have minimal effects on the historic district or its contributing structures. Most changes would occur under impervious surfacing related to underground utility replacement or in the interior of buildings. Few exterior modifications would be required apart

from potential replacement of some equipment and the potential for routing new gas flues up the side of some buildings. Measures would be applied to minimize these effects. The Coast Guard is consulting with the Maryland Historical Trust as part of the EA process to seek concurrence with this finding.

A limited portion of the proposed action would occur in the 100-year floodplain. As described for Policy A.3.1, the proposed action would not result in a change in the amount of impervious surfacing and thus would have no potential to cause additional flooding. Any heat system equipment installed in the 100-year floodplain would be placed at least 3 feet above the base flood elevation levels.

Under the federal NPDES stormwater program, a General Permit is required for all construction activity in Maryland with a planned total disturbance of one acre or more. This permit requires preparation of an approved Stormwater Pollution Prevention Plan and implementation of BMPs as outlined in the General Permit. Adherence to the stormwater permit, if the proposed action would disturb more than 1 acre, and the soil erosion and water quality BMPs would minimize adverse impacts on water quality from stormwater runoff.

No construction activities would occur in tidal wetlands. Construction work would occur approximately 200 feet from tidal wetlands at the nearest point if the entire steam system is replaced. Under the other two alternatives, the nearest underground work would occur approximately 1,000 feet from these same tidal wetlands. Short-term adverse impacts on tidal wetlands would be avoided through the soil erosion and water quality BMPs to prevent any construction-related sediment, debris, oil, fuels, or lubricants from entering tidal wetlands.

For the reasons described above, the proposed action is consistent to the maximum extent practicable with this enforceable policy.

CONCLUSION

Due to the intensively developed character of CG Yard and its surrounding area, the Coast Guard has determined that the proposed action would result in no long-term impacts and minimal short-term adverse impacts on the coastal zone resources of Maryland. All activities will be conducted in compliance with local, state, and federal requirements and will follow BMPS to minimize adverse effects during construction. In addition, any applicable permits and approvals will be obtained and the conditions of those permits and approvals adhered to. For these reasons, the proposed action is consistent to the maximum extent practicable with the enforceable policies of the Maryland CZMP.

Table 1. Maryland CZMP Enforceable Policies

Code	Policy	References¹	Applicability/ Consistency
A	General Policies		
A.1	Core Policies		
A.1.1	It is State policy to maintain that degree of purity of air resources which will protect the health, general welfare, and property of the people of the State.	MDE (C9) Md. Code Ann., Envir. §§ 2-102 to -103	Consistent to the maximum extent practicable
A.1.2	The environment shall be free from noise which may jeopardize health, general welfare, or property, or which degrades the quality of life.	MDE (C9) COMAR 26.02.03.02	Consistent to the maximum extent practicable
A.1.3	The unique ecological, geological, scenic, and contemplative aspects of State wild lands shall not be affected in a manner that would jeopardize the future use and enjoyment of those lands as wild.	DNR (C7) Md. Code Ann., Nat. Res. §§ 5-1201, -1203	NA
A.1.4	The safety, order, and natural beauty of State parks and forests, State reserves, scenic preserves, parkways, historical monuments and recreational areas shall be preserved.	DNR (B1) Md. Code. Ann., Nat. Res. § 5-209	NA
A.1.5	Any water appropriation must be reasonable in relation to the anticipated level of use and may not have an unreasonable adverse impact on water resources or other users of the waters of the State.	MDE (C9) COMAR 26.17.06.02	NA
A.1.6	The natural character and scenic value of a river or waterway must be given full consideration before the development of any water or related land resources including construction of improvements, diversions, roadways, crossings, or channelization.	MDE/DNR (C7) Md. Code Ann., Nat. Res. § 8-405 COMAR 26.17.04.11	NA
A.1.7	A dam or other structure that impedes the natural flow of a scenic or wild river may not be constructed, operated, or maintained, and channelization may not be undertaken, until the applicant considers alternatives less harmful to the scenic and wild resource. Construction of an impoundment upon a scenic or wild river is contrary to the public interest, if that project floods an area of unusual beauty, blocks the access to the public of a view previously enjoyed, or alters the stream's wild qualities.	MDE/DNR (C7) Md. Code Ann., Nat. Res. § 8-406 COMAR 26.17.04.11	NA
A.1.8	Permanent structures that do not have a clear environmental benefit are prohibited east of the dune line along the Atlantic Coast.	MDE/DNR (B1) Md. Code Ann., Nat. Res. § 8-1102	NA
A.1.9	Activities which will adversely affect the integrity and natural character of Assateague Island will be inconsistent with the State's Coastal Management Program, and will be prohibited.	MDE/DNR (B1) Md. Code. Ann., Nat. Res. §§ 5-209, 8-1102	NA

Code	Policy	References¹	Applicability/ Consistency
A.1.10	An opportunity for a public hearing shall be provided for projects in non-tidal waters that dredge, fill, bulkhead, or change the shoreline; construct or reconstruct a dam; or create a waterway, except in emergency situations	MDE (A3) COMAR 26.17.04.13A	NA
A.1.11	Soil erosion shall be prevented to preserve natural resources and wildlife; control floods; prevent impairment of dams and reservoirs; maintain the navigability of rivers and harbors; protect the tax base, the public lands, and the health, safety and general welfare of the people of the State, and to enhance their living environment.	MDA (C4) Md Code Ann., Agric. § 8-102(d)	Consistent to the maximum extent practicable
A.1.12	Controlled hazardous substances may not be stored, treated, dumped, discharged, abandoned, or otherwise disposed anywhere other than a permitted controlled hazardous substance facility or a facility that provides an equivalent level of environmental protection.	MDE (D4) Md. Code Ann., Envir. § 7-265(a)	NA
A.1.13	A person may not introduce in the Port of Baltimore any hazardous materials, unless the cargo is properly classed, described, packaged, marked, labeled, placarded, and approved for highway, rail, or water transportation.	MDOT (D3) COMAR 11.05.02.04A	NA
A.1.14	Operations on the Outer Continental Shelf must be conducted in a safe manner by well-trained personnel using technology, precautions, and techniques sufficient to prevent or minimize the likelihood of blowouts, loss of well control, fires, spillages, physical obstruction to other users of the waters or subsoil and seabed, or other occurrences which may cause damage to the environment or property, or which may endanger life or health.	(B2) Md. Code Ann., Envir. §§ 17-101 to -403 COMAR 26.24.01.01 COMAR 26.24.02.01, .03 COMAR 26.24.05.01	NA
A.2	<i>Water Quality</i>		
A.2.1	No one may add, introduce, leak, spill, or emit any liquid, gaseous, solid, or other substance that will pollute any waters of the State without State authorization.	MDE (A5) Md. Code Ann., Envir. §§ 4-402, 9-101, 9-322	Consistent to the maximum extent practicable
A.2.2	All waters of the State shall be protected for water contact recreation, fish, and other aquatic life and wildlife. Shellfish harvesting and recreational trout waters and waters worthy of protection because of their unspoiled character shall receive additional protection.	MDE (A1) COMAR 26.08.02.02	NA
A.2.3	The discharge of any pollutant which will accumulate to toxic amounts during the expected life of aquatic organisms or produce deleterious behavioral effects on aquatic organisms is prohibited.	MDE (A4) COMAR 26.08.03.01	NA
A.2.4	Before constructing, installing, modifying, extending, or altering an outlet or establishment that could cause or increase the discharge of pollutants into the waters of	MDE (D6)	NA

Code	Policy	References ¹	Applicability/ Consistency
	the State, the proponent must hold a discharge permit issued by the Department of the Environment or provide an equivalent level of water quality protection.	Md. Code Ann., Envir. § 9- 323(a)	
A.2.5	The use of best available technology is required for all permitted discharges into State waters, but if this is insufficient to comply with the established water quality standards, additional treatment shall be required and based on waste load allocation.	MDE (D4) COMAR 26.08.03.01C	NA
A.2.6	Thermal discharges shall be controlled so that the temperature outside the mixing zone (50 feet radially from the point of discharge) meets the applicable water quality criteria or discharges comply with the thermal mixing zone criteria.	MDE (D4) COMAR 26.08.03.03C	NA
A.2.7	Pesticides shall be stored in an area located at least 50 feet from any water well or stored in secondary containment approved by the Department of the Environment.	MDA (C4) COMAR 15.05.01.06	NA
A.2.8	Any development or redevelopment of land for residential, commercial, industrial, or institutional purposes shall use small-scale non-structural stormwater management practices and site planning that mimics natural hydrologic conditions, to the maximum extent practicable. Development on redevelopment will be consistent with this policy when channel stability and 100 percent of the average annual predevelopment groundwater recharge are maintained, nonpoint source pollution is minimized, and structural stormwater management practices are used only if determined to be absolutely necessary.	MDE (C9) Md. Code Ann., Envir. § 4-203 COMAR 26.17.02.01, .06	NA
A.2.9	Unless otherwise permitted, used oil may not be dumped into sewers, drainage systems, or any waters of the State or onto any public or private land.	MDE (D4) Md. Code Ann., Envir. § 5-1001(f)	NA
A.2.10	If material being dumped into Maryland waters or waters off Maryland's coastline has demonstrated actual toxicity or potential for being toxic, the discharger must perform biological or chemical monitoring to test for toxicity in the water.	MDE (A5) COMAR 26.08.03.07 (D) COMAR 26.08.04.01	NA
A.2.11	Public meetings and citizen education shall be encouraged as a necessary function of water quality regulation.	MDE (A2) COMAR 26.08.01.02E(3)	NA

Code	Policy	References ¹	Applicability/ Consistency
A.3	<i>Flood Hazards</i>		
A.3.1	Projects in coastal tidal and non-tidal flood plains which would create additional flooding upstream or downstream, or which would have an adverse impact upon water quality or other environmental factors, are contrary to State policy.	MDE (C2) Md. Code Ann., Envir. § 5-803 COMAR 26.17.05.04A	Consistent to the maximum extent practicable
A.3.2	<p>The following policies apply to projects in non-tidal waters and non-tidal floodplains, but not non-tidal wetlands.</p> <ul style="list-style-type: none"> • Proposed floodplain encroachments, except for roadways, culverts, and bridges, shall be designed to provide a minimum of 1 foot of freeboard above the elevation of the 100- year frequency flood event. In addition, the elevation of the lowest floor of all new or substantially improved residential, commercial, or industrial structures shall also be at least 1 foot above the elevation of the 100-year frequency flood event. • Proposed unlined earth channels may not change the tractive force associated with the 2-year and the 10-year frequency flood events, by more than 10 percent, throughout their length unless it can be demonstrated that the stream channel will remain stable. • Proposed lined channels may not change the tractive force associated with the 2-year and the 10-year frequency flood events, by more than 10 percent, at their downstream terminus unless it can be demonstrated that the stream channel will remain stable. • Category II, III, or IV dams may not be built or allowed to impound water in any location where a failure is likely to result in the loss of human life or severe damage to streets, major roads, public utilities, or other high value property. • Projects that increase the risk of flooding to other property owners are generally prohibited, unless the area subject to additional risk of flooding is purchased, placed in designated flood easement, or protected by other means acceptable to the Maryland Department of the Environment. • The construction or substantial improvement of any residential, commercial, or industrial structures in the 100-year frequency floodplain and below the water surface elevation of the 100-year frequency flood may not be permitted. Minor maintenance and repair may be permitted. The modifications of existing structures for flood-proofing purposes may be permitted. Flood-proofing 	MDE (C2) COMAR 26.17.04.01, .07, .11	NA

Code	Policy	References ¹	Applicability/ Consistency
	<p>modifications shall be designed and constructed in accordance with specifications approved by the Maryland Department of the Environment.</p> <ul style="list-style-type: none"> Channelization shall be the least favored flood control technique. Multiple purpose use shall be preferred over single purpose use, the proposed project shall achieve the purposes intended, and, at a minimum, project shall provide for a 50 percent reduction of the average annual flood damages. 		
A.3.3	<p>Development may not increase the downstream peak discharge for the 100-year frequency storm event in the following watersheds and all their tributaries:</p> <ul style="list-style-type: none"> Gwynns Falls in Baltimore City and Baltimore County; and Jones Falls in Baltimore City and Baltimore County. 	MDE (C2) COMAR 26.17.02.07	NA
B	Coastal Resources		
B.1	<i>The Chesapeake and Atlantic Coastal Bays Critical Area</i>		
B.1.1	Colonial water bird nesting sites in the Critical Area may not be disturbed during breeding season.	CAC (C9) COMAR 27.01.09.04	NA
B.1.2	New facilities in the Critical Area shall not interfere with historic waterfowl concentration and staging areas.	CAC (C9) COMAR 27.01.09.04	NA
B.1.3	Physical alterations to streams in the Critical Area shall not affect the movement of fish.	CAC (C9) COMAR 27.01.09.05	NA
B.1.4	The installation or introduction of concrete riprap or other artificial surfaces onto the bottom of natural streams in the Critical Area is prohibited unless water quality and fisheries habitat will be improved.	CAC (C9) COMAR 27.01.09.05	NA
B.1.5	The construction or placement of dams or other structures in the Critical Area that would interfere with or prevent the movement of spawning fish or larval forms in streams is prohibited.	CAC (C9) COMAR 27.01.09.05	NA
B.1.6	Development may not cross or affect a stream in the Critical Area, unless there is no feasible alternative and the design and construction of the development prevents increases in flood frequency and severity that are attributable to development; retains tree canopy and maintains stream water temperature within normal variation; provides a natural substrate for affected streambeds; and minimizes adverse water quality and quantity impacts of stormwater.	CAC (C9) COMAR 27.01.02.04	NA
B.1.7	The construction, repair, or maintenance activities associated with bridges or other stream crossings or with utilities and roads, which involve disturbance within the buffer or which occur in stream are prohibited between March 1 and May 15.	CAC (C9) COMAR 27.01.09.05	NA

Code	Policy	References ¹	Applicability/ Consistency
B.1.8	Roads, bridges, or utilities may not be constructed in any areas designated to protect habitat, including buffers, in the Critical Area, unless there is no feasible alternative and the road, bridge, or utility is located, designed, constructed, and maintained in a manner that maximizes erosion protection; minimizes negative impacts to wildlife, aquatic life, and their habitats; and maintains hydrologic processes and water quality.	CAC (C9) COMAR 27.01.02.03C, .04C, .05C	Consistent to the maximum extent practicable
B.1.9	In the Critical Area, a minimum 100-foot vegetated buffer shall be maintained landward from the mean high water line of tidal waters, the edge of each bank of tributary streams, and the upland boundary of tidal wetlands. The buffer shall be expanded in sensitive areas in accordance with standards adopted by the Critical Area Commission. The buffer is not required for agricultural drainage ditches if the adjacent agricultural land has in place best management practices that protect water quality. The buffer is not required if existing patterns of development prevent the buffer from protecting ecological quality and functions, in which case, alternative means of protecting ecological quality and functions are required.	CAC (C9) COMAR 27.01.09.01, .01- 5, .01-7	NA
B.1.10	Disturbance to a buffer in the Critical Area is only authorized for a shore erosion control measure, new development, or redevelopment that is: water-dependent; meets a recognized private right or public need; minimizes the adverse effects on water quality and fish, plant, and wildlife habitat; and, insofar as possible, locates non-water-dependent structures or operations associated with water-dependent projects or activities outside the buffer. Mitigation of impacts to the buffer and a buffer management plan must be developed in accordance with standards adopted by the Critical Area Commission when a development or redevelopment activity occurs within the buffer.	CAC (C9) COMAR 27.01.03.03 COMAR 27.01.09.01, .01-2, .01-3	NA
B.1.11	If a development or redevelopment activity occurs on a lot or parcel that includes a buffer or if issuance of a permit, variance, or approval would disturb the buffer, the proponents of that activity must develop a buffer management plan that clearly indicates that all applicable planting standards developed by the Critical Area Commission will be met and that appropriate measures are in place for the long-term protection and maintenance of the buffer.	CAC (C9) COMAR 27.01.09.01- 1, .01-3	NA
B.1.12	Public beaches or other public water-oriented recreation or education areas including, but not limited to, publicly owned boat launching and docking facilities and fishing piers may be permitted in the buffer in portions of the Critical Area not designated as intensely developed areas only if adequate sanitary facilities exist; service facilities are, to the extent possible, located outside the Buffer; permeable surfaces are used to the extent	CAC (C9) COMAR 27.01.03.08	NA

Code	Policy	References ¹	Applicability/ Consistency
	practicable, if no degradation of ground water would result; and disturbance to natural vegetation is minimized.		
B.1.13	Water-dependent research facilities or activities may be permitted in the buffer, if nonwatery dependent structures or facilities associated with these projects are, to the extent possible, located outside the buffer.	CAC (C9) COMAR 27.01.03.09	NA
B.1.14	Industrial and port-related facilities may only be sited in the portions of areas of intense development that are exempted from buffer designation.	CAC (C9) COMAR 27.01.03.05	NA
B.1.15	Agricultural activities are permitted in the buffer, if, as a minimum best management practice, a 25-foot vegetated filter strip measured landward from the mean high water line of tidal waters or tributary streams (excluding drainage ditches), or from the edge of tidal wetlands, whichever is further inland, is established in trees with a dense ground cover or a thick sod of grass.	CAC (C4) COMAR 27.01.09.01-5	NA
B.1.16	The feeding or watering of livestock is not permitted within 50 feet of the mean high water line of tidal waters and tributaries.	CAC (C4) COMAR 27.01.09.01-5	NA
B.1.17	In the Critical Area, the creation of new agricultural lands shall not be accomplished by diking, draining, or filling of nontidal wetlands; by clearing of forests or woodland on soils with a slope greater than 15 percent or on soils with a "K" value greater than 0.35 and slope greater than 5 percent; by clearing that will adversely affect water quality or will destroy plant and wildlife habitat; or by clearing existing natural vegetation within the 100-foot buffer.	CAC (C4) COMAR 27.01.06.02C	NA
B.1.18	Agricultural activity permitted within the Critical Area shall use best management practices in accordance with a soil conservation and water quality plan approved or reviewed by the local soil conservation district.	CAC (C4) COMAR 27.01.06.02G	NA
B.1.19	Cutting or clearing of trees within the buffer is prohibited except that commercial harvesting of trees by selection or by the clearcutting of loblolly pine and tulip poplar may be permitted to within 50 feet of the landward edge of the mean high water line of tidal waters and perennial tributary streams, or the edge of tidal wetlands if the buffer is not subject to additional habitat protection. Commercial harvests must be in compliance with a buffer management plan that is prepared by a registered professional forester and is approved by the Department of Natural Resources.	CAC (C5) Md. Code Ann., Nat. Res. § 8-1808.7 COMAR 27.01.09.01-6	NA

Code	Policy	References¹	Applicability/ Consistency
B.1.20	Commercial tree harvesting in the buffer may not involve the creation of logging roads and skid trails within the buffer and must avoid disturbing stream banks and shorelines as well as include replanting or allowing regeneration of the areas disturbed or cut in a manner that assures the availability of cover and breeding sites for wildlife and reestablishes the wildlife corridor function of the buffer.	CAC (C5) Md. Code Ann., Nat. Res. § 8-1808.7 COMAR 27.01.09.01-6	NA
B.1.21	Solid or hazardous waste collection or disposal facilities and sanitary landfills are not permitted in the Critical Area unless no environmentally acceptable alternative exists outside the Critical Area, and these facilities are needed in order to correct an existing water quality or wastewater management problem.	CAC (C9) COMAR 27.01.02.02	NA
B.1.22	All available measures must be taken to protect the Critical Area from all sources of pollution from surface mining operations, including but not limited to sedimentation and siltation, chemical and petrochemical use and spillage, and storage or disposal of wastes, dusts, and spoils.	CAC (D5) COMAR 27.01.07.02A	NA
B.1.23	In the Critical Area, mining must be conducted in a way that allows the reclamation of the site as soon as possible and to the extent possible.	CAC (D5) COMAR 27.01.07.02B	NA
B.1.24	Sand and gravel operations shall not occur within 100 feet of the mean high water line of tidal waters or the edge of streams or in areas with scientific value, important natural resources such as threatened and endangered species, rare assemblages of species, or highly erodible soils. Sand and gravel operations also may not occur where the use of renewable resource lands would result in the substantial loss of forest and agricultural productivity for 25 years or more or would result in a degrading of water quality or a loss of vital habitat.	CAC (D5) COMAR 27.01.07.03D	NA
B.1.25	Wash plants including ponds, spoil piles, and equipment may not be located in the 100-foot buffer.	CAC (D5) COMAR 27.01.07.03E	NA
B.1.26	A soil erosion and sedimentation control plan shall be required whenever development within the Critical Area will involve any clearing, grading, transporting, or other form of disturbance to land by the movement of earth. This plan shall be appropriately designed to reduce adverse water quality impacts.	CAC (C9) COMAR 27.01.02.04	Consistent to the maximum extent practicable
B.1.27	All stormwater storage facilities shall be designed with sufficient capacity to eliminate all runoff caused by the development in excess of that which would have come from the site if it were in its predevelopment state.	CAC (C9) COMAR27.01.02.04	NA
B.1.28	Intense development should be directed outside the Critical Area. Future intense development activities, when proposed in the Critical Area, shall be directed towards the intensely developed areas.	CAC (D1) Md. Code Ann., Natural Res. § 8-	NA

Code	Policy	References ¹	Applicability/ Consistency
		1807(b) COMAR 27.01.02.02B	
B.1.29	<p>The following development activities and facilities are not permitted in the Critical Area except in intensely developed areas and only after the activity or facility has demonstrated that there will be a net improvement in water quality to the adjacent body of water.</p> <ul style="list-style-type: none"> • Nonmaritime heavy industry • Transportation facilities and utility transmission facilities, except those necessary to serve permitted uses, or where regional or interstate facilities must cross tidal waters <p>Permanent sludge handling, storage, and disposal facilities, other than those associated with wastewater treatment facilities. However, agricultural or horticultural use of sludge when applied by an approved method at approved application rates may be permitted in the Critical Area, but not in the 100-foot Buffer</p>	CAC (C9) COMAR 27.01.02.02	NA
B.1.30	<p>The following policies apply in those areas of the Critical Area that are determined to be areas of intense development.</p> <ul style="list-style-type: none"> • To the extent possible, fish, wildlife, and plant habitats, should be conserved. • Development and redevelopment shall improve the quality of runoff from developed areas that enters the Chesapeake or Atlantic Coastal Bays or their tributary streams. • At the time of development or redevelopment, appropriate actions must be taken to reduce stormwater pollution by 10%. Retrofitting measures are encouraged to address existing water quality and water quantity problems from stormwater. • Development activities may cross or affect a stream only if there is no feasible alternative, and those activities must be constructed to prevent increases in flood frequency and severity attributable to development, retain tree canopy, maintain stream water temperatures within normal variation, and provide a natural substrate for affected streambeds. • If practicable, permeable areas shall be established in vegetation. • Areas of public access to the shoreline, such as foot paths, scenic drives, and other public recreational facilities, shall be maintained and, if possible, are encouraged to be established. • Ports and industries which use water for transportation and derive economic benefits from shore access, shall be located near existing port facilities or in areas identified by local jurisdictions for planned future port facility development and 	CAC (C9) COMAR 27.01.02.03	NA

Code	Policy	References ¹	Applicability/ Consistency
	<p>use if this use will provide significant economic benefit to the State or local jurisdiction.</p> <ul style="list-style-type: none"> • To the extent practicable, development shall be clustered to reduce lot coverage and maximize areas of natural vegetation. <p>Development shall minimize the destruction of forest and woodland vegetation.</p>		
B.1.31	<p>The following policies apply in those portions of the Critical Area that are not areas of intense development.</p> <ul style="list-style-type: none"> • Development shall maintain, and if possible, improve the quality of runoff and ground water entering the Chesapeake and Coastal Bays. • To the extent practicable, development shall maintain existing levels of natural habitat. • All development sites shall incorporate a wildlife corridor system that connects undeveloped vegetated tracts onsite with undeveloped vegetated tracts offsite. • All forests that are cleared or developed shall be replaced on not less than an equal area basis. • If there are no forests on a proposed development site, the site shall be planted to provide a forest or developed woodland cover of at least 15 percent. • Development on slopes equal to or greater than 15 percent, as measured before development, shall be prohibited unless the project is the only effective way to maintain the slope and is consistent with other policies. • To the extent practicable, development shall be clustered to reduce lot coverage and maximize areas of natural vegetation. • Lot coverage is limited to 15 percent of the site. 	CAC (C9) COMAR 27.01.02.04	NA

Code	Policy	References ¹	Applicability/ Consistency
B.2	<i>Tidal Wetlands</i>		
B.2.1	<p>Any action which alters the natural character in, on, or over tidal wetlands; tidal marshes; and tidal waters of Chesapeake Bay and its tributaries, the coastal bays adjacent to Maryland's coastal barrier islands, and the Atlantic Ocean shall avoid dredging and filling, be water dependent, and provide appropriate mitigation for any necessary and unavoidable adverse impacts on these areas or the resources associated with these areas. A proponent of an action described above shall explain the actions impact on:</p> <ul style="list-style-type: none"> • Habitat for finfish, crustaceans, mollusks, and wildlife of significant economic or ecologic value; • Potential habitat areas such as historic spawning and nursery grounds for anadromous and semi-anadromous fisheries species and shallow water areas suitable to support populations of submerged aquatic vegetation; • Marine commerce; • Recreation, and aesthetic enjoyment; • Flooding; • Siltation; • Natural water flow, water temperature, water quality, and natural tidal circulation; • Littoral drift; • Local, regional, and State economic conditions; • Historic property; • Storm water runoff; • Disposal of sanitary waste; • Sea level rise and other determinable and periodically recurring natural hazards; • Navigational safety; • Shore erosion; • Access to beaches and waters of the State; • Scenic and wild qualities of a designated State scenic or wild river; and • Historic waterfowl staging areas and colonial bird-nesting sites. 	MDE (B2) COMAR 26.24.01.01 COMAR 26.24.02.01, .03 COMAR 26.24.05.01.	Consistent to the maximum extent practicable
B.3	Non-Tidal Wetlands – Enforceable policies pertaining to non-tidal wetlands have no applicability to the proposed action and are not addressed in this table.		
B.4	Forests – Enforceable policies pertaining to forests have no applicability to the proposed action and are not addressed in this table.		
B.5	Historical and Archaeological Sites – Enforceable Policies pertaining to Historical and Archaeological Sites have no applicability to the proposed action and are not addressed in this table.		

Code	Policy	References¹	Applicability/ Consistency
B.6	Living Aquatic Resources – Enforceable policies pertaining to living aquatic resources have no applicability to the proposed action and are not addressed in this table.		
C	Coastal Uses		
C.1	Mineral Extraction – Enforceable policies pertaining to mineral extraction have no applicability to the proposed action and are not addressed in this table.		
C.2	Electrical Generation and Transmission – Enforceable policies pertaining to electrical generation and transmission have no applicability to the proposed action and are not addressed in this table.		
C.3	Tidal Shore Erosion Control – Enforceable policies pertaining to tidal shore erosion control have no applicability to the proposed action and are not addressed in this table.		
C.4	Oil and Natural Gas Facilities – Enforceable policies pertaining to oil and natural gas facilities have no applicability to the proposed action and are not addressed in this table.		
C.5	Dredging and Disposal of Dredged Material – Enforceable policies pertaining to dredging and disposal of dredged material have no applicability to the proposed action and are not addressed in this table.		
C.6	Navigation – Enforceable policies pertaining to navigation have no applicability to the proposed action and are not addressed in this table.		
C.7	Transportation – Enforceable policies pertaining to transportation have no applicability to the proposed action and are not addressed in this table.		
C.8	Agriculture – Enforceable policies pertaining to agriculture have no applicability to the proposed action and are not addressed in this table.		
C.9	Development – Enforceable policies pertaining to development have no applicability to the proposed action and are not addressed in this table.		
C.10	Sewage Treatment – Enforceable policies pertaining to sewage treatment have no applicability to the proposed action and are not addressed in this table.		