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PROGRAMMATIC ENVIRONMENTAL ASSESSMENT FOR IMPLEMENTATION OF PROJECTS AT THE PUTNAM PARK AREA AT WEST POINT, NY



MAY 2020



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PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

for IMPLEMENTATION OF PROJECTS AT THE PUTNAM PARK AREA

at WEST POINT, NY

Contract No: W912DS-17-D-003

Prepared for: United States Army Garrison West Point Directorate of Public Works Building 667B, Ruger Road West Point, New York 10996

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> > May 2020

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ACHP	Advisory Council on Historic	EO	Executive Order
	Preservation	ESA	Endangered Species Act
ADP	Area Development Plan	ESMP	Endangered Species
AIRFA	American Indian Religious		Management Plan
	Freedom Act	FEMA	Federal Emergency
APE	Area of Potential Effects		Management Agency
ARPA	Archaeological Resources	FIRM	Flood Insurance Rate Map
	Protection Act	FONSI	Finding of No Significant Impact
BGEPA	Bald and Golden Eagle	ft	Feet/Foot
	Protection Act	FY	fiscal vear
BMP	Best Management Practice		,
	-	GHG	Greenhouse Gas
CAA	Clean Air Act		
CEAC	Cyber and Engineering	HAP	Hazardous Air Pollutant
	Academic Center		
CEQ	Council on Environmental	ICRMP	Integrated Cultural
	Quality		Resources Management
CFR	Code of Federal Regulations		Plan
CGP	Construction General Permit	IMCOM	Installation Management
CLP	City Light and Power		Command
CO	Carbon Monoxide	INRMP	Integrated Natural Resources
CO _{2e}	Carbon Dioxide Equivalent		Management Plan
CRM	Cultural Resources	IONMP	Installation Operational Noise
	Management/Manager		Management Plan
CWA	Clean Water Act		
CY	Cubic Yard	kV	Kilovolt
CZMA	Coastal Zone Management		Light Detection and Densing
	Act	LIDAR	Light Detection and Ranging
		LID	Low impact Development
dB	Decibel	MBTA	Migratory Bird Treaty Act
dBA	A-weighted decibel	MC	Munitions Constituents
DERP	Defense Environmental	MEC	Munitions of Explosive
	Restoration Program	MEC	
DoD	Department of Defense	MGD	Million Gallon Per Day
DOT	Department of Transportation		Military Munitions Posponso
DPW	Directorate of Public Works		Program
EA	Environmental Assessment	MOU	Memorandum of
EIS	Environmental Impact		Understanding
	Statement	MRS	Munition Response Site
EISA	Energy Independence and	MSAT	Mobile Source Air Toxic
	Security Act	msl	mean sea level

MW	Megawatt	RCRA	Resource Conservation and
MWR	Morale, Welfare, and		Recovery Act
	Recreation	REC	Record of Environmental
			Consideration
NAAQS	National Ambient Air Quality	RPLANS	Real Property Planning and
	Standards		Analysis System
NAGPRA	Native American Graves	RPMP	Real Property Master Plan
	Protection and Repatriation		
	Act	SASS	Scenic Area of Statewide
NEPA	National Environmental		Significance
	Policy Act	SDWA	Safe Drinking Water Act
NHLD	National Historical Landmark	SEA	Supplemental Environmental
	District		Assessment
NHPA	National Historic	SF	square foot/feet
	Preservation Act	SHPO	State Historic Preservation
NO ₂	Nitrogen Dioxide		Office
NO _x	Nitrogen Oxide	SO ₂	Sulfur Dioxide
NOA	Notice of Availability	SOx	Sulfur Oxide
NOI	Notice of Intent	SWMP	Stormwater Management
NPDES	National Pollutant Discharge		Plan
	Elimination System	SWPPP	Stormwater Pollution
NRHP	National Register of Historic		Prevention Plan
	Places		
NYNHP	New York Natural Heritage	TCP	Traditional Cultural
	Program		Properties
NYSCMP	New York State Coastal		
	Management Program	UFC	Unified Facilities Criteria
NYSDOS	New York State Department	USACE	U.S. Army Corps of
	of State		Engineers
		USAGWP	U.S. Army Garrison West
O ₃	Ozone		Point
O&R	Orange & Rockland Utilities	U.S.C	United States Code
		USDA	U.S. Department of
PA	Programmatic Agreement		Agriculture
Pb	Lead	USEPA	U.S. Environmental
PEA	Programmatic Environmental		Protection Agency
	Assessment	USMA	U.S. Military Academy
PM _{2.5}	Particulate Matter 2.5		
	microns or less	VOC	Volatile Organic Compound
PM ₁₀	Particulate Matter 10 microns		Mootowator Tractmont Diant
	or less	VVVIP	vvasiewaler Treatment Plant
PPA	Putnam Park Area		
psi	pounds per square inch		

1 1.0 INTRODUCTION

- 2 The Department of the Army (Army) and the Directorate
- 3 of Public Works at U.S. Army Garrison West Point
- 4 (USAGWP) is preparing a Programmatic Environmental
- 5 Assessment (PEA) to analyze the environmental and
- 6 socioeconomic impacts associated with implementing a
- 7 wide range of construction projects at the Putnam Park
- 8 Area (PPA) at West Point, New York. The implementation
- 9 of the construction projects supports the real property
- 10 vision of the Putnam and Ladycliff District as established
- 11 in the district's Area Development Plan (ADP) by
- 12 providing adaptable and connected facilities and spaces
- 13 and promoting neighborhood connections across
- 14 communities. The action would begin with the
- 15 development of a Putnam parking lot in 2020, with the
- 16 remaining construction activities in the following years.
- 17 The Army is preparing this PEA to address the potential
- 18 environmental impacts of the proposed action in

Construction projects included in this PEA:

- Putnam Parking Lot;
- Delafield Dam Decommissioning (Building 739);
- Outdoor Pool and Physical Fitness Center;
- Restoration of Existing Bathhouse (Building 765);
- Restoration of 1949er Lodge (Building 771);
- Upgrade of Electric Substation (Building 835); and
- Establishment of Passive (Undeveloped), Park.
- 19 accordance with the National Environmental Policy Act of 1969 (NEPA; 42 United States Code
- 20 [U.S.C.] Section 4321 *et seq.*); its implementing regulations (40 Code of Federal Regulations
- 21 [CFR] Parts 1500–1508); the Army's regulation implementing NEPA (32 CFR Part 651); and
- 22 consistent with Department of Defense (DoD) Unified Facilities Criteria (UFC) 2100-01,
- 23 Installation Master Planning (DoD 2018) and Council of Environmental Quality (CEQ)
- 24 Memorandum for Heads of Federal Departments and Agencies for Effective Use of
- 25 Programmatic NEPA Reviews (CEQ 2014). The Army is the lead agency for the proposed
- action; there are no cooperating agencies (per 40 CFR Section 1501.6) for the PEA.

27 1.1 INSTALLATION DESCRIPTION AND CURRENT SITUATION

- 28 West Point is located north of the Village of Highland Falls in Orange County, New York along
- the Hudson River Valley (**Figure 1.1-1**). West Point is near the intersection of Orange,
- 30 Rockland, Westchester, and Putnam Counties. It is bordered by the Hudson River and divided
- 31 by U.S. Route 9W and NY Route 293. Located approximately 50 miles away from New York
- 32 City, West Point is on the northern end of the Appalachian Mountains. West Point has a
- 33 cantonment area, academic campus area, as well as camps and training areas. The installation
- 34 is approximately 16,000 acres, including the Main Post, outlying ranges and training areas, and
- 35 Constitution Island.
- 36



Figure 1.1-1. Regional Location

1 2

3

- 1 The installation is home to several tenants, most notably the United States Military Academy
- 2 (USMA), a four-year coeducational federal service academy that prepares cadets for a career of
- 3 professional service to the Army. The Garrison Command, USAGWP, oversees all the
- 4 installation support directorates and offices that maintain the installation real property and
- 5 infrastructure to support USAGWP and the regional community.
- 6 Real property master planning for West Point, conducted consistent with UFC 2-100-01,
- 7 currently consists of an installation-wide Vision Plan and Installation Planning Standards (May
- 8 2017), and ADPs for the six designated districts that comprise the installation. The Real
- 9 Property Master Plan (RPMP) process provides 1) documentation of installation real property
- 10 visions, development plans, planning standards, and capital investment strategies to enable
- 11 clear communication between stakeholders and 2) a framework for installation management
- 12 review of allocation of limited resources that affect, or are affected by, the use of real property
- 13 assets. The bulk of installation planning occurs in the form of ADPs at the scale of districts,
- 14 which are identifiable and connected areas of each installation.

15 **1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION**

- 16 West Point's RPMP divides the installation into six districts. This PEA focuses on an area known 17 as the PPA in the northwest corner of the Putnam and Ladycliff District. The Putnam and 18 Ladycliff District ADP identifies a number of prioritized projects designed to support the 19 installation planning vision and achieve the goals of the district. The PPA was identified as an 20 area in which to further enhance West Point's community and recreational amenities. Seven 21 distinct projects were subsequently identified that would fulfill this goal: 1) Putnam parking lot, 2) 22 Delafield Dam decommissioning, 3) outdoor pool and physical fitness center, 4) restoration of 23 the existing bathhouse, 5) restoration of the 1949er Lodge, 6) upgrade of the electric substation, 24 and 7) establishment of a passive (undeveloped) park (Figure 1.2-1). The purpose of the 25 proposed action is to manage the PPA's real property assets in a thoughtful, deliberative, and 26 sustainable manner consistent with the vision and goals as established by the RPMP and 27 Putnam and Ladycliff District ADP in support of the installation's designated mission. The 28 proposed action is needed to address real property deficiencies and suboptimal conditions, and 29 mitigate safety concerns. The PPA is currently underutilized and can support additional real 30 property actions to support mission requirements. Further, the proposed action is needed to provide adaptable, safe, connected, flexible facilities in support of the Putnam and Ladycliff 31 32 District Vision: The Putnam and Ladycliff District will support the world's premier leader 33 development and academic institution by providing adaptable and connected facilities and spaces within a safe and secure environment, preserving and sustaining historic West Point. 34 35 and promoting neighborhood connections across communities (IMCOM 2019). 36
 - Chapter 1.0: Introduction May 2020



Figure 1.2-1. PPA Project Locations

1 2

1 1.3 SCOPE OF ENVIRONMENTAL ANALYSIS

- 2 This PEA identifies, documents, and evaluates the potential environmental, cultural, and
- 3 socioeconomic impacts associated with the implementation and construction of seven distinct
- 4 projects within the PPA at West Point. The PEA takes a programmatic look at the projects, as
- 5 sufficient details are not available to fully analyze the effects of implementing all of the projects
- 6 in detail. USAGWP will conduct additional NEPA analysis (either a Record of Environmental
- 7 Consideration [REC], Environmental Assessment [EA], or Environmental Impact Statement
- 8 [EIS]) for such actions once the 35 percent design or greater for each individual project is
- 9 available. These analyses may be tiered from this PEA in accordance with 40 CFR Part 1502.20
- 10 and 32 CFR Part 651.14(c). The programmatic approach is designed to allow for early planning,
- 11 coordination, and flexibility throughout the implementation of the proposed action.
- 12 Resource areas analyzed in this PEA include; water resources; biological resources; land use;
- 13 recreation coastal zone management; topography and soils; cultural resources, traffic and
- 14 transportation; utilities and infrastructure; air quality; noise, socioeconomics; environmental
- 15 justice and protection of children; and aesthetics and visual resources.

16 **1.4 DECISION TO BE MADE**

- 17 The decision to be made by the Garrison Commander of USAGWP is to approve or disapprove
- 18 the proposed action in consideration of potential socioeconomic and environmental
- 19 consequences, and actions that protect, restore, and enhance the environment. This PEA is
- 20 intended to assist in that decision-making by providing sufficient evidence and analysis for
- 21 determining whether a Finding of No Significant Impact (FONSI) or EIS should be prepared. If
- 22 the potential adverse environmental impacts associated with the selected alternative would
- 23 potentially remain significant even after all reasonable mitigation measures have been
- 24 implemented, an EIS would be warranted. If the Army moves forward with the action, the start of
- an EIS process would be marked with the formal publishing of a Notice of Intent (NOI) to
- 26 prepare an EIS in the Federal Register.

27 1.5 Key Documents

- 28 Key documents are sources of information incorporated into this PEA. Documents are
- 29 considered applicable because of similar actions, analyses, locations, management actions or
- 30 impacts that may apply to this proposed action. CEQ guidance encourages incorporating
- 31 documents by reference. Documents incorporated by reference in part or in whole include:
- United States Army Garrison West Point, New York Integrated Cultural Resources
 Management Plan, 2020 (awaiting Garrison Commander signature)
- West Point Real Property Vision Plan, May 2017
- 35 West Point Installation Planning Standards, May 2017
- 36 Department of Public Works Engineering Planning Standards, February 2016

1 Integrated Natural Resources Management Plan United States Army Garrison West • 2 Point, New York, September 2018 3 West Point Putnam and Ladycliff District Area Development Plan, April 2019 • 4 Programmatic Environmental Assessment for Real Property Master Plans on Army 5 Installation Management Command Garrisons, DATE 2020 [NOTE TO REVIEWERS: 6 This document is currently in draft-final status and expected to be published in the 7 Federal Register in the next few months.] 8 1.6 **REGULATORY FRAMEWORK** 9 In accordance with 32 CFR Part 651.14(2), the Army considered applicable federal, state, and 10 local regulations during analysis of the proposed action's effects to individual environmental and 11 social resources. The following were determined to be applicable to the proposed action and, 12 therefore, analyzed within this PEA. 13 American Indian Religious Freedom Act (AIRFA) (42 U.S.C. § 21 et seq.) • 14 Archaeological and Historic Preservation Act (AHPA) (16 U.S.C. § 469-469c) • 15 Archaeological Resources Protection Act (ARPA) (16 U.S.C. § 470aa et seq.) • 16 Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. § 668-668d) • 17 Clean Air Act (CAA) (42 U.S.C. § 7401) • 18 Clean Water Act (CWA) (33 U.S.C. § 1251) • 19 Coastal Zone Management Act (CZMA) (16 U.S.C. § 1451 et seq.) • 20 Endangered Species Act (ESA) (16 U.S.C. §§ 1531–1543) • 21 Energy Independence and Security Act (EISA) (42 U.S.C. §§ 6291, 6293, and 6295, as • 22 amended) 23 Migratory Bird Treaty Act (MBTA), as amended (16 U.S.C. §§ 703-712) • 24 National Historic Preservation Act of 1966 (NHPA) (16 U.S.C. § 470 et seq., as • 25 amended) Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. ch. 32 § 26 • 27 3001 *et seq.*) 28 NEPA (42 U.S.C. §§ 4321-4347) • 29 Resource Conservation and Recovery Act (RCRA) (42 U.S.C. § 6901) • 30 Safe Drinking Water Act (SDWA) (42 U.S.C. § 300f et seg.) • 31 CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts • 1500-1508) 32 33 National Pollutant Discharge Elimination System (NPDES) (40 CFR Part 122) • 34 Executive Order (EO) 11990, Protection of Wetlands • 35 EO 12088, Federal Compliance with Pollution Control Standards • 36 EO 12898, Federal Actions to Address Environmental Justice in Minority Populations • and Low-Income Populations 37 EO 13045, Protection of Children from Environmental Health Risks and Safety Risks 38 39 EO 13175, Consultation and Coordination with Indian Tribal Governments • 40 EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds 41 • EO 13834, Efficient Federal Operations

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1 1.7 INTERGOVERNMENTAL COORDINATION, PUBLIC AND AGENCY PARTICIPATION

- 2 The Army invites and strongly encourages public participation in the NEPA process.
- 3 Consideration of the views and information of all interested parties promotes open
- 4 communication and enables better decision-making. The Army specifically urges all agencies,
- 5 organizations, and members of the public with a potential interest in the proposed action—
- 6 including minority, low-income, disadvantaged, and Native American groups-to participate in
- 7 the decision-making process.
- 8 Regulations in 32 CFR Part 651 guide opportunities for public participation with respect to this
- 9 PEA and decision-making on the proposed action. The Army has made this PEA, along with a
- 10 draft FONSI, available to the public for 30 days (19 May to 17 June 2020). The notice of
- 11 availability (NOA) of the PEA was published in the in the Times Herald Record and Pointer View
- 12 on 19 and 21 May 2020, respectively. Interested parties are able to review the documents by
- 13 accessing the documents on the Internet at <u>https://home.army.mil/westpoint/</u>. Comments
- 14 submitted within the 30-day public review period will be made part of the Administrative Record
- 15 and will be fully taken into account before a final decision is made to either execute a final
- 16 FONSI and proceed with implementing the proposed action, or publish a NOI to prepare an EIS.

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12.0DESCRIPTION OF THE PROPOSED ACTION AND2ALTERNATIVES

3 The Army proposes to implement seven projects in support of stated district goals to include the 4 construction/renovation of:

- 5 1) Putnam parking lot;
- 6 2) Delafield Dam decommissioning;
- 7 3) Outdoor pool and physical fitness center;
- 8 4) Restoration of the existing bathhouse;
- 9 5) Restoration of the 1949er Lodge;
- 10 6) Upgrade of the electric substation; and
- 11 7) Establishment of a passive (undeveloped) park.
- 12 **Table 2.1-1** presents approximate square footage and acreages for the seven proposed
- 13 projects in the PPA.

Project Name and Number	Square Footage	Acreage
Putnam Parking Lot (1)	148,647	3.41
Delafield Dam Decommissioning (2)	22,511	0.52
Outdoor Pool (3A)	55,251	1.27
Physical Fitness Center (3B)	146,864	3.40
Bathhouse Restoration (4)	7,434	0.17
1949er Lodge Restoration (5)	24,107	0.55
Electric Substation Upgrade (6)	33,690	0.77
Passive (Undeveloped), Park (7)	952,619	21.87
Total	1,391,123	31.98

Table 2.1-1 PPA Project Square Footage and Acreages

- 14 The first project is proposed to be the Putnam parking lot, which is planned for fiscal year (FY)
- 15 2020. The proposed action would 1) ensure the efficient use of USAGWP's real property assets,
- 16 2) address safety concerns associated with Delafield Pond, 3) address deficiencies in available
- 17 recreational opportunities, 4) ensure long-term mission sustainment, and 5) improve mission
- 18 efficacy. **Figure 2.1-1** presents the footprints of the seven projects proposed at the PPA.

19 2.1 CONSIDERATION OF ALTERNATIVES

- 20 NEPA's implementing regulations provide guidance on the consideration of alternatives to a
- 21 federally proposed action and require a rigorous exploration and an objective evaluation of
- 22 reasonable alternatives. Only those alternatives determined to be reasonable require detailed
- 23 analysis.
- 24



2-2

1 Though this PEA is programmatic in nature, the action alternatives are designed to apply to 2 specific projects in the PPA. As noted previously, the goal of this programmatic approach is to 3 streamline the NEPA process for the construction and development of the seven projects within 4 the PPA boundary. This programmatic level of analysis eliminates repetitive discussions of the 5 same issues; in this case, it would be the similar environmental impacts for most resource areas 6 at the project locations.

7 2.2 ALTERNATIVE 1 (PREFERRED ALTERNATIVE)

8 Under the Preferred Alternative, all seven projects within the PPA would proceed with 9 implementation, although they would be necessarily prioritized and phased based on available 10 funding. Projects anticipated in the short-term include the Putnam parking lot, Delafield Dam 11 decommissioning, outdoor pool and physical fitness center, and restoration of the existing 12 bathhouse and 1949er Lodge. These projects have been prioritized based on their ability to 13 address safety concerns, mitigate asset deficiencies, and enhance quality of life and 14 recreational opportunities as noted in the Putnam and Ladycliff District ADP. Longer-term 15 projects, such as the upgrades to the electric substation and the development of a passive park 16 system, may require additional NEPA analysis (beyond being tiered off this PEA) in the future

17 as the projects become more defined.

18 2.2.1 Putnam Parking Lot (Project 1)

19 A 127-space parking lot in the PPA will be the first of the seven projects to be constructed. As 20 shown in **Figure 2.2-1**, a two-tiered gravel parking area is planned adjacent to Delafield Road in 21 the wooded area northwest of Fort Putnam. One tier of parking will be located across Delafield 22 Road from the current site of Delafield Pond to take advantage of the flatter topography and to 23 support parking capacity for the outdoor pool and fitness center planned for the Delafield Pond 24 site. The upper parking tier will be constructed further up Delafield Road near the electric 25 substation. Parking on the upper tier will primarily be situational/seasonal for events such as 26 graduations and sporting events held at nearby Michie Stadium. The two parking tiers will be 27 connected by and accessed by paved drives that will include gates to regulate access. The 28 existing 32-space perpendicular street parking located on the upper end of Delafield Road will 29 be preserved. Gathering spaces and picnic tables are included in the connecting areas between 30 the tiers. 31 Design of the parking lot is constrained by existing topography. The site naturally slopes from 32 the southeast to the northwest at an approximate 12 to 15 percent grade. Site topographical 33 survey fieldwork was conducted as existing light detection and ranging (LiDAR) topography

- 34 mapping is outdated. Stormwater management will be required due to the increase in
- 35 impervious surface and will be addressed on-site.
- 36



2-4

1 2

1 2.2.2 Delafield Dam Decommissioning (Project 2)

2 Previously operated as an important outdoor swimming facility, Delafield Pond was closed in 3 2017 due to safety concerns associated with uncontrolled seepage along the foundation. The 4 U.S. Army Corps of Engineers (USACE) completed a leakage assessment in January 2017 5 noting that if Delafield Pond were filled to capacity, the dam would likely fail and result in 6 uncontrolled release of water, which would likely lead to significant widespread damage and 7 loss of life. Repairing the dam to achieve structural stability is infeasible due to costs (Pointer 8 View 2017). The former Delafield Pond has been drained as an interim risk reduction measure 9 to eliminate the risk of failure posed by the seepage through the dam and resultant risk of 10 instability of the dam given its size and potential damage to downstream properties. Delafield 11 Dam is currently listed on the New York State Department of Environmental Conservation 12 inventory of dams as a "Hazard Class A Low Hazard" dam (NYSDEC 2020). The USACE has 13 categorized Delafield Dam as a "Small, High Hazard" dam (USAGWP 2019a). USAGWP must 14 move forward, in partnership with USACE, with officially decommissioning the dam in order to 15 mitigate the safety issues and repurpose the site. Additionally, the drained pond is aesthetically 16 inconsistent with an otherwise scenic wooded area with historic viewsheds and seasonal views 17 of the Hudson River. The site is ideally situated to support recreational and community

18 amenities.

19 2.2.3 Outdoor Pool and Physical Fitness Center (Project 3)

20 After Delafield Dam has been officially decommissioned, an outdoor pool and 147,000-square

- 21 foot (SF) physical fitness facility are planned for construction on the site in FY 2026
- 22 (Figure 2.2-2). The outdoor pool is proposed to be constructed in the location of the former
- 23 pond, with the fitness center adjacent to the pool in the area between the former pond and
- current 1949er Lodge (conceptual illustration in **Figure 2.2-3**). The proposed fitness center
- 25 includes fitness rooms for circuit training, free weights, and exercise machines; a basketball
- 26 court/gymnasium; large group fitness rooms; climbing wall; jogging track; equipment storage
- 27 rooms; administrative office space; classrooms; locker rooms with showers; lobby and check-in
- area; and competition-size pool. The outdoor pool to replace Delafield Pond will consist of a
- 29 2,100-SF multi-use community pool with splash pad, diving tank, and pool deck; spectator
- 30 seating and balcony; pool office; pool storage and chemical rooms; restrooms; and concession
- 31 stand. Supporting facilities include lighting, paving, parking (possibly connected access to the
- 32 Putnam parking lot), walks, curbs and stormwater management measures, landscaping,
- 33 retaining walls, signage, and earth work (USAGWP 2019b).
- 34



Figure 2.2-2. Proposed Location of Outdoor Pool and Physical Fitness Center, Bathhouse Renovation, and 1949er Lodge Restoration (Projects 3, 4, and 5)

2-6

1 2





Figure 2.2-3. Conceptual Drawing of Proposed Outdoor Pool

- 3 The physical fitness center will serve as the sole fitness facility available to active duty soldiers
- 4 and civilians at West Point. The fitness center is critical to support active duty service members'
- 5 physical fitness requirements. The current physical fitness facility in use is undersized according
- 6 to the Real Property Planning and Analysis System (RPLANS) and reinforced by Army Standard
- 7 Design Criteria for Physical Fitness Facilities. As such, West Point Family and Morale, Welfare,
- 8 and Recreation (MWR) cannot adequately support soldiers and their families living at West
- 9 Point. The single pool available to soldiers, civilians, and their families is far below the standard
- 10 allowance for current installation size according to Army Standard Design Criteria for
- 11 Natatoriums. Additionally, the existing physical fitness facility is planned for demolition to
- 12 accommodate expansion of the historic West Point Cemetery.
- 13 The existing fitness facility is housed in a structure originally designed and used as the
- 14 installation's PX Shopping Center. The structure was repurposed in January 2002 to temporarily
- 15 meet the installation's needs and requirements for a fitness facility. The 19,578-SF facility and
- 16 structure lacks the needed space to properly execute programs and services for the frequency
- 17 and quantity of visitors (USAGWP 2019b). Repurposing the site of Delafield Pond but
- 18 maintaining its recreational purpose supports mission requirements and the long-term planning
- 19 goals of the Putnam and Ladycliff District.

20 2.2.4 Existing Bathhouse Restoration (Project 4)

- 21 The existing bathhouse (Building 765) is located on top of the Delafield Dam and has historically
- supported recreational activities at the now closed Delafield Pond. The bathhouse, built in 1936

- 1 by the Civilian Conservation Corps (CCC), is approximately 5,000 SF and is in need of
- 2 restoration for use as a community resource building
- 3 (Figure 2.2-2). Potential uses for the facility include a cultural center among other possible
 4 uses.

5 2.2.5 1949er Lodge Restoration (Project 5)

6 The 1949er Lodge (Building 771, also known as the Class of 1949 Lodge) is located in a

7 wooded area west of Delafield Pond (Figure 2.2-2). The approximately 6,500-SF facility was

8 built in 1975 and is available for rent for special events as part of the West Point Club. Due to

9 the age of the facility, a variety of interior upgrades (e.g., HVAC, electric, and plumbing

systems) are required to maintain the functionality of the 1949er Lodge. In addition, potable

11 water will be extended to the facility.

12 2.2.6 Electric Substation Upgrade (Project 6)

13 The existing electric substation (Building 835) is located at the T-intersection of the portion of

14 Delafield Road heading southwest from Merritt Road, and the portion of Delafield Road heading

- 15 northwest from Stony Lonesome Road (**Figure 2.1-1**). The substation, a historic facility
- 16 completed in 1967, currently transmits and distributes power, but USAGWP is considering
- 17 adding electrical generation as a function of the substation. Regardless of whether generation is
- 18 added to this substation, the current infrastructure is aging and the substation is nearing its
- 19 handling capacity and will require regular upgrades in the future to meet a new capacity
- 20 requirement of 69 kilovolts (kV) for the installation's needs. This project is the only industrial
- 21 project anticipated within Alternative 1 and may require additional NEPA analysis (beyond being
- 22 tiered off this PEA) as this project becomes more defined.

23 2.2.7 Establishment of Passive (Undeveloped), Park (Project 7)

24 The Putnam and Ladycliff District ADP identifies the PPA as an opportunity to strengthen the 25 installation's overall community and recreational amenities, which supports Healthy Army 26 Communities, a service-wide commitment to healthy and active living. In addition to the more 27 active recreational opportunities afforded by the development of an outdoor pool and physical 28 fitness center, low intensity recreational amenities are also proposed. The establishment of a 29 passive, or undeveloped, park will allow for the preservation of natural habitat and historic 30 viewsheds, and will involve a low level of development, including walking trails, signage, picnic 31 areas, and benches. Any additional trails will be tied into the existing trails located east and 32 north of Fort Putnam. Sensitive cultural resource sites have been identified in the area slated for 33 low intensity recreation.

34 2.3 ALTERNATIVE 2

- 35 Under Alternative 2, Projects 1 through 3, the Putnam parking lot, Delafield Dam
- 36 decommissioning, and outdoor pool and physical fitness center projects would be implemented

as described under the Preferred Alternative. These identified projects have been prioritized for
 implementation in the near term to address immediate safety concerns and MWR requirements.

- 2 implementation in the near term to address immediate safety concerns and MWR requirements.
- 3 Under this alternative, the remaining projects would not be implemented within the PPA.

4 2.4 No Action Alternative

5 CEQ regulations require analysis of a No Action Alternative in a PEA to provide a comparative 6 baseline against which to analyze the effects of the proposed action, as required under NEPA 7 implementing regulations (40 CFR Part 1502.14[d] and 32 CFR Part 651.34[d]). This enables 8 decision makers to compare the magnitude of the potential environmental effects caused by the 9 proposed action and other alternative actions. The No Action Alternative does not satisfy the 10 purpose of or need for the proposed action.

- 11 Under the No Action Alternative, none of the seven proposed construction projects within the
- 12 PPA would be implemented. Delafield Pond would continue to deteriorate, creating both a visual
- 13 "eye sore" and potential safety concerns. The wooded area within the PPA and supporting
- 14 facilities would continue to be underutilized. Additional parking and recreational amenities,
- 15 identified as needs in the RPMP and Putnam and Ladycliff District ADP, would not be provided
- 16 within the PPA. Soldiers' readiness and morale will be detrimentally affected by minimal and
- 17 non-existent fitness and aquatic facilities. Within two years, following the closing of the existing
- 18 fitness center to accommodate the cemetery expansion, West Point would be incapable of
- 19 supporting programs and initiatives that are essential to maintaining Army readiness.

20 2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

A potential alternative considered but dismissed included a more extensive list of repair projects than is included in Alternative 1. That is, incorporation of all short-term projects identified in the Putnam and Ladycliff District ADP was considered for this PEA. However, the PPA is a unique developable area within the district that is ripe for creation into a cohesive recreation area. Additionally, the development and funding timeframes of the seven identified projects are further along than other projects in the district. Therefore, this alternative was not carried forward for further analysis in this PEA. This page intentionally left blank.

13.0AFFECTED ENVIRONMENT AND ENVIRONMENTAL2CONSEQUENCES

3 Chapter 3 describes the conditions of, and possible impacts to, environmental resources

4 potentially affected by the proposed action and alternatives. The description of existing

5 conditions provides a baseline understanding of the resources from which any changes that

6 may be brought about by the implementation of an alternative can be identified and evaluated.

7 Following the description of environmental resources potentially affected, the potential changes

- 8 or impacts to the resources are then described as environmental consequences. As stated in
- 9 CEQ guidelines, 40 CFR 1508.14, the "human environment potentially affected" is interpreted

10 comprehensively to include natural and physical resources and the relationship of people with

11 those resources. The term "environment" as used in this report encompasses all aspects of the

12 physical, biological, social, and cultural surroundings. In compliance with NEPA, the CEQ, and

13 Army guidelines, evaluation is limited to resource areas that are potentially affected by the

14 proposed action and alternatives.

15 3.1 WATER RESOURCES

16 Water resources include the quantity and quality of surface water bodies and groundwater,

17 stormwater, floodplains, and wetlands. Surface water includes all rivers, streams, lakes, and

18 ponds that are used for various applications including recreation, sustenance, irrigation, flood

19 control, and human health. Surface waters in the U.S. are protected under the CWA, the goal of

- 20 which is "to restore and maintain the chemical, physical, and biological integrity of the Nation's
- 21 waters."
- 22 The CWA requires that any point source facility that discharges polluted wastewater into a body
- 23 of water must first obtain a National Pollutant Discharge Elimination System (NPDES) permit
- 24 that is issued at a national level through the U.S. Environmental Protection Agency (USEPA), or
- 25 an approved State agency. Stormwater is excess surface water that occurs or collects during
- 26 periods of frequent precipitation and is typically diverted into a facility's stormwater sewer
- 27 system. Stormwater runoff management addresses measures to reduce flow energy and

28 pollutants in stormwater and to control discharge from point and non-point sources. Point source

- 29 pollution is produced by a single, identifiable source. Non-point source pollution affects surface
- 30 water and groundwater resources as a result of pollution from diffuse sources.
- 31 Groundwater includes subsurface hydrologic resources and is typically a reliable and safe fresh
- 32 water source. Groundwater is an important component of the overall hydrologic cycle of the
- 33 earth.
- 34 Floodplains are defined by EO 11988 as "the lowland and relatively flat areas adjoining inland
- 35 and coastal waters including flood prone areas of offshore islands, including at a minimum, that
- 36 area subject to a 1 percent or greater chance of flooding in any given year." Areas subject to a 1

- 1 percent or greater chance of annual flooding are also referred to as 100-year floodplains and
- 2 areas subject to a 0.2 percent or greater chance of annual flooding are referred to as 500-year
- 3 floodplains. On January 30, 2015, EO 13690, *Establishing a Federal Flood Risk Management*
- 4 Standard and Process for Further Soliciting and Considering Stakeholder Input, was announced
- 5 and amended EO 11988. Per both orders, federal agencies are required to avoid, to the extent
- 6 practicable, the long- and short-term adverse impacts associated with the occupancy and
- 7 modification of floodplains and to avoid direct or indirect support of floodplain development
- 8 whenever there is a practicable alternative. If impacts cannot be avoided, the appropriate flood
- 9 risk management strategies need to be applied to the design and construction of the building.
- 10 Wetlands are considered sensitive habitats and are subject to federal regulatory authority under
- 11 Sections 401 and 404 of the CWA and EO 11990, *Protection of Wetlands*. Wetlands are defined
- 12 by the USACE as those areas that are inundated or saturated by surface or groundwater at a
- 13 frequency and duration sufficient to support, and that under normal circumstances do support, a
- 14 prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental
- 15 Laboratory 1987). Wetlands generally include swamps, marshes, bogs, and similar areas.

16 3.1.1 Affected Environment

- 17 3.1.1.1 Surface Water
- The surface water systems of USAGWP are composed of lakes, ponds, and streams scattered throughout the installation. USAGWP lies in the drainage basin of the Hudson River. The most important drainage on the installation is the Popolopen Brook watershed, which provides most of the useable water for the cantonment area. The Highland Brook watershed provides the water supply for the town of Highland Falls and Woodbury. Shallow soil, glacial geology, and abundant rainfall produce a regionally high water table, resulting in numerous wetlands, lakes, and ponds. Most of the lakes and ponds are the result of artificial dams that have raised water
- 25 levels within former wetland areas (USAGWP 2018a).
- 26 Delafield Pond is located within the PPA (**Figure 3.1-1**) and the outlet drains via stormwater
- 27 runoff system to the Hudson River. As described in Section 2.2.2, Delafield Pond is currently
- 28 drained because the USACE determined that the Delafield Dam was unsafe due to concerns
- 29 associated with uncontrolled seepage along the foundation. Lusk Reservoir is located to the
- 30 south of the project area and is hydrologically isolated from the PPA.
- 31 A Low Impact Development Stormwater Management Plan was prepared for USAGWP
- 32 (USAGWP 2015). The Stormwater Management Plan (SWMP) is intended to comply with Army
- 33 Regulations 200-1 Environmental Quality, Environmental Protection and Enhancement (AR
- 34 200-1) and Section 438 of Energy Independence and Security Act. Planning-level and detailed
- 35 analyses of stormwater runoff and controls will be necessary to evaluate new development and
- 36 redevelopment projects at USAGWP.



Figure 3.1-1. Surface Water Resources in the PPA

1 2

3

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- 1 The SWMP outlines these analyses as well as Low Impact Development (LID) technologies to
- 2 control post development runoff consistent with federal regulations and policies.
- 3 3.1.1.2 Groundwater
- 4 Groundwater on USAGWP occurs in an unconsolidated aquifer consisting of alluvial deposits
- 5 and a consolidated bedrock aquifer (USAGWP 2018a). The Orange County Water Authority
- 6 (2010) has identified "major aquifers" within Orange County that are located primarily in gravel
- 7 deposits and produce high groundwater yields; however, there are no major aquifers identified
- 8 at USAGWP or vicinity.
- 9 Water within the unconsolidated aquifer occurs primarily in the sands and gravels of the
- 10 stratified drift deposits. These deposits represent the most prolific sources of groundwater on
- 11 the installation, but the deposits are thin and generally have small well yields which average
- 12 about 40 gallons per minute (USAGWP 2018a). Soils at the PPA are Hollis Rock Outcrop that
- 13 have a depth to groundwater of greater than 6 feet (USAGWP 2015).
- 14 Most potable water at USAGWP is supplied by surface water sources. Thirty-two small-
- 15 diameter, shallow wells supply potable water to outlying range, bivouac, and recreational
- 16 facilities (USAGWP 2018a). The wells most likely draw water from the stratified alluvial sand
- 17 and gravel deposits, and the upper weathered bedrock aquifers. Well depths are generally from
- 18 25 to 40 ft and have fairly low yields of from 3.5 to 6.0 gallons per minute (USAGWP 2018a).
- 19 3.1.1.3 Floodplains
- 20 The Federal Emergency Management Agency (FEMA) is in charge of identifying flood hazards
- 21 and assessing flood risks, and partners with states and communities to provide accurate flood
- 22 hazard and risk data to guide them to mitigation actions. Flood hazard mapping is an important
- 23 part of the National Flood Insurance Program, as it is the basis of the National Flood Insurance
- 24 Program regulations and flood insurance requirements. FEMA maintains and updates data
- 25 through Flood Insurance Rate Maps (FIRMs) and risk assessments. FIRMs include statistical
- 26 information such as data for river flow, storm tides, hydrologic/hydraulic analyses and rainfall
- 27 and topographic surveys. Per the FEMA FIRMs for Orange County, New York, Panels 363 and
- 28 364 (Map Numbers 36071CO363E and 36071CO3643E, Effective August 3, 2009), the project
- area is located outside of any area identified as being subject to inundation by 1-percent-
- 30 annual-chance of flooding (i.e., 100-year floodplain) (FEMA 2009).
- 31 3.1.1.4 Wetlands and Other Waters of the U.S.
- 32 Aquatic resources, such as wetlands, vernal pools, rivers, streams, lakes, and ponds are of
- 33 critical importance to the protection and maintenance of living resources, because they provide
- 34 essential breeding, spawning, nesting, and wintering habitats for many fish and wildlife species.
- 35 The aquatic resources also enhance the quality of surface waters by impeding erosive forces of
- 36 moving water and trapping waterborne sediment and associated pollutants, maintaining

- 1 baseflow to surface waters through the gradual release of stored flood waters and groundwater,
- 2 and providing a natural means of flood control and storm damage protection through the
- 3 absorption and storage of water during high-runoff periods (USAGWP 2018a).
- 4 Delafield Pond (currently drained) is not a jurisdictional water of the U.S. Under the current
- 5 CWA rule, a pond can be considered jurisdictional if it has a physical, biological, or chemical
- 6 connection (significant nexus) to a navigable water (generally within 500 feet if there is no clear
- 7 surface water connection). Delafield Pond is well over 500 feet from the Hudson River, and has
- 8 no natural surface water connection. In addition, the New CWA Rule was published on 21 April
- 9 2020, and will go into effect on 20 June 2020. Under the New CWA Rule, adjacent waters can
- 10 only be jurisdictional if there is a clear and obvious surface water connection, which Delafield
- 11 Pond does not have with the Hudson River. The drained condition of Delafield Pond does not
- 12 affect its jurisdictional status. There are no wetlands or other waters of the U.S. located within
- 13 the project area (see **Figure 3.1-1**).

14 3.1.2 Environmental Consequences

15 3.1.2.1 Alternative 1 (Preferred Alternative)

16 Surface Water

- 17 Under the Preferred Alternative, construction and modification projects would have the potential
- 18 to impact surface water resources. The collective area impacted by the proposed construction
- 19 activity would exceed 1 acre in size and therefore require compliance with New York's State
- 20 Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges
- 21 from Construction Activity (CGP). A Notice of Intent would be submitted to the New York DEC
- 22 and a Stormwater Pollution Prevention Plan (SWPPP) would be prepared and implemented
- 23 during construction in compliance with the CGP.
- 24 The SWPPP would include erosion and sediment control practices designed in conformance
- 25 with the New York State Standards and Specifications for Erosion and Sediment Control, dated
- 26 November 2016. The SWPPP would emphasize pollution prevention through the use of erosion
- 27 and sediment control best management practices (BMPs). The sources of impacts from
- construction would be limited to the area of ground disturbance at any one time and the duration
- 29 of construction at each distinct project site, and runoff would only be likely to occur during and
- 30 following a precipitation event. The site-specific SWPPP would include measures to minimize
- 31 potential impacts associated with stormwater runoff during construction, including BMPs and
- 32 standard erosion control measures. These measures include straw bales, sandbags, silt
- 33 fencing, earthen berms, use of tarps or water spraying, soil stabilization, temporary
- 34 sedimentation basins, and revegetation with native plant species, where possible, to decrease
- 35 erosion and sedimentation. In compliance with the CGP, post-construction stormwater
- 36 management practices would be selected, designed, installed, and maintained to meet the

- 1 performance criteria in the New York State Stormwater Management Design Manual, dated
- 2 January 2015.
- 3 In accordance with UFC 3-210-10, LID (as amended, 2015) and EISA Section 438, any
- 4 increase in surface water runoff as a result of the new impervious surfaces would be attenuated
- 5 through the use of permanent drainage management features. As per EISA Section 438, the
- 6 sponsor of any development or redevelopment project involving a federal facility with a footprint
- 7 that exceeds 5,000 square feet must use site planning, design, construction, and maintenance
- 8 strategies for the property to maintain or restore, to the maximum extent technically feasible, the
- 9 predevelopment hydrology of the property with regard to the temperature, rate, volume, and
- 10 duration of flow. UFC 3-210-10, LID (as amended, 2015) clarifies that "footprint" consists of all
- 11 new impervious surfaces associated with the building(s), including both building area and
- 12 pavement area of associated supporting facilities (such as parking and sidewalks) (DoD 2015).
- 13 New construction associated with the new parking lot would resulting in up to 48,203 SF (1.1
- 14 acres) of new impervious surface. LID technologies would be implemented as detailed in the
- 15 USAGWP LID SWMP and would accommodate runoff due to increased impervious surfaces
- 16 associated with the new parking lot (USAGWP 2015). Any new LID technologies or modified
- 17 BMP's would be added to real property and a maintenance plan/schedule would be supplied by
- 18 the construction contractor to DPW Operations and Maintenance and DPW Environmental
- 19 Management Division Stormwater Manager.
- 20 Implementation of these measures, as necessary and appropriate, would ensure that impacts to
- 21 surface water under the Preferred Alternative would be less than significant.

22 Groundwater

- 23 Construction activities and operations under the Preferred Alternative would include stormwater
- 24 runoff protection measures that would also serve to protect groundwater quality. Through
- 25 compliance with New York's CGP, LID, and EISA Section 438, there would be a reduction in
- stormwater pollutant loading potential and thus a reduction in pollution loading potential to the
- 27 underlying groundwater basins. Impacts to groundwater recharge would be minimized through
- 28 implementation of LID technologies that would ensure predevelopment hydrology is maintained.
- 29 Site grading and construction activities would also not reach depths at which groundwater would
- 30 be affected. Most potable water at USAGWP is supplied by surface water sources so
- 31 groundwater would not be impacted.
- Implementation of stormwater runoff protection measures, as necessary and appropriate, would
 ensure that impacts to groundwater under the Preferred Alternative would not be significant.

34 Floodplains

- 35 The proposed projects under the Preferred Alternative would not occur within a 100-year
- 36 floodplain zone (FEMA 2009). As discussed under surface water, predevelopment hydrology
- 37 would be maintained through compliance with LID and EISA Section 438 and there would be no
- 1 substantial increase in stormwater runoff. The Preferred Alternative would be in compliance with
- 2 EO 11988. Therefore, impacts to flooding that would result from construction activities or
- 3 operations under the Preferred Alternative would not be significant.

4 <u>Wetlands and Other Waters of the U.S.</u>

- 5 The proposed projects under the Preferred Alternative would not occur within or directly impact
- 6 any jurisdictional wetlands or waters of the U.S. Delafield Pond is not a jurisdictional water of
- 7 the U.S. Therefore, impacts to wetlands or waters of the U.S. under the Preferred Alternative
- 8 would not be significant.

9 3.1.2.2 Alternative 2

- 10 Under Alternative 2, the Putnam parking lot, Delafield Dam decommissioning, and outdoor pool
- 11 and physical fitness center projects would be implemented as described under the Preferred
- 12 Alternative. Impacts to water resources would be similar to those under the Preferred
- 13 Alternative, but would occur over smaller spatial and temporal scales. Under Alternative 2,
- 14 stormwater runoff protection measures would be implemented as described under the Preferred

15 Alternative. Therefore, impacts to water resources would be less than significant under

16 Alternative 2.

17 3.1.2.3 No Action Alternative

18 Under the No Action Alternative, none of the seven proposed construction projects would be

- 19 implemented. There would be no construction or other ground disturbing activities. Water
- 20 resources would be expected to remain as described under Section 3.1.1. Therefore, there
- 21 would be no impacts to water resources under the No Action Alternative.

22 3.2 BIOLOGICAL RESOURCES

23 Biological resources include plant and animal species, and the habitats within which they occur.

24 This analysis focuses on species that are important to the function of ecosystems, are of special

25 societal importance, or are protected under federal or state law. These resources are commonly

26 divided into the following categories: Plant Communities, Wildlife, and Special Status Species.

- 27 Biological resources are grouped and analyzed in this PEA as follows:
- Plant Communities include plant associations and dominant constituent species that
 occur in the project area. Special status plant species are discussed in more detail
 below.
- Wildlife includes the characteristic animal species that occur in the project area. Special consideration is given to bird species protected under the MBTA and EO 13186,
 Responsibilities of Federal Agencies to Protect Migratory Birds. Special status wildlife species are discussed in more detail below.
- Special Status Species are those plant and animal species that are listed, have been
 proposed for listing, or are candidates for listing as threatened or endangered under the
 federal ESA and other species of concern as recognized by state or federal agencies.

1 3.2.1 Affected Environment

2 3.2.1.1 Plant Communities

- 3 The PPA is largely undeveloped and is dominated by Appalachian oak-hickory forest. Dominant
- 4 species in the Appalachian oak-hickory forest include hardwood tree species, such as northern
- 5 red oak (*Quercus rubra* var. *borealis*), black oak (*Quercus velutina*), scarlet oak (*Quercus*
- 6 *coccinea*), pignut hickory (*Carya glabra*), and flowering dogwood (*Cornus florida*).
- 7 Lusk reservoir is located immediately south of the PPA, and the Hudson River is approximately
- 8 0.5 mile east of the PPA. Neither of these bodies of water would be impacted by the proposed
- 9 action and these water bodies, and any aquatic species associated with them, are not
- 10 addressed further in this biological resources analysis.
- 11 3.2.1.2 Wildlife
- 12 Wildlife that occur in the PPA are typical of hardwood-dominated forests and woodlands in the
- 13 region. Common wildlife species that likely utilize the Appalachian oak-hickory forest of the
- 14 PPA, and nearby habitats, include the blue jay (*Cyanocitta cristata*), scarlet tanager (*Piranga*
- 15 *olivacea*), gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), eastern chipmunk
- 16 (*Tamias striatus*), northern watersnake (*Nerodia sipedon*), and redback salamander (*Plethodon*
- 17 *cinereus*). The USAGWP Integrated Natural Resource Management Plan (INRMP) contains a
- 18 documented species list of all wildlife observed on USAGWP properties. USAGWP maintains
- 19 game and non-game management programs on the installation, and closely monitors wildlife
- 20 populations (USAGWP 2018a).
- 21 USAGWP properties are used by more than 100 species of breeding migratory birds and are
- the winter residence of, or visited by, another 140 species (USAGWP 2018a). In spring and fall,
- 23 raptors and passerines migrate through USAGWP along many of the northeast-southwest
- ridges of the reservation and along the Hudson River. Nearly all species of bird occurring at
- 25 USAGWP are protected under the MBTA.
- 26 3.2.1.3 Special Status Species
- 27 A USFWS Information for Planning and Consultation data search was completed to assess the
- 28 potential for federally listed species to occur in the project area (USFWS 2020). Special status
- species potentially occurring in the PPA are listed in **Table 3.2-1**.
- 30

Common Nome	Colontific Nome	Status		Habitat	
Common Name	Scientific Name	Federal State		Παριτατ	
Bald eagle	Haliaeetus leucocephalus	BGEPA	т	In southeastern New York, nests in large coniferous trees, between 10 and 180 feet above the ground, near large waterbodies that are undisturbed by human presence.	
Golden eagle	Aquila chrysaetos	BGEPA	E	Open country, prairies, tundra, open coniferous forest, barren areas, and eastern deciduous mountain forests, Nests 10 to 100 feet from the ground on cliffs and in trees.	
Indiana bat	Myotis sodalis	Е	E	Caves and mines. Hibernation during the winter months occurs in caves with air flow and stable temperatures. In summer months, the bats use wooded areas, roosting under loose tree bark on dead or dying trees. Foraging habitats include riparian areas, upland forests, ponds, and fields.	
Northern long- eared bat	Myotis septentrionalis	т	Т	Forests and hunt over small ponds, in forest clearings, and along forest edges. Hibernates in caves and underground mines. Maternity roosts are in tree cavities, under exfoliating bark, and in buildings.	
Small whorled pogonia	Isotria medeoloides	т	E	Older growth hardwood stands with an open understory, often near streams. Prefers acidic soils and areas with a thin duff layer of dead leaves.	

Table 3.2-1. Federally Protected Species Potentially Occurring in the PPA

Sources: USAGWP 2018a; USFWS 2019; 2020.

Legend: BGEPA = Bald and Golden Eagle Protection Act; E = endangered; SSC = species of special concern; T = threatened.

- 1 Although the dwarf wedgemussel (Alasmidonta heterodon) occurs in the region (USFWS 2019),
- 2 the species is known to occur only in the Neversink River, a tributary to the Delaware River. The
- 3 dwarf wedgemussel does not occur on or near the project area, and is not discussed further in
- 4 this EA.
- 5 The bald eagle is known to breed in the lower Hudson River Valley, and Constitution Marsh is a
- 6 known nesting area, approximately one mile northeast of the PPA. The nearest bald eagle nests
- 7 are at Saint Basil's Academy and on Crow's Nest Mountain, approximately 1 and 1.5 miles from
- 8 the PPA. Constitution Island, approximately 0.75 mile northeast of the PPA, also serves as an
- 9 important bald eagle day-use area during winter months, from December through March
- 10 (USAGWP 2018a).
- 11 Golden eagles are regular visitors to USAGWP. Golden eagles have been observed in nest-
- 12 building activities at USAGWP, but no actual nesting has occurred (USAGWP 2018a).
- 13 The Indiana bat is likely only a rare visitor at USAGWP, if present at all (USAGWP 2018a).
- 14 Several surveys have been completed for the Indiana bat. Although no Indiana bats have been

- captured at USAGWP during surveys, the species potentially occurs on, but likely does not
 inhabit USAGWP.
- 3 Northern long-eared bats have been captured during past surveys on the installation (USAGWP
- 4 2018a; Wolff and Delaney 2019). A known hibernaculum is present on the installation and is
- 5 listed by the New York Natural Heritage Program (NYNHP), but is not available for training or
- 6 access, and has been properly secured. The USFWS released a Section 4(d) rule under the
- 7 ESA for the northern long-eared bat in 2016. The 4(d) rule defines take and the range map for
- 8 the species and provides management guidelines to allow for protection of areas impacted by
- 9 white-nose syndrome while still allowing certain activities to be completed by landowners and
- 10 managers within the species range without formal consultation (USFWS 2016). USAGWP has
- 11 prepared an Endangered Species Management Plan (ESMP) for the northern long-eared bat to
- 12 direct management actions at the installation (USAGWP 2018b).
- 13 Although potential habitat for small whorled pogonia occurs at USAGWP, the species has never
- 14 been detected, including during surveys conducted in 2018 by the NYNHP (NYNHP 2018).
- 15 There are numerous state species of concern at USAGWP, including multiple mammal, bird,
- 16 reptile, amphibian, insect, and plant species. Amongst these is the state threatened timber
- 17 rattlesnake (*Crotalus horridus*), for which the nearest hibernaculum is approximately one mile
- 18 from the PPA. The management of sensitive species on USAGWP aims to identify, protect, and
- 19 preserve endangered, threatened, and rare species on the reservation in accordance with
- 20 applicable laws and regulations and Army policy on responsible stewardship. Management for
- 21 these species also involves the education of project construction contractors on the special
- status of the species, their identification, worksite management to avoid conflicts with these
- 23 species, and procedures to report and handle the animals under permit. A complete list of
- 24 known state species of concern at USAGWP, including applicable management practices, is
- 25 found in the USAGWP INRMP (USAGWP 2018a).
- 26 3.2.2 Environmental Consequences
- 27 3.2.2.1 Alternative 1 (Preferred Alternative)

28 Plant Communities

- 29 The maximum project footprints for proposed projects in the PPA are listed in **Table 3.2-2**, along
- 30 with foreseeable impacts to Appalachian oak-hickory forest habitat.
- 31

Project	Footprint Acreage	Potential Impact to Forest Habitat
Putnam Parking Lot	3.41	The entire project footprint occurs in forested habitat and would be developed.
Delafield Dam Decommissioning	0.52	Little to no permanent impacts. Potential for temporary impacts for site access.
Delafield Outdoor Pool	3.40	Permanent impacts to drained Delafield Pond and surrounding forest habitat.
Physical Fitness Center	1.27	Permanent impacts to drained Delafield Pond and surrounding forest habitat.
Existing Bathhouse Restoration	0.17	Little to no permanent impacts. Potential for temporary impacts for site access.
1949er Lodge Restoration	0.55	Little to no permanent impacts. Potential for temporary impacts for site access.
Electric Substation Upgrade	0.77	Little to no permanent impacts. Potential for temporary impacts for site access.
Passive (undeveloped), Park	21.87	Low level of development, including walking trails, signage, picnic areas, and benches.

Table 3.2-2. Potential Impacts to Forest Hab	oitat
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1 Under the Preferred Alternative, Appalachian oak-hickory forest would be developed or

2 otherwise temporarily impacted. However, Appalachian oak-hickory forest covers 46 percent

- 3 (approximately 7,360 acres) of the land area of USAGWP, and any loss of forested habitat
- 4 associated with development under the Preferred Alternative would represent a less than

5 significant percent of the total forested habitat on the installation. In addition, natural resources

6 at USAGWP are managed in accordance with the INRMP (USAGWP 2018). Under the

7 Preferred Alternative, management practices outlined by the INRMP, such as invasive weed

8 control and restoration of temporarily impacted areas, would be implemented to lessen potential

9 impacts to plant communities. Therefore, impacts to plant communities would be less than

10 significant under the Preferred Alternative.

11 <u>Wildlife</u>

- 12 As described above, construction and renovation projects associated with the Preferred
- 13 Alternative would largely occur in Appalachian oak-hickory forest, which provides habitat for

14 multiple wildlife species. However, any loss of forested habitat would represent a less than

15 significant percent of the 7,360 acres of Appalachian oak-hickory forest habitat for wildlife use at

- 16 USAGWP.
- 17 Under the Preferred Alternative, impacts to wildlife due to construction and/or renovation
- 18 activities would be minor. Noise associated with construction may cause wildlife to temporarily
- 19 avoid the area, including those that are protected under the MBTA. Noise associated with
- 20 construction activities, as well as an increase in general industrial activity and human presence,
- 21 could evoke reactions in birds. Disturbed nests in the immediate vicinity of construction activity
- 22 would be susceptible to abandonment and depredation. However, bird and wildlife populations

- at USAGWP are already exposed to elevated noise associated with military training and general
 community use, and noise associated with construction would be temporary.
- 3 Construction and renovation projects associated with the Preferred Alternative would eliminate
- 4 or displace wildlife from the project footprints and their vicinities. Individuals of the smaller, less
- 5 mobile, and burrowing species could be killed or injured by construction in new footprints,
- 6 whereas mobile species (e.g., birds and larger mammal species) would disperse to surrounding
- 7 areas. Any loss of or indirect impacts to commonly occurring individuals would not represent a
- 8 noticeable portion of the population. Therefore, impacts to wildlife would be less than significant
- 9 under the Preferred Alternative.

10 Special Status Species

- 11 Under the Preferred Alternative, loss of Appalachian oak-hickory forest could represent a loss of
- 12 foraging and summer roosting habitat for the northern long-eared bat, and potentially the
- 13 Indiana bat. The Indiana bat only occurs sporadically on USAGWP, if at all. There would be no
- 14 loss of cave or mine bat hibernation habitat. Per the USAGWP northern long-eared bat ESMP
- 15 (USAGWP 2018b), all tree clearing, construction, and maintenance activities would be
- 16 conducted in accordance with the guidelines provided in the ESA, Section 4(d) rule. Per the
- 17 Section 4(d) rule, incidental take of northern long-eared bats from tree removal activities is not
- 18 prohibited unless it results from removing a known occupied maternity roost tree, from tree
- 19 removal activities within 150 feet of a known occupied maternity roost tree from June 1 through
- July 31, or results from tree removal activities within 0.25 mile of a hibernaculum at any
- 21 time. Under the Preferred Alternative, no tree clearing would be conducted within 150 feet of a
- 22 known occupied maternity roost tree or within 0.25 mile of a hibernaculum. To the extent
- 23 practical, any tree cutting would be completed during the hibernation period (November to April)
- 24 when bats would not be impacted by land clearing. Otherwise, USAGWP would coordinate with
- 25 USFWS to minimize potential impacts to bats. In addition, and consistent with the Section 4(d)
- rule recommendations and the USAGWP ESMP (USAGWP 2018b), use of outdoor lighting
- 27 would be done in a manner to minimize light pollution by angling lights downward or via other
- 28 light minimization measures to lessen potential nighttime foraging impacts on bats.
- 29 Bald and golden eagle nesting would not be impacted under the Preferred Alternative. The
- 30 nearest bald eagle nests are at Saint Basil's Academy and on Crow's Nest Mountain,
- 31 approximately 1 and 1.5 miles from the proposed work site respectively, and neither are visible
- 32 from the work site. Golden eagles are not known to nest at USAGWP. The relatively minimal
- 33 loss of Appalachian oak-hickory forest would not represent a loss of potential foraging habitat
- 34 for eagles.
- 35 Although potential habitat for small whorled pogonia occurs at USAGWP, the species has never
- 36 been detected, including during surveys conducted in 2018 by the NYNHP (NYNHP 2018).

Therefore, the species is not likely to occur in the PPA and would not be impacted under the
 Preferred Alternative.

- 3 Prior to any new development in natural habitats, surveys and/or monitoring associated with
- 4 ongoing INRMP management objectives would identify the potential for special status species to
- 5 be impacted, and BMPs, such as seasonal avoidance, relocation, or habitat enhancement,
- 6 would offset impacts to special status species. Any loss of natural habitat associated with the
- 7 Preferred Alternative would represent a less than significant percent of the available habitat on
- 8 USAGWP. Therefore, impacts to special status species would be less than significant under the
- 9 Preferred Alternative.

10 3.2.2.2 Alternative 2

- 11 Under Alternative 2, the Putnam parking lot, Delafield Dam decommissioning, and outdoor pool
- 12 and physical fitness center projects would be implemented as described under the Preferred
- 13 Alternative. Impacts to biological resources would be similar to those under the Preferred
- 14 Alternative, but would occur over smaller spatial and temporal scales. Under Alternative 2, all
- 15 tree clearing, construction, and maintenance activities would be conducted in accordance with
- 16 the guidelines provided in the ESA, Section 4(d) rule tor the northern long-eared bat. In addition,
- 17 continued adherence to natural resource management guidelines and best management
- 18 practices outlined in the INRMP (USAGWP 2018a) would provide protections to biological
- 19 resources. Therefore, impacts to biological resources would be less than significant under
- 20 Alternative 2.

21 3.2.2.3 No Action Alternative

- 22 Under the No Action Alternative, none of the seven proposed construction projects within the
- 23 PPA would be implemented. There would be no construction or other ground disturbing
- 24 activities. Biological resources would be expected to remain as described under Section 3.2.1.
- 25 Therefore, there would be no impacts to biological resources under the No Action Alternative.

26 3.3 LAND USE

27 3.3.1 Affected Environment

- 28 The PPA is located in the northwest corner of the Putnam and Ladycliff District and is bounded
- by Stony Lonesome Road to the south and east, by the southern edge of Delafield Road to the
- 30 west, extending northwest of the 1949er Lodge, and roughly looping back to Merritt Road to the
- 31 north. The shuttered Delafield Dam/Pond and bathhouse is located to the west of Delafield
- 32 Road, along with the 1949er Lodge. An electric substation is located at the T-intersection of the
- 33 portion of Delafield Road heading southwest from Merritt Road, and the portion of Delafield
- 34 Road heading northwest from Stoney Lonesome Road. The remainder of the PPA is comprised
- 35 of undeveloped, forested land.

- 1 The RPMP classifies West Point land uses into five categories: Community, Industrial,
- 2 Professional/Institutional, Residential, and Ranges/Training. The land within the PPA is
- 3 classified as a Community land use. **Figure 3.3-1** depicts the existing land use around the site.
- 4 Community land uses encompass a broad range of community facilities for family support,
- 5 personnel services, housing, commercial, and recreational services.
- 6 Community facilities within the PPA include the Delafield Pond and bathhouse, the 1949er
- 7 Lodge, the West Point Jewish Chapel, and Fort Putnam. Fort Putnam was a key fortification
- 8 making up West Point's defenses in 1776 and is now part of the West Point Museum, which is a
- 9 large historical attraction for the region. The area is accessible to visitors through either Stony
- 10 Lonesome Gate or Thayer Gate. Land uses adjacent to the PPA include: Ranges and Training
- 11 to the northwest; Professional and Institutional to the southwest, south, and east; and a small
- 12 portion of Residential to the north.
- 13 As previously mentioned, the Putnam and Ladycliff District ADP establishes the PPA as an
- 14 important area in which to further enhance West Point's community and recreational amenities.

15 3.3.2 Environmental Consequences

- 16 3.3.2.1 Alternative 1 (Preferred Alternative)
- 17 Implementation of the Preferred Alternative is anticipated to enhance current land use by further
- realizing the area's potential as a community and recreational hub. Consistency with the RPMP
- 19 would be maintained and supported as the proposed actions are compatible with the
- 20 Community land use designation.
- 21 Project 1 would provide much-needed additional parking to support Community land use
- 22 functions throughout the installation, including parking for sporting events at nearby Michie
- 23 Stadium and recreational opportunities within the PPA. Projects 2 through 4 would enhance the
- 24 recreational use of the Delafield Dam site with the redevelopment of an outdoor pool, supporting
- bathhouse, and physical fitness facility. These projects will fulfill a critical need for physical
- 26 fitness facilities and are consistent with the current Community land use designation. The
- 27 restoration of the 1949er Lodge (Project 5) would not impact the existing land use of the site, as
- the lodge will continue supporting community functions. Project 6 would update an existing
- 29 industrial use and would, therefore, not significantly impact existing land use. The establishment
- 30 of an undeveloped park (Project 7) is compatible with the existing Community land use
- 31 designation, as it will expand and enhance the PPA's recreational amenities.
- 32 There would be no significant adverse impacts to land use resulting from the implementation of
- 33 the Preferred Alternative.



1 3.3.2.2 Alternative 2

- 2 Under Alternative 2, the Putnam parking lot, Delafield Dam decommissioning, and outdoor pool
- 3 and physical fitness center projects (Projects 1 through 3) would be implemented. The
- 4 remaining projects proposed under the Preferred Alternative, however, would not be
- 5 implemented. The expected impacts for Alternative 2 would be similar as described under the
- 6 Preferred Alternative, and there would be no significant adverse impacts to land use.
- 7 3.3.2.3 No Action Alternative
- 8 Under the No Action Alternative, the forested area within the PPA would continue to be
- 9 underutilized as a recreational and community amenity. The existing facilities within the PPA
- 10 would continue to deteriorate and would be incapable of supporting the vision as established in
- 11 the Putnam and Ladycliff District ADP. Land use would be expected to remain as described
- 12 under Section 3.3.1. Thus, there would be no impacts to land use under the No Action
- 13 Alternative.

14 **3.4 RECREATION**

15 3.4.1 Affected Environment

- 16 Recreation is defined as an activity done for enjoyment when one is not working, while outdoor
- 17 recreation refers to the use of natural resources in an outdoor setting for human enjoyment.
- 18 Recreational resources consider outdoor recreational activities that take place away from the
- 19 residences of participants. The outdoor recreation program at USAGWP includes a variety of
- 20 activities, including hunting, fishing, boating, hiking, horseback riding, alpine skiing,
- 21 snowboarding, and camping. The success of the recreation program is directly related to the
- 22 quality of natural resources at West Point.
- 23 Outdoor recreation activities occur in both designated MWR Recreation Areas and Military
- 24 Training Areas. Recreation activities in designated training areas are prohibited during training
- 25 use and danger areas are always prohibited. Training areas are available for outdoor recreation
- 26 under access approval by the Range Control Office. All major bodies of water on USAGWP are
- 27 available for recreational use if training is not scheduled. Recreational opportunities are
- 28 available to cadets, military personnel (active and retired) and their families, and DoD civilian
- 29 employees and their families.
- 30 The current physical fitness facility (Building 683), located on Buckner Loop, is undersized for
- 31 the size of USAGWP. Building 683 is slated for demolition in 2028 to accommodate a planned
- 32 expansion of the historic West Point Cemetery.
- 33 The J2 Hunting Area currently extends into the PPA near Delafield Pond (Figure 3.4-1). It is
- one of the most popular bowhunting areas on USAGWP (USAGWP 2018a). Aside from the
- 35 hunting are, there are no other active recreational opportunities available within the PPA.
- 36 Delafield Pond used to be a popular recreational beach and swimming area for the West Point

- 1 community. It was closed, however, in 2017 due to safety concerns associated with uncontrolled
- 2 seepage along the foundation. Round Pond Recreation Area and Long Pond Recreation Area,
- 3 both located on New York State Route 293, offer similar amenities, including a lake, beach, and
- 4 picnic areas. The Round Pond Recreation Area is not available to the public and is managed by
- 5 MWR. The Long Pond Recreation Area is available to West Point and the residents of the Town
- 6 of Highlands. MWR also manages the Bull Pond Recreation Area and the Lake Frederick
- 7 Recreation Area.
- 8 While there is ample forested land within the PPA, there are no formal hiking trails located within
- 9 the PPA beyond the paths located east and north of Fort Putnam. Hiking is authorized in the
- 10 designated MWR recreation areas, as well as in Training Areas during established events with
- 11 prior permission from the Range Management Branch.

12 3.4.2 Environmental Consequences

- 13 3.4.2.1 Alternative 1 (Preferred Alternative)
- 14 Implementation of the actions under the Preferred Alternative is anticipated to enhance both the
- 15 active and low intensity recreational amenities at USAGWP, which supports Healthy Army
- 16 Communities, a service-wide commitment to healthy and active living. Projects 2 and 3 would
- 17 positively impact the recreational resources by redeveloping the shuttered Delafield Pond as an
- 18 outdoor pool and physical fitness facility. The outdoor pool to replace Delafield Pond will consist
- 19 of a 2,100-SF multi-use community pool. The 147,000-SF physical fitness center will include
- 20 fitness rooms, a gymnasium, group fitness rooms, a climbing wall, jogging track, classrooms,
- 21 locker rooms, a competition-size pool, and supporting administrative space. Once built, the
- 22 physical fitness center within the PPA will be the sole physical fitness facility available to active
- 23 duty soldiers and civilians at USAGWP.
- Projects 3, 4, and 5 would result in the development of occupied facilities and, as such, will
- 25 require a 500-ft buffer from any hunting activities. As a result, Hunting Area J2 will need to be
- 26 modified to account for the buffer area (**Figure 3.4-1**). However, the impact to the overall
- 27 hunting amenities available on USAGWP would be less than significant.
- 28 Project 7 would also expand and enhance the PPA's recreational amenities by creating low
- 29 intensity recreational opportunities below the planned parking lot in and around Fort Putnam.
- 30 The creation of an undeveloped park will allow for the preservation of natural habitat and
- 31 viewsheds, and will provide walking trails, picnic areas, and benches.
- 32 3.4.2.2 Alternative 2
- 33 Under Alternative 2, Projects 1 through 3 would be implemented. As such, the positive impact
- 34 associated with adding active recreational opportunities would be as described under the
- 35 Preferred Alternative. However, the passive park would not be established (Project 7) and the
- 36 PPA would not gain the associated recreational amenities.



1 2

1 3.4.2.3 No Action Alternative 2 Under the No Action Alternative, baseline conditions as described in Section 3.4.1 would remain 3 unchanged and there would be no alteration to the recreational resources located at USAGWP. 4 Additional recreational amenities would not be provided within the PPA. The wooded area within 5 the PPA and supporting facilities would continue to be underutilized. Additional parking and 6 recreational amenities, identified as needs in the RPMP and Putnam and Ladycliff District ADP, 7 would not be provided within the PPA. Soldiers' readiness and morale will be detrimentally 8 affected by minimal and non-existent fitness and aquatic facilities. Within two years, following 9 the closing of the existing fitness center to accommodate the cemetery expansion, West Point 10 would be incapable of supporting programs and initiatives that are essential to maintaining Army readiness.

11

12 3.5 **COASTAL ZONE MANAGEMENT**

13 3.5.1 Affected Environment

14 The federal CZMA (16 USC Section 1451, et seq., as amended) is a voluntary law enacted to 15 encourage coastal states and territories to develop and implement programs to manage the 16 nation's coastal resources. In accordance with Section 307 of the CZMA and 15 CFR Part 930, 17 Subpart C, federal agency activities affecting a land or water use or natural resource of a state's 18 coastal zone must be "consistent to the maximum extent practicable" with the enforceable 19 policies of the state's coastal management program. The CZMA establishes national policy to 20 protect resources in the coastal zone; CZMA policy is implemented by state coastal 21 management programs that have been approved by National Oceanic and Atmospheric 22 Administration. 23 Federal lands are excluded from the jurisdiction of such approved state coastal management 24 programs. However, the CZMA and its implementing regulations provide that federal agencies 25 must determine if it is reasonably foreseeable that their proposed actions, whether inside or 26 outside of a state's coastal zone, will directly or indirectly affect any land or water use or natural

- 27 resource within that coastal zone. To implement the provisions of the CZMA, federal agencies 28
- must make "consistency determinations" on their proposed activities. Based on a review of New 29 York State's Coastal Boundary Map, the PPA is located within the coastal zone as defined by
- 30 the by the New York State Coastal Management Program (NYSCMP), which is administered by
- 31 the New York State Department of State (NYSDOS). The project area is not identified within a
- 32 State-approved Local Waterfront Revitalization Program Area. .The NYSCMP establishes
- 33 coastal zone boundaries in accordance with the requirements of the CZMA, provides an
- 34 organizational structure to implement the program, and establishes a set of statewide policies
- 35 enforceable on all state and federal agencies which manage resources along the state's
- 36 coastline, all of which aim to protect owners and their property and provide a method to
- 37 consistently manage all coastal activities. Since the PPA is located within a coastal area, the

1 project must be reviewed by NYSDOS to evaluate whether the project is consistent with the

- 2 State's coastal management policies (USAGWP 2018a).
- 3 3.5.2 Environmental Consequences
- 4 3.5.2.1 Alternative 1 (Preferred Alternative)
- 5 In determining effects, federal agencies shall follow 15 CFR 930.33(a)(1), including an
- 6 evaluation of the relevant enforceable policies of the approved coastal management program.
- 7 Due to the PPA's proximity to the Hudson River and the critical need to decommission the
- 8 Delafield Dam, the following relevant policies from the State management program were
- 9 identified:
- 10 Policy No. 18 (Full Consideration to Interests and Safeguards to Protect Coastal • 11 Resources) – This policy notes that proposed actions must consider the social, 12 economic, and environmental interests of the State and its citizens in such matters that 13 would affect safety and natural resources. The Department of Environmental 14 Conservation requires the removal, replacement, or repair of unsafe structures and the 15 Delafield Dam is currently listed on the inventory of dams as a "Hazard Class A Low 16 Hazard" structure. Implementing the actions under the Preferred Alternative would 17 support the CMP, Policy 18.
- Policy No. 24 (Exceptional Scenic Areas) This policy requires an assessment of
 whether the action could affect a scenic resource and whether the action would be likely
 to impair the scenic beauty of the scenic resource. USAGWP is located within the
 Hudson Highlands Scenic Area of Statewide Significance (SASS); the project location is,
 thus, considered a significant scenic resource. As further discussed in Section 3.12.2,
 significant adverse effects on the scenic resources are not anticipated.
- 24 The implementation of the Preferred Alternative has very limited potential to adversely affect 25 coastal zone resources, and that limited potential is mitigated through adherence to USAGWP's 26 Low Impact Development SWMP, construction and stormwater BMPs, and context-sensitive 27 design (USAGWP 2015). A negative determination of effects will be submitted to the NYSDOS 28 concluding that the projects under the Preferred Alternative will not result in any reasonably 29 foreseeable effects to land and water uses of the coastal area and will conform to the applicable 30 policies within the CMP. The consistency determination is included in Appendix A. All 31 development would be planned and designed to avoid sensitive areas and would be consistent 32 with the CMP to the maximum extent practicable.
- 33 3.5.2.2 Alternative 2
- 34 The expected coastal resource impacts for Alternative 2 would be the same as described under
- 35 the Preferred Alternative. There are no anticipated adverse impacts to coastal resources
- 36 associated with the implementation of Projects 1 through 3.

1 3.5.2.3 No Action Alternative

2 Under the No Action Alternative, there would be no changes to the coastal zone resources of

3 the PPA from existing conditions as described in Section 3.5.1.

4 3.6 TOPOGRAPHY, GEOLOGY AND SOILS

5 Topography and soils are generally considered a subset of geological resources, which consist 6 not only of topography and soils, but also geology, geologic hazards, and mineral resources. 7 Topography is defined as the elevation, slope, aspect, and surface features found within a given 8 area. Long-term geological, seismic, erosional, and depositional processes form the topographic 9 relief of an area. The geology of an area includes surface and bedrock materials, their 10 orientation and faulting, and may contain valuable geologic resources such as mineral deposits, 11 petroleum reserves, and fossils. Geologic hazards include the seismicity (the relative frequency 12 of earthquakes) and existence or potential for landslides, sinkholes, mine collapse, and 13 subterranean gases (carbon dioxide, methane, or radon) in a given area. Soil refers to the 14 unconsolidated earthen materials overlaying bedrock or other parent material. The soil 15 structure, elasticity, strength, shrink-swell potential, liquefaction potential, and erodibility can all 16 determine the ability of the ground to support structures and facilities.

17 3.6.1 Affected Environment

18 3.6.1.1 Topography

19 USAGWP is situated within the Hudson Highlands area of the New England physiographic 20 province. The Hudson Highlands are a northeast-southwest trending glaciated feature 21 characterized moderately steep hills and numerous escarpments interspersed with small plains. 22 basins, and narrow valleys with relatively flat slopes (USAGWP 2018a). The area surrounding 23 USAGWP is undulating and rugged with glacially derived alluvium and till deposits in the 24 lowland areas. The prominent topographic features at USAGWP are: 1) steep slopes, often greater than 20 percent; 2) forested areas; 3) the adjacent Hudson River; and 4) scattered 25 26 developed communities/towns (USAGWP 2018a and Google Earth Pro 2020). Elevations on 27 USAGWP range from approximately sea level at the Hudson River, to 1,433 feet above mean 28 sea level (msl) at Burke Mountain. However, elevations of the PPA only range from 29 approximately 230 feet msl (west of the intersection of Delafield Road and Merritt Road) to 480 30 feet above msl (at Fort Putnam) (USGS 2020a). Surface water drainage generally flows in an 31 easterly direction towards the Hudson River (USGS 2020a).

32 3.6.1.2 Soils

33 The U.S. Department of Agriculture (USDA) Natural Resource Conservation Service notes one

34 soil association containing 2 soil series that occur within the West Point PPA projects area. As

- 35 shown in **Figure 3.6-1**, the Rock outcrop-Hollis complex (97 percent) soil type covers all of the
- 36 non-water (3 percent) land in the project area (USDA 2020). These soil types are classified as

- 1 well-drained (ROC) to somewhat excessively drained (ROD) and not hydric. A table of the major
- 2 soil types found at West Point PPA, and their key features, are presented in **Table 3.6-1**.



Figure 3.6-1. Geologic Strata of the PPA

Table 3 6-1	Soils	at the	West	Point	ΡΡΔ
1 able 5.0-1	30113	alue	WESL	FUIII	FFA

Soil Types (Symbol)	Drainage Class	Hydric	Prime Farmland	Acres	Percent of Area
Rock outcrop-Hollis complex, 15 to 35 percent slopes (ROD)	Somewhat excessively drained	No	No	29.5	92.6
Rock outcrop-Hollis complex, sloping (ROC)	Well drained	No	No	0.9	3.0
Water (W)				1.4	4.4
TOTAL				31.8	100

Source: USDA 2020.

Note: The soil mapping provided by this source is intended for use at a scale of at least 1:15,800. Generally, its accuracy should not be relied upon for detailed planning for an area of this size. However, the homogeneity of the soil mapped here provides a useful baseline for generalizations about soil types at the PPA.

5 Hydric Soils

3 4

- 6 Hydric soils are soils that are saturated, flooded, or ponded for long enough during the growing
- 7 season to develop anaerobic (oxygen-deficient) conditions in their upper part. Anaerobic soil
- 8 conditions are conducive to establishing vegetation that is adapted for growth in an oxygen-
- 9 depleted environment and are typically found in wetlands (hydrophytic vegetation). The

- 1 presence of hydric soils is one of three criteria (hydric soils, hydrophytic vegetation, wetland
- 2 hydrology) used to determine the presence of USACE jurisdictional wetlands.

3 Erodible Soils

- 4 The dominant soil type on the PPA the Rock outcrop-Hollis complex, 15 to 35 percent slopes
- 5 has an off-road/off-trail erosion hazard rating of "severe". The off-road/off-trail erosion hazard
- 6 rating is an interpretation of the potential hazard of soil loss from off-road and off-trail areas after
- disturbance activities that expose (i.e., defoliate) the soil surface. The erosion rating of "severe"
 indicates that erosion is very likely and that erosion-control measures, including revegetation of
- 9 bare areas, are advised (USDA 2020). The other soil type listed in Table 3.6-1 has not been
- 10 rated by USDA.
- 11 Maintaining good vegetative cover on these soils is important for preventing erosion and
- 12 sedimentation into streams and lakes. Where mission activities have the potential to disturb
- 13 erodible soils, USAGWP implements best management practices in accordance with its INRMP
- 14 Five-Year Implementation Plan to minimize soil loss and sediment delivery to (and turbidity in)
- 15 surface waters (USAGWP 2018a).
- 16 USAGWP has soil, erosion, and sedimentation (SES) goals to manage, conserve, and protect
- 17 soil resources that support native habitats, water quality, and the military mission. One of the
- 18 objectives, SES 1.1, is to identify eroded soils, protect soil resources, and prevent soil erosion
- 19 and its potential impacts on water quality, habitat, and the mission. The other objective, SES
- 20 1.2, is to minimize land disturbance and erosion resulting from mission activities (USAGWP
- 2018a). All construction projects are required to submit a Soil Erosion and Sediment Control22 Plan.

23 3.6.1.3 Geology

- 24 USAGWP is located in a low, rugged mountain range known as the Hudson Highlands. It is part
- 25 of a zone of folded and faulted metamorphic and igneous rocks subjected to extensive
- 26 weathering and erosion. The Hudson Highlands are part of the Reading Prong, a northeast-
- 27 southwest trending salient of the New England Province. The geology of USAGWP has been
- 28 influenced by thrust faulting, folding, dike injection, jointing, uplift, and erosion that have
- 29 occurred throughout geologic time (USAGWP 2018a).
- 30 The geologic strata of the PPA consists of middle Proterozoic-age geologic units, dominated
- 31 almost entirely by hornblende granite and granite gneiss, with lesser amounts of amphibolite
- 32 and rusty and gray biotite-guartz-feldspar gneiss on the northwestern and southern edges,
- 33 respectively (USGS 2020b, **Figure 3.6-1**). This is underlain by Precambrian-age granite, diorite,
- 34 gneiss, and schist which compose the majority of the crystalline bedrock (USAGWP 2018a). In
- 35 terms of geologic contributions to the topography and soils, glaciation during the last ice age
- 36 scraped and reformed the surficial geologic structures, leaving behind the linear kame deposits,
- 37 glacial till, sand and gravel, and exposed bedrock that shape the USAGWP of today.

1 3.6.1.4 Geologic Hazards

2 Earthquakes

Older inactive faults mapped at the surface near and within the habitation area of USAGWP
include the Long Pond, the Crown Ridge, and the Highland Brook faults (USAGWP 2018a).
However, no active faults (occurring within the past 10,000 years [Holocene epoch]) are known
to occur on the PPA (USGS 2020c). Nevertheless, tension earthquakes (not a result of direct
fault movement) occur on occasion in this area. According to USGS, earthquakes that have
occurred in proximity to the PPA include:

- Approximately 6 miles southeast, magnitude 2.9, north of Peekskill, NY, 1980
- Approximately 12 miles north, magnitude 3.3, Hughsonville, NY, 1974
- Approximately 15 miles southwest, magnitude 2.5, Southfields, NY, 1992
- Approximately 18 miles east, magnitude 2.6, Brewster, NY, 2000
- Approximately 19 miles east-northeast, magnitude 3.0, Pawling, NY, 1983
- Approximately 19 miles southeast, magnitude 3.8, Bedford Center, NY, 1845

No reports of damage at the USAGWP have resulted from any of the earthquakes identifiedabove (USAGWP 2018a).

17 Landslides

- 18 A landslide is a downslope mass movement of soil, rock, or a combination of materials on an
- 19 unstable slope. Landslides can occur rapidly as a singular event or very slow over time.
- 20 Landslides typically occur in areas of high topographic relief, weathered rock or loosely
- 21 consolidated soils, and a lack of vegetative cover. While the PPA does have steep slopes, the
- 22 bedrock is older and well-lithified, and the topsoil is held in place by abundant vegetation.
- Additionally, a review of geologic and topographic maps of the PPA and surrounding areas do
- 24 not show evidence of past landslide activity (USGS 2020b and USGS 2020d).

25 <u>Radon</u>

- 26 Radon is a naturally occurring, colorless, odorless, inert, radioactive gas that has been linked to
- 27 lung cancer. Radon is a decay product of the most abundant naturally occurring isotope of
- 28 uranium -- U238. Uranium and radon are found nearly everywhere in very small concentrations
- and can enter a home through cracks in the foundation. The national average indoor radon level
- 30 is 1.3 picocuries per liter (pCi/L). According to the USEPA, Orange County is designated as a
- 31 Zone 1 (the highest level) county for radon levels, with a predicted average indoor radon
- 32 screening levels less than 2 pCi/L (USEPA 2020c). The USEPA recommends that all homes
- 33 (below the third floor) and schools test for the presence of radon, but especially in areas with a
- 34 radon level above 4pCi/L (Zone 1) (USEPA 2016).

1 3.6.2 Environmental Consequences

2 3.6.2.1 Alternative 1 (Preferred Alternative)

3 Topography

4 The implementation of the Preferred Alternative would result in temporary and permanent 5 impacts to topography associated with earth-moving activities. The majority of the proposed 6 construction and renovation projects would occur in developed or disturbed areas, and 7 topography would be largely unaffected. However, certain projects are likely to impact areas 8 where grade-leveling and major modifications would be needed (notably Projects 1, 2, 3, and 7), 9 and would convert areas of softscape to hardscape (gravel, concrete, asphalt, and other less 10 permeable surfaces), such as Project 1, or convert the vegetation, such as Project 7. However, 11 loss of softscape associated with construction and development under the Preferred Alternative 12 would represent a less than significant percent of the total permeable softscape on the 13 installation. Management practices outlined by the INRMP, such as stormwater management 14 and facility drainage design, would be implemented to lessen potential indirect impacts. 15 Therefore, impacts to topography from implementation of the Preferred Alternative would be

16 less than significant.

17 <u>Soils</u>

- 18 The implementation of the Preferred Alternative would result in temporary and permanent
- 19 impacts to soils. As mentioned above, several of the proposed construction and renovation
- 20 projects would occur in developed or disturbed areas and existing soils would be largely
- 21 unchanged. Other projects, such as Projects 1, 2, 3, and 7, are likely to necessitate some
- removal of topsoil at the site of construction. During the construction phase, BMPs (e.g., the use
- 23 of tarps and containment barriers for stormwater management) would be used to minimize the
- 24 migration of soils offsite. Therefore, impacts to soils from implementation of the Preferred
- 25 Alternative would be less than significant.

26 <u>Geology</u>

- 27 The implementation of the Preferred Alternative would result in temporary and minor permanent
- 28 impacts to geology. Minor impacts to the surface and near-surface geology would occur as a
- 29 result of grading and leveling, and drilling or digging into the bedrock to secure foundations for
- 30 the new facilities, such as Projects 1 and 3. No mineral resources or sensitive geologic
- 31 resources would be impacted by implementation of the Preferred Alternative. Therefore, impacts
- 32 to geology from implementation of the Preferred Alternative would be less than significant.

33 Geologic Hazards

- 34 There are no active faults, mines, or coal/oil/gas deposits at the sites to be developed as part of
- 35 the Preferred Alternative. Therefore, impacts to or from geologic hazards from implementation
- 36 of the Preferred Alternative would be less than significant.

1 3.6.2.2 Alternative 2

2 Topography

- 3 Potential impacts to topography from the implementation of Alternative 2 would be similar to
- 4 those under the Preferred Alternative, but with less disturbance over a reduced surface area.
- 5 Therefore, impacts to topography from implementation of the Alternative 2 would be less than 6 significant.

7 Soils

- 8 Potential impacts to soils from the implementation of Alternative 2 would be similar to those
- 9 under the Preferred Alternative, but with less disturbance over a reduced surface area.
- 10 Therefore, impacts to soils from implementation of the Alternative 2 would be less than
- 11 significant.

12 <u>Geology</u>

- 13 Potential impacts to geology from the implementation of Alternative 2 would be similar to those
- 14 under the Preferred Alternative, but with less disturbance over a reduced surface area.
- 15 Therefore, impacts to geology from implementation of the Alternative 2 would be less than
- 16 significant.

17 Geologic Hazards

- 18 Potential impacts to or from geologic hazards from the implementation of the Preferred
- 19 Alternative would be similar to those for Alternative 1, but with less construction and disturbance
- 20 over a reduced surface area. Therefore, impacts to or from geologic hazards from
- 21 implementation of the Alternative 2 would be less than significant.
- 22 3.6.2.3 No Action Alternative
- 23 Under the No Action Alternative, the PPA projects would not be implemented. Without
- implementation of the proposed projects, there would be no impacts to topography, geology and soils, and conditions would remain as described in Section 3.6.1.

26 3.7 CULTURAL RESOURCES

- 27 Cultural resources consist of prehistoric and historic buildings, districts, sites, structures,
- 28 artifacts, or any other physical evidence of human activity considered important to a culture,
- 29 subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources
- 30 can be divided into three major categories: archaeological resources (prehistoric and historic),
- 31 architectural resources, and traditional cultural resources.
- 32 Archaeological resources are locations where human activity measurably altered the earth or
- 33 left deposits of physical remains (e.g., tools, arrowheads, or bottles). "Prehistoric" refers to
- 34 resources that predate the advent of written records in a region. These resources can range

- 1 from a scatter composed of a few artifacts to village sites and rock art. "Historic" refers to
- 2 resources that postdate the advent of written records in a region. Archaeological resources can
- 3 include campsites, roads, fences, trails, dumps, battlegrounds, mines, and a variety of other
- 4 features.
- 5 Architectural resources include standing buildings, dams, canals, bridges, and other structures
- 6 of historic or aesthetic significance. Architectural resources generally must be more than 50
- 7 years old to be considered for protection under existing cultural resource laws. However, more
- 8 recent architectural resources, such as Cold War-era military buildings, may warrant protection
- 9 if they have exceptional characteristics and the potential to be historically significant or if they
- are integral parts of a district that is eligible. These properties are evaluated under National
- 11 Register of Historic Places (NRHP) Criteria Consideration G, which includes properties that
- 12 have achieved significance within the past 50 years. Architectural resources must also possess
- integrity (i.e., important historic features must be present and recognizable in order to convey itssignificance).
- 15 Traditional cultural resources can include archaeological resources, buildings, neighborhoods,

16 prominent topographic features, habitats, plants, animals, and minerals that American Indians or

- 17 other groups consider essential for the continuance of traditional cultures.
- 18 Only cultural resources considered to be significant, known or unknown, warrant consideration
- 19 with regards to adverse impacts resulting from a proposed action. To be considered significant,
- 20 archaeological or architectural resources must meet one or more criteria as defined in 36 CFR
- 21 60.4 for inclusion in the NRHP. The quality of significance in American history, architecture,
- 22 archaeology, engineering, and culture is present in districts, sites, buildings, structures, and
- objects that possess integrity of location, design, setting, materials, workmanship, feeling, and
 association, and:
- a) that are associated with events that have made a significant contribution to the broadpatterns of our history; or
- b) that are associated with the lives of persons significant in our past; or
- c) that embody the distinctive characteristics of a type, period, or method of construction, or
 that represent the work of a master, or that possess high artistic values, or that represent
 a significant and distinguishable entity whose components may lack individual
- 31 distinction; or
- d) that have yielded, or may be likely to yield, information important in prehistory or history.
- 33 Several federal laws and regulations have been established to manage cultural resources,
- 34 including the NHPA (1966), the AHPA (1974), AIRFA (1978), the ARPA (1979), and NAGPRA
- 35 (1990). In addition, coordination with federally recognized American Indian Tribes must occur in
- 36 accordance with EO 13175, *Consultation and Coordination with Indian Tribal Governments*.

- 1 On November 27, 1999, the DoD promulgated its Annotated American Indian and Alaska Native
- 2 Policy, which emphasizes the importance of respecting and consulting with tribal governments
- 3 on a government-to-government basis. This Policy requires an assessment, through
- 4 consultation, of the effect of proposed DoD actions that may have the potential to significantly
- 5 affect protected tribal resources, tribal rights, and Indian lands before decisions are made by the
- 6 respective services (DoD American Indian/Alaska Native Policy), as does DoD Instruction
- 7 4710.02, Interaction with Federally Recognized Tribes (September 14, 2006).

8 3.7.1 Affected Environment

- 9 The proposed action would include seven distinct projects in the PPA in the northwest corner of
- 10 the Putnam and Ladycliff District of USAGWP as described in Section 2.2.
- 11 The area of potential effects (APE) for this project encompasses the area where ground-
- 12 disturbing activities, demolition, and building restorations would occur (Figure 3.7-1). The Army
- 13 is consulting with the New York State Historic Preservation Officer (SHPO) per the review
- 14 process defined in the July 2016 Programmatic Agreement (PA) Regarding Operations,
- 15 Maintenance, and Development Activities at United States Army Garrison, West Point, NY (PA)
- 16 on its finding of effect for the proposed action (USAGWP 2016).

17 3.7.1.1 Archaeological Resources

- 18 As of 2009, approximately 7,260 acres of the total 16,085 acres at USAGWP have been
- 19 surveyed for archaeological resources. A total of 247 archaeological sites have been recorded
- 20 at USAGWP. The prehistoric resources include rockshelters, camps, lithic scatters, and isolated
- 21 finds. The historic sites consist of Revolutionary War, early settlement, early industrial, military,
- 22 multicomponent, and unidentified historic resources. Of these 247 archaeological sites, 21 have
- 23 been identified as contributing elements of the West Point National Historic Landmark District
- 24 (NHLD), all of which are from the Revolutionary War period. Currently, 4 of the 247 sites are
- considered potentially eligible for the NRHP, 31 have been determined not eligible, and 212
- 26 have not been evaluated (USAGWP 2020). Approximately 79 percent of the PPA has been
- 27 previously surveyed for archaeological resources and no prehistoric sites have been identified.
- 28 Four historic archaeological sites were identified, one was determined not eligible and three
- 29 have not been evaluated. One of the unevaluated sites is Fort Putnam, which is contributing to
- 30 the NHLD.
- 31



1 3.7.1.2 Architectural Resources

- 2 The built environment of West Point ranges from Revolutionary War-era reconstructed
- 3 fortifications, historic buildings, and structures representing each phase of the academy's
- 4 development, to new construction. There are many designed landscape components (e.g.,
- 5 parade grounds, athletic fields, and gardens), monuments, bridges, and dams. Collectively, this
- 6 setting is of national importance, as recognized by the 1960 NHL designation of over 2,000
- 7 acres that include the academy's core. It is also part of the West Point sense of tradition,
- 8 character, and identity (USAGWP 2020).
- 9 As one of the larger NHLs in the country, the USMA contains a substantial number of historic
- 10 architectural resources, many of which are currently unevaluated for significance. In addition,
- 11 the USMA NHLD contains a number of landscapes and viewsheds that have been determined
- 12 to be historically significant. The Project APE in the PPA lies within the boundaries of the West
- 13 Point NHLD (USAGWP 2020). The proposed projects would potentially impact four architectural
- 14 resources within the West Point NHLD: Delafield Pond, created in 1890 and closed in 2017;
- 15 Delafield Dam, construction date uncertain but likely in the mid to late-1800s; Delafield
- 16 Bathhouse, built in 1936; and the 1949er Lodge, built in 1975. Delafield Dam was evaluated in
- 17 2005 and was determined not individually eligible to the NRHP. The reservoir was determined
- 18 NRHP-eligible for its association with the development of a reliable water supply for the USMA.
- 19 In addition, it was recommended to be included as a contributing landscape feature to the
- 20 USMA NHLD because of its importance as part of West Point's landscape and West Point's
- 21 history of providing its own water source since 1839. The Delafield Bathhouse has not been
- evaluated but such evaluation will take place as part of the proposed action.
- 23 3.7.1.3 Traditional Cultural Properties
- 24 To date, no Traditional Cultural Properties (TCPs) have been identified at USAGWP. Three 25 federally recognized Native American Tribes that are historically, culturally, and linguistically 26 affiliated with the area have been identified. These Tribes include the Stockbridge-Munsee Band 27 of Mohican Indians, Delaware Nation, and the Delaware Tribe of Indians. In October 2005, a 28 Memorandum of Understanding (MOU) was signed between West Point and the Stockbridge 29 Munsee Nation, who represented the interests of the Delaware Nation and the Delaware Tribe 30 of Indians. The MOU outlined consultation procedures for activities that may affect traditional 31 cultural property and for activities that may result in the advertent discovery or excavation of
- 32 human remains or traditional cultural resources (USAGWP 2020).

33 3.7.2 Environmental Consequences

- 34 Section 106 of the NHPA empowers the Advisory Council on Historic Preservation (ACHP) to
- 35 comment on federally initiated, licensed, or permitted projects affecting cultural sites listed or
- 36 eligible for inclusion in the NRHP. Once cultural resources have been identified, significance
- 37 evaluation is the process by which resources are assessed relative to significance criteria for

- 1 scientific or historic research, for the general public, and for traditional cultural groups. Only
- 2 cultural resources determined to be significant (i.e., eligible for listing in the NRHP) are
- 3 protected under the NHPA.
- 4 Section 106 of the NHPA requires federal agencies to request the participation of the ACHP in
- 5 any consultation regarding the resolution of adverse effects of undertakings on NHLDs.
- 6 Furthermore, agencies are required to afford the Secretary of the Interior the option to comment
- 7 on undertakings that may result in an adverse effect on NHLDs.
- 8 Analysis of potential impacts on cultural resources considers both direct and indirect impacts.
- 9 Direct impacts may occur by: (1) physically altering, damaging, or destroying all or part of a
- 10 resource; (2) altering characteristics of the surrounding environment that contribute to resource
- significance; (3) introducing visual, audible, or atmospheric elements that are out of character
- 12 with the property or alter its setting; or (4) neglecting the resource to the extent that it
- 13 deteriorates or is destroyed. Direct impacts can be assessed by identifying the type and location
- 14 of the proposed action and by determining the exact locations of cultural resources that could be
- 15 affected. Indirect impacts primarily result from the effects of the use and operation of the
- 16 facilities, which could disturb, damage, or destroy cultural resources.
- 17 To manage cultural resources, the USAGWP prepared an Integrated Cultural Resources
- 18 Management Plan (ICRMP). The ICRMP is intended to guide West Point in complying with the
- 19 related Cultural Resource Management (CRM) federal preservation requirements and Army
- 20 regulations.
- 21 Assessment of potential project-related impacts on cultural resources is also guided by the PA,
- 22 which outlines the consultation process with key cultural resource decision-makers and
- 23 stakeholders. The PA also lists key and contributing elements of the NHLD, as well as other
- 24 historic properties.
- 25 3.7.2.1 Alternative 1 (Preferred Alternative)

26 Archaeological Resources

27 Approximately 79 percent of the PPA has been previously surveyed for archaeological 28 resources and no prehistoric sites have been identified. Four historic archaeological sites were 29 identified, one was determined not eligible and three have not been evaluated. One of the 30 unevaluated sites is Fort Putnam which is contributing to the NHLD. (USAGWP 2020). Projects 31 1 through 6 are within locations which have been previously surveyed, therefore, identified sites 32 can be avoided and any impacts minimized. Project 7 involves a low level of development and is 33 slated for low intensity recreation with minimal to no ground disturbance. Proposed ground 34 disturbance within the unsurveyed portion appears to be limited to previously disturbed areas 35 such as the reservoir and existing building footprints. In the event of an inadvertent discovery 36 during ground-disturbing operations, the following specific actions would occur. The project 37 manager would cease work immediately and the discovery would be reported to their supervisor

- 1 and the USAGWP Cultural Resources Manager (CRM). The CRM would secure the location
- 2 and ensure that all cultural items are left in place and that no further disturbance is permitted to
- 3 occur. The CRM would then notify the Museum Director and the Chief or the Military History
- 4 Division, Department of History. They would continue to follow the Protection of Archaeological
- 5 or Historical Artifacts protocol under Standard Operating Procedure 16-1 of the ICRMP
- 6 (USAGWP 2020). Under these conditions, there would be no significant impacts to
- 7 archaeological resources with implementation of this alternative.

8 Architectural Resources

- 9 The proposed action would include seven distinct projects in the PPA in the northwest corner of
- 10 the Putnam and Ladycliff District of the West Point installation. Of these projects, two involve
- 11 historic architectural resources: Project 2, Delafield Dam decommissioning and Project 4,
- 12 restoration of the Delafield Bathhouse.
- 13 Created in 1890, Delafield Pond and its adjacent dam was closed in 2017 due to safety
- 14 concerns associated with uncontrolled seepage along the dam's foundation. Repairing the dam
- 15 to achieve structural stability was determined to be infeasible due to costs. Project 2 involves
- 16 the decommissioning of the dam in order to mitigate the safety issues and repurpose the site.
- 17 Delafield Pond and the Delafield Dam are historic resources within the National Historic
- 18 Landscape of West Point and the reservoir is an NRHP-eligible historic structure, recommended
- 19 as a contributing landscape feature to the NHLD, though this has not been reviewed or certified
- 20 by the NPS. Decommissioning the dam would include full or partial removal of the dam and its
- 21 associated facilities. This would potentially have an adverse effect on the NRHP-eligible
- 22 reservoir. This determination will be made by the CRM after viewing final plans for the proposed
- 23 action. Any adverse effect would be mitigated as prescribed in the 2016 PA with the NY SHPO.
- 24 Building 765, the Delafield Bathhouse, is located on top of Delafield Dam and historically
- 25 supported recreational activities at the now closed Delafield Pond. Proposed Project 4 would
- 26 include restoration of the bathhouse, a 5,000-SF structure built in 1936 by the CCC. The
- 27 restored bathhouse would support a new outdoor pool and physical fitness center built at the
- 28 decommissioned Delafield Dam. To the extent possible, the design will follow the Secretary of
- 29 the Interior's Standards for Rehabilitation to avoid potential adverse effect to the unevaluated
- 30 building. A determination of effects will be made after final plans and an evaluation of the
- 31 building are completed. Proposed Project 5 includes interior upgrades to the HVAC, electric,
- 32 and plumbing systems to Building 771, the 1949er Lodge. The Lodge is a 6,500 SF facility, built
- in 1975. The building will be fifty years old in 2025 and would be evaluated for listing in the
- 34 NRHP at that time. If the building was determined to be eligible for listing in the NRHP, then
- 35 interior utility modifications considered in the proposed project are considered allowances in
- 36 Appendix C of the PA, meaning that there is limited potential to adversely affect historic
- 37 properties and further review is not required.

1 <u>Traditional Cultural Properties</u>

- 2 To date, no TCPs have been identified on the USAGWP or in the surrounding area. The
- 3 Stockbridge-Munsee Band of Mohican Indians have specifically stated that there are no known
- 4 Mohican TCPs at USAGWP (USAGWP 2020). Government-to-government consultation
- 5 between the USAGP and each federally recognized Tribe associated with the installation is
- 6 being conducted for this action in recognition of their status as sovereign nations, to provide
- 7 information regarding Tribal concerns per Section 106 of the NRHP as well as information on
- 8 traditional resources that may be present on or near the installation. Per agreement, the CRM
- 9 will forward the Final PEA to the designated tribal government representative.
- 10 Therefore, there would be no significant impacts to cultural resources with implementation of the
- 11 Preferred Alternative.
- 12 3.7.2.2 Alternative 2

13 Archaeological Resources

- 14 Under Alternative 2, Projects 1 through 3, the Putnam parking lot, Delafield Dam
- 15 decommissioning, and outdoor pool and physical fitness center projects would be implemented
- 16 as described under Alternative 1. Under Alternative 2, the remaining projects would not be
- 17 implemented within the PPA. The locations of Projects 1 through 3 are outside of the avoidance
- 18 areas for cultural resources. Therefore, the expected impacts for Alternative 2 would be the
- 19 same as described under Alternative 1, and there would be no significant impacts to
- 20 archaeological resources.

21 Architectural Resources

- 22 Under Alternative 2, impacts to the Delafield Dam and Delafield Pond would be the same as
- 23 described under Alternative 1. Under Alternative 2, Projects 4 through 7 would not be
- 24 implemented within the PPA. The Delafield Bathhouse would not be restored, and the 1949er
- 25 Lodge would not receive interior upgrades. Cultural resources would be expected to remain as
- described in Section 3.7.1.

27 Traditional Cultural Properties

- To date, no TCPs have been identified on the USAGWP or in the surrounding area. It is unlikely
 that TCPs would be located during the proposed actions of Alternative 2.
- 30 Therefore, there would be no significant impacts to cultural resources with implementation of 31 Alternative 2.
- 32 3.7.2.3 No Action Alternative
- 33 Under the No Action Alternative, none of the seven proposed construction projects within the
- 34 PPA would be implemented. Delafield Pond would continue to deteriorate, creating both a visual

1 "eye sore" and potential safety concerns. Cultural resources would be expected to remain as

2 described in Section 3.7.1.

3 3.8 TRAFFIC AND TRANSPORTATION

4 **3.8.1 Affected Environment**

- 5 For the purposes of this PEA, transportation consists of road infrastructure and associated
- 6 traffic conditions for the PPA vicinity with a focus on transportation infrastructure as the
- 7 proposed action would involve expansion of roadways and parking availability for the
- 8 installation.
- 9 3.8.1.1 Internal and Surrounding Roadways
- 10 USAGWP is accessible from U.S. Route 9W and New York State Routes 218 and 293. These
- 11 roads are currently used to access the installation for academic services, sporting events, and
- 12 miscellaneous activities. Roads on USAGWP are hard-surfaced with designed drainage and are
- 13 maintained by the Directorate of Public Works (DPW). Traffic circulates throughout the
- 14 installation via a continuous curving roadway consisting of Mills Road and Washington Road.
- 15 The cantonment area of West Point is open to the public and is visited by millions of people a
- 16 year attending special events or for sightseeing. Public access to the installation is available via
- 17 Thayer Gate in the southeast portion of West Point via New York Route 218, or Stony
- 18 Lonesome Gate in the southwest portion of West Point via U.S. Route 9W (USACE 2017).
- 19 The PPA is accessed from Merritt Road on the northern end near Delafield Pond and from
- 20 Stony Lonesome Road on the southern end near Fort Putnam (**Figure 3.8-1**). Delafield Road
- 21 curves through the PPA, with an unnamed spur linking Delafield Road to the 1949er Lodge.
- 22 While traffic is not typically a concern at USAGWP, traffic is notoriously heavy on days when 23 football games are held at Michie Stadium.
- 24 3.8.1.2 Parking
- Within the PPA, there is a small parking lot associated with the drained Delafield Pond site that
 is not currently utilized as it is not proximate to any commonly used facilities. There is also
 parking adjacent to the 1949er Lodge to support the community functions held at that facility. On
 the upper end of Delafield Road near the electric substation, there are approximately 32 angled
- 29 perpendicular street parking spaces.
- 30 Parking is currently limited at USAGWP on days when special events or sporting events are
- 31 held at nearby Michie Stadium.
- 32



1 **3.8.2 Environmental Consequences**

2 3.8.2.1 Alternative 1 (Preferred Alternative)

3 Internal and Surrounding Roadways

- 4 The Preferred Alternative would not modify the current internal roadway system to or within the
- 5 PPA. Internal circulation would continue to use Delafield Road. Anticipated impacts include a
- 6 lessening of traffic volumes on game days (and other days with heavy visitors) as a result of the
- 7 increased parking that will be available within the PPA, as described below.
- 8 The Preferred Alternative may result in temporary impacts to local traffic and traffic flow on
- 9 Merritt Road and Delafield Road resulting from construction and demolition activities that occur.
- 10 Construction-related traffic would include heavy equipment and transport vehicles, dump/haul
- 11 trucks, personnel transport vehicles, and others as necessary. Construction staging areas would
- 12 be established on site, likely along Delafield Road, and are not expected to significantly impact
- 13 traffic. During construction and demolition activities and depending on the location of the project
- site, vehicle size, timing, and operational status of the gates, it is anticipated that vehicular traffic
- 15 would either use Thayer Gate or Stony Lonesome Gate. Therefore, temporary impacts would
- 16 primarily occur during the construction of the parking lot (Project 1) and the outdoor pool and
- 17 fitness facility (Project 3).

18 Parking

- 19 The Preferred Alternative would positively impact the parking resources available at USAGWP.
- 20 The implementation of the Preferred Alternative would result in the development of a parking lot
- 21 support situational and seasonal events such as graduations and sporting events held at nearby
- 22 Michie Stadium. The existing perpendicular street parking (32 spaces) located on Delafield
- 23 Road will be preserved, as will the parking associated with the 1949er Lodge.
- 24 3.8.2.2 Alternative 2
- 25 The expected impacts to traffic and transportation networks for Alternative 2 would be the same
- 26 as described under the Preferred Alternative, and there would be no significant adverse impacts
- 27 to traffic.

28 3.8.2.3 No Action Alternative

- 29 Under the No Action Alternative, there would be no changes to the traffic conditions or
- 30 transportation networks in the area, and conditions would remain as described in Section 3.8.1.

31 3.9 UTILITIES

- 32 Utilities include the infrastructure and services provided to USMA West Point that are
- interrelated with the infrastructure that is the subject of this PEA.

1 3.9.1 Affected Environment

2 3.9.1.1 Electricity/Natural Gas

- 3 Electricity and natural gas are provided to the installation, including the PPA, by Orange and
- 4 Rockland Utilities (O&R) and Central Hudson Gas & Electric Co. (Central Hudson), respectively
- 5 (USACE 2017). The electrical utilities have been privatized at West Point, with City Light and
- 6 Power (CLP) being the utility provider. CLP is responsible for day-to-day operations and
- 7 maintenance of the site electrical systems (USAGWP 2019c).
- 8 The installation is currently fed power from O&R through two 34.5 kV feeders from their
- 9 Harriman Substation. The overall capacity of the lines is 19 megawatts (MW) each. The
- 10 installation has two medium voltage systems operating, one at 13.8 kV and the other at 4.16 kV.
- 11 The 13.8 kV originates from the Delafield Substation, transforming 34.5 kV from O&R. The
- 12 substation contains two 34.5/69 kV 13.8 kV, 12/16/60 mega volt amp transformers and are in
- 13 good condition. The 15 kV switchgear at the Delafield substation was recently replaced and is in
- 14 good condition (USAGWP 2019c). Upgrades are still needed to address capacity and
- 15 redundancy issues (Project 6).
- 16 While Central Hudson supplies the natural gas, the natural gas distribution system is owned,
- 17 operated, and maintained by the installation. Central Hudson feeds the installation from a 300
- 18 pound per square inch (psi) pressure regulating station near Orrs Mills Road South via a nine-
- 19 mile single 10-inch pipe at a pressure of 120 psi. After the 10-inch pipe enters campus at the
- 20 North end, the pipe splits into two 6-inch pipes, the 60 psi pipe to the East and the 120 psi pipe
- 21 to the Southwest. The natural gas distribution system is the fuel source for the Central and
- 22 North power plants, domestic hot water generation, and for heating the buildings not connected
- 23 to the central steam system. The majority of buildings across campus have natural gas supplied
- to them at less than 1 psi other than those buildings requiring high pressure distribution. There
- are nine regulator stations located throughout the campus to control and deliver the various
- 26 pressure demands. There are no current supply issues to meet the demands of the installation
- 27 (USAGWP 2019c).

28 3.9.1.2 Potable Water

- 29 Potable water is supplied to the USAGWP from two water treatment plants: Lusk Water
- 30 Treatment Plant and Stony Lonesome Water Treatment Plant. As of June 2020, the treatment
- 31 plants have been privatized at West Point, with American Water being the utility provider.
- 32 American Water is responsible for day-to-day operations and maintenance of the water
- 33 treatment plants that supply potable water to the USMA and USAGWP. The water treatment
- 34 plants take in raw water, treat it, and distribute through more than 51 miles of water system
- 35 piping. Raw water is supplied by surface water resources located on the USAGWP installation
- 36 including Stilwell Lake, Mine Lake, Long Pond, and Lusk Reservoir (USACE 2017). The
- 37 installation is broken into five water districts, each with its own pressure zone. Both water

treatment plants are relatively old and have not had recent upgrades. Lusk Treatment Plant was
 constructed in 1932 and supplies water to Districts 1, 2, and 3. Lusk Treatment Plant has 4.0

3 million gallons per day (MGD) design capacity, and operates at 2.4 MGD. Stony Lonesome

4 Treatment Plant was constructed in 1969 and supplies water to Districts 4 and 5. Stony

5 Lonesome Treatment Plant has 2.0 MGD capacity, and operates at 1.0 MGD (USAGWP

6 2019c).

7 3.9.1.3 Sanitary Sewer

8 The wastewater system consists of a collection system, pumping stations, and the Target Hill 9 Wastewater Treatment Plant (WWTP). Target Hill WWTP was constructed in 1954, currently 10 has a capacity of 2.06 MGD, and treats an average flow of 1.7 MGD. There are three major 11 pump stations at the USAGWP: South Dock, Howze Field, and Commissary Field (USAGWP 12 2019c). The Target Hill WWTP is in the process of being renovated and expanded to address 13 facility upgrades and increased capacity. Following renovation, the plant will have capacity to 14 treat an average daily flow of 2.3 MGD. As with electric and potable water, wastewater 15 management and maintenance has also been privatized. As of June 2020, American Water is 16 responsible for day-to-day operations and maintenance of the WWTP at West Point.

17 3.9.1.4 Storm Sewer

18 Stormwater that is generated from rainfall events flows across the installation via a system of 19 overland methods (swales and streams) and underground closed drainage pipes and 20 discharges into the Hudson River. The storm sewer network at West Point dates back over 200 21 years and is generally in aging and suboptimal condition. The storm sewer system is generally 22 separated from other sewer systems, specifically the sanitary sewer; however, some instances 23 of combined sewer systems can be found on the installation. Combined sewers add increased 24 loads onto the pump stations and the Target Hill WWTP and increase the potential for unwanted 25 sewage discharge directly into the Hudson River. Combined sewers are generally found to be in 26 the Central Campus Area and older housing areas. The existing stormwater outlets located 27 along the Hudson River become submerged underwater during high tide situations. This causes 28 the closed drainage systems to backup, preventing stormwater from being properly conveyed 29 from campus during rainfall events. To aid in reducing the quantity of stormwater entering the 30 system via infiltration into the ground and evaporation, there are 13 stormwater management 31 facilities located at the installation (USAGWP 2019c). Management of the facilities is done in 32 accordance with the USAGWP SWMP (USAGWP 2015).

33 3.9.2 Environmental Consequences

34 3.9.2.1 Alternative 1 (Preferred Alternative)

35 Under the Preferred Alternative, all seven projects will be implemented at the PPA, and there

- 36 would be direct and long-term beneficial impacts on West Point's utility service systems.
- 37 Specifically:

- Electricity: Upgrades to the Delafield Substation (Project 6) to address electricity
 capacity and redundancy issues installation-wide, as well as the potential to provide
 electricity generation capabilities. Replacement of outdated electrical systems at 1949er
 Lodge (Project 5), and construction of energy-efficient and modern electrical systems at
 the new Physical Fitness Center (Project 3) to include sustainability and energy
 enhancement measures.
- Potable water: upgrades to fire hydrants, isolation valves, backflow preventers, and
 piping throughout the PPA as part of overall construction projects.
- 9 With respect to natural gas, the increased need from the construction of new facilities and
- 10 upgrades to existing facilities in the PPA is not expected to provide a great impact on existing
- 11 need, and the installation currently has enough capacity to address the increased demand.
- 12 While the construction of the Putnam Parking Lot will increase impervious surface, impacts will
- 13 be minimized through design measures to implement modern stormwater management
- 14 techniques on-site at the Putnam Parking Lot project.
- 15 In conclusion, the implementation of the Preferred Alternative would have direct, beneficial,
- 16 long-term benefits for many utility systems and minor impacts to natural gas and stormwater.
- 17 These impacts would be minimized by the implementation of energy efficient construction
- 18 methods, management measures identified in the USAGWP SWMP, and best management
- 19 practices for modern stormwater management.
- 20 3.9.2.2 Alternative 2
- 21 Under Alternative 2, Projects 1 through 3 would be implemented. Impacts would be similar to 22 those described under the Preferred Alternative; however, the Delafield Substation upgrades
- (Project 6) would not occur, and thus electric infrastructure would continue to be inadequate in
- terms of capacity and redundancy for West Point. The Bathhouse and 1949er Lodge would
- 25 continue to utilize outdated and inefficient electrical, plumbing, and heating systems.
- 26 3.9.2.3 No Action Alternative
- Under the No Action Alternative, none of the seven proposed construction projects within the
 PPA would be implemented. The wooded area within the PPA and supporting facilities would
 continue to be underutilized. Aging utilities infrastructure would not be upgraded in the PPA and
 utilities would be expected to remain as described under affected environment in Section
 3.9.21.

32 **3.10 AIR QUALITY**

- 33 As part of the CAA, the USEPA has established National Ambient Air Quality Standards
- 34 (NAAQS) for major pollutants of concern, called "criteria pollutants." These criteria pollutants
- 35 include carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃),
- 36 particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), particulate matter
- 37 with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$), and lead (Pb). The NAAQS

- 1 represent maximum levels of background pollution that are considered safe, with an adequate
- 2 margin of safety to protect the public health and welfare. Based on measured ambient criteria
- 3 pollutant data, the USEPA designates areas in the U.S. as having air quality better than
- 4 (attainment) or worse than (nonattainment) the NAAQS. The state of New York has adopted the
- 5 federal NAAQS, and also maintains its own state ambient air quality standards for SO₂,
- 6 suspended particulate, settleable particulate, fluoride and hydrogen sulfide (6CRR-NY III,
- 7 Subpart 257).
- 8 The CAA also established a national goal of preventing degradation or impairment in federally
- 9 designated Class I areas. Class I areas are defined as those areas where any appreciable
- 10 degradation in air quality or associated visibility impairment is considered significant. There are
- 10 no Class I areas in the state of New York or in Connecticut, which is across the Hudson River.
- 12 The closest Class I area is the Brigantine Wilderness Area in New Jersey, which lies more than
- 13 130 miles south of the installation.
- 14 In addition to criteria pollutants, the USEPA has defined 187 substances as hazardous air
- 15 pollutants (HAPs). HAPs emitted from mobile sources are called Mobile Source Air Toxics
- 16 (MSATs). MSATs are compounds emitted from highway vehicles and non-road equipment that
- 17 are known or suspected to cause cancer or other serious health and environmental effects. The
- 18 primary control methodologies for these pollutants for mobile sources involves reducing their
- 19 content in fuel and altering the engine operating characteristics to reduce the volume of
- 20 pollutant generated during combustion. MSATs would be the primary HAPs emitted by mobile
- 21 sources during construction. The equipment used during construction would likely vary in age
- 22 and have a range of pollution reduction effectiveness. Construction equipment, however, would
- 23 be operated intermittently, for the duration of construction, and would produce negligible
- ambient HAPs in a localized area. Therefore, MSAT emissions are not considered further in this
- 25 analysis.

26 3.10.1 Affected Environment

- 27 West Point is located in Orange County, New York. The area is currently designated a
- 28 maintenance area for the Federal 24-hour $PM_{2.5}$ standard. The installation maintains a Title V
- 29 permit for a variety of emission sources, including the central heating plant, individual building
- 30 boilers, generators, fuel storage, spray paint booths and a landfill flaring system (NYSDEC
- 31 2017).
- 32

1 **Table 3.10-1** presents the 2014 emission inventory for Orange County, which includes the cities

- 2 of Middletown, Newburgh, Port Jervis, and West Point.
- 3

Table 3.10-1. 2014 Criteria Pollutant Emissions for Orange County, NY

Location	EMISSIONS (TONS/YEAR)						
Location	VOCs	CO	NOx	SO ₂	PM _{2.5}	PM ₁₀	
Orange County, NY	19,042	42,166	6,958	939	1,826	4,662	
Source: USEPA 2020a.							
Lagandy, CO = aarban manavida; NO = nitragan avidaa; SO = aulfur diavida; DM = = narticulate matter loss than ar							

Source: USEPA 2020a.
 Legend: CO = carbon monoxide; NO_x = nitrogen oxides; SO₂ = sulfur dioxide; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; VOC = volatile organic compound.

8 3.10.2 Environmental Consequences

9 Air quality impacts within the affected environment were reviewed relative to federal, state, and

10 local air pollution standards and regulations. Because Orange County is a maintenance area for

11 PM_{2.5}, the General Conformity Rule applies, and so for the purposes of this analysis, the 100

12 tons per year *de minimis* threshold for PM_{2.5} was used to assess Conformity.

13 3.10.2.1 Alternative 1 (Preferred Alternative)

presented in Table 3.10-2.

14 Under the Preferred Alternative, all seven projects within the PPA would proceed with

- 15 implementation, although they would be necessarily prioritized and phased based on available
- 16 funding. Projects anticipated in the short-term include the Putnam Parking Lot, Delafield Dam
- 17 decommissioning, outdoor pool and physical fitness center, and restoration of the existing
- 18 bathhouse and 1949er Lodge. The construction of the physical fitness center will require either
- 19 connection to the Central Heating Plant or the addition of building boilers for heat and hot water.
- 20 In either case, modification of the Title V Permit to accommodate the increased emissions would
- 21 likely be required. The bathhouse and 1949er Lodge renovations would likely require upgrade to
- 22 more efficient heating sources as well. Construction emissions have been estimated and are
- 23 24

Table 3.10-2. Annual Construction Emissions Estimates for PPA

	EMISSIONS (TONS/YEAR)						
Year	VOC	NOx	СО	SOx	PM 10	PM _{2.5}	
2021	0.79	17.52	4.21	0.05	0.77	0.75	
2026	1.13	19.36	5.29	1.18	0.95	0.93	
De minimis Threshold	NA	NA	NA	NA	NA	100	
Exceedance (Yes/No)	No	No	No	No	No	No	

25 26 27

Legend: CO = carbon monoxide; CO₂e = carbon dioxide equivalent; NO_x = nitrogen oxides; SO_x = sulfur oxides; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; VOC = Volatile Organic Compound.

- 28 Based on the calculations, the emissions associated with construction activities proposed at the
- 29 PPA would not be significant. PM_{2.5} emissions are below the General Conformity *de minimis*
- 30 threshold. Estimate details can be found in Appendix B. Emissions of other criteria pollutants

- 1 are also at low levels representing small fractions of the annual Orange County emissions.
- 2 These construction emissions are temporary in nature and will cease upon completion of the
- 3 proposed projects, resulting in only minor and temporary impacts. Some operational emissions
- 4 may result from the implementation of the proposed projects, as indicated in Section 3.10.1, but
- 5 these sources would be required to meet regulatory permit requirements and so would not carry
- 6 significant impacts.
- 7 3.10.2.2 Alternative 2
- 8 Under Alternative 2, only the Putnam Parking Lot, Delafield Dam decommissioning, and outdoor
- 9 pool and physical fitness center projects would be implemented as described under Alternative
 10 1. As these represent the vast majority of emissions across the projects, the emission impacts
- As these represent the vast majority of emissions across the projects, the emission impacts
 are virtually unchanged compared to the Preferred Alternative. As a result, the emissions and
- 12 minor impacts associated with the implementation of Alternative 2 are the same as described for
- 13 the Preferred Alternative.
- 14 3.10.2.3 No Action Alternative
- 15 Under the No Action Alternative, none of the seven proposed construction projects within the
- 16 PPA would be implemented. Emissions from the installation would remain unchanged.

17 3.11 Noise

- 18 Noise is often defined as any sound that is
- 19 undesirable because it interferes with
- 20 communication, is intense enough to damage
- 21 hearing, diminishes the quality of the
- 22 environment, or is otherwise annoying. Noise may
- 23 be intermittent or continuous, steady or impulsive,
- 24 and may be generated by stationary or mobile
- 25 sources. The individual response to similar noise
- 26 events can vary widely and is influenced by the

The perception and evaluation of sound involves three basic physical characteristics:

- 1. Intensity, or loudness, expressed in decibels;
- 2. Frequency, or the number of cycles per second, in hertz; and
- 3. Duration or the length of time the sound can be detected.
- 27 type and characteristics of the noise source, distance between source and receptor, receptor
- sensitivity, and time of day.
- 29 Sound, expressed in decibels (dB), is created by vibrations travelling through a medium such as
- 30 air or water. A sound level of 0 dB is the approximate threshold of human hearing and is barely
- 31 audible under extremely quiet conditions. By contrast, normal speech has a sound level of
- 32 approximately 60 dB. Sound levels above 100 dB begin to be felt inside the human ear as
- discomfort. Sound levels between 110 and 130 dB are felt as pain (Berglund and Lindvall 1995).
- 34 The minimum change in the sound level of individual noise events that an average human ear
- 35 can detect is about 3 dB. On average, a person perceives a doubling (or halving) of a sound's
- 36 loudness when there is a 10 dB change in sound level.
1 **3.11.1 Affected Environment**

- 2 The noise analysis in this EA focuses on noise as it relates to worker and community exposure.
- 3 The analysis uses the "A-weighted" metric for noise, denoted as dBA. A-weighting provides a
- 4 good approximation of the response of the average human ear and correlates well with the
- 5 average person's judgment of the relative loudness of a noise event.
- 6 Noise in the U.S. is regulated under a number of different statutes and regulations. The Noise
- 7 Control Act of 1972 and as amended by the Quiet Communities Act of 1978, set forth the policy
- 8 of the U.S. to promote an environment for all citizens that is free from noise that jeopardizes
- 9 human health and welfare. USEPA, the U.S. Department of Housing and Urban Development,
- 10 and DoD have identified noise levels to protect public health and welfare with an adequate
- 11 margin of safety. These levels are considered acceptable guidelines for assessing noise
- 12 conditions in an environmental setting. Noise levels below 65 dB are considered to be
- 13 acceptable in suitable living environments. The Occupational Safety and Health Administration
- 14 (OSHA) regulates noise impacts to workers and sets forth thresholds for a safe work
- 15 environment. According to OSHA, an employee should not be subjected to continuous noise
- 16 exceeding 90 dBA for durations lasting more than 8 hours per day (**Table 3.11-1**). As the level
- 17 increases, the allowed duration of noise decreases. The maximum limit is 115 dBA for duration
- 18 of 15 minutes or less. In addition, OSHA standards state that exposure to impulsive or impact
- 19 noise (loud, short duration sounds) is not to exceed 140 dB peak sound pressure level (OSHA
- 20 2020).

Duration per Day (hours)	Sound Level (dBA)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25	115

Table 3.11-1. OSHA Permissible Noise Exposures

- 21 Noise is managed at USAGWP in accordance with the Installation Operational Noise
- 22 Management Plan (IONMP) (USAGWP 2013). The IONMP provides a strategy for noise
- 23 management. Elements of the IONMP include education about noise and Army noise metrics,
- 24 complaint management, and noise abatement procedures. The IONMP provides a methodology
- 25 for analyzing exposure to noise associated with military operations and provides land use
- 26 guidelines for achieving compatibility between the noise generated by the Army and the
- 27 surrounding communities. The Army has an obligation to U.S. citizens to recommend uses of
- 28 land around its installations which will: (a) protect citizens from noise and other hazards; and (b)
- 29 protect the public's investment in these training facilities.

As noted in the IONMP, the noise generating activities at USAGWP are associated with small 1 2 caliber weapons firing (.50 caliber and below), demolition and large caliber weapons operations 3 (20mm and greater), and aviation activity (helicopter missions) (USAGWP 2013). Existing noise 4 within the PPA is minimal; sources include electric substation operations and vehicular traffic 5 accessing and egressing the site. Vehicular traffic generates a level of noise typical for a 6 residential or academic setting (NEA, 2005). Noise level measurements have not been obtained 7 specifically in the PPA. However, the noise levels can be approximated based on existing land 8 uses. The typical day-night noise level in residential areas ranges from 39 to 59 dBA (USACE 9 2017). Typically, the dBA value for privately owned vehicles is 50 dBA (for light traffic) (U.S. 10 Department of Transportation 2006). It can be assumed that the existing sound levels in the

11 project area are within this range.

12 Construction noise varies greatly depending on the construction process, type and condition of

13 equipment used, and the layout of the construction site. Overall, construction noise levels are

14 governed primarily by the noisiest pieces of equipment (e.g., dump truck, excavator, grader, pile

15 hammer, and operational equipment) with dBA values up to 101 dBA. Typically, the sound level

16 attenuates, or diminishes, at a rate of 6 dBA for each doubling of the distance (i.e., if the noise

17 level is 85 dBA at 50 feet, it is 79 dBA at 100 feet) from a point source (USEPA 1971).

18 **3.11.2 Environmental Consequences**

19 Noise impacts result from perceptible changes in the overall noise environment that increase

20 annoyance or affect human health. Annoyance is a subjective impression of noise wherein

21 people apply both physical and emotional variables. To increase annoyance, the cumulative

22 noise energy must measurably increase. Human health effects such as hearing loss and noise-

related awakenings can result from exposures to noise. The evaluation criteria used in this

24 noise analysis include the potential for:

A person to be subjected to continuous noise exceeding 90 dBA for durations lasting
 more than 8 hours per day. This evaluation criteria is based on OSHA standards (29
 CFR Section 1910.95), whereby employees should not be subjected to continuous noise
 exceeding 90 dBA for durations lasting more than 8 hours per day (OSHA 2020).

• Noise to perceptibly change at sensitive receptor locations in the short and long term.

Shor-term construction and long-term, post-construction noise levels exceeding ambient
 background sound levels.

32 3.11.2.1 Alternative 1 (Preferred Alternative)

33 Typical construction assumes standard construction and demolition practices. This would

34 include the use of some heavy equipment over a temporary period. Construction-related noise

35 emissions from the types of equipment that would be used in implementation of the Preferred

36 Alternative would range from 74 to 90 dBA when measured 50 feet from the respective piece of

37 equipment (Federal Highway Administration 2006). Construction noise is modeled using the

1 Federal Highway Administration's Road Construction Noise Model Version 1.1, which was

2 developed to calculate noise levels emanating from various types of construction equipment.

3 Although developed for road construction, the equipment types and noise calculations apply to

4 any type of construction activity. The Army would adhere to OSHA noise safety standards and

5 ensure that construction workers and employees would not be subjected to continuous noise

6 exceeding 90 dBA for durations lasting more than 8 hours per day.

7 The noise associated with repair, construction, and demolition activities would be most likely 8 confined to general working hours (7:00 a.m.–8:00 p.m.) and are unlikely to adversely alter the

9 surrounding noise environment. The following project-related, construction phase noise sources
 10 are anticipated:

- Equipment necessary to prepare the project area and construct the parking lot outdoor
 pool and fitness center and park elements; demolish the Delafield Dam, and renovate the
 Bathhouse, 1949er Lodge and electric substation upgrades.
- Vehicles and equipment accessing and egressing the site including trucks hauling construction and demolition debris for off-site management.
- Temporary power generators
- 17 Noise impacts would be short-term and intermittent, and minimized through the implementation

18 of BMPs including restrictions on idling time and using/maintaining equipment in proper working

- 19 order. In addition, the Army is committed to providing advance notification to West Point
- 20 residents and the community if construction activities are planned for weekends or holidays
- 21 notifying nearby sensitive receptors in advance of commencing the noisiest phases of the
- 22 planned construction projects, and using IONMP protocols to log and respond to noise
- 23 complaints received during implementation of the Preferred Alternative.
- In conclusion, noise associated with construction, demolition, and renovation would not
 adversely affect sensitive receptors since the noise would attenuate ambient background noise
 levels. Therefore, implementation of Preferred Alternative would not result in significant noise
- 27 impacts.

28 3.11.2.2 Alternative 2

- 29 Under Alternative 2, Projects 1 through 3 would be implemented. Impacts would be similar to
- 30 those described under the Preferred Alternative, but to a lesser extent. Construction of the three
- 31 projects would cause temporary impacts to the noise environment as described under the
- 32 Preferred Alternative. Thus, there would be no significant adverse impacts to the noise
- 33 environment under Alternative 2.
- 34 3.11.2.3 No Action Alternative
- 35 Under the No Action Alternative, there would be no changes to the existing noise environment in 36 the area, and conditions would remain as described in Section 3.11.1.

1 3.12 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

- 2 For the purposes of this PEA, socioeconomics refers to the economic impact of the PPA in
- 3 context of the surrounding community in terms of jobs and the general population and
- 4 employment conditions in Orange County and the town of Highland Falls. It also includes
- 5 environmental justice and protection of children as these are a component of the demographic
- 6 and social considerations of NEPA.

7 3.12.1 Affected Environment

8 3.12.1.1 Socioeconomics

- 9 The town of Highland Falls, including West Point, covers over 30 square miles. In 2018, the total
- 10 population of Orange County was estimated to be 378,227 and the population of Highland Falls
- 11 was estimated to be 3,827 (USCB 2018). In December 2015, USAGWP maintained an
- 12 approximate population of 13,833 military and civilian residents, including contractors
- 13 (USAGWP 2017). The population at USAGWP has been steadily growing over the past decade.
- 14 USAGWP is the second largest employer of full-time personnel in the region. The dominant
- 15 industries in the region are education and health care services, retail trade, and entertainment
- 16 and food services. In February 2020, the unemployment rate for Orange County was 4.1
- 17 percent, which was up 0.3 percent from the 2019 annual average (NYDOL 2020). West Point
- 18 routinely hires local and regional contractors to perform construction and renovation activities for
- 19 numerous projects at the installation. In 2018, there were 11,207 and 102 construction jobs in
- 20 Orange County and Highland Falls, respectively. The average per capita income in 2018 for
- 21 Orange County was \$33,472. Highland Falls had a slightly higher average per capita income in
- 22 2018 at \$42,460 (USCB 2018).
- 23 USAGWP provides quality of life and community services for those who reside on post or are
- 24 employed by USAGWP. These services include housing, childcare facilities, chapel,
- 25 recreational facilities, community club, fire department, and security services. USAGWP also
- 26 provides athletic and physical recreational opportunities for cadets, such as football, baseball,
- 27 track and field, soccer, tennis, swimming, cycling, golf, hockey, basketball, lacrosse, crew, and
- 28 sailing. Many of these services also are available to the surrounding community and general
- 29 public.

30 3.12.1.2 Environmental Justice

- 31 On February 11, 1994, President Clinton signed EO 12898, Federal Actions to Address
- 32 Environmental Justice in Minority and Low-Income Populations. The general purposes of the
- EO are to 1) focus the attention of federal agencies on the human health and environmental
- 34 conditions in minority communities and low-income communities with the goal of achieving
- 35 environmental justice; 2) foster nondiscrimination in federal programs that substantially affect
- 36 human health or the environment; and 3) give minority communities and low-income

- 1 communities greater opportunities for public participation in and access to public information on
- 2 matters relating to human health and the environment. EO 12898 directs federal agencies to
- 3 develop environmental justice strategies.
- 4 EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, was
- 5 issued in 1997 to identify and assess environmental health and safety risks that might
- 6 disproportionately affect children. Children may suffer disproportionately more environmental
- 7 health and safety risks than adults because of various factors: children's neurological, digestive,
- 8 immunological, and other bodily systems are still developing; children eat more food, drink more
- 9 fluids, and breathe more air in proportion to their body weight than adults; children's behavior
- 10 patterns may make them more susceptible to accidents because they are less able to protect
- 11 themselves; and children's size and weight may diminish the protection they receive from
- 12 standard safety features.
- 13 The PPA is located wholly within the West Point military installation boundary. Residential
- 14 houses are located to the north of the PPA along Washington Road. According to the EPA
- 15 Environmental Justice Screening and Mapping Tool ("EJ Screen Tool"), there is a 27 percent
- 16 minority population within a 1-mile buffer around Delafield Pond, which is less than the 44
- 17 percent comparative minority population within the EPA region and state. There is a 9 percent
- 18 low-income population within a 1-mile buffer around the project area, which is less than the 29
- 19 percent and 31 percent low-income rates of comparative populations of the EPA region and
- state, respectively (USEPA 2020). The EJ Screen Tool indicated that the PPA does not
- 21 represent an area with disproportionately high low-income or minority populations. Please see
- 22 Appendix C for the EPA Environmental Justice Screening Report.

23 3.12.2 Environmental Consequences

- 24 3.12.2.1 Alternative 1 (Preferred Alternative)
- The implementation of the seven projects in the PPA under the Preferred Alternative would result in several million dollars in military spending over the course of the PPA development for projects that in which interested private firms would be invited to submit bids and provided an
- 27 projects that in which interested private firms would be invited to submit bids and provided an
- opportunity to be awarded contracts to perform the work. The military expenditures for each
 contract would produce direct employment for workers that would perform the construction and
- 30 renovation as well as indirect employment and expenditures from the ripple effect of that
- 31 spending in the local economy. This would be a short-term beneficial impact to the local/regional
- 32 economy, although not all construction labor and materials would be procured locally. The
- 33 regional labor force would be expected to absorb the increased demand for direct construction
- 34 jobs, as well as any associated secondary jobs. No in-migration to the area would be expected
- 35 as a result of construction spending. Additional taxes would accrue to federal, state, and local
- 36 governments as a result of the increase in construction activities; however, these impacts would

- 1 be minor and temporary. In summary, the military spending for implementation of Preferred
- 2 Alternative would result in minor short-term beneficial impacts to the local region.
- 3 There would be no disproportionately high or adverse impacts to minority or low-income
- 4 populations resulting from implementation of the Preferred Alternative. The PPA is located
- 5 adjacent to a small residential area located along Washington Road; however, the Preferred
- 6 Alternative would not result in adverse impacts to children's health or safety. The proposed
- 7 projects will support and enhance vital community and recreational amenities that will be
- 8 available to all cadets, faculty, support personnel, and the general public.

9 3.12.2.2 Alternative 2

- 10 The socioeconomic impacts under Alternative 2 would be similar to those described under the
- 11 Preferred Alternative, just to a lesser extent given that only Projects 1 through 3 would be
- 12 implemented. This would require less construction and incur less military spending in the local
- 13 economy than described under the Preferred Alternative. The expected environmental justice
- 14 impacts for Alternative 2 would be the same as described under the Preferred Alternative. There
- 15 would be no disproportionately high or adverse impacts to minority or low-income populations
- 16 resulting from the implementation of Alternative 2.

17 3.12.2.3 No Action Alternative

- 18 Under the No Action Alternative, there would be no changes to the socioeconomic conditions of
- 19 the area as described in Section 3.11.1. No related changes to employment and expenditures
- 20 and associated direct and indirect effects are reasonably foreseeable. Additionally, there would
- 21 be no disproportionate environmental justice impacts to minority or low-income populations or
- 22 impacts that would adversely impact children's health and safety.

23 3.13 AESTHETICS AND VISUAL RESOURCES

24 **3.13.1 Affected Environment**

- 25 The proposed PPA project site is approximately 32 acres, which consists of the drained
- 26 Delafield Pond and its deteriorating bathhouse, the 1949er Lodge, an existing electric
- 27 substation, and undeveloped, forested land. The drained pond is aesthetically inconsistent with
- 28 an otherwise scenic wooded area with historic viewsheds and seasonal views of the Hudson
- 29 River. The proposed physical fitness facility would be a 147,000-SF facility that would be 7-
- 30 stories from the lowest elevation (USAGWP 2019b).
- 31 USAGWP is located within the Hudson Highlands SASS, which consists of combined aesthetic
- 32 values of landscape character, uniqueness, public accessibility, and public recognition. The
- 33 designation and protection of SASS are included within NYSCMP Policy 24. Siting and facility-
- 34 related guidelines are included in the NYSCMP to protect SASS.
- 35 The policy states that impairment of a SASS includes:

1. The irreversible modification of geologic forms; the destruction or removal of vegetation; the modification, destruction, or removal of structures, whenever the geologic forms,

- 3 vegetation, or structures are significant to the scenic quality of an identified resource; and
- The addition of structures which because of siting or scale will reduce identified views or
 which because of scale, form, or materials will diminish the scenic quality of an identified
 resource.

7 The PPA incorporates steep terrain south of Washington Road and areas along the upper end

8 of Delafield Road have expansive views overlooking the Hudson River, particularly during the

9 winter and early spring months when the trees have lost their leaves. The Historic Landscape

10 Management Plan for the U.S. Military Academy at West Point identifies Fort Putnam as a

11 historically significant viewpoint; it is the only identified viewpoint within the PPA (USACE 2002).

12 3.13.2 Environmental Consequences

13 3.13.2.1 Alternative 1 (Preferred Alternative)

14 Maintaining the aesthetic and visual integrity of the PPA will be a key goal of the site design.

15 The projects implemented under the Preferred Alternative would not result in adverse effects to

16 the viewsheds at West Point and are anticipated to positively impact the aesthetic resources of

17 the PPA. Officially decommissioning Delafield Pond and redeveloping the site as an outdoor

pool and physical fitness center would alleviate the visual "eye sore" created by the abandoneddam property.

20 There are 18 historically significant views that were identified in association with the Cadet Zone

21 (USAGWP 2003); two viewpoints are relevant to the PPA (**Figure 3.13-1**). Redoubt 4, located at

22 Fort Putnam, is a historically significant viewpoint; however, the views are oriented toward the

Hudson River and The Plain, not towards the PPA. View 3 is from the Crow's Nest summit, a

24 mountain located along the western bank of the Hudson River and on the northern edge of

25 USAGWP property. The view is oriented east-southeast towards the PPA, although much of the

26 PPA is obscured by mountainside and tree foliage. The multi-story physical fitness facility may

be visible from View 3, but the impacts to the viewshed would be mitigated by the design of the physical fitness facility. In accordance with the West Point Installation Planning Standards, new

28 physical fitness facility. In accordance with the West Point Installation Planning Standards, new 29 construction of the physical fitness center and any exterior renovations of existing facilities will

30 use building materials that are consistent with the "Community Theme", which recommends

31 wood and stone building materials within the PPA (IMCOM 2017b).

32 The restoration of the 1949er Lodge will include interior upgrades and will not alter the visual

33 resources of the project area. Likewise, the updates to the existing electric substation are not

- 34 anticipated to have any adverse impacts on the area aesthetics.
- 35 The establishment of a passive park within the PPA (Project 7) will focus on preserving historic

36 viewsheds and will involve limited development, to include walking trails, signage, picnic areas,

37 and benches. Development of these supporting features will abide by the Installation Planning

1

2

- 1 Standards and will enhance the overall character of the PPA as a recreational hub. The creation
- 2 of a park will allow visitors greater opportunities to enjoy the scenic views offered by the PPA.
- 3 Overall, careful design and execution of the Preferred Alternative will result in overall
- 4 improvement to the visual landscape of the PPA. The final design will adhere to all guidance
- 5 outlined in the Installation Planning Standards related to site planning, building design, and
- 6 landscaping. Additionally, design of the Preferred Alternative would follow guidelines included in
- 7 New York's CMP (Policy 24) to protect SASS.

8 3.13.2.2 Alternative 2

- 9 Under Alternative 2, Projects 1 through 3 would be implemented, so the visual landscape would
- 10 be improved with the redevelopment of the Delafield Pond site. The expected impacts for
- 11 Alternative 2 would be like those described under the Preferred Alternative. However, the
- 12 anticipated benefits to be accrued with the development of a passive (undeveloped) park within
- 13 the PPA would not be realized under Alternative 2.

14 3.13.2.3 No Action Alternative

- 15 Under the No Action Alternative, there would be no changes to the aesthetics and existing
- 16 viewsheds of the PPA as described in Section 3.12.1. The drained Delafield Pond would
- 17 continue to be an "eye sore" for the area and existing facilities would continue to deteriorate,
- 18 contributing to a suboptimal visual landscape in the project area





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1 4.0 CUMULATIVE IMPACTS

2 4.1 DEFINITION OF CUMULATIVE IMPACTS

3 The approach taken in the analysis of cumulative impacts in this document follows the

4 objectives of NEPA, CEQ regulations, and CEQ guidance. Cumulative impacts are defined in 40

5 CFR Section 1508.7 as follows:

6 The impact on the environment that results from the incremental impact of the action when 7 added to the other past, present, and reasonably foreseeable future actions regardless of 8 what agency (federal or non-federal) or person undertakes such other actions. Cumulative 9 impacts can result from individually minor but collectively significant actions taking place 10 over a period of time.

11 To determine the scope of environmental impact statements, agencies shall consider 12 "....[c]umulative actions, which when viewed with other proposed actions have cumulatively 13 significant impacts and should therefore be discussed in the same impact statement" (40 CFR 14 Section 1508.25).

- 15 In addition, CEQ and the USEPA have published guidance addressing implementation of
- 16 cumulative impact analyses—*Guidance on the Consideration of Past Actions in Cumulative*
- 17 Effects Analysis (CEQ 2005) and Consideration of Cumulative Impacts in EPA Review of NEPA
- 18 Documents (USEPA 1999). CEQ guidance entitled Considering Cumulative Impacts Under
- 19 NEPA (1997) states that cumulative impact analyses should "...determine the magnitude and
- 20 significance of the environmental consequences of the proposed action in the context of the
- 21 cumulative impacts of other past, present, and future actions...identify significant cumulative
- 22 impacts...[and]...focus on truly meaningful impacts."
- 23 Cumulative impacts are most likely to arise when a relationship or synergism exists between a
- 24 proposed action and other actions expected to occur in a similar location or during a similar time
- 25 period. Actions overlapping with or in close proximity to the proposed action would be expected
- 26 to have more potential for a relationship than those more geographically separated. Similarly,
- 27 relatively concurrent actions would tend to offer a higher potential for cumulative impacts. To

28 identify cumulative impacts, the analysis needs to address the following three fundamental

- 29 questions.
- 30 1) Does a relationship exist such that impacts to affected resource areas by the proposed
 31 action might interact with the impacts to resources of past, present, or reasonably
 32 foreseeable actions?
- 33 2) If so, what would the combined impact be?
- 34 3) Are there any potentially significant impacts not identified when the proposed action is35 considered alone?
- 36

1 4.2 POTENTIAL CUMULATIVE IMPACTS BY RESOURCE

2 4.2.1 Resources of Concern

- 3 This cumulative impacts analysis focuses on those resource areas where the incremental
- 4 impact of the proposed action could have the potential for significant direct or indirect
- 5 cumulative effects, as well as those resources that are of concern in the PPA surrounding area.
- 6 Based on the analysis presented in Chapter 3.0, the following resource areas were carried
- 7 forward for further analysis of potential cumulative effects: water resources, recreation, coastal
- 8 zone management, topography, geology, and soils, cultural resources, traffic and transportation,
- 9 air quality, socioeconomics and environmental justice, and aesthetics and visual resources.
- 10 For the purposes of this PEA, the following resource areas were not carried forward for
- 11 cumulative effects analysis: biological resources, land use, noise, and utilities. Since the direct
- 12 and/or indirect impacts to these resource areas are localized and temporary, and the respective
- 13 resources are anticipated to recover within a short period of time, another action would need to
- 14 occur in the same localized area at the same time for cumulative impacts to be possible. While
- 15 a few of the other actions potentially affecting these resource areas may occur in the same
- 16 localized area, the potential for cumulative significant impacts due to the incremental impact of
- 17 the proposed action would not exist as the proposed action was found to result in no, negligible,
- 18 or minor direct/indirect adverse impacts to these resource areas.

19 **4.2.2** Other Actions Affecting the Resources of Concern

- 20 Other past, present, and reasonably foreseeable actions that could influence the resource areas
- 21 carried forward for further analysis are addressed here. This includes consideration of the other
- 22 past and present actions and their locations, the extent of their direct and indirect effects, any
- 23 likely future actions, and their relative contribution to cumulative impacts on the specific
- 24 resource.
- 25 4.2.2.1 Past, Present, and Reasonably Foreseeable Actions
- 26 In accordance with CEQ's guidance, past actions are relevant and useful in analyzing whether
- 27 the reasonably foreseeable effects of the proposed action may have a continuing, additive, and
- significant relationship to those effects. CEQ guidance emphasizes a focus on the current
- aggregate effects of past actions without delving into the historical details of individual past
- actions unless such information is necessary to describe the cumulative impact of all pastactions combined.
- ST actions combined.
- 32 A comprehensive list of relevant recent past, ongoing, and reasonably foreseeable future
- actions, along with the status of the NEPA analysis (if applicable) is provided in **Table 4.2-1**.
- 34 These actions focus on those that were found to have potential for cumulative effects with the
- 35 proposed action on water resources, recreation, coastal zone management, topography,
- 36 geology, and soils, cultural resources, traffic and transportation, air quality, socioeconomics and

- 1 environmental justice, and aesthetics and visual resources. A comprehensive list of relevant
- 2 recent past, ongoing, and reasonably foreseeable future 32 actions, along with the status of the
- 3 NEPA analysis (if applicable) is provided in **Table 4.2-1** and shown in **Figure 4.2-1**.

Action	Level of Analysis Completed or Planned	Decision Document	Lead Agency
Past Actions			
USMA Lacrosse Center	EA	FONSI (DATE 2015)	Army
Target Hill WWTP Project	EA	FONSI (October 2017)	Army
New West Point Elementary School	EA	FONSI (July 2017)	Army
Present and Reasonably Foreseeable Action	S		
Military Munitions Response Program	Regulatory Consultations	NA	Army
RPMP Projects for the Putnam and Ladycliff District	EA	FONSI (TBD)	Army
Highland Falls Waterfront Redevelopment	Feasibility Study	NA	Town of Highland Falls
Thayer Flats Hotel development	NA	NA	South Gate Flats LDT
West Point Cemetery Expansion	EA	FONSI (February 2019)	Army
Construction of the Cyber and Engineering Academic Center and Parking Structure	SEA	FONSI (May 2020)	Army
Clinton District RPMP projects	EIS	ROD (Early 2022)	Army

Table 4.2-1. Cumulative Action Evaluation

Legend: EA = Environmental Assessment; SEA = Supplemental Environmental Assessment; FONSI = Finding of No Significant Impact; ROD = Record of Decision; NA = Not applicable TBD = to be determined

4 USMA Lacrosse Center. A new Lacrosse Center facility was designed in 2009 and updated in

- 5 2015 for use by the USMA Cadet Varsity lacrosse team. The facility was sited at the corner of
- 6 Stony Lonesome and Mills Roads. The Lacrosse Center consists of three floors of equipment
- 7 storage space, locker room and shower facilities, conference rooms, coaches' offices, players'
- 8 lounge, and multi-purpose space (Sasaki 2009).
- 9 Target Hill WWTP Project. USAGWP is upgrading and expanding the existing Target Hill
- 10 WWTP with the objective of increasing treatment capacity from the current 2.06 MGD to 3.5
- 11 MGD maximum-month plant rating (2.3 MGD average daily flow) to meet current and projected
- 12 future needs. The WWTP will continue to operate during renovation. Treated effluent from the
- 13 upgraded plant will be discharged to the Hudson River via a new outfall, which will replace the
- 14 existing NYSDEC SPDES-permitted outfall; it is anticipated that existing effluent limits will be
- 15 maintained. The upgrades to and expansion of the WWTP facility are designed to a minimum
- 16 life of 50 years (structures and buildings) in accordance with DoD UFC 1-200-02 including
- 17 energy efficiencies, building envelope and integrated building system performance.

In addition to the renovation and expansion of the WWTP, the project included the following
 elements:

- Installation of new perimeter security fencing.
- Land-based stabilization of the two existing box culverts, which discharge stormwater via
 existing outfalls to the Hudson River.
- Installation of, and SPDES-permitted discharges from, a replacement outfall, which
 extends approximately 340 linear feet from the WWTP to a discharge point in the
 Hudson River; the existing outfall was abandoned in-place.
- Integration of alternative energy systems to support USAGWP sustainability goals;
 potential systems under consideration consist of WWTP-generated methane gas
 including anaerobic digestion of food waste generated on the USAGWP site to improve
 gas production and energy value.
- 13 Construction and demolition activities required off-site management of construction and
- demolition debris. An EA was completed in October 2017. Renovation and expansion activitiescommenced in summer 2019.
- 16 **New West Point Elementary School.** USAGWP was in need of an updated elementary school
- 17 for the families living on post. The original elementary school was constructed in 1963. The
- 18 building is set to be demolished by the end of summer 2020 and the new West Point
- 19 Elementary School was constructed to provide space for additional staff parking, greenspace,
- 20 and antiterrorism/force protection setbacks. The new building was constructed on the existing
- 21 Elementary School/Middle School Campus, north of Washington Road, and includes a total of
- 22 95,552 gross SF of educational building facilities. The footprint of the new elementary school
- 23 occupies the center one-third of the site extending northeast of the existing shared gymnasium
- 24 with the middle school, with the front of the building facing to the west. The larger play areas
- 25 occupy the east and north portions of the site. An EA was completed in June 2017 and
- 26 construction of the new West Point Elementary School was completed January 2020 (USAGWP
- 27 2017).

3

28 USAGWP Military Munitions Response Program (MMRP). Congress established the MMRP 29 in 2003 under the Defense Environmental Restoration Program (DERP) to address munitions of 30 explosive concern (MEC) and munitions constituents (MC) located on current and former 31 defense sites. The U.S. Army conducted an inventory of closed, transferred, and transferring 32 military ranges and defense sites. If information indicates that munitions may have been used 33 during training at these munition response sites (MRSs), environmental studies are conducted 34 at the MRSs under the MMRP. The study results are used to determine if MEC and MC are 35 present, and if MEC and MC could potentially harm human health and the environment. If there 36 is potential harm, then some type of action may be needed to reduce or eliminate the harm. 37 USAGWP has identified six MRSs: Target Hill, Artillery Firing Range South, North Athletic Field, 38 Siege Battery, Lusk Reservoir, and Fort Clinton West. Lusk Reservoir is located adjacent to the 39 PPA, along the southeast boundary (USACE 2015).



Legend

- Cumulative Action Evaluation Sites
- Existing Buildings
- ----- Roads
 - PPA Project Boundary
- West Point Installation

						1000 1000
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- Cumulative Action Evaluation

 Past Actions
 Lacrosse Center
 Target Hill WWTP Project
 New West Point Elementary School
 Present and Reasonably Foreseeable Actions
 Military Munitions Response Program
 - 4 MMRP Target Hill
 - 5 MMRP Artillery Firing Range South
 - 6 MMRP North Athletic Field
 - 7 MMRP Siege Battery
 - 8 MMRP Lusk Reservoir



Figure 4.2-1. Cumulative Actions Locations

1 2

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1

2 **RPMP for the Putnam and Ladycliff District.** As part of the overall RPMP for West Point, the 3 installation was divided up into districts and ADPs were developed for each district. The PPA is 4 within the Putnam and Ladycliff District. The ADP for the Putnam and Ladycliff District was 5 completed in April 2019 (IMCOM 2019a). The ADP establishes a framework for future 6 development with a series of executable improvements that can be funded in the short-, mid-, 7 and long-term. Major elements of the preferred alternative in the ADP include the Michie 8 Stadium expansion, Thayer Gate reconfiguration, expansion of Thayer Hotel, improve 9 wayfinding at the installation, and redevelopment of the Delafield Pond Site, which is part of the 10 PPA (IMCOM 2019a).

11 Highland Falls Waterfront Redevelopment. In 2017, the Village of Highland Falls, the town of 12 Highland Falls, and the project partners of Orange County, Scenic Hudson, Hudson Highlands 13 Land Trust, USAGWP, and the New York State Hudson River Valley Greenway, initiated a 14 Waterfront Redevelopment Feasibility Study to improve and provide public access to the 15 Hudson River. The project area consists of the portion of waterfront land between the West 16 Point Museum and the Thayer Hotel at West Point, including Station Hill Road and the 17 intersection with the West Point Highway and Main Street. The goal of the Feasibility Study is to 18 provide improved waterfront access and redevelopment opportunities as part of a wider 19 waterfront and economic development initiative. Potential redevelopment opportunities include a 20 new marina; adaptive reuse of the former train station building; restaurant, retail, and boater 21 support facilities; and new and improved public waterfront access (LA Group 2017). As of 22 January 2020, the design phase is moving forward and focusing on the area of the old Highland 23 Falls railroad depot. Preliminary plans include a restaurant, kayak launch, and a tramway 24 system to provide access to the small and steep area (Times Herald-Record 2020). 25 Thayer Flats Hotel Development. A \$39 million luxury hotel and spa is proposed for downtown

Highland Falls, known as the Thayer Flats at West Point (Figure 4.2-2). The project has strong
 potential to rejuvenate downtown Highland Falls and be an anchoring business. Thayer Flats is

28 planned for 479 Main Street, 750 feet from the Thaver Gate. Four structures on the site would

29 be razed, including a vacant bank; the former Pentagon Federal Credit Union; a rundown

30 boarding house; a two-family home; and a four-unit apartment building (Times Herald-Record

31 2019). Developers met with local planning boards and development authorities in late 2019 and

32 plan to break ground sometime in 2020 and open by October 2021. The 130,000-SF luxury

33 hotel will include 24,000 SF of enclosed parking, plus a first-floor lobby with 20-foot ceilings, and

34 a 3,000-SF farm-to-fork restaurant. The second floor will feature a 4,000-SF room for

35 conferences and social events, plus a 5,000-SF spa and salon area. The third through fifth

36 floors will contain 79 guest rooms. The top floor rooftop area would include a 1,400-SF kitchen,

a 2,500-SF clubroom, and a stage, fireplace, hot tub, cabanas and outdoor pool that will be

38 covered with a heated, glass atrium in the winter. Developers aim to fill a void for local high-end

- 1 lodging, which will lead tourists to stay longer and spend more when they visit West Point
- 2 instead of day-tripping (Times Herald-Record 2019).



Source: South Gate Flats LTD Figure 4.2.-2 Design Rendering of Thayer Flats Hotel

6 West Point Cemetery Expansion. The Army National Military Cemeteries proposed to expand 7 the perimeter of the West Point Cemetery to include a contiguous parcel north of the cemetery 8 boundary. The cemetery expansion is needed to support the Army's commitment to provide in-9 ground burial to authorized service members and family members. Cadets, graduates, faculty, 10 and staff of the USMA are eligible for burial at the West Point Cemetery. The cemetery, located 11 on Washington Road in the northeast corner of the USAGWP, uses approximately 130-150 in-12 ground burial sites per year; approximately 75 percent of the needed sites are for cremated 13 remains. Current space at West Point Cemetery is limited; as of March 2017, there were only 26 14 full casket sites and 57 in-ground cremated remains sites remaining (USAGWP 2019d). The 15 cemetery expansion is needed to meet future interment/inurnment demands of eligible persons, 16 both in the short- and long-term. Extending the operational life of the cemetery by providing 17 sufficient capacity would enable Army National Military Cemeteries to serve forecasted demand 18 of eligible persons and their families. The proposed design would increase the number of burial 19 sites by 4,063, including 1,079 24-SF sites for in-ground, casketed remains; 2,444 12-SF sites 20 for cremated remains; and 540 niche wall spaces. Approximately 30,000 cubic yards (CY) of soil 21 would need to be removed due to potential contamination and replaced with approximately

1 20,000 CY of engineered fill. The site is a former landfill and will require review and approval by 2 NYSDEC (USAGWP 2019d). An EA was completed in 2019. Construction is underway and 3 planned for completion in August 2021 (Army 2019). Phase II of the cemetery expansion 4 involves demolition of the existing suboptimal fitness center and PX in 2028. 5 Construction of the Cyber and Engineering Academic Center (CEAC) and Parking 6 **Structure.** USAGWP has proposed the development of a state-of-the-art computer and 7 engineering sciences academic building and underground parking structure on the USMA 8 campus (USAGWP 2019e). The CEAC fulfills the need for a collaborative science and 9 engineering learning space enabling USMA cadets to experiment with and develop new and 10 emerging technologies that will enable the United States Military to remain at the technological 11 forefront of new battlefields, both physical and digital. The proposed parking structure would 12 serve CEAC as well as address parking shortages within the USMA campus without increasing 13 the footprint of surface parking. The CEAC building would be constructed within the Central 14 Zone/Cadet Zone of the USMA Campus, on the west side of Thayer Road, south of existing 15 Building 606, and across Thaver Road from the existing Mahan Hall. The action would involve 16 the demolition of four existing single-family residential structures (Quarters #5-#8) and an 17 associated garage building (Building #20), an existing rock retaining wall, and an existing 18 surface parking area. The residential structures are contributing elements to the West Point 19 NHLD. The new CEAC building would be approximately 136,000 SF and four stories. There 20 would be two enclosed pedestrian bridges, one spanning over Thayer Road to connect the 21 CEAC to Mahon Hall, and the other to connect to Building 606. Rooftop meeting and colloquium 22 space would constitute the fourth floor of the CEAC building. A two level, 450-space parking 23 structure would be constructed beneath the CEAC building and accessed from a driveway 24 intersecting Thayer Road from the west. New hardscape is proposed to integrate the CEAC with 25 the existing academic buildings and barracks located within the Central Zone at USMA. Existing 26 thematic grotesques depicting engineering sciences salvaged from the previous demolition of 27 Building 606 will be incorporated into the CEAC design to enhance the context sensitive design 28 of the building and connect the CEAC building to the engineering and science education legacy 29 of West Point. In addition to the demolition of the residential buildings, redevelopment of the 30 existing construction staging area, and construction of the CEAC building and parking structure, 31 the proposed project includes: 32 Extension of Thayer Walk pedestrian plaza to the south and relocation of the security 33 guard booth located at the existing terminus of Thayer Walk. 34 Stormwater management measures, including the use of Green Infrastructure

- 35 Techniques based on the regulations of the NYSDEC and an underground stormwater 36 detention to ensure stormwater quality.
- Construction of accessory components (i.e., site access/circulation and utility
 connections.)

1 Construction phase activities will include a 70-ft rock cut and excavation, requiring the disposal

- 2 of approximately 345,000 CY of rock and excavated material. During construction, traffic
- 3 impacts to Stony Lonesome would be temporary and minor as traffic would be rerouted to
- 4 accommodate construction traffic and staging areas. The Stony Lonesome/Delafield Road
- 5 intersection could experience increased traffic flow once the CEAC is constructed, but traffic
- 6 analysis has been completed to plan for increased demand (Ewing Cole 2019).USAGWP
- 7 completed a SEA for the CEAC building and parking structure in May 2020. Construction is
- 8 anticipated to be completed in summer 2023 (USAGWP 2019e).
- 9 **RPMP for the Clinton District.** As noted previously, West Point was divided up into districts
- 10 and ADPs were developed for each district. The ADP for the Clinton District was finalized in
- 11 January 2019 (IMCOM 2019b). The Clinton District is home to the academic core of USMA.
- 12 Living quarters, classrooms, the library, dining halls, the Cadet Chapel, and Cadet support
- 13 functions are located within the main campus area. Adjacent to the Cadet campus is The Plain,
- 14 which hosts military parades, celebrations, and graduation. Various athletic fields used for both
- 15 Division-I athletics and other recreational leagues are also found throughout the District. North
- 16 Dock and South Dock areas are primarily used for recreational functions and overflow parking
- 17 for larger sporting events. USAGWP DPW's main offices are located within the District as well.
- 18 A significant number of tourists visit the area to witness the history of West Point. Trophy Point,
- 19 the main campus area, West Point Cemetery, Eisenhower Hall, and The Plain are a few of the
- 20 prominent areas popular amongst visitors. With its high visibility, the Clinton District serves as
- 21 the public image of West Point. The ADP establishes a framework for future development with a
- series of executable improvements that can be funded in the short-, mid-, and long-term. Major
- 23 elements of the preferred alternative in the ADP include construction of the CEAC, upgrades to
- 24 The Plain, revitalization of Trophy Point, expansion of and upgrades to walking trails, and
- 25 various academic building upgrades and renovations (IMCOM 2019b). The Clinton District
- contains the majority of the USMA academic campus and ceremonial spots at West Point.
- 27 Because of its public importance and building and road density, an EIS will be prepared to
- 28 analyze the impacts from the projects identified in the ADP preferred alternative. The anticipated
- date for publication of the NOI is 2021, with a ROD anticipated to be signed in early 2022.

4.2.3 Determination of the Magnitude and Significance of Cumulative Impacts on the Selected Resource

- 32 4.2.3.1 Water Resources
- 33 Impacts to water resources, including wetlands, are typically localized. Therefore, the study area
- 34 considered in the cumulative analysis for this resource area is limited to projects that may occur
- 35 at or in very close proximity to the proposed action area. Several of the projects planned by the
- 36 Army (as listed in **Table 4.2-1**) are relevant in that they could impact surface waters within a
- 37 similar timeframe as the proposed action. These actions include the Target Hill WWTP, New

- 1 West Point Elementary School, RPMP projects, West Point Cemetery Expansion, and the
- 2 CEAC and parking structure project.
- 3 Surface Water. Cumulative construction projects that exceed one acre, would require coverage
- 4 under New York's CGP. In compliance with coverage under his permit, a SWPPP would be
- 5 prepared and implemented, including post-construction stormwater management practices, to
- 6 manage and treat the stormwater discharge to protect water quality during and after
- 7 construction. All development on USAGWP would also include LID technologies detailed in the
- 8 USAGWP LID SWMP (USAGWP 2015). Through compliance with New York's CGP and
- 9 implementation of LID, cumulative effects would be less than significant when considering the
- 10 proposed action and other cumulative projects.
- 11 **Groundwater.** Construction impacts to groundwater under the proposed action would not
- 12 extend below ground surface to a depth that would affect the underlying groundwater basins.
- 13 Compliance with measures to protect water quality in surface waters under the proposed action
- 14 and other cumulative construction projects would minimize impacts to water quality in the
- 15 underlying groundwater basins.
- 16 Floodplains. The proposed action would not occur within any 100-year floodplain nor would it 17 impact floodplain capacity. Therefore, there would be no cumulative impacts to floodplains.
- Wetlands and Other Waters of the U.S. The proposed action would not occur within or directly
 impact any jurisdictional wetlands or waters of the U.S. Delafield Pond is not a jurisdictional
 water of the U.S. Therefore, there would be no cumulative impacts to wetlands or waters of the
 U.S.
- 22 In conclusion, individually, the projects would result in short-term and localized impacts to water
- 23 resources and it is expected the environment would recover following conclusion of each
- 24 project. Moreover, permit requirements would minimize individual project impacts to the fullest
- 25 extent possible. As a result, no significant adverse cumulative impacts to water resources are
- 26 anticipated.
- 27 4.2.3.2 Recreation
- 28 The study area for cumulative impacts associated with recreational resources includes the West
- 29 Point installation and Hudson River waterfront in Highland Falls. The West Point Elementary
- 30 School, RPMP projects, West Point Cemetery Expansion, Highland Falls Waterfront
- 31 development and Thayer Flats Hotel development projects are all relevant in that they could
- 32 potentially impact recreational resources.
- 33 Cumulative impacts to recreational resources from past, present, and reasonably foreseeable
- 34 actions within the study area would be less than significant. While demand on recreational
- 35 resources is expected to rise with the increase in available recreational amenities, there is the
- 36 potential for long-term beneficial impacts from the park, pool, and physical fitness center at the

- 1 PPA, the proposed waterfront amenities such as the kayak launch, and spa services available
- 2 at the proposed Thayer Flats Hotel. These actions improve access to and quality of recreational
- 3 opportunities at USAGWP and the surrounding communities in Orange County. Therefore,
- 4 implementation of the proposed action combined with the past, present, and reasonably
- 5 foreseeable projects, would result minor, beneficial cumulative impacts to recreational
- 6 resources.
- 7 4.2.3.3 Coastal Zone Management
- 8 The study area for cumulative impacts associated with coastal zone management includes the
- 9 West Point installation and Hudson River coastline. The proposed action, as well as all past and
- 10 current on-post construction projects listed in **Table 4.2-1** require consultation with NYSDOS to
- 11 determine consistency with the NYSCMP. Documentation must be submitted for NYSDOS
- 12 review in accordance with 15 CFR 930.34(b). All projects at West Point would be subject to
- 13 state and federal requirements for activities occurring in the coastal zone as defined by the
- 14 NYSCMP. All development would be planned and designed to avoid sensitive areas, including
- 15 the Hudson Highlands SASS, and would be consistent with the NYSCMP to the maximum
- 16 extent practicable. The implementation of the projects has very limited potential to adversely
- 17 affect coastal zone resources, and that limited potential is mitigated through adherence to
- 18 USAGWP's Low Impact Development SWMP, construction and stormwater BMPs, and context-
- 19 sensitive design. As a result, no significant adverse cumulative impacts to the coastal zone are
- 20 anticipated.
- 21 4.2.3.4 Topography, Geology and Soils
- 22 Impacts to topography, geology and soils, from the proposed actions are very small and highly
- 23 localized. Therefore, the study area considered in the cumulative analysis for this resource area
- is limited to projects that may occur at or in very close proximity to the proposed action area.
- 25 All past, present, and reasonably foreseeable actions involving ground disturbance and
- 26 construction will require coverage under the NYSDEC's SPDES General Permit for Stormwater
- 27 Discharges from Construction Activity (GP-0-15-002), which includes the requirement to
- 28 develop a SWPPP and Erosion and Sediment Control Plan. Additionally, the USAG Engineering
- 29 Planning Standards provide requirements of Erosion and Sediment Control Plan. Projects
- 30 requiring significant excavation or blasting of rock, such as the CEAC and parking structure,
- 31 would require geotechnical investigations and must incorporate the recommendations into
- 32 project design. Prior to blasting of rock, a pre-blast survey must be completed to identify
- 33 potential noise and vibration related impacts, and a blasting plan must be prepared and
- 34 implemented by a NYS-licensed blasting contractor. Therefore, it is not anticipated that impacts
- to topography, geology, and soils from other past, present, and future actions, when considered
- 36 incrementally with the proposed action, would result in significant cumulative impacts.

1 4.2.3.5 Cultural Resources

2 The study area considered in the cumulative analysis for cultural resources is the general area

- 3 surrounding the PPA and the West Point NHLD.
- 4 Both the proposed action and the on-post projects listed in **Table 4.2-1** would occur in the West
- 5 Point NHLD. Design of the proposed action projects and the on-post projects must comply with
- 6 procedures outlined in the West Point ICRMP and the 2016 PA. They also must adhere to the
- 7 recommendations included in the West Point Historic Landscape Management Plan.
- 8 Consultation with the New York SHPO must be completed only if the West Point CRM
- 9 determines that an undertaking will have an adverse effect on contributing elements of the
- 10 NHLD. If a project would result in an adverse effect to the NHLD a letter of agreement for the
- 11 minimization and mitigation of adverse effects must be obtained with the NY SHPO before
- 12 proceeding. In conclusion, significant adverse cumulative impacts to cultural resources are not
- 13 anticipated.
- 14 4.2.3.6 Traffic and Transportation
- 15 For any project, traffic increases would be observed on roads used for the transport of
- 16 construction equipment/materials and workers to and from project sites. Thus, the study area
- 17 considered in the cumulative analysis for transportation infrastructure includes roadways on the
- 18 installation, Thayer and Stony Lonesome Gates, and roadways off the installation, particularly
- 19 New York Route 218 and U.S. Route 9W.
- 20 Most all construction, demolition, and remediation projects described in Section 4.2.2.1 would
- 21 utilize existing transportation infrastructure and are, thus, relevant to the cumulative analysis
- 22 thereof. Potential traffic impacts have been evaluated at varying levels of detail of where NEPA
- 23 documentation has been completed.
- Although the proposed action would implement long-term, beneficial improvements to traffic circulation and parking at USAGWP, a significant amount of construction and development is proposed to occur at USAGWP over the next approximately five years (e.g., the Cemetery expansion along Washington Road) that would increase the volume of traffic in the study area during normal work hours on a cumulative basis. It is anticipated that some projects may overlap, but there are uncertainties on timing as all projects are subject to implementation
- 30 timelines and funding that can change based on numerous factors. For each project, traffic
- 31 impacts would be short-term in nature, lasting no more than the duration of the project, and the
- 32 majority of the projects would confer minor volume increases within the context of average
- 33 roadway traffic. Additionally, each individual project would require the construction/demolition
- 34 contractor to prepare a project-specific haul route or transportation plan. This plan would
- 35 describe regular detours and specific gate use for construction vehicles, deliveries, and workers;
- 36 specify laydown area use; and establish appropriate traffic control and signage. This continued
- 37 oversight would assist West Point in the prevention of traffic-related issues as daily traffic of

- 1 residents, cadets, and personnel interacts with multiple or ongoing construction/ demolition
- 2 activities. Thus, impacts to traffic and transportation resources are not expected to become
- 3 cumulatively significant.
- 4 4.2.3.7 Air Quality
- 5 The local construction projects planned by the Army as described in Section 4.2.2.1 are relevant
- 6 in that they would produce emissions that would be additive to those produced by
- 7 implementation of the proposed action.
- 8 Based on the air quality analysis performed for the proposed action, the emissions associated
- 9 with construction activities proposed at the PPA would not be significant. PM_{2.5} emissions are
- 10 below the General Conformity *de minimis* threshold. The other actions listed in **Table 4.2-1** were
- 11 either assessed through NEPA to be below conformity *de minimis* level or would be expected to
- 12 have *de minimis* levels of emissions. Because of the attainment classification of the area, it is
- 13 unlikely that significant impacts to air quality, such as violation of a NAAQS, would result. It is
- 14 more likely that the overall level of criteria pollutant emissions would increase temporarily during
- 15 construction periods, but at a level that would only generate temporary impacts. Therefore, it is
- 16 not anticipated that air emissions from other past, present, and future actions, when considered
- 17 incrementally with the proposed action, would exceed any regulatory standards.

18 Greenhouse Gas (GHG) Emissions and Climate Change. In June 2014, the DoD released 19 the 2014 Climate Change Adaptation Roadmap to document the DoD's efforts to plan for the 20 changes that are occurring or expected to occur as a result of climate change. The Roadmap 21 provides an overview and specific details on how the DoD's adaptation will occur and ongoing 22 efforts (DoD 2014). The U.S. Army War College published Implications of Climate Change for 23 the U.S. Army in July 2019. This study examined the implications of climate change for the 24 Army to include national security challenges associated with or worsened by climate change, 25 and organizational challenges arising from climate change-related issues in the domestic 26 environment. Additionally, the study provided recommendations to address GHGs and climate 27 change for both the Army operating environment and the Army institution. The study assumed 28 that human behavior can mitigate both the size and consequences of negative impacts that 29 result from climate change (U.S. Army War College 2019). 30 GHG emissions would increase due to implementing the proposed action, primarily due to fuel

- 31 combustion from construction equipment. Because buildings are also a large source of GHGs in
- 32 DoD, USAGWP could plan for reduction of emissions from the new and renovated facilities that
 33 are planned as compared to current facility operations. While construction and operation of
- 34 facilities may result in fuel combustion and therefore GHG emissions, USAGWP could reduce
- 35 impacts and possibly reduce the overall installation footprint through the use of renewable
- 36 energy resources, energy conservation designs for buildings planned for construction and

- renovation, and other common methods to lower energy consumption or use cleaner energy
 sources.
- 3 In conclusion, the proposed action, which involves repair, demolition, and construction activities
- 4 in the PPA, would incrementally contribute to global emissions. These emissions, while small,
- 5 would increase the atmosphere's concentration of GHGs, and, in combination with past and
- 6 future emissions from all other sources, contribute incrementally to the global warming that
- 7 produces the adverse effects of climate change. The total direct and indirect impacts would
- 8 most likely be constrained to small increases in GHG emissions to the atmosphere as a result of
- 9 demolition and construction activities.
- 10 4.2.3.8 Socioeconomics and Environmental Justice
- 11 The projects described in **Section 4.2.2.1** and listed in **Table 4.2-1**, are all relevant in that they
- 12 could potentially be additive to those socioeconomic impacts produced by implementation of the
- 13 proposed action.
- 14 Employment of construction contractors needed to complete all past, present, and reasonably
- 15 foreseeable future development would result in a minor temporary beneficial impact to
- 16 socioeconomic resources within the town of Highland Falls and Orange County. Additionally,
- 17 there would likely be a minor long-term positive impact on community services of the USAGWP.
- 18 All actions on post would improve infrastructure and facilities at USAGWP, thus improving the
- 19 quality of education, recreation, and community services at the USAGWP.
- 20 The employment of contractors to construct the proposed action and projects may result in
- 21 minor, temporary increased state sales tax revenue on goods and services purchased in the
- 22 Town of Highland Falls and adjacent municipalities. Additionally, the development of the
- 23 Highland Falls waterfront and new Thayer Flats hotel along with the increase amenities in the
- 24 PPA, could provide minor, long-term beneficial impacts to tax revenues and local businesses,
- 25 as visitors are encouraged to visit West Point and the surrounding areas. In conclusion, minor
- 26 beneficial cumulative impacts to socioeconomics are anticipated.
- 27 4.2.3.9 Aesthetics and Visual Resources
- 28 The local construction projects planned by the Army as described in Section 4.2.2.1 are relevant
- in that they are located within various important viewsheds and could potentially be additive to
- 30 those impacts produced by implementation of the proposed action.
- 31 USAGWP values and attempts to maintain a high aesthetic quality throughout its installation
- 32 activities, especially in areas of high visibility within the Main Post/Academic Area, as well as the
- 33 various views from this area. Due to the intensity of use and associated development at
- 34 USAGWP, the implementation of past, present, and reasonably foreseeable actions at West
- 35 Point would result in long-term direct impacts on visual resources. Implementation of the
- 36 proposed action, combined with other projects, could result in long-term impacts on visual

- 1 resources and important viewsheds. However, design measures would be incorporated into the
- 2 proposed action to reduce the visual impact (see Section 3.12). These measures include special
- 3 attention to architectural and building design to utilize designs and materials that are appropriate
- 4 and compatible with the West Point built and natural environment. In addition, West Point would
- 5 ensure that special attention is paid to lighting design and function. Specifically, lighting design
- 6 goals include using technologies to minimize obtrusive light effects to areas outside of West
- 7 Point. West Point is committed to maintaining the visual integrity of visual resources associated
- 8 with historic, cultural, and natural landscapes at USAGWP. Accordingly, the ICRMP and Historic
- 9 Landscape Management Plan are integral to evaluating and planning projects and activities that
 10 have the potential to adversely affect visual resources. As needed, project specific visual impact
- 11 assessments are conducted, and measures to minimize negative visual impacts are
- 12 incorporated. Thus, implementation of past, present, and reasonable foreseeable actions would
- 13 result in long-term, but minor, adverse impacts on visual landscapes.

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15	

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2 This PEA was distributed to the following agencies.

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- 12 Division of Coastal Resources
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- 15 Ms. Kelly Turturro, Regional Director
- 16 NYS DEC-Region 3
- 17 21 South Putt Corners Road
- 18 New Paltz, NY 12561
- 19 Ms. Rose Harvey, SHPO
- 20 Commissioner Office of Parks, Recreation, and Historic Preservation
- 21 Albany, NY 12238

22 Native American Tribes

- 23 Ms. Bonney Hartley
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1 7.0 LIST OF PREPARERS

- 2 This PEA was prepared for the Army by Cardno as a sub-consultant to CEMS Engineering
- 3 under with the New York District Corps of Engineers. A list of primary Army organizations and
- 4 individuals who contributed to the preparation and review of this document follows. Key Cardno
- 5 and CEMS contributors are listed in **Table 7.0-1**.

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- 10 Tara Ostock, Environmental Engineer
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Table 7.0-1. Key Lis	t of Preparers

1
1	APPENDIX A
2	COASTAL CONSISTENCY DETERMINATION
3	

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DEPARTMENT OF THE ARMY U.S. ARMY INSTALLATION MANAGEMENT COMMAND HEADQUARTERS, UNITED STATES ARMY GARRISON WEST POINT 681 HARDEE PLACE WEST POINT, NEW YORK 10996-1514

12 May 2020

SUBJECT: Negative Determination for the Implementation of Projects at the Putnam Park Area at U.S. Army Garrison West Point, New York

Christopher C. Pray Natural Resources Mnager IMML-PWE-N Directorate of Public Works 667A Ruger Rd. USAG- West Point, NY, 10996

Mr. Matthew P. Maraglio, CPESC Coastal Review Specialist New York State Department of State Division of Coastal Resources Suite 1010, One Commerce Plaza 99 Washington Avenue Albany, New York 12231-0001

Dear Mr. Maraglio:

This letter provides the New York State Coastal Management Program (NYSCMP) Consistency Review Unit (CRU) with the U.S. Army Garrison West Point's (USAGWP) negative determination under the Coastal Zone Management Act, Section 307 (c)(1) and (2), and 15 CFR 930.35 (d) for a project at USAGWP that will implement seven real property planning actions in an area known as the Putnam Park Area (PPA). In accordance with the National Environmental Policy Act, USAGWP is conducting environmental review through a Programmatic Environmental Assessment (PEA) for the implementation of the proposed action.

The PPA project site is located in the northeast corner of USAGWP along Merritt Road, in the Town of Highland Falls, Orange County in the State of New York.

Real property master planning for West Point currently consists of Area Development Plans (ADPs) for the six designated districts that comprise the installation. The PPA is within the Putnam and Ladycliff District of West Point. The Putnam and Ladycliff District ADP designated the PPA as an area in which to enhance West Point's community and recreational amenities. Seven distinct projects were subsequently identified that would fulfill this goal: 1) Putnam parking lot, 2) Delafield Dam decommissioning, 3) outdoor pool and physical fitness center, 4) restoration of the existing bathhouse, 5) restoration of the 1949er Lodge, 6) upgrade of the



electric substation, and 7) development of a passive park. The purpose of the proposed action is to manage the PPA's real property assets in a thoughtful, deliberative, and sustainable manner consistent with the vision and goals as established by the RPMP and Putnam and Ladycliff District ADP in support of the installation's designated mission. The proposed action is needed to address real property deficiencies and suboptimal conditions, and mitigate safety concerns. The PPA is currently underutilized and can support additional real property actions to support mission requirements.

Although the location of the project is within the West Point National Historic Landmark District (NHLD) and falls within the Hudson Highlands Scenic Area of Statewide Significance (SASS) HH-3, Contemporary West Point Military Academy Subunit, direct effects on the coastal uses and resources from the project are anticipated to be insignificant as the proposed design conforms to the cultural character of the subunit.

The PPA has been previously surveyed for archeological resources, and no National Register of Historic Places (NRHP)-eligible archaeological resources have been identified. A small portion of the PPA, located adjacent to Fort Putnam, has been designated as an avoidance area for cultural resources. The development of a passive park, which is the only proposed action in the vicinity of the established avoidance area, will involve a low level of development with minimal to no ground disturbance. In the event of an inadvertent discovery during ground-disturbing operations, USAGWP would follow protocol set forth in the installation's Integrated Cultural Resources Management Plan.

Of the proposed actions, three of the projects involve historic architectural resources: Delafield Dam decommissioning (Project 2); restoration of the Delafield Bathhouse (Project 4); and restoration of the 1949er Lodge (Project 5). Created in 1890, Delafield Pond and its adjacent dam was closed in 2017 due to safety concerns associated with uncontrolled seepage along the dam's foundation. Repairing the dam to achieve structural stability was determined to be infeasible due to costs. Project 2 involves the decommissioning of the dam in order to mitigate the safety issues and repurpose the site. Delafield Pond and the Delafield Dam are historic resources within the National Historic Landscape of West Point and the pond is a historic landscape individually eligible for the NRHP. Decommissioning the dam would include full or partial removal of the dam and its associated facilities. This would have an adverse effect on the historic structure and landscape. The USAGWP Cultural Resources Manager is consulting with the New York State Historic Preservation Office and the Advisory Council on Historic Preservation to mitigate the adverse effect.

The Historic Landscape Management Plan for the U.S. Military Academy at West Point identifies Fort Putnam as a historically significant viewpoint; it is the only identified viewpoint within the PPA. Careful design and execution of the proposed action will result in overall improvement to the visual landscape of the PPA. The final design would adhere to all guidance outlined in the Installation Planning Standards related to site planning, building design, and landscaping. Additionally, design of the proposed action would follow guidelines included in NYSCMP to protect SASS.

The proposed action has the potential to impact surface water resources and would result in up to 1.1 acres of new impervious surface associated with the construction of a new parking lot. The collective area impacted by the proposed construction activity would exceed 1 acre in size and, therefore, require compliance with New York's State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity. Mitigation of adverse effects associated with implementing the project includes the installation of an Erosion and Sediment Control Plan to protect water resources as well as pollution prevention measures as dictated by the Stormwater Pollution Prevention Plan. Implementation of these measures would ensure that impacts to surface water would be less than significant.

The New York State Department of Environmental Conservation requires the removal, replacement, or repair of unsafe structures. The Delafield Dam is currently listed on the Department's inventory of dams as a "Hazard Class C High Hazard" structure. The proposed project would officially decommission Delafield Dam and would, therefore, support the NYSCMP's policies directing safe structures for citizens.

Direct effects on the coastal uses and resources from this project are, therefore, anticipated to be insignificant and no adverse impacts upon the environmental, historic, or visual resources of the Hudson River Valley are anticipated. Any impacts will be mitigated through adherence to USAGWP's Low Impact Development Stormwater Management Plan, construction and stormwater best management practices, and context-sensitive design. USAGWP finds that the proposed project would not affect any coastal use or resources, pursuant to 15 CFR 930.35 (b) and that the project is consistent with NYS Coastal Policies directly applicable to the proposed project, namely NYS Coastal Policy Nos. 18 and 24.

Pursuant to 15 CFR 930.41, the NYSCMP CRU has 60 days from receipt of this letter in which to concur with, or object to, this Negative Determination, or request an extension of 15 days for additional review. NYSCMP CRU concurrence with our determination will be presumed if a response from your office is not received within 60 days.

Sincerely, PRAY.CHRISTOPHER.C Digitally signed by PRAY.CHRISTOPHER.CHARLES.12652947 HARLES.1265294746 46 Date: 2020.05.12 10:12:19 -04'00'

CHRISTOPHER C. PRAY NEPA Coordinator (Acting) Environmental Management Division

Enclosures Regional Location Map Project Location Map SSA Map









- 1 Putnam Parking Lot
- 2 Delafield Dam Decommissioning
- 3A Delafield Outdoor Pool
- 3B Physical Fitness Center
- 4 Delafield Bathhouse Renovation
- 5 Restoration of 1949 Lodge
- 6 Upgrade of Electric Substation
- 7 Passive (Undeveloped), Park





Historically Significant Viewpoints Relevant to PPA

1	APPENDIX B
2	AIR QUALITY EMISSION CALCULATIONS
3	

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Construction emission assumptions for Putnam Park Area Construction Projects

				453.59 grams per pound
				200 trees per acre
Putnam Parking Lot		2021		40 CY debris from 15 trees
Land Clearing	3.41 acres			
	148,540 SF			
	5,501 cy excavation		458 trucks of dirt hauled out	
	2,751 cy asphalt		275 trucks of asphalt hauled in	
	2,751 cy gravel		275 trucks of gravel hauled in	
	16,504 SY grading			
Delafield Outdoor Po	ool	2026	18 months construction	
and Physical Fitness	Center		360 Material Deliveries	
Land Clearing	3.40 acres			
Fill for pond	0.52 acres			
	4,920 cy excavation			
	147000 sf building			
	5,771 cy concrete			
	3,240 cy asphalt			
	2,885 cy gravel			
	373 cy fill			
	18,973 SY grading			
Bathhouse and 1949	er Lodge			
Renovations				
Bldg Renovations	1	L1,500 sf bldg	12 mor	ths renovation duration
			240 Mat	erial Deliveries
Clearing	3 41 Acres			

cicaring	5.41	ACICS								
	Hours of			VOC	СО	NOx	SO ₂	PM10	PM2.5	CO ₂
Off-road Equipment	Operation	Engine HP	Load Factor	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr
Dozer	40	145	0.58	0.38	1.41	4.17	0.12	0.30	0.29	536
Loader/Backhoe	40	87	0.21	1.43	7.35	6.35	0.15	1.06	1.03	692

Small Backhoe	40	55	0.21	1.43	7.35	6.35	0.15	1.06	1.03	692
				VOC	СО	NOx	SO2	PM10	PM2.5	CO ₂
				lb	lb	lb	lb	lb	lb	lb
			Dozer	2.79	10.49	30.95	0.85	2.20	2.13	3,973
		Loader w/ i	ntegral Backhoe	2.31	11.84	10.23	0.24	1.71	1.66	1,114
			Small backhoe	1.46	7.49	6.47	0.15	1.08	1.05	704

				VOC	CO	NOx	SO ₂	PM10	PM2.5	CO ₂
On-road Equipment	Miles	Engine HP	Speed (mph)	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Dump Truck	4,533	230	45	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385
				VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
				lb	lb	lb	lb	lb	lb	lb
			Dump Truck	310.35	1,640.56	7,358.29	3.68	306.91	297.38	701,462
			Subtotal in lbs	317	1670	7406	5	312	302	707,254
		Clearing Gra	ind Total in Tons	0.16	0.84	3.70	0.00	0.16	0.15	
							320.8			

Site Prep - Parking Lot

Site Prep - Excavate/Fill (CY)	5,501	CY			5,293	CY hauled		Dump RT=	30	miles
Grading (SY)	16,504	SY					А	ssume comp	act 0.5 feet /	(0.166 yards)
				VOC	СО	NOx	SO ₂	PM10	PM2.5	CO ₂
Off-road Equipment	Hours	Engine HP	Load Factor	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr
Excavator	18	243	0.59	0.34	1.21	4.03	0.12	0.22	0.22	536
Skid Steer Loader	22	160	0.23	0.38	1.47	4.34	0.12	0.31	0.30	536
Dozer (Rubber Tired)	20	145	0.59	0.38	1.41	4.17	0.12	0.30	0.29	536
Compactor	13	103	0.58	0.40	1.57	4.57	0.12	0.32	0.31	536
Grader	6	285	0.58	0.34	1.21	4.07	0.12	0.23	0.22	536
Backhoe/Loader	6	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536
		·		VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
				lb	lb	lb	lb	lb	lb	lb
			Excavator	1.96	6.88	22.93	0.66	1.27	1.23	3,048
			Skid Steer Loader	0.68	2.62	7.74	0.21	0.55	0.53	956
		Do	zer (Rubber Tired)	1.42	5.34	15.74	0.43	1.12	1.08	2,021
			Compactor	0.68	2.69	7.82	0.20	0.55	0.53	917

Grader	0.75	2.64	8.90	0.25	0.49	0.48	1,172
Backhoe/loader	0.24	0.85	2.87	0.08	0.16	0.16	364

				VOC	CO	NOx	SO ₂	PM10	PM2.5	CO2
On-road Equipment	Miles	МРН	Engine HP	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Dump Truck	13,232	45	230	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385
				VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
				lb	lb	lb	lb	lb	lb	lb
		D	ump Truck (14 CY)	905.87	4,788.59	21,477.91	10.74	895.84	868.02	2,047,479
			Subtotal in lb:	912	4,810	21,544	13	900	872	2,055,957
		Site Prep G	rand Total in Tons	0.46	2.40	10.77	0.01	0.45	0.44	
	Site	Prep Grand To	otal in Metric Tons							933

Gravel Work for Parking Area

	2,751	СҮ		229	trips	6,878	total miles			
						NOx	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Off-road Equipment	Hours	Engine HP	Load Factor	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr
Dozer	28	185	0.59	0.34	1.21	4.08	0.12	0.23	0.22	536
Wheel Loader for Spreading	0.35	1.25	4.23	0.12	0.24	0.23	536			
Compactor	0.36	1.34	4.45	0.12	0.26	0.25	536			
				VOC	CO	NOx	SO2	PM10	PM2.5	CO ₂
				lb	lb	lb	lb	lb	lb	lb
			Dozer	2.28	7.99	27.01	0.76	1.50	1.45	3,547
Wheel Loader for Spreading					4.86	16.47	0.45	0.93	0.90	2,085
			Compactor	2.66	9.92	32.98	0.85	1.90	1.85	3,969

			VOC	CO	NOx	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
On-road Equipment	Miles	Engine HP	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Dump Truck	6,878	230	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385
			VOC	CO	NOx	SO2	PM10	PM2.5	CO ₂
			lb	lb	lb	lb	lb	lb	lb

Dump Truck	10.46	55.31	248.07	0.12	10.35	10.03	23,649
Subtotal (lbs):	17	78	325	2	15	14	33,249
Gravel Work Grand Total in Tons	0.01	0.04	0.16	0.00	0.01	0.01	
Gravel Work Grand Total in Metric Tons							15

Paving Surface and Paving HMA for Parking Area

Paving - HM	4 1,000 CI	-
		_

	Hours of			VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
Off-road Equipment	Operation	Engine HP	Load Factor	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr
Grader	455	145	0.59	0.38	1.41	4.16	0.12	0.30	0.29	536
Roller	682	401	0.59	0.34	2.46	5.53	0.12	0.34	0.33	536
Paving Machine	910	164	0.59	0.38	1.44	4.25	0.12	0.30	0.29	536
Asphalt Curbing Machine	91	130	0.59	0.40	1.57	4.57	0.12	0.32	0.31	536
				VOC	CO	NOx	SO2	PM	PM2.5	CO ₂
				VOC Ib	CO Ib	NOx Ib	SO2 Ib	PM lb	РМ2.5 Ib	CO ₂ Ib
			Grader	VOC lb 32.29	CO lb 121.16	NOx lb 357.03	SO2 lb 9.89	PM lb 25.37	PM2.5 lb 24.61	CO₂ Ib 45,961
			Grader Roller	VOC lb 32.29 121.49	CO lb 121.16 876.54	NOx lb 357.03 1,969.93	SO2 Ib 9.89 41.02	PM lb 25.37 120.54	PM2.5 lb 24.61 116.93	CO₂ lb 45,961 190,697
			Grader Roller Paving Machine	VOC lb 32.29 121.49 73.75	CO lb 121.16 876.54 279.96	NOx lb 357.03 1,969.93 825.25	SO2 lb 9.89 41.02 22.36	PM lb 25.37 120.54 58.22	PM2.5 lb 24.61 116.93 56.48	CO2 lb 45,961 190,697 103,965

2,751 CY

			based Speed	VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
On-road Equipment	Miles	Engine HP	(miles/hour)	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Dump Truck	6,878	230	10	0.002	0.008	0.036	0.00002	0.002	0.001	3.439
Water Truck	150	230	10	0.002	0.008	0.036	0.00002	0.002	0.001	3.439
				VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
				lb	lb	lb	lb	lb	lb	lb
			Dump Truck	104.63	553.09	2,480.72	1.24	103.47	100.26	236,486
			Water Truck	2.28	12.06	54.11	0.03	2.26	2.19	5,158

	Volume of		VOC	voc	со	NOx	SO2	PM10	PM2.5	CO ₂
	HMA	Weight of	lb/ton of							
Hot Mix Asphalt (HMA)	(ft ³)	HMA (tons)	asphalt	lb	lb	lb	lb	lb	lb	lb
Standard Hot Mix Asphalt	1,000	73	0.04	2.92	-	-	-	-	-	-

Subtotal (lbs):	343	1,867	5,757	76	315	305	590,507
Paving Grand Total in Tons	0.17	0.93	2.88	0.04	0.16	0.15	
Paving Grand Total in Metric Tons							268

Construction Emissions for Parking Area

VOC	СО	NOx	SO2	PM10	PM2.5	CO ₂
tons	tons	tons	tons	tons	tons	Metric tons
0.79	4.21	17.52	0.05	0.77	0.75	1,536

2026 - Delafield Outdoor Pool and Physical Fitness Center

Clearing	3.4	Acres								
	Hours of			VOC	СО	NOx	SO ₂	PM10	PM2.5	CO ₂
Off-road Equipment	Operation	Engine HP	Load Factor	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr
Dozer	40	145	0.58	0.38	1.41	4.17	0.12	0.30	0.29	536
Loader/Backhoe	40	87	0.21	1.43	7.35	6.35	0.15	1.06	1.03	692
Small Backhoe	40	55	0.21	1.43	7.35	6.35	0.15	1.06	1.03	692
					СО	NOx	SO2	PM10	PM2.5	CO ₂
				lb	lb	lb	lb	lb	lb	lb
	Dozer	2.79	10.49	30.95	0.85	2.20	2.13	3,973		
	ntegral Backhoe	2.31	11.84	10.23	0.24	1.71	1.66	1,114		
	Small backhoe	1.46	7.49	6.47	0.15	1.08	1.05	704		

				VOC	CO	NOx	SO ₂	PM10	PM2.5	CO ₂
On-road Equipment	Miles	Engine HP	Speed (mph)	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Dump Truck	4,533	230	45	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385
	VOC	СО	NOx	SO2	PM	PM2.5	CO ₂			
				lb	lb	lb	lb	lb	lb	lb
			Dump Truck	310.35	1,640.56	7,358.29	3.68	306.91	297.38	701,462
	Subtotal in Ibs						5	312	302	707,254
	0.16	0.84	3.70	0.00	0.16	0.15				
	Clearir	ng Grand Tota	al in Metric Tons							320.8

Site Prep - Pool and Center										
Site Prep - Excavate/Fill (CY)	5,293	CY			5,293	CY hauled		Dump RT=	30	miles
Grading (SY)	18,973	SY					А	ssume comp	act 0.5 feet	(0.166 yards)
				VOC	CO	NOx	SO ₂	PM10	PM2.5	CO ₂
Off-road Equipment	Hours	Engine HP	Load Factor	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr
Excavator	18	243	0.59	0.34	1.21	4.03	0.12	0.22	0.22	536
Skid Steer Loader	21	160	0.23	0.38	1.47	4.34	0.12	0.31	0.30	536
Dozer (Rubber Tired)	19	145	0.59	0.38	1.41	4.17	0.12	0.30	0.29	536
Compactor	15	103	0.58	0.40	1.57	4.57	0.12	0.32	0.31	536
Grader	7	285	0.58	0.34	1.21	4.07	0.12	0.23	0.22	536
Backhoe/Loader	6	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536
				VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
				lb	lb	lb	lb	lb	lb	lb
			Excavator	1.96	6.88	22.93	0.66	1.27	1.23	3,048
			Skid Steer Loader	0.65	2.50	7.39	0.20	0.52	0.50	913
	zer (Rubber Tired)	1.35	5.07	14.96	0.41	1.06	1.03	1,920		
	Compactor	0.78	3.10	9.02	0.23	0.63	0.61	1,058		
			Grader	0.88	3.08	10.38	0.29	0.58	0.56	1,367
	Backhoe/loa				0.85	2.87	0.08	0.16	0.16	364

				VOC	CO	NOx	SO ₂	PM10	PM2.5	CO ₂
On-road Equipment	Miles	MPH	Engine HP	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Dump Truck	13,232	45	230	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385
		VOC	CO	NOx	SO2	PM	PM2.5	CO ₂		
	lb	lb	lb	lb	lb	lb	lb			
		D	ump Truck (12 CY)	905.87	4,788.59	21,477.91	10.74	895.84	868.02	2,047,479
	Subtotal in Ib:					21,545	13	900	872	2,056,149
	0.46	2.41	10.77	0.01	0.45	0.44				
							933			

Gravel Work for Pool and Center

 3,240	CY	2	270 trips 8,101 tc			total miles			
		VOC	СО	NOx	SO ₂	PM ₁₀	PM _{2.5}	CO ₂	

Off-road Equipment	Hours	Engine HP	Load Factor	g/hp-hr						
Dozer	28	185	0.59	0.34	1.21	4.08	0.12	0.23	0.22	536
Wheel Loader for Spreading	34	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536
Compactor	76	103	0.43	0.36	1.34	4.45	0.12	0.26	0.25	536
				VOC	CO	NOx	SO2	PM10	PM2.5	CO ₂
				lb						
			Dozer	2.28	7.99	27.01	0.76	1.50	1.45	3,547
		Wheel Loa	ader for Spreading	1.36	4.86	16.47	0.45	0.93	0.90	2,085
			Compactor	2.66	9.92	32.98	0.85	1.90	1.85	3,969

			VOC	CO	NOx	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
On-road Equipment	Miles	Engine HP	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Dump Truck	8,101	230	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385
			VOC	CO	NOx	SO2	PM10	PM2.5	CO ₂
			lb	lb	lb	lb	lb	lb	lb
		Dump Truck	12.32	65.15	292.21	0.15	12.19	11.81	27,856
	S	ubtotal (lbs):	19	88	369	2	17	16	37,457
Grav	vel Work Grand	Total in Tons	0.01	0.04	0.18	0.00	0.01	0.01	
Gravel Wor	k Grand Total in	n Metric Tons							17

Concrete Work - Pool and Center

	Total	5,771	СҮ	Note: Assun	ne all excavate	ed soil is accou	unted for in Ex	cavate/Fill a	nd Trenching	5
				Emission Factors						
	Hours of		VOC	СО	NOx	SO ₂	PM10	PM2.5	CO ₂	
Off-road Equipment	Operation	Engine HP	Load Factor	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr
Concrete Mixer	304	3.5	0.43	0.69	3.04	6.17	0.13	0.54	0.52	588
Concrete Truck	275	300	0.43	0.38	1.75	6.18	0.11	0.27	0.26	530
						An	nual Emission	S		
				VOC	со	An NOx	nual Emission SO2	s PM	PM2.5	CO2
				VOC Ib	CO Ib	An NOx Ib	nual Emission SO2 Ib	s PM Ib	РМ2.5 Ib	CO ₂ Ib
			Concrete Mixer	VOC Ib 0.69	CO Ib 3.07	An NOx Ib 6.22	nual Emission SO2 Ib 0.13	s PM Ib 0.55	PM2.5 Ib 0.53	CO 2 Ib 593
			Concrete Mixer Concrete Truck	VOC lb 0.69 29.69	CO lb 3.07 136.53	An NOx Ib 6.22 483.52	nual Emission SO2 Ib 0.13 8.91	s PM lb 0.55 21.01	PM2.5 lb 0.53 20.38	CO2 lb 593 41,443

	Concrete Work Grand Total in Tons	0.02	0.07	0.24	0.00	0.01	0.01	
Concre	e Work Grand Total in Metric Tons							19

Building Construction- Center

147,000 SF Foundation

147,000 SF Total

						En	nission Factor	s		
	Hours of			VOC	CO	NOx	SO ₂	PM10	PM2.5	CO2
Off-road Equipment	Operation	Engine HP	Load Factor	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr
Crane	735	330	0.58	0.25	1.22	5.26	0.11	0.21	0.20	530
Concrete Truck	735	300	0.43	0.19	1.45	4.32	0.12	0.21	0.20	536
Diesel Generator	588	40	0.43	0.26	1.41	3.51	0.11	0.23	0.22	536
Telehandler	1,470	99	0.59	0.51	3.94	4.93	0.13	0.52	0.51	595
Scissors Lift	1,176	83	0.59	0.51	3.94	4.93	0.13	0.52	0.51	595
Skid Steer Loader	735	67	0.59	1.69	7.97	6.70	0.15	1.19	1.15	691
Pile Driver	7,580	260	0.43	0.46	1.55	5.90	0.11	0.31	0.30	530
All Terrain Forklift	29	84	0.59	0.51	3.94	4.93	0.13	0.52	0.51	595
						An	nual Emission	IS		
				VOC	CO	NOx	SO2	PM	PM2.5	CO2
				lb	lb	lb	lb	lb	lb	lb
			Crane	76.20	378.22	1631.30	35.38	64.42	62.49	164,470
			Concrete Truck	39.22	304.05	903.17	24.11	43.91	42.59	112,096
			Diesel Generator	5.85	31.41	78.22	2.41	5.17	5.02	11,955
			Telehandler	96.45	745.78	933.03	24.21	98.65	95.69	112,558
			Scissors Lift	64.69	500.20	625.79	16.24	66.16	64.18	75,493
			Skid Steer Loader	108.40	510.37	429.03	9.52	76.17	73.89	44,254
			Pile Driver	866.97	2899.30	11026.75	212.85	586.40	568.81	989,531
			All Terrain Forklift	1.64	12.66	15.83	0.41	1.67	1.62	1,910

	Hours of			VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
On-road Equipment	Operation	Engine HP	Speed (mph)	lb/mile						
Delivery Truck	180	265	45	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385
				VOC	СО	NOx	SO2	PM	PM2.5	CO2

	lb	lb	lb	lb	lb	lb	lb
Delivery Truck	12.32	65.14	292.17	0.15	12.19	11.81	27,852
Subtotal (lbs):	1,272	5,447	15,935	325	955	926	1,540,119
Building Construction Grand Total in Tons	0.64	2.72	7.97	0.16	0.48	0.46	
Building Construction Grand Total in Metric Tons							699

Bathhouse and Lodge Renovations

	Hours of			VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
On-road Equipment	Operation	Engine HP	Speed (mph)	lb/mile						
Delivery Truck/Debris Removal	240	265	45	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385
				VOC	СО	NOx	SO2	PM	PM2.5	CO ₂
				lb						
			Delivery Truck	16.43	86.85	389.56	0.19	16.25	15.74	37,136
			Subtotal (lbs):	18	88	390	2005	16	16	37,136
	Building C	onstruction G	rand Total in Tons	0.01	0.04	0.20	1.00	0.01	0.01	
Bu	ilding Construc	tion Grand To	otal in Metric Tons							17

Construction Emissions for Pool and Center; Lodge and Bathhouse Renovations

VOC	CO	NOx	SO2	PM10	PM2.5	CO ₂
tons	tons	tons	tons	tons	tons	Metric tons
1.13	5.29	19.36	1.18	0.95	0.93	2,005

1 APPENDIX C 2 ENVIRONMENTAL JUSTICE SCREENING REPORT 3 3

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EJSCREEN Report (Version 2019)

1 miles Ring Centered at 41.393430,-73.966250

NEW YORK, EPA Region 2 Approximate Population: 6,095

Input Area (sq. miles): 3.14

PPA

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	0	0	1
EJ Index for Ozone	0	0	1
EJ Index for NATA* Diesel PM	6	5	3
EJ Index for NATA* Air Toxics Cancer Risk	0	0	1
EJ Index for NATA* Respiratory Hazard Index	0	0	2
EJ Index for Traffic Proximity and Volume	44	47	42
EJ Index for Lead Paint Indicator	0	0	0
EJ Index for Superfund Proximity	9	12	5
EJ Index for RMP Proximity	11	12	18
EJ Index for Hazardous Waste Proximity	33	33	23
EJ Index for Wastewater Discharge Indicator	6	5	6

EJ Index for the Selected Area Compared to All People's Blockgroups in the State/Region/US



State Percentile Regional Percentile National Percentile

This report shows the values for environmental and demographic indicators and L3SCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

Salaatad Variahlaa	Value	Sta	te	EPA R	egion	US	A
Selected variables	value	Avg.	%tile	Avg.	%tile	Avg.	%tile
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m ³)	7.57	7.61	41	7.88	31	8.3	28
Ozone (ppb)	43.3	44	27	44.4	19	43	46
NATA* Diesel PM (µg/m³)	0.292	1.05	22	0.941	<50th	0.479	<50th
NATA* Air Toxics Cancer Risk (risk per MM)	25	32	32	32	<50th	32	<50th
NATA* Respiratory Hazard Index	0.31	0.49	29	0.47	<50th	0.44	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	5.4	1700	5	1400	4	750	9
Lead Paint Indicator (% pre-1960s housing)	0.35	0.56	25	0.51	31	0.28	66
Superfund Proximity (site count/km distance)	0.065	0.22	23	0.29	17	0.13	52
RMP Proximity (facility count/km distance)	0.096	0.5	16	0.58	17	0.74	14
Hazardous Waste Proximity (facility count/km distance)	0.093	42	6	30	6	4	17
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.012	1.2	82	0.92	79	14	80
Demographic Indicators							
Demographic Index	18%	38%	29	37%	29	36%	26
Minority Population	27%	44%	43	44%	42	39%	46
Low Income Population	9%	31%	14	29%	18	33%	11
Linguistically Isolated Population	2%	8%	43	8%	42	4%	56
Population with Less Than High School Education	0%	14%	4	13%	4	13%	4
Population under Age 5	8%	6%	75	6%	76	6%	73
Population over Age 64	0%	15%	0	15%	0	15%	0

The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice (http://www.epa.gov/environmentaljustice)

4/1/2020

EJSCREEN Report

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.