Woodcock Creek Lake Master Plan
2019 Master Plan

Executive Summary

A Master Plan is required for each Civil Works project and all fee-owned lands for which the U.S. Army Corps of Engineers (Corps) has administrative responsibility. It serves as a strategic land-use management document that guides the comprehensive management and development of all recreational, natural, and cultural resources throughout the life of the water resource project, anticipating what could and should happen at the Corps project, while remaining flexible enough to address changing conditions.

The primary goals of this Woodcock Creek Lake Project (Project) Master Plan, revised in 2019, are to prescribe an overall land and water management plan, resource objectives, and associated design and management concepts, which: 1) use sound environmental principles to protect and enhance public lands; 2) cultivate volunteers, public-private partnerships, and apply for grants; 3) provide safe and memorable connections, as part of multiple destination points; and 4) leverage emerging technology to tell the Corps' story and enhance visitor experiences.

Upon completion of this Master Plan, Operational Management Plans (OMPs) will be executed yearly, reflecting the resource objectives outlined in this Plan. The below table reflects the years in which key resource objectives should be implemented.

Five Year	**Ten Year**	**Conditions Based Actions****
"Friends of Woodcock Creek Lake" group established	Public emergency call out systems are installed around the Project	Oil and Gas leveraging and mitigation
Invasive Species Management Plan has been established	Reclamation Plan is established	Endangered species conservation methods
Boundaries and inventory data are in digital format	Signature event developed	Invasive species control methods
Vegetative Management Plan has been established	Information Center is updated and modernized to accommodate partner and Corps meetings*	Real Estate actions
Initial description of biological and cultural resources are documented	Degraded facilities have been identified and divestment options have been considered*	Climate change impacts

***Items that require external support (i.e. budgeting decisions through executive assistance)**
****Condition Based Actions will be evaluated as new requests or information becomes available**

Based on public input, it was concluded that Woodcock Creek Lake provides equal amounts of conservation and recreation. At Woodcock Creek Lake, we employ a Conservation/Recreation Mix Development Concept, which means that there are almost equal amounts of conservation and recreation land within the Project. In order to implement Woodcock Creek Lake's resource objectives and to maintain this preferred current use, future regulation and legal changes should consider allowing funds that are generated at the Project to stay at the Project.

Contents

Contents 3
1. Project Authorization 5
1.1 Project Purpose 5
1.2 Watershed and Project Description 5
1.3 Listing of Prior Design Memorandums 6
1.4 Listing of Pertinent Project Information 6
1.5 Purpose & Scope of the Master Plan 7
1.6 Management Goals 8
1.7 Resource Objectives 9
2. Project Setting and Factors Influencing Management and Development 17
2.1 Hydrology 17
2.2 Topography, Geology, and Soils 17
2.3 Resource Analysis 18
2.4 Cultural Resources 23
2.5 Demographics 24
2.6 Economics 25
2.7 Recreation Facilities, Activities and Needs 28
2.8 Related Recreational, Historical and Cultural Areas 29
2.9 Real Estate and Acquisition Policy 29
3. Land Allocation, Land Classification, Water Surface and Project Easement Lands 29
3.1 Land Allocation 29
3.2 Land Classification 30
3.3 Easement Lands 35
4. Resource Plan 36
4.1 Classification and Justification 36
4.2 Easement Lands 45
5. Special Considerations Affecting Natural Resources 45
6. Agency and Public Coordination 50
6.1 Scoping Meetings 52
6.2 Public Review Meetings 52

6.3 Outreach Efforts 53
7. Summary of Recommendations 54
7.1 Coordination with Partnerships 54
7.2 Facility Modernization 55
7.3 Land Classification Changes 56
7.4 Development Requests 57
7.5 Wildlife Management and Environmentally Sensitive Areas 58
7.6 Threatened and Endangered Species 58
7.7 Water Quality 58
7.8 Summary 59
8. Bibliography 60

Appendix A: Applicable Public Laws and Federal Statues

Appendix B: Map Plates

Appendix C: Design Memorandums/Studies/Contracted Work

Appendix D: Summary of Public Comments

Appendix E: Engineer Regulations, Pamphlets, and Manuals

Appendix F: Programmatic Environmental Assessment

1. Project Authorization

The construction of Woodcock Creek Lake was authorized by the Rivers and Harbors Act of 1962. Authorizations subsequent to construction (Table 1-1; full list in Appendix A) provided for additional benefits, including water quality improvement, fish and wildlife management, and recreational uses of the impoundment and Project lands.

Table 1-1. Project Purposes and Authorities for Woodcock Creek Lake

Operating Purpose	Authority	Citation
Flood Control	Rivers and Harbors Act of 1962	PL 87-874 (A)
Water Quality	Federal Water Pollution Control Act of 1972	PL 92-500 (A)
Recreation	Rivers and Harbors Act of 1962, Flood Control Act of 1944	PL 87-874 (A), PL 78-534 (G)
Fish/Wildlife	Fish and Wildlife Coordination Act of 1934	PL 85-624 (G)

1.1 Project Purpose

Woodcock Creek Lake was built for flood control, water quality, and recreation. As such, any other consideration(s) for the Project are secondary in terms of budgeting and operations.

1.2 Watershed and Project Description

Woodcock Creek Lake serves as a multi-purpose project which provides a storage system for flood risk reduction for French Creek drainage basin (see Appendix B, Plate 1, for Project Area map). Woodcock Creek Lake is one of three flood control projects included in the authorized French Creek flood control system. This system, including Muddy Creek and Union City Dams, replaces the previously authorized French Creek Reservoir near Cambridge Springs. Currently, the storage water within the dam is allocated to meet the downstream schedule of 75 cfs required by the U.S. Department of Health. The remaining storage that is not used to meet the downstream schedule is allocated to recreation. The empty volume is set aside for flood control. Woodcock Creek Lake is located five miles northeast of Meadville, PA, and about four miles upstream from Woodcock Creek's mouth at French Creek (see Appendix B, Plate 2, for the Transportation map). The total area of the watershed above Woodcock Dam is about 29,248-acres. The Project's land and waters extend over portions Crawford County.

At full pool, the elevation of Woodcock Creek Lake is 1,208.4-feet and occupies an area of 775-acres (Table 1-2). Maximum flood storage will be available when the lake is at the minimum pool elevation of 1,161.9-feet. At this elevation, the Project occupies an area of 120-acres. During winter months, the Project is generally kept at an elevation of 1,164.8-feet, about 19.5-feet above the top of the flood storage release gates. With spring runoff around mid-March, these gates will be closed and the pool's elevation will be gradually raised to its summer level,

about 1,180.4-feet, around the first of May. The autumn drawdown will normally begin at the end of August, and the pool will be returned to its winter level by mid-December.

Table 1-2. Woodcock Creek Lake Reservoir Information

Pool	Elevation (feet)	Surface Area (acres)
Minimum Pool	1,161.9	120
Full Pool	1,208.4	775
Summer Pool	1,180.4	333
Winter Pool	1164.8	140

The Project consists of 1,730.93 total acres, including flowage easement. Near the dam, the Corps maintains 441.08-acres of public recreational facilities, including picnic areas, restrooms, and access to Project trails and overlook areas. Of the total number of acres, about 962.79-acres are outgranted to the following entities (Table 1-3, below):

The Pennsylvania Game Commission leases 660.39-acres. This lease encompasses lands including several access points for hunting areas and a boat ramp.

Crawford County leases 277.10-acres to operate Woodcock Lake Park. Woodcock Lake Park has a campground, picnic sites, a swim beach, hiking trails, and a boat launch.

Crawford County Conservation District leases 25.30-acres of land to operate the Woodcock Creek Nature Center and Stainbrook Park. Appendix B, Plate 3, shows the Outgrant map.

Table 1-3. Outgrant Areas

Grantee	Type	Acres	Expiration Date
PA Game Commission (PAGC)	Wildlife	660.39	November 30, 2036
Crawford County	Recreation	277.10	May 25, 2024
Crawford County Conservation District	O&M	25.30	February 27, 2062

1.3 Listing of Prior Design Memorandums

See Appendix C.

1.4 Listing of Pertinent Project Information

While the Master Plan is focused on management of land and water surface area related to Project purposes, the following tables are provided to aid in understanding Project information regarding water storage levels and Project construction (Table 1-4, below). Further details are available in the Woodcock Creek Lake Water Control Manual.

Table 1-4. Woodcock Creek Lake Dam Information

Average Annual Precipitation	44.29 inches*
Drainage Area above Dam	29,248-acres
Construction Completed	July 1973
Operation Start	January 1974
Dam Type	Rolled earth, fill embankment
Dam Length	4,650 feet
Dam Height	90 feet above streambed
Base Width	330-550 feet (spillway section)
Outlet Works	Reinforced concrete conduit. with control structure
Spillway	Saddle, uncontrolled
Highest Inflows Recorded	4,660 cubic feet per second (cfs) (1 July 1980)
Highest Outflows Recorded	1,400 cfs (1 March 1974)
Highest Elevation (NAVD 88)**	1,197.54 (13 June 1986)

*Average Annual Precipitation for Meadville, PA. From: USclimatedata.com, accessed July 2018.
**All datum listed in NAVD 88 unless otherwise stated.

1.5 Purpose & Scope of the Master Plan

This Master Plan presents updated land use categories, management objectives, resource plans, and recommendations for the management of Project lands and waters to meet current and future needs. It is a vital tool for the responsible stewardship of Project resources for the benefit of present and future generations, guiding the comprehensive management and development of the natural, cultural, and man-made resources at Woodcock Creek Lake Project.

This Master Plan responds to regional and local needs, resource capabilities, suitability, and expressed public interests consistent with authorized Project purposes, pertinent legislation, applicable regulations, national objectives, and other state and regional goals and programs. Distinct from the Project-level implementation emphasis of the Operational Management Plan (OMP), policies in the Master Plan are guidelines implemented through provisions of the OMP, specific Design Memorandums (Appendix C), and the Annual Work Plan.

In this Master Plan, we employ a Conservation/Recreation Mix Development Concept for Woodcock Creek Lake (Table 1-5, below). Under this concept, there are almost equal amounts of conservation and recreation land within the Project. Specifically, the amount of land area classified for conservation use at Woodcock Creek Lake is about 53 percent of the total land. Thus, this development concept also meets the need for sustainable management and conservation of natural resources within the Project, while providing for current and future quality outdoor recreational needs of the public and consistency with periodically updated Corps regulations. This Master Plan lays out future recommendations for the management of both

recreation and natural resources. Table 1-5, below, describes the different applicable development concepts based on land classification percentages.

It is recommended that the District maintain Woodcock Creek Lake's development concept a Conservation/Recreation Mix. During our scoping process, members of the public, stakeholders, and partners encouraged the continued use of Woodcock Creek Lake for the varied conservation and recreation experiences it currently serves. All data presented in the subsequent sections justifies this development scenario.

Table 1-5. Development Concepts

Development Concept	Conservation Percentage	Recreation Percentage
Recreation Intensive	0-10	90-100
Recreation Weighted	10-40	60-90
Conservation/Recreation Mix	**40-60**	**40-60**
Conservation Weighted	60-90	10-40
Conservation Intensive	90-100	0-10

1.6 Management Goals

This section and the following section set forth goals and objectives necessary to achieve the vision for the future of Woodcock Creek Lake. In the context of this Master Plan, goals express the overall desired end state of the cumulative land and recreation management programs, whereas resource objectives specify task-oriented actions necessary to achieve the Master Plan goals. The following goals are the priorities for consideration when determining resource objectives and development activities.

1. Use sound environmental principles to protect and enhance public lands.
2. Cultivate volunteers, public-private partnerships, and apply for grants.
3. Provide safe and memorable connections, as part of multiple destination points.
4. Leverage emerging technology to tell the Corps' story and enhance visitor experiences.

Implementation of these goals is based upon time, manpower, and budget. These goals will be pursued through the use of a variety of mechanisms, including: volunteer efforts, hired labor, contract labor, permit conditions, remediation, and special lease conditions. It is the intention of the Woodcock Creek Lake staff to provide a realistic approach to the management of all resources.

In addition to the above goals, the Corps management activities are guided by Corps-wide Environmental Operating Principles (EOPs) in accordance with ER 200-1-5. The EOPs are as follows:

1. Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse, and sustainable condition is necessary to support life.

2. Recognize the interdependence of life and the physical environment.
3. Proactively consider environmental consequences of Corps programs and act accordingly in all appropriate circumstances.
4. Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.
5. Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.
6. Seek ways and means to assess and mitigate cumulative impacts to the environment; bring system approaches to the full life cycle of our processes and work.
7. Build and share an integrated scientific, economic and, social knowledge base that supports a greater understanding of the environment and impacts of our work.
8. Respect the views of individuals and groups interested in Corps activities; listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

1.7 Resource Objectives

Resource objectives, subsequently referred to as Management and Development Activities (MDAs), are defined as clearly written statements that both respond to identified issues and specify measurable and attainable activities for resource development and/or management of the lands and waters under Corps jurisdiction. MDAs provided in this section are established to provide high levels of stewardship to managed lands and resources, while simultaneously providing a high level of public service.

The objectives stated in this Master Plan support the Plan's goals, Corps EOPs, and applicable national performance measures. They are consistent with authorized Project purposes, federal laws and directives, regional needs, resource capabilities, and they take public input into consideration. Regional and state planning documents, including the Crawford County Conservation District Master Plan, the Pennsylvania Game Commission Annual Plan, the Greenways Recreation Plan, the Crawford County Comprehensive Plan, and the Woodcock Peer-to-Peer Study for Woodcock Lake Park Campground, were all considered in developing these objectives.

Each of the following MDAs has a current and future component (see below). The current component is the near-term focus of the current Master Plan and should be the impetus of efforts of this review cycle (i.e., five years). The future component is the long-term focus to be addressed in subsequent reviews (i.e., ten years).

Goal 1: Use sound environmental principles to protect and enhance public lands[1]

Management and Development Activity	Five-year	Ten-year	Resource Objective
Inventory natural and cultural resources	Initial description of biological and cultural resources are documented (E)	Operational Geospatial Data Base for Natural and Cultural Resources are developed (E)	Completed Biological/Cultural Resource Inventory
	OMP is updated (S&E)	Information within the database registered with the State Historic Preservation Office (SHPO) (E)	
	Complete 50% of resource inventory (natural and cultural) within five years (E)		
Identify and address threats to the Project	Internal or external subject matter experts are being engaged to resolve identified issues (S&E)	Reclamation Plan for impacted resources is written (E)	Conservation and enhancement of Project land
	A Vegetative Management Plan is established in order to avoid, minimize, and mitigate impacts to natural resources (E)		
	Partner with cooperating stakeholders to develop an Invasive Species Management Plan (E)		
	Best Management Practices are implemented (S&E)		
Achieve and maintain desired natural and cultural resource conditions	Specific conservation organizations (federal and state agencies, academia, non-profits) have been asked to engage (S&E)	Working relationships with federal, state, academia, and NGOs are being utilized to achieve these conditions (S&E)	Increased stakeholder buy-in and protection of the resources in and surrounding the Project
	Lake staff are trained on how to study and manage Project resources (S&E)		
	Identify indicator species (E)		
	Habitat enhancement initiatives such as fish attractor structures, bird habitats, and pollinator plots (S&E)		
	Available skill sets and equipment across projects are leveraged (S&E)	Implement species specific management plans for indicator species (E)	

[1] S = Sustain
E = Establish

	New equipment that can be used at multiple lakes are acquired (E)		
	Annual Work Plans are being implemented (E)		

Goal 2: Cultivate volunteers, public-private partnerships, and grants[1]

Management and Development Activity	Five-year	Ten-year	Resource Objective
Development of appropriate MOU/MOA's with potential partners	Opportunities with action groups and local organizations, such as local sportsmen clubs, Ducks Unlimited, Audubon Society, etc., have been initiated (S&E)	Appropriate MOU/MOA(s) with land management partners are established (E)	Partners are helping to share the Corps vision for Woodcock Creek Lake
Establishing the right partnership, at the right place, at the right time	Educational programs (green-collar development) are developed and supported (S&E)	An organization which supplies assistance to the Project, such as Student Conservation Association (SCA), AmeriCorps, "Friends of Woodcock Creek Lake", American Conservation Experience (ACE), has established a relationship with the Project (E)	Partners, volunteers, and interns are amplifying Project staff responsibilities to further protect and enhance natural and cultural resources
	Partner with birding groups such as the PA Society of Ornithologists to establish baseline data for the Project and to participate in outreach events and programs		
	Opportunities for incentivizing volunteer groups have been explored (e.g. camp sites, office space, sheds, recognition signs, etc.) (E)	Seasonal natural resources survey crews are coming to the Project (E)	
	Potential volunteer groups have been approached for interest in forming a "Friends Group," SCA, or ACE (E)		
Establishing a Disc Golf course	Complete 18 hole disc golf course (S&E)	Establish relationship with local disc golf club to maintain and promote disc golf course (E)	Develop partnerships with professional associations to hold tournaments; nationally recognized disc golf course

Goal 3: Provide safe and memorable connections, as part of multiple destination points[1]

Management and Development Activity	Five-year	Ten-year	Resource Objective
Ranger safety	Operational personal hand held communications and monitoring devices have been refreshed and are on the same frequency as county EMS (E)	Enhanced securities, such as video surveillance systems or safe rooms, are installed throughout the Project (E)	Project staff is working in a safe environment
		In accordance with Corps standards and guidance manuals, communication and security features have been met. Necessary upgrades have been made accordingly (S&E)	
Visitor safety	Consistent visitor assistance experience through playground inspections, removal of hazard trees, updates to boat patrol manual etc., is being ensured (S&E)	Regular maintenance program is established (S&E)	Low chances of incidents and quick response times for emergency personnel; routine maintenance has diminished likelihood of an accident/incident
	Update emergency Corps Point of Contacts (POCs) for local emergency response agencies (S&E)	Public emergency call out systems are installed around the Project (essential and remote recreational areas) along with a dry hydrant near the dam (E)	
	Establish emergency responder staging areas (E)	Project Site Areas (PSAs) with low use and degraded facilities have been identified and divestment options have been considered if appropriate (S&E)	
	Assign building numbers/indicator signs for emergency response purposes within project operation areas (E)		
	Emergency groups practice emergency safety/trainings at the Project on a regular basis (S&E)		
Connect with other District lakes and locks	Joint ventures with other locks and lakes have been explored (E)	Review of joint ventures for modifications or additions (S&E)	Public is aware of the Corps recreational facilities at multiple projects
	Create district brochure with all lake projects and locks and dams that explores different activities and amenities (E)		
Serve as part of multiple destination points, increasing off-season, non-peak visitation to the Project	Project staff are engaged with local Tourist Promotion Bureaus, Chambers of Commerce, and Regional Planning Commissions (S&E)	Promote regional trail "activity" (i.e. ice cream parlors, wine tours, barn tours) (E)	Diverse user groups from regional areas are coming to the Project and visitation has increased
		Increased winter recreational opportunities are implemented (e.g. cross country skiing, snowshoeing, winter birding opportunities) (E)	

	Local and regional outdoor recreation organizations have been engaged (S&E)	Advertise as regional paddlecraft recreation destination (to include French Creek, Oil Creek) (E)	
Promoting all that Woodcock Creek Lake has to offer; bringing in visitors with varying interests and of varying ages	School groups, clubs, etc. have been reached out to and invited to the Project (E) Dam Tours are being conducted as a way to educate visitors and increase visitation at Woodcock Creek Lake (E) Signage regarding different activity areas are displayed around the Project (S&E) Project staff are participating in multiple outreach events (e.g. Radio PSA's, Crawford County Fair) (S&E)	A signature event is being hosted, bringing visitors to the Project (e.g. Wounded Warrior, Fishing Competition, Disc Golf Tournament, Woodcock Creek Lake Clean-up Day, Kids Fishing Tournament, etc.). Events are being advertised through Chamber of Commerce and Tourist Bureau (E)	Visitors are aware and utilizing all of the available resources at the Project

Goal 4: Leverage emerging technology to tell the Corps stories and enhance visitor experiences[1]

Management and Development Activity	Five-year	Ten-year	Resource Objective
Public interaction with the Project is occurring through technology	Interpretive programming and updated engaging educational signage is being included in every OMP Annual Update (E)	Visitors are able to contribute to data collection through their cells phones (E)	Technology is used in interpretive services, citizen science, and showcasing Project opportunities
	QR Codes are utilized on bulletin boards at trail heads, Information Center, and around the dam so visitors can gather more information about the Project and current activities (E)		
	Visitors are being encouraged to submit photos and post about the Project on social media (e.g. hashtag established) (E)		
Embrace emerging technology to improve information collection	Locations for fish habitat structures, trails, disc golf course, and other amenities are in a digital, interactive format that the public can utilize and offer comments and suggestions on future improvements to these areas (E)	Project boundary inventory and monitoring are being conducted wirelessly through Project staff and public using future apps (E)	Project staff are utilizing technology to better monitor and communicate about the Project
	Boundaries and inventory data are available in digital format (E)		
Enhance public outreach	Get Woodcock Creek Lake on apps such as OhRanger and eBird for users to look up information on mobile devices and contribute to data collection (E)	Utilizing special interest groups or individuals such as the Audubon society, reach out to the public and present educational/informational programs to increase awareness of Woodcock Creek Lake (E)	Visitation is increasing due to greater public awareness of events and opportunities at the Project
	Informational bulletin boards, kiosks, and Information Center is updated to reflect most current information (S&E)	The Information Center will be updated and modernized to accommodate partner and Corps meetings (E)	

	Regional outdoor recreational activities are promoted on social media (e.g. Instagram, Facebook) (S&E)		
	Success stories are being shared on local news outlets and coordinated with PAO (S&E)		
	New and updated signage leading to lake and within the Project boundaries has been increased, indicating the presence of Woodcock Creek Lake (directional signs along public highways) (S&E)		

2. Project Setting and Factors Influencing Management and Development

2.1 Hydrology

The existing terrain at Woodcock Creek Lake is due to past glaciation. Flat, upland plateaus are intermixed with gently sloping hills and flat-bottomed stream valleys. Maximum relief varies from 150 to 400-feet, and glacial till blankets the entire area. The till material has accumulated to depths of 200-feet along the valley floors. The soils of the upland areas are relatively impervious with low infiltration rates and high runoff rates during intensive rainfalls. Prior to the most recent periods of glaciation, the streams of this area flowed northward. The advancing ice sheets blocked these drainages, and the result was impounded bodies of water that forced new outlets to the south. Heavily forested areas exist in the headwaters and along some of the tributary valleys (U.S. Army Corps of Engineers, Woodcock Creek Lake Master Plan, 1975).

The overall length of Woodcock Creek Lake from its point of origin in Randolph Township to its mouth above Meadville, PA, is 20.5-miles. Throughout the 12.5-miles of stream above the dam, the channel rises about 200-feet at a rather uniform rate. The width of the stream channel at the dam is about 30-feet. Woodcock Creek Lake has three main tributaries. Bossard Run enters the right bank of Woodcock Creek Lake about 0.25-miles above the dam and has a watershed of about 1,408-acres. Stainbrook Run, with a drainage area of about 2,022.40-acres, enters Woodcock Creek Lake on the left bank just below the dam. The largest tributary along the stream is Woodcock Creek. It enters the right bank of Woodcock Creek Lake at about 4.7-miles above the dam and has a total drainage area of 3,584-acres (U.S. Army Corps of Engineers, Woodcock Creek Lake Master Plan, 1975). See Appendix B, Plate 4, for the Watershed Boundary map.

2.2 Topography, Geology, and Soils

Woodcock Creek Lake is located in the glaciated portion of the Allegheny Plateau Province. The Project area has been periodically invaded by successive ice sheets during the Illionian and Wisconsin stages of glaciation. As a result of this glacial activity, significant changes were made in the physical characteristics of the pre-glacial terrain. It is known that pre-glacial streams of this area flowed northward. With the advancement of glacial ice sheets from the north, the mouths of these drainages were periodically blocked and huge lakes of impounded water were formed. As the depth of these impounded lakes increased, the watershed divides to the south were breeched and new south-flowing drainages were formed. With each successive ice advancement, these new stream patterns became better defined and deepened until ultimately the existing drainage system emerged. Concurrent with the reformation of the drainage patterns, the

alternating flow of successive glaciers over the Woodcock basin also reshaped the terrain. Hilltops and ridge lines were eroded, V-shaped valleys were considerably broadened and the topography was generally made less rugged. The physical features were further softened through the deposition of glacial till during the northward retreat of each ice sheet. Kame terraces, moraines, and thick layers of water-borne sediment were also deposited by these receding ice sheets. Post-glacial geological processes further minimized extremes in relief as upland layers of till were eroded and washed into the stream valleys.

Evidence of this past geological activity is quite apparent in the Woodcock Creek Lake Project area. The terrain is relatively uniform with little or no dramatic differentiation of features. The upland areas are relatively flat, while slopes are gentle and valleys are both broad and flat. Maximum relief generally varies from 150 to 400-feet. The entire area is covered with glacial till, with the upland sites having a residual layer that is five to 20-feet thick and the valley floor containing depositions of till that reach thicknesses of 200-feet. The bedrock underlying the Project is flat-lying, interbedded siltstones and siltshales of the Chemung formation deposited during the Devonian age. This bedrock is exposed in the bed of Bossard Run and in the bed and walls of Stainbrook Run. Because of the relatively recent origin of the drainage patterns within the glaciated portion of northwestern Pennsylvania, many stream systems are as yet incompletely defined. Headwater areas are poorly drained and "perched" marshy areas are common. Because of these immature drainage conditions, wet soils are quite common in the Project area. The soils along the major stream valleys are of glacial origin and are made up of sand, gravel and clay. Because of the nature of these materials and their greater thicknesses, the valley soils have a higher infiltration rate than the more impervious, compacted soils of the slope and upland areas (see Appendix B, Plate 5, for the Soils map).

2.3 Resource Analysis

2.3.1 Fish and Wildlife Resources

Woodcock Creek Lake's forested habitat, scrub-shrub uplands, wetlands, streams, and river/lakes support a variety of wildlife species common to the Commonwealth of Pennsylvania. A few of the more common avian species likely to occur in the Project area, include osprey (*Pandion haliaetus*), turkey (*Meleagris gallopavo*), red-winged blackbirds (*Agelaius phoeniceus*), robins (*Turdus sp.*), song sparrows (*Melospiza melodia*), common mergansers (*Mergus merganser*), and mallards (*Anas platyrhynchos*).

Mammal diversity is typically associated with large, intact tracts of forest. Mammal species of the region commonly include white-tailed deer (*Odocoileus virginianus),* red fox (*Vulpes fulvus*), opossum, (*Didelphimorphia),* raccoon *(Procyon lotor),* gray squirrel (*Sciurus carolinensis*), white-footed mouse (*Peromyscus leucopus*), and short-tailed shrew (*Blarina brevicauda*).

Smaller populations of black bear (*Ursus americanus),* bobcat (*Lynx rufus*), and fisher (*Martes pennanti)* are present. The hairy-tailed mole (*Parascalops breweri*), smoky shrew (*Sorex fumeus*), and eastern woodrat (*Neotoma floridana*) are rare species that may exist.

Woodcock Creek Lake also provides habitat for a diverse assemblage of fish species including smallmouth/largemouth bass (*Micropterus sp.*), walleye (*Sander vitreus*), yellow perch (*Perca flavescens*), black crappie (*Pomoxis nigromaculatus*), muskellunge (*Esox masquinongy*) catfish (*i.e., Ictalurus punctatus, Ameiurus catus, etc.*), carp (*Cyprinus sp.*), white sucker (*Catostomus commersonii*), golden redhorse (*Moxostoma erythrurum),* and other species.

In addition, Woodcock Creek Lake supports a variety of amphibians and reptiles including a number of different frog, turtle, salamander, and snake species.

2.3.2 Vegetative and Timber Resources

Mature, deciduous forest dominates Project land cover. The remaining land is a combination of field/pasture, shrubland, wetlands/riparian, with minor areas of maintained lawn. The Project supports the overarching goal of forest sustainability detailed in the Pennsylvania Department of Conservation and Natural Resources (DCNR) Forest Resource Management Plan. Forest sustainability requires the continued existence and use of forests to meet human physical, economic, and social needs; the desire to preserve the health of forest ecosystems in perpetuity; and the preservation of options for future generations, while meeting the needs of the present. The Forest Management Plan for the Project contains further details, including resource inventories and harvesting procedures (see Appendix B, Plate 6, for the Vegetative Resources map).

2.3.3 Threatened and Endangered Species

While there have been no confirmed sightings on Woodcock Creek Lake property, the habitat type exists for the below species (Table 2-1, below), meaning that they could be found within the area or occur as transient species:

Table 2-1. Threatened and Endangered (ESA) Species (USFWS IPaC, 26 November 2018)

Species	Scientific Name	Class	Federal Status	Habitat
Northern Riffleshell	*Epioblasma torulosa rangiana*	Clam	Endangered	Occurs in clean, firmly packed, coarse sand and gravel in riffles and runs of small and large streams
Snuffbox Mussel	*Epioblasma triquetra*	Clam	Endangered	Found in small to medium-sized creeks to larger rivers and lakes. It occurs in swift currents of riffles and shoals and wave-washed lakeshores over gravel and sand with occasional cobble and boulders, and

				generally burrows deep into the substrate except when spawning or attracting a host
Northern Long-eared Bat	*Myotis septentrionalis*	Mammal	Threatened	Spends winter hibernating in caves and mines. During the summer, roosts singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags
Indiana Bat	*Myotis sodalis*	Mammal	Endangered	Hibernation sites have stringent requirements, including noticeable airflow and low non-freezing temperatures possible. Primary maternity roosts are trees (often large, dead ones) with ex-foliating bark and sun exposure that results in high temperatures, while males seek cooler roosts. Most roosts are within ¾ mile of water
Clubshell	*Pleurobema clava*	Clam	Endangered	Prefers clean, loose sand and gravel in medium to small rivers and streams. This mussel will bury itself in the bottom substrate to depths of up to four inches
Rabbitsfoot	*Quadrula cylindrica*	Clam	Threatened	Occurs in large creeks to large rivers. It is often found along margins of shoals in gravel substrate in slow to moderate current
Eastern Massasauga	*Sistrurus catenatus*	Reptile	Threatened	Swamps, marshes, bogs, peat lands, wet meadows, prairie lands, low lying poorly drained soil, dry open fields with lots of vegetation. The habitat will vary with seasons. Spring and fall they can be found in the wetter habitats, and summer they may be found in dry habitats
Rayed Bean	*Villosa fabalis*	Clam	Endangered	Often occurs in or near shoal or riffle areas, deep slow runs and in the shallow, wave-washed areas of glacial lakes. Substrates typically include gravel and sand. Rayed Bean are sometimes associated with the roots of vegetation in and adjacent to riffles and shoals, but the species also lives in relatively deep-water (10 to 20-feet) and sparsely vegetated habitat

2.3.4 Invasive Species

In accordance with Executive Order (EO) 13751 (FR: 08 Dec 2016; amending EO 13112), an invasive species means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Invasive species can be microbes, plants, or animals that are non-native to an ecosystem. In contrast, exotic species, as defined by EO 11987 (FR: 24 May 1977), include all plants and animals not naturally occurring, either presently or historically, in any ecosystem of the United States.

Invasive species can take over and out compete native species by consuming their food, occupying their territory, and altering the ecosystem in ways that harm native species. Invasive species can be accidentally transported or they can be deliberately introduced because they are thought to be helpful in some way. Invasive species cost local, state, and federal agencies billions of dollars every year.

Currently, there are over 285 invasive plant species impacting Pennsylvania (LandScope, 2018). The most common plant invasive species around Woodcock Creek Lake are Autumn Olive (*Elaeagnus umbellate*), Japanese Knotweed (*Fallopia japonica*), Morrow Honeysuckle (*Lonicera morrowii*), Tatarian Honeysuckle (*Lonicera morrowii*), Multiflora Rose (*Rosa multiflora*), and Crown Vetch (*Securigera varia*). The most common invasive fauna around Woodcock Creek Lake is the Asian Clam (*Corbicula fluminea*).

2.3.5 Ecological Setting

The purpose of ecological land classification is to provide information for research, assessment, monitoring, and management of ecosystem components. The Natural Resource Management mission statement (ER 1130-2-550; Change 5, 30 Jan 2013) directly supports this paradigm. The lower Woodcock Creek Lake region, according to the U.S. Environmental Protection Agency's designation of ecoregions, is located within the Pittsburgh Low Plateau section of the Western Allegheny Plateau Ecoregion. According to U.S. Forest Service's designation, the lower Woodcock Creek region is located within the Unglaciated Allegheny Plateau section of the Eastern Broadleaf Ecoregion.

2.3.6 Wetlands

According to the National Wetland Inventory (NWI), Woodcock Creek Lake delineates about 10-acres of freshwater emergent wetlands and 92-acres of freshwater forested/shrub wetlands. Appendix B, Plate 7, shows the Wetlands map.

2.3.7 Water Quality & Sedimentation

Water Quality

Woodcock Creek Lake is located within the French Creek watershed, in Northwestern Pennsylvania. One of the congressionally authorized project purposes of Woodcock Creek Lake is to provide low flow augmentation for degraded water quality conditions from downstream point source inputs in the town of Meadville, PA.

The Pittsburgh District water quality specialists have evaluated water quality conditions at Woodcock Creek Lake since 1969 via a sampling program. Overall, water quality within Woodcock Creek Lake is currently unimpaired. This can be attributed to the relatively undeveloped land within the Project's drainage basin and related tributaries. Collected water quality data shows slight increases in nutrient (nitrogen and phosphorus species) through time. Harmful algae blooms (HABs) have also increased in frequency and magnitude over the past five years. In contrast, metals are minimal and fall within the level for natural environmental accumulation. Finally, the zooplankton community, which forms the base of Woodcock Creek Lake's food web, is abundant, healthy, and diverse. Due to this, walleye are harvested for eggs every year by the Pennsylvania Fish and Boat Commission's walleye hatchery and game fish stocking programs.

In order to effectively manage Woodcock Creek Lake's congressionally authorized purpose, the Water Quality Unit within the Water Resources section conducts the following program at the Project. Data collected includes chemical, physical, and biological constituents at numerous sampling locations on tributaries, bays, the lake, and outflow. Currently, routine water quality monitoring includes:

- Biweekly sample collection by Project staff from the outflow
- Yearly limnology surveys of the lake by water quality staff
- Once every ten years, monthly intensive limnology surveys from the months of March through October are performed to understand decadal/spatial changes in limnological dynamics; and
- A water temperature buoy, which records water temperature at three foot increments within the Project

Future stressors to Woodcock Creek Lake include increased nutrient loading and shale gas development. Woodcock Creek Lake is a nitrogen limited system. This means a minuscule amount of nutrients added to the lake can have catastrophic effects on lake ecosystem. Effects of increased nutrient most likely would increase the frequency and magnitude of HABs, the collapse of the zooplankton community, as well as, the failure of the Project to meet its primary purposes. Currently, the buffering and filtration capacity provided by surrounding undeveloped land limits the amount of nitrogen reaching and dispersing through the lake. However, future

development is projected to increase in this area and; therefore, protection of undisturbed land will become important for the future functioning of Woodcock Creek Lake.

Woodcock Creek Lake is underlain by the Utica Shale. The advancement in gas fracking technology has made this geologic unit more economical for natural gas extraction. As a result, the Project would most likely see the effects of shale gas wastewater in the future. This includes: extremely saline conditions (high conductance, high total dissolved solids), surfactant, and frack fluid contamination and other water quality impairments.

Water quality monitoring will continue as a critical part of a holistic, environmentally sound water-quality management strategy for the Project to continue to meet applicable federal and state environmental laws, criteria, and standards.

Sedimentation

Sedimentation surveys were conducted in 1973 and 1988. The 2009 periodic inspection reported that the 1988 survey showed a one percent accumulation. There has not been a sedimentation survey since 1988 at Woodcock Creek Lake. No sedimentation issues were noted or reported by the Project staff. Downstream of the dam was also inspected, but no significant sedimentation was observed. A recent sedimentation survey is recommended to confirm the available storage capacity of the reservoir (U.S. Army Corps of Engineers, Woodcock Creek Dam Eleventh Periodic Inspection Report, 2014).

2.4 Cultural Resources

Crawford County was originally inhabited by the Iroquiois and other tribes and nations prior to the American Revolutionary War. The Native Americans' primary travel route in the region, the Venango Trail, incorporates portions of a number of modern roads in the Project area, including U.S. 6/19, French Creek Parkway, PA 86, and U.S. 322. In December 1753, Major George Washington passed through the Saegertown area along the Venango Trail on a diplomatic mission from the Governor of Virginia to the commander of French forces at Fort Presque Isle concerning a territorial dispute prior to the start of the French and Indian War in 1754.

In the Treaty of Fort Stanwix (1784), the Iroquois relinquished all claims to the Upper Ohio Valley and sold the area included in the Project area to Pennsylvania. The state designated this tract as "Donation Lands" which were subdivided and reserved for Pennsylvania Revolutionary War veterans as a bonus settlement. By 1793, the Holland Land Company bought out most of the veterans' titles in Western New York and Northwestern Pennsylvania and resold them to settlers. Crawford County was subsequently created by the Allegheny County Court of Quarter Sessions on March 12, 1800, and named for Colonel William Crawford, Revolutionary War veteran and friend of George Washington.

Settlement at what is today Saegertown started circa 1795 with the arrival of Arthur and Patrick McGill. In 1801, Major Roger Alden built and operated a sawmill which became the focal point of a community known as Aldens Mill. In 1824, Daniel Saeger, a gentleman-farmer from the German community in Lehigh, PA, purchased the sawmill and adjoining lands, laid out a town and named it Saegertown. Saeger remained prominent as a local businessman and magistrate and later as a state legislator. His son, Edward's residence, constructed in 1845, is on the National Register of Historic Places.

The reservoir at Woodcock Creek Lake was constructed in 1961 and entered service the following year. The surrounding property is largely undisturbed and has archaeological potential. To date, there are two historic sites at Woodcock Creek Lake that fall within a 0.25-mile radius of the reservoir. They are the Gass Wolf house and the two damtender houses. Surveys in the area have been very small, related to Corps specific repairs.

2.5 Demographics

2.5.1 Market Area

Woodcock Creek Lake was constructed on French Creek in Saegertown, PA which is located in the middle of Crawford County. The Project receives visitors primarily from Crawford County in which the Project is located, as well as some neighboring counties. Due to the Projects location close to the center of Crawford County and the availability of other recreation areas in other nearby counties the market area for this analysis is focused on Crawford County, as well as the three counties along its borders closest to the Project: Erie County, Mercer County, and Venango County.

2.5.2 Population

Crawford County, Erie County, Mercer County, and Venango County were identified for demographic analysis due to the size of the Project, its geographic setting, and data collected about the surrounding counties. All data comes from the United States Census website, the Bureau of Labor Statistics website, and the Pennsylvania Department of Labor and Industry website. Crawford County is about 647,680-acres in area, mostly covering an east to west area. With Saegertown and the Project being located at nearly the center of the county, it is more likely that visitors to Woodcock Creek Lake would be from elsewhere in the county or either from Erie County to the north or Mercer County and Venango County to the south.

While the total population of Pennsylvania has grown by about 4.1 percent since 2000, the populations in Crawford County, Mercer County, and Venango County have not changed much, with only Erie County having seen even more growth with an increase of about 4.9 percent. This growth in Erie County likely comes from some of its surrounding counties, but given the state

population growth there is a strong possibility that some of the newer population came from out of state. This increased population in Erie County and the fairly stable populations in the other three counties should result in greater recreation at Woodcock Creek Lake. At the very least, there is no reason to believe an increase in population would cause any decrease to recreation demand. Woodcock Creek Lake is one of many outdoor recreation locations available to the residents from this region and the role of the Project in meeting regional recreational demand is discussed in more detail in the following sections.

The population of Crawford County is projected to shrink by less than one percent every ten years through 2040 whereas the populations of Erie County, Mercer County, and Venango County are projected to grow at varying rates. Erie County in particular is expected to have its population grow at a slightly greater rate than the population of Pennsylvania as a whole, which should help to increase the recreation demand at Woodcock Creek Lake. The rather slow rate of decline in population for Crawford County and the nearly equally slow rate of increase in population for Venango County is not expected to have much effect on recreation demand. Mercer County's increase in population would likely have a slightly positive effect on recreation demand.

2.6 Economics

2.6.1 Income and Poverty Status

For the period of 2012 to 2016, the median household income in Crawford County, Erie County, Mercer County, and Venango County fell below the value for Pennsylvania. All four counties also had a higher percentage of their population below the poverty line when compared to the state. The county values were close enough to those of the state that being slightly lower could be inconsequential when looking at impacts to recreation demand for Woodcock Creek Lake, but a key factor in determining recreation demand is income level of an area. In general, higher levels of income lead to greater amounts of time and money spent on recreation. The best conclusion that can be drawn from this information is that income and poverty status would likely have a small negative impact to recreation at the Project or no impact at all.

2.6.2 Area Industries

Crawford County, Erie County, Mercer County, and Venango County have many similarities with regard to primary industries of employment (Figures 2-1 through 2-4, below). The "manufacturing," "health care and social assistance," and "retail trade" industries are the largest employers in all four counties with "health care and social assistance" being the top industries in Erie County, Mercer County, and Venango County. The "manufacturing" industry is the largest employer in Crawford County. The following graphs break down employment by industry for each county.

Figure 2-1. Employment by Industry in Crawford County (for Persons Over the Age of 16)

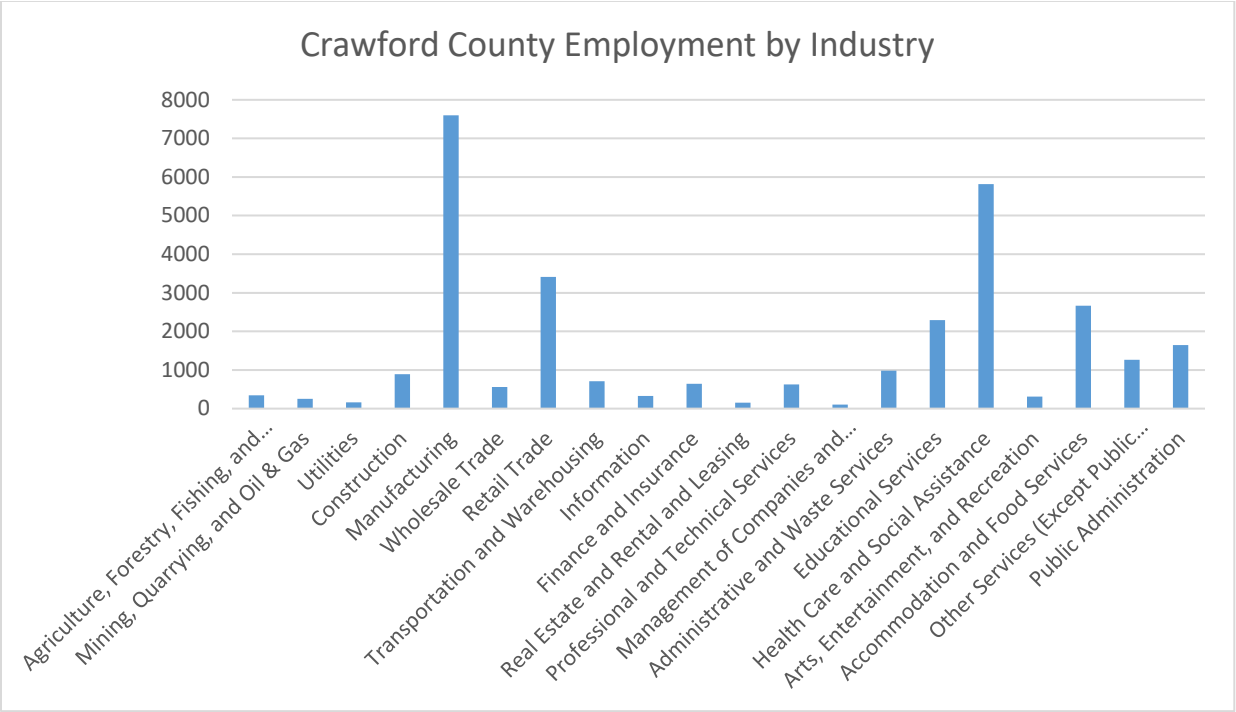


Figure 2-2. Employment by Industry in Erie County (for Persons Over the Age of 16)

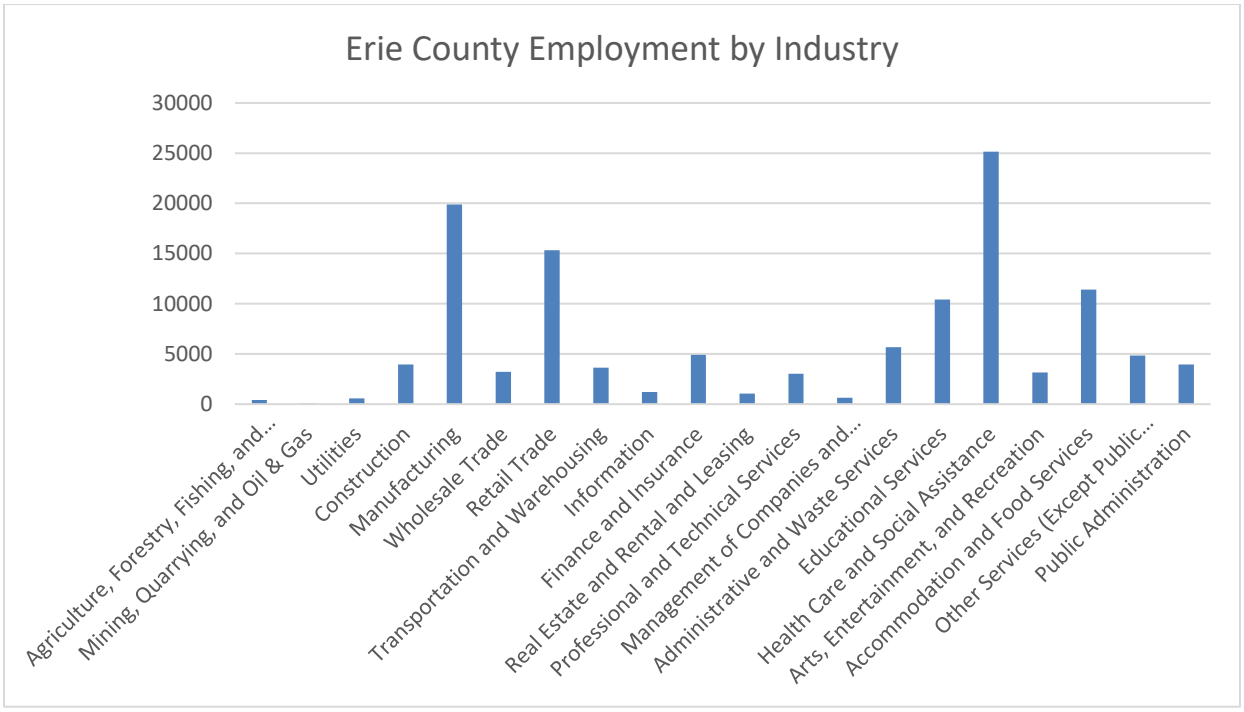


Figure 2-3. Employment by Industry in Mercer County (for Persons Over the Age of 16)

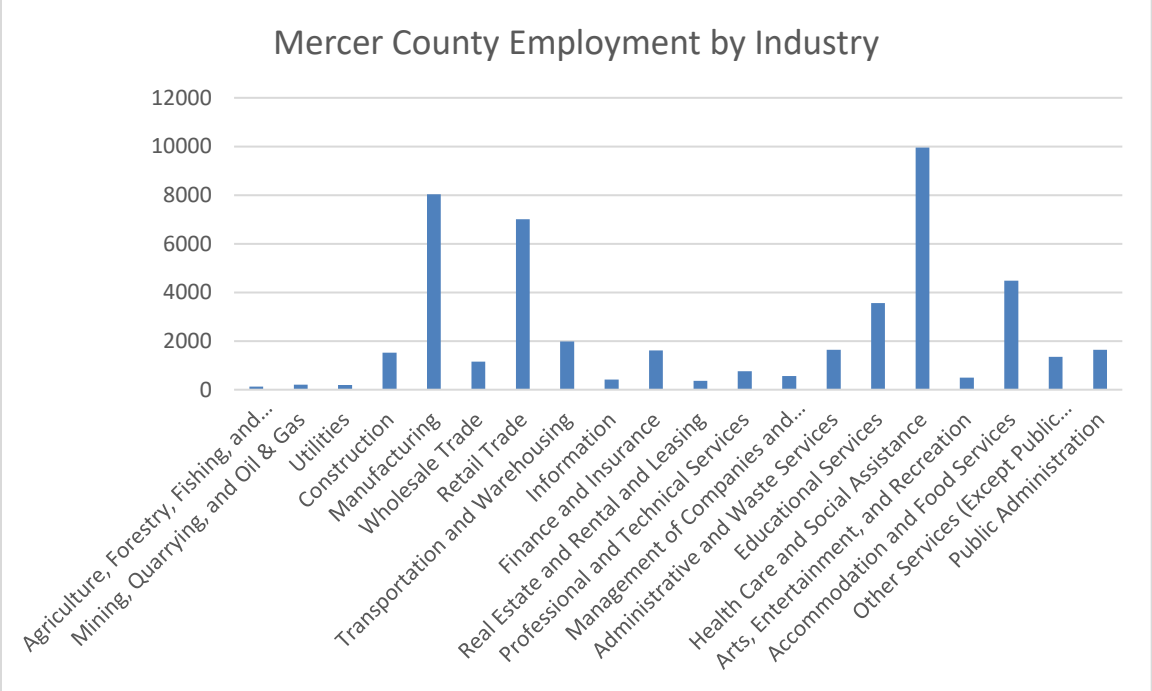
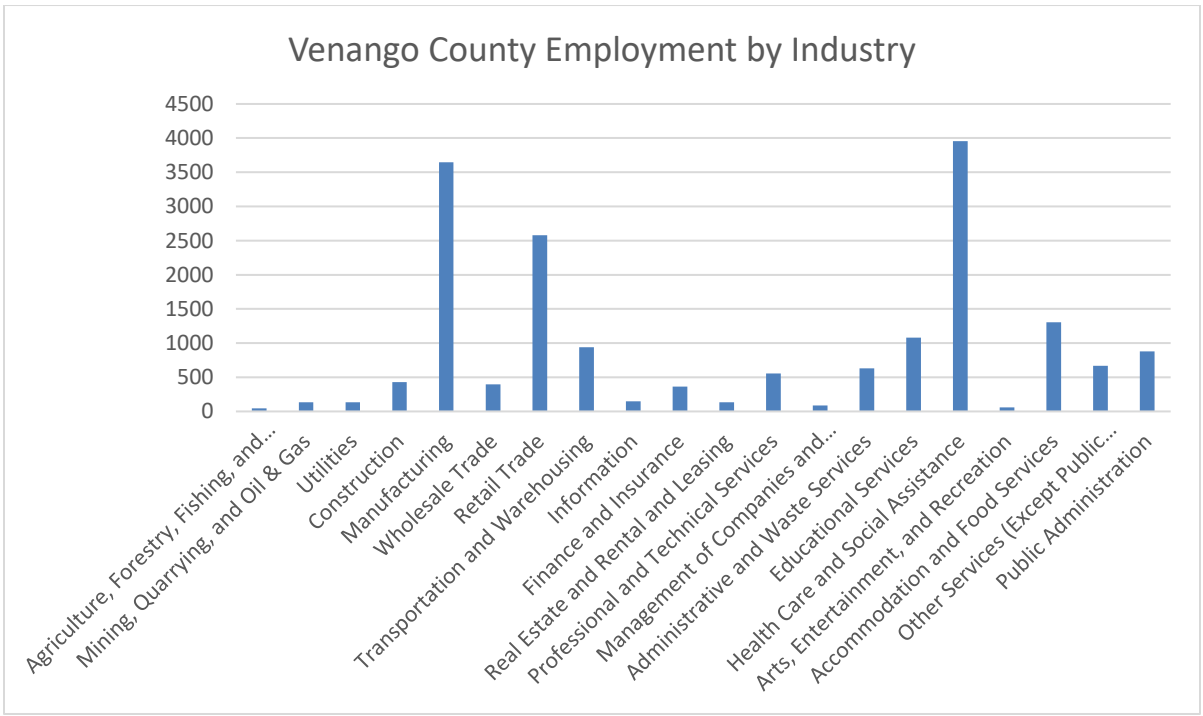


Figure 2-4. Employment by Industry in Venango County (for Persons Over the Age of 16)



2.6.3 Economic Impact of Recreation Related Spending

For 2016, there was an estimated 213,384 visits (person-trips) at Woodcock Creek Lake which resulted in direct benefits to the region amounting to $4,404,845 in sales, $1,581,492 in labor income, $2,219,320 in economic value added, and 58 jobs supported in the region.

2.7 Recreation Facilities, Activities and Needs

Woodcock Creek Lake offers a wide variety of facilities, including a pavilion, day-use and picnic areas, disc golf course, a boat launch area, Woodcock Lake Park Campground, hunting areas, and hiking trails provided by the Corps and partners. In addition, the Project provides opportunities for water-based recreation, such as fishing, boating, and paddlecraft.

2.7.1 Zones of Influence

The primary zone of influence encompasses the Erie-Meadville, Pennsylvania Metropolitan Statistical Area (MSA) as the basis in summarizing the population associated with Woodcock Creek Lake. The Erie-Meadville MSA includes Erie and Crawford counties and had a total population of 369,331 in 2010 (data from the U.S. Census website). As of the 2010 census, it is the seventh largest metropolitan area in Pennsylvania. Woodcock Creek Lake is located near the borough of Saegertown, Crawford County. Crawford County's population as of the 2010 census is 88,765, a 1.85% decrease from the 2000 census. The surrounding counties within the zone of influence are Erie, Mercer, and Venango Counties. Erie County's population as of the 2010 census is 280,566, nearly identical to that of the 2000 census. Mercer County's population as of the 2010 census is 116,638, a 3.12% decrease from the 2000 census. Venango County's population as of the 2010 census is 54,984, a 4.56% decrease from the 2000 census.

2.7.2 Visitation Profile

The Project is a recreational destination for visitors in Crawford, Erie, Mercer, and Venango counties, with the majority coming from within a 25-mile radius. Popular recreational activities at Woodcock Creek Lake include a disc golf course, hiking, picnicking, hunting, angling, paddlecraft (e.g. canoes, kayaks), and boating. There are six major higher level educational facilities within a 35-mile radius of Woodcock Creek Lake.

2.7.3 Recreation Analysis

Woodcock Creek Lake had a visitation of about 213,384 in 2016. There have been user demands for infrastructure improvements, including installing a new pavilion located near the outflow, kayak launches added at the public boat launch at Crawford Count Park, Wi-Fi and cell phone service to reduce safety hazards, and restroom facility upgrades at Bossard Nature Area and the overlook buildings. Other recreational opportunities include various picnic sites, one playground, and six hiking trails. The common infrastructure supports the current amount of recreational use at Woodcock Creek Lake.

2.7.4 Recreational Carrying Capacity

Carrying capacity, which includes both an environmental dimension (how much use can the resource support without being compromised) and a social dimension (how much use can occur before the quality of visitor experience is diminished), is currently balanced at Woodcock Creek Lake. The Project has few boating accidents despite the fact that the campground is booked year round. Future recreational developments will require harmonizing recreational diversity and accommodating new demands within a developed footprint in a manner that is environmentally and economically sustainable.

2.8 Related Recreational, Historical and Cultural Areas

Woodcock Creek Lake is located within the "Pennsylvania's Great Lakes" tourism region by the Pennsylvania Department of Community and Economic Development. The Project is bordered by the county-operated Colonel Crawford Park, which features a campground and a boat launch, and State Game Lands 435, which offer hunting opportunities. Additional camping is available at nearby Stainbrook Park, operated by the Crawford County Conservation District and also within a short distance at Cochranton, Union City, Jamestown, Linesville, Meadville, and Conneaut Lake. Another major regional tourist attraction is Conneaut Lake Park and Marina, which features boating and an amusement park that opened in 1937. Lake Erie is 32-miles north of Woodcock Creek Lake.

2.9 Real Estate and Acquisition Policy

The total real estate at the Project encompass 1,730.93-acres of which 1,403.87-acres are fee land title, 325.70-acres are water, and 1.36-acres are flowage easement. There are 14 total outgrants of which two are easements for pipelines, two are easements for roads, and ten are easements for utility lines. There are no known mineral tracts at Woodcock Creek Lake.

3. Land Allocation, Land Classification, Water Surface and Project Easement Lands

This Master Plan is intended to guide the comprehensive management and development of recreation, natural, and cultural resources at the Project, and define the Corps' responsibilities pursuant to federal laws to preserve, conserve, restore, maintain, manage, and develop lands, waters, and resources. An important aspect in managing these goals is properly defining the appropriate use for lands and waters consistent with their congressionally authorized purpose(s).

3.1 Land Allocation

In accordance with EP 1130-2-550 (Change 5, 30 Jan 13) land allocations identify the authorized purposes for which Corps lands were acquired. There are four categories of allocation:

Operations

These are the lands acquired for the congressionally authorized purpose of constructing and operating the Project. The entire Woodcock Creek Lake Project has a land allocation of Operations, which means that all project lands were originally acquired to provide safe, efficient operation of the Project and its authorized purposes. No specific parcels were acquired for or assigned to individual purposes of recreation, fish and wildlife conservation and enhancement, or mitigation.

Recreation

These lands were acquired specifically for the congressionally authorized purpose of recreation. These lands are referred to as separable recreation lands. Lands in this allocation can only be given a land classification of "Recreation".

Fish and Wildlife

These lands were acquired specifically for the congressionally authorized purpose of fish and wildlife management. These lands are referred to as separable fish and wildlife lands. Lands in this allocation can only be given a land classification of "Wildlife Management".

Mitigation

These lands were acquired specifically for the congressionally authorized purpose of offsetting losses associated with development of the Project. These lands are referred to as separable mitigation lands. Lands in this allocation can only be given a land classification of "Mitigation".

3.2 Land Classification

EP 1130-2-550 (Change 5, 30 Jan 13) further defines land classifications to provide for development and resource management consistent with authorized purposes and other federal laws. The previous Master Plan, dated July 1975, used an obsolete classification scheme that has been rectified in this document to meet current standards. Currently, there are six categories of classification, identified as:

- Project Operations
- High Density Recreation
- Mitigation
- Environmentally Sensitive Areas
- Multiple Resource Managed Lands
- Water Surface

The classification process refines the land allocations to fully utilize Project lands and considers public desires, legislative authority, regional and project-specific resource requirements, and suitability. Land classification indicates the primary use for which Project lands are managed. The Project manages lands according to five of the above six classifications (sans Mitigation). The system for classification has been realigned to meet current standards. Appendix B, Plate 8, illustrates the Land Classifications map.

3.2.1 Project Operations

This category includes lands required for the sub-impounding dam and associated structures, administrative offices, maintenance compounds, and other areas that are used to operate and maintain the Project (with public access to some of these areas often restricted). Where compatible with operational requirements, Project Operations lands may be used for wildlife habitat management and recreational use, as long as the proposed activities do not negatively impact project operations. Likewise, licenses, permits, easements, or other outgrants are issued only for uses that do not conflict with operational requirements. For example, mooring private vessels or modification of land and vegetation are prohibited without explicit permission. Requests for a permit for a compatible use within an area designated for project operations will be evaluated on a case-by-case basis and a decision will be made as to whether or not the proposed activity will be permitted, based on the potential impact to operations.

3.2.2 High Density Recreation

These lands are designated for intensive levels of recreational use to accommodate and support the recreational needs and desires of visitors. They include lands on which existing or planned major recreational facilities are located, and allow for developed public recreation facilities, concession development, and high-density or high-impact recreational use. In general, any uses of these lands that interfere with public enjoyment of recreational opportunities are prohibited. Low-density recreation and wildlife management activities compatible with intensive recreation use are acceptable, most usually on an interim basis. No agricultural uses are permitted on these lands, except on an interim basis for maintenance of scenic or open space values. Permits, licenses, and easements are not issued for non-compatible man-made intrusions, such as pipelines, overhead transmission lines, and non-Project roads, except where warranted by the public interest and no viable alternative area or route is available.

The facilities in these areas will accommodate the recreation needs of visitors in concentrated numbers, while also offering open space lands for the purpose of providing more complete and attractive recreation areas. The modernization of campsites and recreation facilities is anticipated to occur on a funds-available basis. Modernization may include hardening, leveling, and paving of campsites, upgrading electrical and plumbing infrastructure, adding or upgrading

restroom and shower facilities, and adding or expanding roads and parking lots to provide better access and accommodate additional visitors.

Requests for permits to conduct concessions, rentals, or conducting any other business in these areas will be reviewed on a case-by-case basis and will involve real estate agreements and fee payment to the Corps.

Given the difficulty of maintaining current facilities, the development of more modern facilities demanded by recreational visitors will likely include partnering with stakeholders to share in the cost, operation, and maintenance of any such asset.

3.2.3 Environmentally Sensitive Areas

This classification consists of areas where scientific, ecological, cultural, or aesthetic features have been identified. Designation of these lands is not limited to just lands that are otherwise protected by laws, such as the Endangered Species Act, the National Historic Preservation Act, or applicable state statues. These areas must be identified and protected by management to ensure they are not adversely impacted. Typically, either very limited or no development of public use is allowed on these lands. No agricultural or grazing uses are permitted on these lands, unless necessary to implement a specific resource management benefit. These areas are typically distinct parcels located within another, larger land classification area.

Defining sensitive areas as part of the Master Plan process assists in the protection of valuable resources. These sites are mapped and managed by the Corps. Environmentally Sensitive Areas include locations of threatened and endangered species and cultural sites. Many factors contribute in identifying sensitive areas. The degree of sensitivity varies by location and other contributing factors. An area may be available to construct a properly-designed hiking trail, or may be actively managed by forest practices such as timber stand improvement that does not negatively impact the site's sensitivity. Other sites can be very sensitive to human disturbance and need adequate protection from development. Examples of this degree of sensitivity would involve eagle nests, osprey nests, and heron rookeries. These animals are threatened by human activities, especially during active breeding seasons.

Areas designated as sensitive can change over time and continuous monitoring through programs like Multiple Species Inventory and Monitoring (MSIM) provide valuable information to keep identified sensitive areas current. Through the use of Geographic Information System (GIS) databases maintained with separated layers, the dynamic nature of sensitivity can be managed in an up-to-date program. Some areas may be highly sensitive to change; other areas need prescribed management to remain viable. The goal of sensitive area management is to protect

and preserve known areas that contribute to the diversity and health of the Project area. Appendix B, Plate 9, shows the Land Cover map.

3.2.4 Multiple Resource Management Lands

These lands can be divided into four sub-categories for the purposes of this Master Plan. These categories are; Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. In the future, some of these areas may be converted to High Density Recreation. Conversion to High Density Recreation may occur based on future recreation needs within the Project area. The Corps must continue to carefully evaluate land use requests in these areas to include road and utility easements, rights-of-way for pipelines, resource mining activities, and other potential ground and resource disturbing activities and to ensure that these actions do not negatively impact the environment in a significant manner.

Low Density Recreation

These lands are designated for dispersed and/or low impact recreation use. Development of facilities on these lands is limited. Emphasis is on providing opportunities for non-motorized activities such as walking, fishing, hunting, or nature study. Site-specific, low-impact activities such as primitive camping and picnicking are allowed. Facilities may include boat ramps, boat docks, trails, parking areas and vehicle controls, vault toilets, picnic tables, and fire rings. Manmade intrusions, including power lines, non-Project roads, and water and sewer pipelines, may be permitted under conditions that minimize adverse effects on the natural environment.

In these areas, natural conditions preclude intensive public use development because extensive alteration of natural systems would be required. Difficult access is also a factor indicating low-density use as most appropriate for these lands.

Private or long-term exclusive group use of these lands will not be permitted. Management practices leading to habitat improvements for the benefit of wildlife are encouraged. No licenses, permits, or easements will be issued for non-compatible manmade intrusions, such as underground or exposed pipelines, cables, overhead transmission lines, or non-Project roads. Exceptions to this restriction may be made where necessary to serve a demonstrated public need only in those instances where no reasonable alternative is available. Agricultural uses are permitted on this land. The focus for areas under the Low Density Recreation classification is on a balance of low-impact recreational activities along with conservation of natural areas and native species. Management of invasive species is also a priority for these areas to prevent their spread throughout the Project area. Hunting is permitted in most areas under this classification and is managed by the PAGC to promote healthy populations of game species. This includes multiple Game Management areas.

Low density recreation areas have the potential to be converted to high density recreation through the development of new trail systems, campgrounds, boat launches, or other recreational features. These areas also have the potential to be used for utility lines, timber sales, or mining activities if a third-party makes a request for such an activity. However, these actions would require additional study and would be approved on a case-by-case basis based on the anticipated impacts associated.

Wildlife Management

Proper management techniques will be applied wherever the opportunity exists to improve conditions for wildlife, recreation, scenic value, timber, wildfire prevention, pest control, watershed protection, or for use on the Project. While all Project lands are managed for fish and wildlife habitat in conjunction with other land uses, Wildlife Management Area lands are designated specifically for wildlife management. They contain valuable wildlife habitat components that are managed, using guidance that includes the State Wildlife Action Plan (SWAP) provided by the PAGC, to yield habitat suitable for designated game and non-game species. Licenses, permits, and easements for such man-made intrusions such as pumping plants, pipelines, cables, transmission lines, and non-Project roads are usually not allowed on these lands, although exceptions to this policy are allowable, if properly mitigated.

Vegetation Management

Vegetation management, including agricultural activities that do not greatly alter the natural character of the environment, are permitted for a variety of purposes, including erosion control, retention and improvement of scenic qualities, and wildlife management. Management activities focus on the protection and enhancement of forest resources and vegetative cover. The lack of fire, a natural and historic disturbance occurrence is a factor responsible for lack of forest regeneration, changes in forest species composition, and changing forest structure and forest health. In turn, the use of prescribed fire for a natural disturbance factor and ecological driver to reclaim, improve, maintain, and enhance habitats will be analyzed for use.

Forests are managed as a multipurpose resource for sustained yield when consistent with recreation and wildlife management objectives and approved land uses. Hunting and fishing are allowed pursuant to tribal or state fish and wildlife management regulations where these activities are not in conflict with the safety of visitors and Project personnel. Other activities are conducted under the guidance of the Project's forest management and wildlife management plans.

Future or Inactive Recreation Areas

These areas have site characteristics compatible either with future recreational development or recreation areas that are closed. Until there is an opportunity to develop or reopen these areas, they will be managed for multiple resources.

3.2.5 Water Surface

There are four possible sub-classifications. See Appendix B, Plate 10, Water Zoning map.

- **Restricted.** Water areas restricted for Project operations, safety, and security purposes.

- **Designated No-Wake.** To protect environmentally sensitive shoreline areas, recreational water access areas from disturbance, and/or public safety.

- **Fish and Wildlife Sanctuary.** Annual or seasonal restrictions on areas to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning.

- **Open Recreation.** Those waters available for year-round or seasonal water-based recreational use.

3.3 Easement Lands

Project Easement lands are lands on which easement interests are held but no fee title ownership exists. They typically include three different types of easements – operations, flowage, and conservation.

3.3.1 Operations Easement

Operations easements are easements purchased for the purpose of Project operations.

3.3.2 Flowage Easement

Flowage easements are easements purchased for the right to temporarily overflow, flood, and submerge private land during flood risk management operations. The purpose of these easements is to provide adequate storage for flood waters.

3.3.3 Conservation Easement

Conservation easements are easements purchased for the purpose of protecting wildlife, fisheries, recreation, cultural resources, environmental resources, or endangered species.

4. Resource Plan

The resource plan describes, in broad terms, how project lands will be managed according to the established land classifications. Each classification is discussed in terms of anticipated public use and resource stewardship needs.

4.1 Classification and Justification

The land classifications are:

- **Project Operations.** Lands required for the dam, spillway and other areas that are used solely for operation of the Project (more fully described in Sec. 3.2.1, above).

- **High Density Recreation.** Lands developed for intensive recreational activities (more fully described in Sec. 3.2.2).

- **Environmentally Sensitive Areas.** Areas including scientific, ecological or cultural features such as those protected under the Endangered Species Act, National Historic Preservation Act or other laws (more fully described in Sec. 3.2.3).

- **Multiple Resource Managed Lands.** Includes areas of low density recreation, wildlife management, vegetative management, and future/inactive recreation areas (more fully described in Sec. 3.2.4).

- **Water Surface.** Water surface areas restricted for Project operations, no-wake zones, used for open recreation, or restricted for fish and wildlife sanctuary (more fully described in Sec. 3.2.5).

Further details for managing these lands will be included in the Operational Management Plan (OMP), as revised. Management tasks described in the OMP will support the resource objectives, land classifications, and resource plan set forth in this Master Plan. While the following sections address specific plans for the land classifications listed above, at all project lands the Corps will strive to meet universal project purposes which include taking proactive measures to enhance universal access to lands and facilities, improvement of safety for visitors, and identification and elimination of encroachments and trespasses. In addition, the Corps will seek to identify important "unofficial" recreation activities and sites such as undeveloped shoreline fishing areas, swimming areas outside of developed beaches, or other favorite areas used by recreationists. As development occurs in the future, the Corps will seek to protect these areas and may require mitigation for development actions that would negatively impact these

sites. As these sites are identified, they will be included in future updates to the Master Plan and may also be included in the OMP.

4.1.1 Project Operations

This category includes lands required for the sub-impounding dam and associated structures, administrative offices, maintenance compounds, and other areas used to operate and maintain Woodcock Creek Lake Project. There are 167.40-acres of land that are classified as Project Operations. The management plan (stated as "resource objectives") for these areas is to continue providing physical security necessary to ensure continued operations of the dam and related facilities.

4.1.2 High Density Recreation

Lands developed for intensive recreational activities for the public are considered as high density recreation including day use areas, campgrounds, and commercial concessions (marinas, restaurants, resorts, etc.). Future possibilities for development of these areas include expansion of trail systems utilizing emerging technologies such as Quick Reference (QR) codes and other electronic media outreach, upgrades to designated watercraft (boats, kayaks, canoes, paddleboards, etc.), launching areas, conversion of low density campsites to sites with electric and water hook-ups for RVs, and expansion of additional park recreation features. There is a total of 129.70-acres that fall under High Density Recreation. Appendix B, Plate 11, shows the Recreation map.

Dam Site

The Dam Site Recreation Area is located at the top of the dam with parking located near the maintenance compound off of State Highway 198. Visitors can park here to access a one mile walk across the dam along with connecting hiking trails, a disc golf course, and newly installed swings from which the scenic view of the dam and lake can be observed.

Bossard Nature Area

The Bossard Nature Area is across the road from the Dam Site Recreation Area. The Bossard Nature Trail is designated as a National Recreation Trail in the National Trails System. In this area visitors can find hiking trails and a restroom.

Overlook Recreation Area

The Overlook Recreation Area is located on the north shore of Woodcock Creek Lake and off of State Highway 198. This area provides visitors with a scenic area to enjoy a picnic shelter, volleyball court, horseshoe pits, and an area to rent canoes, kayaks, and stand-up paddleboards

provided by a Co-Op Association. This recreation area is not only popular in the summer but also in the spring and winter seasons by photographers capturing images of migrating waterfowl which use Woodcock Creek Lake as a stopover.

Outflow Recreation Area

The Outflow Recreation Area is located below the dam off of State Highway 198. Visitors can enjoy a disc golf course, playground, picnic tables, access to hiking trails, and fishing.

Stainbrook Park

Stainbrook Park is located on the east side of the outflow, below the dam. This area is leased to the Crawford County Conservation District. Stainbrook Park offers fishing access, reservable picnic shelters, access to hiking trails/walking paths, and a nature center. The Woodcock Creek Nature Center offers various environmental education classes open to the public and special interest groups.

Woodcock Lake Park

Woodcock Lake Park is located on the south shore of Woodcock Creek Lake. It maintained and operated by Crawford County Board of Commissioners. Here there is a campground, swim beach with volleyball court, hiking trails, four picnic shelters equipped with restrooms, volleyball courts, a playground, and a 70-foot wide paved boat launching ramp. The campground has 111 paved sites, 75 of which are equipped with electric hook-ups. All sites have a picnic table and charcoal grill. There are three comfort stations with showers also located within the campground. The campground is open from Memorial Day to Labor Day.

Best Management Practices for High-Density Recreation Lands:

- Provide access for and use by the elderly and people with disabilities
- No ground disturbing activities in high density recreation areas, unless authorized by the Corps
- Interpret cultural resources to benefit visitors
- Protect the viewshed in order to maintain current aesthetic values
- Installation of a parking lot and drop in zone for kayaking at either the outflow or at existing boat launches
- Any additional campsites would only be constructed in existing campground
- Prescribed fire should be considered as a management method for this land classification

4.1.3 Mitigation

No land falls under this category at Woodcock Creek Lake.

4.1.4 Environmentally Sensitive Areas

The following occurrences on the landscape can be classified as a sensitive area:

- Known or discovered cultural sites
- Large tract woodlands
- Mature woodlands
- Reforestations
- Wetlands identified in the National Wetlands Inventory
- Lands possessing unique wildlife value by diversity or conservative species
- Steep slope
- Aesthetic quality or aesthetic views (scenic)
- Corridors between habitats that protect connectivity (e.g. riverine woodlands)

Archaeological Site

About 10-acres are classified as containing archaeological sites. Sites contain artifacts of pre-historic cultures of different archaeological periods, indicating repeated usage of this area over an extended period of time. The land around the dam has been affected by modern construction, but information may still be contained within deeper soil layers. This land classification will be managed to protect these sites in accordance with the provisions of pertinent laws, including the Archaeological Resources Protection Act, National Historic Preservation Act, and Native American Graves Protection and Repatriation Act. Areas will continue to be surveyed for the presence of archeological resources when development activities are proposed to ensure that utilities placement, mining, installation of recreation features, and other actions do not impact unknown resources. If additional cultural resources are discovered on the Project, these parcels would be converted to this management category and additional protections would be afforded to ensure compliance with applicable laws.

Fresh Water Wetlands

The National Wetlands Inventory delineates about 10-acres of freshwater emergent wetlands and 92-acres of freshwater forested/shrub wetlands were retained as Environmentally Sensitive Areas.

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. For the purposes of this classification, wetlands must have one or more of the following three attributes: 1) at least periodically, the land supports predominantly hydrophytes; 2) the substrate is predominantly

undrained hydric soil; and 3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year (Cowardin et al. 1979).

Wetland areas are functioning properly when adequate vegetation and landforms are present to: 1) dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; 2) filter sediment, capture bedload, and aid floodplain development; 3) improve flood-water retention and ground-water recharge; 4) develop root masses that stabilize streambanks against cutting action; 5) develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and 6) support greater biodiversity. Based on above information, the wetlands at Woodcock Creek Lake are functioning properly.

Bossard Environmentally Sensitive Area

About 13.35-acres are classified as the Bossard Environmentally Sensitive Area. Eastern hemlock (*Tsuga canadensis*) was a dominant tree species in the presettlement forests of the eastern United States (Lutz 1930, Whitney and DeCant 1990), and covers an extensive range in the present day. It is a very important component of present-day eastern temperate forests, serving as a keystone species, especially in riparian zones (Mladenoff 1987, Quimby 1996, Ellison et al. 2005). Hemlock is the main conifer component in many existing mature forests of Pennsylvania and New York (Bjorkbom and Larson 1977, Abrams et al. 2001, Nowacki and Abrams 1994) and provides critical habitat for many species in both riparian and upland areas (Burns and Honkala 1990, Tingley et al. 2002, Ross et al. 2004, Turcotte 2008, Allen et al. 2009, Mathewson 2009). Hemlock trees in a forest directly and indirectly affect water volume and chemistry and soil nitrogen cycling. Hemlock regulates nutrient and water cycling, mediates soil moisture levels and stream base flows, air, soil, and stream temperatures, and provides unique and critical wildlife habitats with food. Widespread hemlock loss would affect local viability of several species, alter wildlife distribution and use, and reduce aquatic and terrestrial species diversity. Furthermore, hemlock loss would result in a loss of scenic and other aesthetic values, and would degrade some recreation experiences.

Best Management Practices for Environmentally Sensitive Areas:

- Control noxious weeds and other pests in a manner that avoids damage to existing desirable vegetation and sensitive areas (wetlands and streams)
- Preserve and protect existing wetland and other sensitive or unique habitats that support threatened and endangered species along with other wildlife

- Proponents of surface disturbing activities shall identify important, sensitive, or unique habitats in the vicinity of the Project and design the proposed project to avoid, minimize, or mitigate impacts to these resources
- Riparian areas are maintained and enhanced for the protection and enhancement of fisheries
- As a standard practice, ephemeral and perennial drainages and wetland/riparian areas will be avoided as locations for oil and gas related facilities, including drilling locations, production facilities, roads, and pipelines. Whenever possible, facilities will be confined to existing alignments or locations, minimizing width requirements and maximizing multiple occupancy
- Surface disturbance will not be allowed within 200-meters of the source of a spring or seep, or within downstream riparian areas created by flows from the source or resulting from riparian area management
- Proponents of surface disturbing actives shall conduct surveys for federal and state-protected species and other species of concern within action area and design the Project to avoid, minimize, or mitigate impacts to these resources
- The Corps will prohibit the disturbance of any population of federally listed plant species
- Prescribed fire should be considered as a management method for this land classification
- Special management attention may be needed to protect important and relevant values of ESAs which may include historical, cultural, and scenic values, or fish and wildlife and their natural resources
- Land management decisions regarding the watershed supporting this ESA should take into consideration potential impacts to this community, including alterations to the light, temperature, and hydrologic regimes. Periodic monitoring for the Hemlock Woolly Adelgid is recommended
- No motorized use will be authorized within Environmentally Sensitive Area boundaries; other trails (i.e., foot trails, mountain bike trails, cross country skiing trails, etc.) will be analyzed on a case by case basis. Trail design, construction, and maintenance will ensure all criteria in which the Environmentally Sensitive Area was established will remain protected

4.1.5 Multiple Resource Managed Lands

This category includes 981.50-acres of land where the predominant use is for wildlife management or dispersed recreation. However, there are other compatible uses which may occur on these lands without impacting the predominant use.

4.1.5.1 Low Density Recreation

Low density refers to lands with minimal development or infrastructure that support passive public recreational use (e.g. primitive camping, fishing, hunting, trails, wildlife viewing). There are 360.40-acres at Woodcock Creek Lake that fall under this category.

Woodcock Creek Lake's low density areas are on the western side of the Project. These areas are managed for wildlife viewing, aesthetic value, bank fishing, and nature trails.

Best Management Practices for Low-Density Recreation Lands:

- Provide access for and use by the elderly and people with disabilities
- No ground disturbing activities in low density recreation areas unless authorized by the Corps
- Interpret cultural resources to benefit visitors
- Protect the viewshed in order to maintain current aesthetic values
- Prescribed fire should be considered as a management method for this land classification

The Non-Recreational Outgrant Policy, which reflects nationwide guidance developed in 2009, will be used to evaluate requests for use of Corps lands and waters. Future non-recreational outgrant requests may be granted if one of the following two conditions are met:

- There is no viable alternative to the activity or structure being placed on Corps lands
- There is a direct benefit to Woodcock Creek Lake and their respective authorized mission

4.1.5.2 Wildlife Management Areas

Wildlife lands are available for sightseeing, wildlife viewing, nature study, and hiking. There are 660.39-acres of land and water leased to the PAGC for wildlife management. Consumptive uses of wildlife, including hunting, fishing, and trapping, may be allowed when compatible with the wildlife objectives for a given area and within federal and state fish and wildlife management regulations as established with ER 1130-2-540, Environmental Stewardship Operations and Maintenance Policies, 4 Nov 2002.

Proper management of white-tailed deer populations may help keep their negative impacts to a minimum. In areas that are overpopulated with deer, forest regeneration is often hindered, crops and horticultural plantings damaged, reducing many resources necessary to other wildlife. Habitat destruction by overabundant deer populations has had a serious impact on songbird populations, especially woodland warblers, which require forest undergrowth layers to feed, nest, and take cover. Many of the bird species so affected are in decline. In addition, over-abundant deer populations pose a significant risk to the safety of motorists and damage to vehicles when

roadway collisions occur. White-tailed deer management is regulated in Pennsylvania through hunting permits allocated by the PAGC.

Public land managers experiencing high density deer populations should incorporate considerations into land and habitat management techniques. Habitat plots may be established to improve herd health and decrease the animals' dependency on natural areas. Public and private landowners may enroll in the Deer Management Assistance Program (DMAP), administered by PAGC which provides additional permits to hunt antlerless deer on registered properties to help reduce deer populations (PA DCNR, 2017).

Best Management Practices for Wildlife Management Areas:

- Surface disturbance will not be allowed within 200-meters of active raptor nests on natural habitat features, such as trees, large brush, and cliff faces
- The Master Memorandum of Understanding between the Corps and the Animal and Plant Health Inspection Service, Wildlife Services (WS), will guide nuisance species damage control
- Manage forest resources and other vegetation for balanced uses of recreation, wildlife, and fisheries
- Monitor forest conditions to document health and to identify pests
- A habitat restoration plan shall be developed to avoid, minimize, or mitigate negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. The plan shall identify revelation, soil stabilization, and erosion reduction measures that shall be implemented to ensure that all temporary-use areas are restored. The plan shall require that restoration occur, as soon as possible, after completion of activities to reduce the amount of habitat converted at any one time and to shorten the length of recovery time to natural habitats
- Recovery plans for species federally-listed as threatened or endangered will be implemented under the authority of the Endangered Species Act, including the reintroduction or relocation of native special status species in areas on public land in coordination and cooperation with local governments
- Increased intensity in research and monitoring will be needed to evaluate changes in habitat condition, land use threats to the species, species use and distribution, reclamation efforts, propagation, and other projects that may help in enlarging the knowledge base of these species
- Prescribed fire should be considered as a management method for this land classification

- No motorized use will be authorized within Wildlife Management Area boundaries; other trails (i.e., foot trails, mountain bike trails, cross country skiing trails, etc.) will be analyzed on a case by case basis.
- Re-establish Oak Savanna's where appropriate within Wildlife Management Areas. Restoration activities may include the following: prescribed fire, brush control, tree control, weed management, and planting of native species

4.1.5.3 Future Recreation Areas

For Woodcock Creek Lake, there are no acres of land that have been designated for future recreation.

4.1.6 Water Surface

There are four Water Surface categories within the boundaries of Woodcock Creek Lake: Restricted, Open Recreation, Fish and Wildlife Sanctuary, and Designated No-Wake. These areas make up 325.70-acres that are within the reservoir's conservation pool. As part of managing the water surface areas at the Project, the Corps will seek to maintain, and if possible improve water quality and fisheries habitat structure to support a productive sport fishery and maintain healthy populations of native fish species. Water quality monitoring at established stations should continue throughout the Project property and watershed, as the data gathered aids in conservation of the Projects aquatic resources.

4.1.6.1 Restricted

Restricted areas include those portions of the reservoir pool where public access is prohibited due to Project operations, security concerns, or to promote public safety. This includes the areas between trash booms and the upstream portion of the dam and the area immediately downstream of the dam. There are 0.70-acres at Woodcock Creek Lake that fall under this category.

4.1.6.2 Designated No-Wake

Designated no-wake zones are marked with buoys to protect environmentally sensitive shoreline areas, recreational areas (such as boat ramps and docks), and for public safety. Boats are required to slow down in these areas to prevent waves from impacting these areas. There are 48.30-acres at Woodcock Creek Lake that fall under this category.

4.1.6.3 Open Recreation

Open recreation areas are waters that are available year-round or seasonally for water-based recreational use. There are 276.70-acres at Woodcock Creek Lake that fall under this category. At Woodcock Creek Lake there is a 10-horsepower restriction on vessels. There has been public interest in increasing the horsepower limit; however, an action like this would require an evaluation outside the scope of this document. Further analysis would be in accordance with ER

200-2-2, Environmental Quality – Procedures for Implementing the National Environmental Policy Act, 4 Mar 1988.

4.1.6.4 Fish and Habitat Management

Fish and wildlife sanctuary zones have annual or seasonal restrictions on areas to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning. There are no acres at Woodcock Creek Lake that fall under this category.

4.2 Easement Lands

There are about 125.22-acres of easement lands at Woodcock Creek Lake.

4.2.1 Operations Easement

The Corps has no acres of operations easement lands at Woodcock Creek Lake.

4.2.2 Flowage Easement

The Corps has 1.36-acres of flowage easement lands at Woodcock Creek Lake.

4.2.3 Conservation Easement

The Corps has no acres of conservation easement lands at Woodcock Creek Lake.

4.2.4 Other Easement

The Corps also has 123.86-acres of utility, pipeline, and roadway easement lands at Woodcock Creek Lake.

Best Management Practices for Easement Lands:

- Monitor any activities occurring on easement lands to ensure that Corps rights, according to terms and conditions of the legal easement, remain unimpeded
- Promote an understanding of Corps boundary and mission by both the public and the owners of underlying private property

5. Special Considerations Affecting Natural Resources

During the development of this Master Plan, several issues were identified that could affect or are affecting the stewardship and management potential of the lands and waters at the Project.

1. Oil and Gas Development

Since the construction of the Project, and particularly in recent years, there has been a regional increase in the amount of oil and gas related activities being proposed and requested on Corps land. These activities consist mostly of sections of gas-gathering pipelines and waterline right-of-way easement requests, at times culminating in a non-recreational outgrant, utility line rights-

of-way, or general site access easements/requests. These proposals are most often for the connection of more extensive, existing oil and gas networks. In general, these larger networks/systems typically include: gathering lines, water lines, compressor stations, road crossings, fresh water impoundments, water intakes/outfalls that were previously constructed, or proposed in areas adjacent to Corps land. In essence, the Corps land crossings and right-of-way requests serve as network connections.

Ownership of the minerals rights underlaying Woodcock Creek Lake may be owned outright by the federal government, may be third party owned, or some combination thereof. There may be subordination agreements or surface restrictions in place. It is also possible for the Bureau of Land Management (BLM) to lease federally owned mineral interests beneath the surface of Project land. It is necessary to review and consider the specific ownership documentation of each tract in order to determine the rights and controls that the Corps has on said tracts. Oil and gas well locations will be managed for surface disturbance such as invasive species and erosion control.

2. Federally-Owned Minerals

Under the multiple-use principle, federal minerals beneath the surface of Corps lands may be made available for mineral exploration and extraction, consistent with Project activities. The primary statute governing oil and gas development on federally-managed lands is the Lease of Oil and Gas Lands (30 U.S.C. 226 et. al.), the Mineral Leasing Act of 1920 (30 U.S.C. 181 et. seq.), as amended by the Federal Onshore Oil and Gas Leasing Reform Act of 1987. This statute authorizes the Secretary of the Interior, through the BLM, to issue leases to private individuals and corporations to extract federal oil and gas from public lands. While the Mineral Leasing Act authorizes the BLM to issue oil and gas leases, it does not require that leases be issued. The BLM must obtain the Army's approval and the Army, through the Engineering District, can place limitations in the lease regarding the extractions of these minerals (See AR 405-30; *See* 43 CFR § 3503.20). If a developer approaches the BLM for access to a certain parcel or mineral interest, the BLM notifies the Corps and requests title information for the parcel and any use stipulations the Corps might require. The Real Estate Office for the Corps provides the BLM the title information along with any stipulations (AR 405-30). The BLM would in turn inform the party interested in leasing the federal minerals of all of the stipulations. If the developer is still interested, the BLM follows its procedures to make the minerals available. The Corps has the final say in whether minerals will be made available, and the Assistant Secretary of the Army (ASA) has final approval on any non-availability determination.

3. Owners of Private and State Minerals

Owners of private and state oil and gas rights have a property right to develop their interests, which generally includes reasonable use of the surface to the extent necessary to accomplish such development. However, this does not mean their operations are free from limitation or reasonable regulation that might originate under state and/or federal law, whether pursuant to property law concepts or other legal authorities. Under applicable state and federal laws and regulations, the mineral owner, whether it is private or state, and/or the lessee must coordinate with the Project to use the federally-controlled surface. For all types of mineral leases where surface occupancy is approved under a lease, the lessees must obtain prior approval for any surface activities on Corps-managed lands (Title 43 – Public Lands: Interior Code of Federal Regulations [CFR] Subpart 3160). It is the Project's responsibility to protect Project purposes when allowing surface use. Moreover, while owners of oil and gas interests generally have the right to reasonable use of the surface to the extent necessary for private oil and gas exploration and development, they are not exempt from possible liability to the surface owner for damages stemming from such exploration and development.

4. State or Privately-Owned Minerals Accessed from State or Privately-Owned Land

Effective control of mineral extraction activities, particularly when the Corps does not own the necessary estates in real property to control development within the close proximity of dams and other structures, requires close coordination among the Project staff and the District Office, especially Operations, Real Estate, Engineering-Construction, and Office of Counsel. Operations personnel are often the first Corps employees to become aware of new or proposed mineral extraction activities near the Project. Mineral extraction activities may include exploration operations, mining operations, drilling operations, production operations, reworking operations (including hydraulic fracturing), and high pressure pipeline operations. Real Estate personnel must investigate the location of activities and determine the federal real property interests in the location. Engineering-Construction personnel must evaluate any new or proposed activities in order to make determination whether said activity is compatible with the structural integrity of the dam and other major structures. The Corps' ability to regulate and dictate private mineral extraction on adjacent private lands is minimal; however, federal agencies have a duty to protect federal resources for authorized purposes.

5. Hemlock Woolly Adelgid

Westward migration of the Hemlock Woolly Adelgid *(Adelges tsugae)*, an exotic, invasive insect currently documented in 42 counties in the eastern two-thirds of Pennsylvania is a possible threat to the hemlock trees in the Bossard ESA. The Hemlock Woolly Adelgid, native to Asia, is a sap-feeding insect that attacks the eastern hemlock. This insect pest can result in high levels of hemlock mortality, opening up the forest canopy and illuminating the forest floor to full sunlight.

6. Indiana Bat and Northern Long-Eared Bat

Currently listed as federally endangered, the Indiana Bat (*Myotis sodalis*) is a small, gray to chestnut-brown bat that hibernates in caves and abandoned mines during winter months (starting mid-September into November) and roosts under peeling tree bark, under bridges, and sometimes in buildings, during warmer months (starting mid-April into May). The total body length of an adult Indiana bat averages between 2-3 inches, with a wingspan of 9.5-10.5 inches. Populations have been declining since the 1960's, largely due to disturbance of winter cave hibernacula. The Northern Long-Eared Bat (*Myotis septentrionalis),* listed as federally threatened, is a medium-sized bat with a total body length of 3-3.7 inches and a wingspan of 9-10 inches. Their fur color can be medium to dark brown on the back and pale-brown on the underside; primarily distinguishable by their long ears. The Northern Long-Eared Bat, has similar behavior, threats to their existence, habitat, and range as the Indiana Bat.

While no known hibernacula for these bats exist on Woodcock Creek Lake property, there is sufficient potential summer roosting habitat present in and amongst the forested components of the Project. At present, there is no current management or survey plan in effect; however, the US Fish and Wildlife Service (USFWS) has adopted regional, seasonal cutting/disturbance restrictions. Generally, tree-cutting activities should be carried out from mid-November through the end of March, during which time bats are hibernating. If any tree-cutting is necessary from the beginning of April to mid-November, trees greater than or equal to five inches in diameter at breast height should not be cut or physically disturbed in order to avoid potentially killing or injuring roosting bats. Further, the following general guidelines apply to tree characteristics indicative of potential bat habitat: 1) dead or dying trees and snags (with exfoliating bark); 2) live trees (such as shagbark and shellbark hickory; *Carya* sp.) which have exfoliating or defoliating bark in the trunk or branches; and 3) trees or snags that have characteristics typical of roost sites for bats (i.e., have exfoliating or defoliating bark, or contain cracks, crevices, or holes that could be used by the species as a potential roost).

Currently, no known occurrence of these bats has been reported or observed at Woodcock Creek Lake. Staff are aware of and abide by the cutting/disturbance restrictions. Corps staff at the Project will continue to work with the USFWS and partner with other state and federal resource agencies to assure that potential detrimental effects to managed resources are minimized on public lands entrusted to the Corps.

7. Emerald Ash Borer

The Emerald Ash Borer (EAB), (*Agrilus planipennis),* is a non-native invasive pest of ash (*Fraxinus sp.*) trees in the United States. It was first found in North America in the summer of

2002 in southeast Michigan and in Ontario, Canada. The first confirmed detection in Pennsylavania occurred in June of 2007. EAB poses a significant threat to North America's ash resources and has no effective natural enemies in North America. Control tactics are extremely limited with tree removal being the principal option. If left unchecked, the pest will continue to infest and destroy native and landscape ash trees, resulting in the loss of millions of dollars to forest products and nursery industries. The damage caused by EAB will directly impact the forest ecosystem due to the loss of ash species and its impact on biodiversity and wildlife.

8. Bald Eagle

The Bald Eagle (*Haliaeetus leucocephalus*), is protected by the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA). The MBTA and the Eagle Act protect Bald Eagles from a variety of harmful actions and impacts. The U.S. Fish and Wildlife Service established the National Bald Eagle Management Guidelines to advise landowners, land managers, and others who share public and private lands with Bald Eagles of protective provisions that apply to human activities. A variety of human activities can potentially interfere with Bald Eagles, affecting their ability to forage, nest, roost, breed, or raise young. The guidelines are intended to help minimize impacts to Bald Eagles, particularly where they may constitute "disturbance," which is prohibited by the Eagle Act.

9. Round Goby

The Round Goby (*Neogobius melanostomus*) is a small, but aggressive bottom-dwelling fish that grows rapidly and reproduces several times in one spawning season. It is a huge threat to North American aquatic ecosystems because it is adaptable to a wide range of environmental conditions. Round Gobies are native to Eurasia in the Black, Caspian, and Azov seas, and tributaries. They were first discovered in the St. Clair River in 1990, presumably released during ballast water exchanges of transoceanic ships. They have since spread to all of the Great Lakes, and are now working their way inland through rivers and canal systems. In Pennsylvania, the Round Goby is abundant in Lake Erie and its lower tributaries. The first inland occurrence for Pennsylvania was confirmed in 2010 at the Fairview Gravel Pits in Erie County. The aggressive Round Goby is thriving at the expense of native fish populations including sculpins, logperch, lake trout, and darters. They feed voraciously on the eggs and young of native species, and are able to out compete them for food and breeding habitat. Round Gobies have a competitive advantage because they can feed in complete darkness, survive in degraded water conditions, and use their pelvic fin as suction cups to keep them anchored to rocks and substrates in rapid currents. Because Round Gobies aggressively defend prime spawning areas, they reduce the reproductive success of native species by denying them access. In addition to fish eggs and other aquatic organisms, Round Gobies feed heavily on zebra mussels and quagga mussels. Because

invasive mussels are filter feeders, they can accumulate contaminants such as heavy metals, Polychlorinated Biphenyl (PCB), harmful bacteria, and toxins in their fatty tissues. Since many sport fish, including smallmouth bass, yellow perch, and walleye, are found to prey on Round Gobies, the direct transfer and bioaccumulation of the contaminants moves up the food chain, leading to more restrictive fish consumption advisories. Round Gobies have also been implicated as vectors of disease such as Type E botulism in the Great Lakes that has caused widespread fish and bird kills. Preventing the spread of Round Gobies to new areas is the best way to prevent further ecological and economic damage. Anglers are often the first to discover new infestations because they are commonly caught by hook and line.

10. Climate Change

Potential long-term changes in Pennsylvania's climate (i.e., altered air temperature and/or precipitation rates) may affect habitats and species. Intolerant flora and fauna, as well as species currently existing on the edge of their range, are at greatest risk of local extirpation as a result of altered environmental conditions expected under climate change. Existing data regarding climate change was predicted on models and climate data from 60 years ago. Given these predictions, it may result in water management and water quality difficulties, such as not being able to make summer pool in time for the recreation season or not having enough water in the late summer to meet downstream flow targets. There is also the possibility of increased storm runoff, due to climate change, which has the potential to result in greater inputs of pollution, which in turn can affect water quality of the reservoir and downstream of the Project. Similarly, increased runoff may alter rates of sedimentation with the reservoir and reduce the lifetime of the reservoir. Ecosystems and associated species impacted by pre-existing anthropogenic stressors are also at greater risk. Thus, preserving and promoting healthy and connected habitats will be critical to ensuring long-term persistence of all species under climate change.

6. Agency and Public Coordination

Throughout the scoping process, the Corps involved the public; engaged with partners and stakeholders representing interests at the local, regional, state, and federal levels; and coordinated with sovereign (recognized) tribal nations.

Comments from the various partner, stakeholder, and public meetings were received on a variety of topics, including:

Preferred qualities, characteristics, and components of the Project:

- Maintaining and promoting the trail system around the Project, including access to the walkway across the dam

- Providing opportunities for safe conditions for canoes and kayaks
- Ensuring that Woodcock Creek Lake develops incrementally in order to reach a maintainable level of recreation and tourism, without becoming too overcrowded
- Serving as a one of multiple destination points for the area, used as an attractor for tourists for Crawford County

Potential Threats:

- Public safety around the lake
- Balancing recreational draw with resource conservation objectives
- Horsepower increase and its potential impact on safety and water quality
- Invasive Species
- Harmful Algal Blooms (HABs)
- Declining Woodcock habitat
- Oil and Gas development

Regional Needs/Opportunities:

- Improving consistency of maps and brochures featuring the Project and surrounding area with other partners
- Opening up concessions for activities such as biking and kayaking
- Establishing a "Friends Group" for the Project
- Providing veterans and handicapped individuals with better access to the amenities at Woodcock Creek Lake
- Improving signage announcing arrival and departure from the Project
- Extending and increasing utilization of the trails and dam walkway
- Partnering on education programming and the building of educational sites
- Increasing public awareness of the Project and coordinating with current tourism efforts in Crawford County
- Starting a management plan for the forests based off analyses in order to increase young, successional habitat
- Studying the impacts of removal of the current horsepower restrictions
- Establishing allowances within the Master Plan for special or seasonal uses of Project lands such as ROTC trainings, hunting in the campground area, etc.
- Creating opportunities for other recreation experiences including disc golf, geocaching, and kayaking
- Protecting Hemlock grove at the Project

See Appendix D for the compilation of the comments collected during the Scoping and Draft Release meetings. All comments made during these meetings and submitted online were considered for incorporation into the Master Plan. All formal comments submitted during the Draft Release meeting will also be found, with the Corps response, in Appendix D.

6.1 Scoping Meetings

Scoping efforts began in late May 2017 with a meeting between Corps staff and Project partners: Crawford County Department of Public Safety, Crawford County Maintenance, Woodcock Township Emergency Management Agency (EMA), Saegertown Borough Maintenance, Saegertown Borough EMA, Crawford County Conservation District, and the Pennsylvania Game Commission. A stakeholder meeting with state agency representatives (i.e. Pennsylvania Department of Environmental Protection (PADEP) – Northwest Regional Office as well as the Waterways and Wetlands Program; Pennsylvania Fish and Boat Commission; Pennsylvania Environmental Council; and Pennsylvania State Police) and local governmental agency representatives (i.e. Crawford County Commissioners; Woodcock Township; Crawford County - Convention and Visitors Bureau as well as the Maintenance Department and the Department of Planning and Development); as well as local interest groups (Creek Connections from Allegheny College and Edinboro University ROTC) in attendance, was conducted on August 3, 2017. These scoping meetings focused on communicating the Corps' intent and need to revise the Master Plan; establishing the scope of the Master Plan update; and most importantly, learning about the needs, opportunities, and concerns of partners and stakeholders. See Appendix D for a summary of the meetings. For interested parties unable to attend the scheduled meetings or not located close to the Project site, they could visit the Project's Master Plan website to also engage in the scoping process.

The Corps decided not to hold a formal public scoping meeting at the beginning of the process because the Crawford County Conservation District was simultaneously updating their Master Plan. The Corps and the Conservation District raised concerns over confusing the public and meeting exhaustion. However, Crawford County Conservation District shared information gathered at their public meetings with the Corps. Additionally, stakeholders representing many different interests attended the Corps Master Plan scoping meetings. To compensate for the lack of formal public scoping meetings, efforts to engage the public via press releases and social media were increased.

6.2 Public Review Meetings

Pittsburgh District offered to hold separate meetings for Woodcock Creek Lake partners prior to the Public Review period for the Master Plan in order to discuss proposed changes within the Master Plan; however, the partners indicated a joint meeting with the public would be sufficient.

The provision of the draft Master Plan to partners gave them the opportunity for comment, review, and to discuss the changes prior to public review. The Corps hosted an open house style meeting for public review of the updated Master Plan and Environmental Assessment on August 14, 2018. The purpose of the public review meeting was to unveil the proposed recommendations and proposed land use classifications. These items were based off of internal Corps discussions and input received from partners, stakeholders, and the public during the public scoping phase of the Master Plan. The meeting was also held to elicit any remaining feedback on the proposed updates to the Master Plan and accompanying Environmental Assessment. Notice of the public meeting was sent out as an email on July 31, 2018 to partners and stakeholders included on the Woodcock Creek Lake Master Plan mailing list, followed by an email marking the beginning of the public review comment period and announcement of the Notice of Availability on August 2, 2018. Pittsburgh District also published notice of the public review period via a press release, the Woodcock Creek Lake Master Plan website, and Facebook posts on the Woodcock Creek Lake Facebook page. Any interested parties could find pertaining documents to this update on Woodcock Creek Lake Master Plan website. Public notifications and comments collected during the meeting itself can be found in Appendix D.

6.3 Outreach Efforts

The following outreach efforts were conducted to notify the public, stakeholders, and partners of the opportunities for involvement and to solicit input into the Master Plan update process:

- Website: A dedicated website was developed to describe the Master Plan process, changes in the Master Plan, and recommendations resulting from the Master Plan Revision as well as provide an avenue for additional comments to be submitted: http://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Woodcock-Creek-Lake/Woodcock-Creek-Lake-Master-Plan/

- Fact Sheet: A Master Plan update fact sheet was developed to inform partners, stakeholders, and the public on the purpose and scope of the Master Plan update. This fact sheet was sent in all email correspondence, handed out at each of the meetings, and provided on the Project website.

- Agency, Partner, and Stakeholder Letters: Letters were sent directly to agencies, partners, and stakeholders inviting them to attend the scheduled meetings and to send any comments or concerns to the Corps. These letters were either sent attached to an email invitation or mail depending on address availability and preference of the recipients.

- Notice of Availability: Pittsburgh District sent a Notice of Availability (NOA), required for National Environmental Policy Act compliance, to partners and stakeholders indicating the

30-day comment period for the Master Plan and Environmental Assessment, along with the web address to access the documents on August 2, 2018.

- Indian Nation Coordination Letters: Letters were sent directly to Indian Nations in recognition of the Corps' Federal Tribal Trust responsibilities. The letters inquired as to whether the Indian Nations had any information relevant to the Project and invited them to contact the Pittsburgh District either via mail, email, or phone in order to submit any comments or concerns, and/or indicate how they would prefer to engage with the Master Plan update process. During the Public Review phase, Pittsburgh District also sent letters requesting comments on the proposed revision of the Master Plan.

- Agency, Partner, and Stakeholder Email Invitations: Email invitations for both the partner and stakeholder meetings were sent out via email to all partners and stakeholders with available contact information. A Project fact sheet was attached.

- Public Facebook Posts: Facebook posts were made on the Woodcock Creek Lake Facebook page advertising the Master Plan update and inviting comments.

7. Summary of Recommendations

7.1 Coordination with Partnerships

The modest size of the staff at Woodcock Creek Lake creates a prime opportunity for partners and volunteers to augment and advance the operations and management at the Project. Therefore, an overarching recommendation for Woodcock Creek Lake is to create partnerships to leverage fiscal resources and continue to involve local communities and stakeholders in achieving the resource objectives set forth in Section 1.7. This recommendation includes working with federal and state agencies to leverage resources for complimentary natural resources management, with recreation service providers to improve user experiences, with environmental groups to improve habitat, and with educational and community groups to encourage volunteer activities that are mutually beneficial.

In order to keep in accordance with other plans regarding resources and opportunities within Crawford County, the Corps shall keep abreast of content within the existing plans reviewed during the update of this Master Plan as well as any future plans that are developed for the area.

The Corps should also seek to continuously stay engaged and further coordination efforts. To encourage coordination and partnership, the Project staff should engage with external partners including but not limited to:

- Crawford County Conservation District
- Crawford County Department of Planning & Development
- Crawford County Department of Public Safety
- Crawford County Maintenance
- Crawford County Commissioners
- Crawford County Convention & Visitors Bureau
- Woodcock Township Emergency Management Agency (EMA)
- Saegertown Borough Maintenance
- Saegertown Borough EMA
- Pennsylvania Game Commission
- Pennsylvania Department of Environmental Protection (PADEP)
- Pennsylvania Fish & Boat Commission
- Pennsylvania Environmental Council
- Pennsylvania State Police
- Creek Connections from Allegheny College
- Edinboro University ROTC

Opportunities ripe for partnerships include: Promotion of the Project and linkages to other destinations in the area, updated brochures and maps to ensure consistency in distributed information, trail extensions or maintenance of trails, educational programming, an invasive species management plan, and the Woodcock Creek Lake signature event.

7.2 Facility Modernization

It is the goal of the Corps at Woodcock Creek Lake to continue to modernize current facilities within existing footprints of recreation areas and prioritize improvements for safety and improved visitor experience where funding is available and in accordance with Engineer Manual 1110-1-400, Engineering and Design – Recreation Facility and Customer Service Standards, 1 November 2004.

Potential improvements include those described above, in Section 1.7 Resource Objectives of this Master Plan, which were adopted from the public input process and the needs identified from the Project staff including these examples below:

Specific potential improvements for safety, if resourcing and/or a successful partnership becomes available at Woodcock Creek Lake, should include:

- Informational and directional signs around the lake and trails, including demarcation of property lines

- Improvements to roads and parking areas leading to and surrounding Woodcock Creek Lake

Specific potential improvements for improved visitor experience, if resourcing and/or a successful partnership becomes available at Woodcock Creek Lake, should include:

- Pavilions to be installed at Woodcock Creek Lake recreation areas
- Installation of another 9 disc golf baskets, bringing the disc golf course to 18 holes
- Identify Project Site Areas (PSAs) with low use and degraded facilities; divest when appropriate
- Establish different ways for visitors to explore Woodcock Creek Lake: brochures, maps, or development of a phone app in which visitors could access park maps, learn about the Project, and log information from their experience at the site
- Seek opportunities to expand winter recreation activities (i.e., snowshoeing, cross country skiing, etc.)
- Increase technology related to recreation (i.e., drones, etc.)

7.3 Land Classification Changes

The land use classification changes discussed in this document and evaluated in the attached Environmental Assessment represent the changes in land use, management strategies, and guidance concerning naming conventions that have occurred since the original Master Plan for this Project was developed in the mid-1970's. The primary change in the Master Plan were the three previous Land Classifications originally based on soil suitability (Recreation, Forest Management, and Wildlife Management) are now consolidated under the Multiple Resource Management Land Classification (Low Density Recreation; Wildlife Management) in this revised Master Plan (see Table 7-1, below). As a result, the majority of Project lands are classified as Multiple Resource Management. High-density recreation is identified as its own classification due to increased recreation opportunities in those areas.

Other updates to this Master Plan include the renaming of archeological and historical sites as the new land classification of Environmentally Sensitive Areas and the addition of water classifications, which did not exist in the original Master Plan. Updating and highlighting naming conventions and/or classifications as part of the Master Plan will ensure the conservation of valuable resources continues uninhibited.

Table 7-1. Conversion of Land and Water Classifications

Original	Proposed
Historical Site	Environmentally Sensitive Area
Recreation	High Density Low Density
Forest Management Wildlife Management	Environmentally Sensitive Area Wildlife Management
Project Operations	Operations
N/A	Water Surface

This table reflects a change in terminology classifications of land and water.

Table 7-2. Summary of Land Class Changes

Existing Land Use Class	Existing Land Use Acres	Proposed Land Use Class	Proposed Land Use Acres
Forest Management Wildlife Management Historical Site	Unknown Unknown Unknown	Environmentally Sensitive Areas Wildlife Management Areas	125.27 621.10
Recreation	Unknown	High Density Recreation Low Density Recreation Future Recreation	129.70 360.40 0
Project Operations	Unknown	Project Operations	167.40

Previous Master Plans did not break down acreage by land classification; therefore, this table reflects that change in the new 2019 Master Plan.

While these land use classifications may be updated in the future, those described in this document, dated 2019, represent the most current and relevant uses of various Project lands. Additional details of the uses and management goals for individual Project site areas will be provided in a forthcoming OMP for the Project.

7.4 Development Requests

Historically, Woodcock Creek Lake has received oil and gas requests, a trend that is anticipated to continue, if not increase, into the future. In recognition of these trends, Woodcock Creek Lake should prepare for an increase in non-recreational requests (e.g. Pennsylvania Shell ethylene cracker plant-related infrastructure, natural gas transmission lines) by purposefully limiting development to existing disturbed areas, communicating Corps land use policies, and encouraging the development of mitigation plans in line with the Resource Objectives outlined in Section 1.7.

Furthermore, this document also highlights where the Corps will allow utilities to cross government land at Woodcock Creek Lake. This Master Plan has determined that additional oil

and gas infrastructure will not be permitted on Environmentally Sensitive Areas, in order to limit existing disturbances, which will best protect Corps lands from negative impacts of fragmentation, erosion, wildlife value, and aesthetic quality decline. In addition, the Master Plan identifies the areas in which viewsheds should not be compromised. Best Management Practices, which should be used and applied to any future oil and gas development requests at Woodcock Creek Lake, have been outlined in Section 5.

7.5 Wildlife Management and Environmentally Sensitive Areas

The Corps land at Woodcock Creek Lake represents a significantly-sized riparian corridor of valuable wildlife lands. These lands are vulnerable to change by human disturbance; therefore, large portions of these lands are outgranted to other agencies, whose primary purpose is wildlife management, with secondary use being recreation. While some areas of Woodcock Creek Lake have developed recreation areas, a large portion of land acreage remains in an undeveloped natural state, being heavily forested and rich in riverine habitat, including wetlands. The goal is to continue coordination with resource agency partners, continue to successfully manage these lands for the use and enjoyment of our visitors, and the conservation of our valuable natural resources. In the future, the Corps should develop survey methods to identify sensitive habitats, possibly using a MSIM, and use the results to designate additional Environmentally Sensitive Areas. These lands should be protected from human disturbance and development activities to the extent possible, and ensure compliance with all applicable laws and regulations. If development activities are proposed for these areas, the Corps will work with partners to minimize the disturbance or mitigate the impacts. The Corps will also consider proactive steps to enhance natural areas for sensitive species and to restore sensitive habitats through native vegetation plantings, removal of invasive species through prescribed burns, or other efforts targeted at non-game species habitat. In addition, the Corps will continue to protect cultural resources in existing Environmentally Sensitive Areas and promote education related to these resources.

7.6 Threatened and Endangered Species

Federally-listed Threatened and Endangered plant and animal species will be managed according to USFWS Recovery Plans. State listed species will be protected through partnerships and agreements with state agencies. Best Management Practices, which should be used to manage Threatened and Endangered Species at Woodcock Creek Lake, have been outlined in Section 2.

7.7 Water Quality

Future stressors to Woodcock Creek Lake include increased nutrient loading and shale gas development. Effects of increased nutrient most likely would increase the frequency and magnitude of HABs, the collapse of the zooplankton community, as well as, the failure of the

Project to meet its authorized mission of water quality. Future development is projected to increase in this area and therefore protection of undisturbed land will become important for the future functioning of Woodcock Creek Lake. Water quality monitoring will continue as a critical part of a holistic, environmentally sound water-quality management strategy for the Project to continue to meet applicable federal and state environmental laws, criteria, and standards.

7.8 Summary

The 1975 Woodcock Creek Lake Master Plan (updated from the original 1967 Master Plan) focused on a plan geared towards developed recreation; yet, such development did not progress at the Project as much as originally anticipated. Most recently, Woodcock Creek Lake more closely follows a Conservation/Recreation Mix Development Scenario. Thus, through our analysis and in accordance with ER 1105-2-100, we recommend that Woodcock Creek Lake continue to follow this mixed development scenario. The resulting resource objectives, resource plans, and specific recommendations found within this Master Plan reflect this goal.

8. Bibliography

Abrams, M.D., Copenheaver, C.A., Black, B.A., and van de Gevel, S. 2001. Dendroecology and climatic impacts for a relict old-growth, bog forest in the Ridge and Valley Province of central Pennsylvania, U.S.A. Canadian Journal of Botany 79: 58-69.

Allen, M.C., Sheehan, J., Jr., Master, T.L., and Mulvihill, R.S. 2009. Responses of Acadian flycatchers (Empidonax virescens) to hemlock woolly adelgid (Adelges tsugae) infestation in Appalachian riparian forests. The Auk 126: 543-553.

Bjorkbom, J.C. and Larson, R.G. 1977. The Tionesta Scenic and Research Natural Areas. USDA Forest Service General Technical Report NE-31. USDA Forest Service, Upper Darby, PA.

Burns, R. and Honkala, B. 1990. Silvics of North America: Conifers (Vol. 1). USDA Forest Service, Washington, D.C.

Cowardin, L.M., Carter, Virginia, Golet, F.C., and LaRoe, E.T., 1979. Classification of wetlands and deepwater habitats of the United States: U.S. Fish and Wildlife Service Report FWS/OBS-79/31, 131 p.

Ellison, A.M., Bank, M.S., Clinton, B.D., Colburn, E.A., Elliott, K., Ford, C.R., Foster, D.R., Kloeppel, B.D., Knoepp, J.D., Lovett, G.M., Mohan, J., Orwig, D.A., Rodenhouse, N.L., Sobczak, W.V., Stinson, K.A., Stone, J.K., Swan, C.M., Thompson, J., Von Holle, B., and Webster, J.R. 2005. Loss of foundation species: Consequences for the structure and dynamics of forested ecosystems. Frontiers in Ecology and the Environment 3: 479-486.

LandScope America. Http://www.landscope.org/. Last accessed 18 April 2018.

Lutz, H.J. 1930. Original forest composition in northwestern Pennsylvania as indicated by early land survey notes. Journal of Forestry 28: 1098-1103.

Mathewson, B. 2009. The relative abundance of eastern red-backed salamanders in eastern hemlock-dominated and mixed deciduous forests at Harvard Forest. Northeastern Naturalist 16: 1-12.

Mladenoff, D.J. 1987. Dynamics of nitrogen mineralization and nitrification in hemlock and hardwood treefall gaps. Ecology 68: 1171-1180.

Nowacki, G.J. and Abrams, M.D. 1994. Forest composition, structure, and disturbance history of the Alan Seeger Natural Area, Huntington County, Pennsylvania. Bulletin of the Torrey Botanical Club 121: 277-291.

Pennsylvania Department of Conservation and Natural Resources. (n.d.). Deer management assistance program. Retrieved January 10, 2017 from Pennsylvania Department of Conservation and Natural Resources website: http://www.dcnr.state.pa.us/forestry/dmap/index.aspx

Quimby, J.W. 1996. Value and importance of hemlock ecosystems in the eastern United States. In Proceedings of the First Hemlock Woolly Adelgid Review. Salome, S.M., Tigner, T.C., and Reardon, R.C., editors. Charlottesville, VA, October 12, 1995. USDA Forest Service, Morgantown, WV. Pages 1-8.

Ross, R.M., Redell, L.A., Bennett, R.M., and Young, J.A. 2004. Mesohabitat use of threatened hemlock forests by breeding birds of the Delaware River basin in northeastern United States. Natural Areas Journal 24: 307-315.

Tingley, M.W., Orwig, D.A., Field, R., and Motzkin, G. 2002. Avian response to removal of a forest dominant: Consequences of hemlock woolly adelgid infestations. Journal of Biogeography 29: 1505-1516.

Turcotte, R.M. 2008. Arthropods associated with eastern hemlock. In Fourth Symposium on Hemlock Woolly Adelgid in the Eastern United States, Onken, B. and Reardon, R., editors. Hartford, CN, February 12-14, 2008. USDA Forest Service, Morgantown, WV. Page 61.

U.S. Army Corps of Engineers, Pittsburgh District. 1975. Woodcock Creek Lake Master Plan. Pittsburgh.

U.S. Army Corps of Engineers, Pittsburgh District. 2014. Woodcock Creek Dam Eleventh Periodic Inspection Report. Pittsburgh.

U.S. Fish & Wildlife Service (USFWS) (2018, April). Information for Planning and Consultation (IPaC Project Planning Tool: https://ecos.fws.gov/ipac/). Last accessed: 03 Apr 2018. Pittsburgh, PA.

Whitney, G.G. and DeCant, J.P. 2003. Physical and historical determinants of the pre-and postsettlement forests of northwestern Pennsylvania. Canadian Journal of Forest Research 33: 1683-1697.

APPENDIX A

APPLICABLE PUBLIC LAWS & FEDERAL STATUTES

The following public laws (PL) are applicable to Woodcock Creek Lake.

B.1 PL59-209, Antiquities Act of 1906: The first Federal law established to protect what are now known as "cultural resources" on public lands. It provides a permit procedure for investigating "antiquities" and consists of two parts: An act for the Preservation of American Antiquities, and Uniform Rules and Regulations.

B.2 PL74-292, Historic Sites Act of 1935: Declares it to be a national policy to preserve for (in contrast to protecting from) the public, historic (including prehistoric) sites, buildings, and objects of national significance. This act provides both authorization and a directive for the Secretary of the Interior, through the National Park Service, to assume a position of national leadership in the area of protecting, recovering, and interpreting national archeological historic resources. It also establishes an "Advisory Board on National Parks; Historic Sites, Buildings, and Monuments, a committee of eleven experts appointed by the Secretary to recommend policies to the Department of the Interior".

B.3 PL74-738, Flood Control Act of 1936: Authorizes civil engineering projects (e.g. dams, levees, dikes) and other flood control measures through the U.S. Army Corps of Engineers and other federal agencies.

B.4 PL75-761, Flood Control Act of 1938: Authorizes civil engineering projects (e.g. dams, levees, dikes) and other flood control measures through the U.S. Army Corps of Engineers and other federal agencies.

B.5 PL78-534, Flood Control Act of 1944: Section 4 of the act as last amended in 1962 by Section 207 of PL87-874 authorizes the Corps to construct, maintain, and operate public parks and recreational facilities in reservoir areas and to grant leases and licenses for lands, including facilities, preferably to federal, state or local governmental agencies.

B.6 PL85-500, River and Harbor Act of 1958: This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.

B.7 PL85-624, Fish and Wildlife Coordination Act 1934: This act, as amended, sets down the general policy that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resource development programs. Opportunities for improving fish and wildlife resources and adverse effects on these resources shall be examined along with other purposes which might be served by water resources development.

B.8 PL86-717, Forest Conservation: This act provides for the protection of forest cover for reservoir areas under this jurisdiction of the Secretary of the Army and the Chief of Engineers.

B.9 PL87-874, Rivers and Harbors Act of 1962: This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.

B.10 PL88-578, Land and Water Conservation Fund Act of 1965: This act established a fund from which Congress can make appropriations for outdoor recreation. Section 2(2) makes entrance and user fees at reservoirs possible by deleting the words "without charge" from Section 4 of the 1944 Flood Control Act as amended.

B.11 PL89-72, Federal Water Project Recreation Act of 1965: This act requires that not less than one-half the separable costs of developing recreational facilities and all operation and maintenance costs at federal reservoir projects shall be borne by a non-federal public body. An OCE/OMB implementation policy made these provisions applicable to projects completed prior to 1965.

B.12 PL89-90, Water Resources Planning Act (1965): This act established the Water Resources Council and gives it the responsibility to encourage the development, conservation, and use of the Nation's water and related land resources on a coordinated and comprehensive basis.

B.13 PL89-272, Solid Waste Disposal Act, as amended by PL 94-580, dated October 21, 1976: This act authorized a research and development program with respect to solid-waste disposal. It proposes (1) to initiate and accelerate a national research and development program for new and improved methods of proper and economic solid-waste disposal, including studies directed toward the conservation of national resources by reducing the amount of waste and unsalvageable materials and by recovery and utilization of potential resources in solid waste; and (2) to provide technical and financial assistance to state and local governments and interstate agencies in the planning, development, and conduct of solid-waste disposal programs.

B.14 PL89-665, National Historic Preservation Act of 1966: This act provides for: (1) an expanded National Register of significant sites and objects; (2) matching grants to states undertaking historic and archeological resource inventories; and (3) a program of grants-in aid to the National Trust for Historic Preservation; and (4) the establishment of an Advisory Council on Historic Preservation. Section 106 requires that the President’s Advisory Council on Historic Preservation have an opportunity to comment on any undertaking which adversely affects properties listed, nominated, or considered important enough to be included on the National Register of Historic Places.

B.15 PL90-483, River and Harbor and Flood Control Act of 1968, Mitigation of Shore Damages: Section 210 restricted collection of entrance fee at Corps lakes and reservoirs to users of highly developed facilities requiring continuous presence of personnel.

B.16 PL91-190, National Environmental Policy Act of 1969 (NEPA): NEPA declared it a national policy to encourage productive and enjoyable harmony between man and his environment, and for other purposes. Specifically, it declared a “continuing policy of the Federal Government…to use all practicable means and measures...to foster and promote the general welfare, to create conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.” Section 102 authorized and directed that, to the fullest extent possible, the policies, regulations and public law of the United States shall be interpreted and administered in accordance with the policies of the Act.

B.17 PL91-611, River and Harbor and Flood Control Act of 1970: Section 234 provides that persons designated by the Chief of Engineers shall have authority to issue a citation for violations of regulations and rules of the Secretary of the Army, published in the Code of Federal Regulations.

B.18 PL92-463, Federal Advisory Committee Act: The Federal Advisory Committee Act became law in 1972 and is the legal foundation defining how federal advisory committees operate. The law has special emphasis on open meetings, chartering, public involvement, and reporting.

B.19 PL92-500, Federal Water Pollution Control Act Amendments of 1972: The Federal Water Pollution Control Act of 1948 (PL 845, 80th Congress), as amended in 1956, 1961, 1965 and 1970 (PL 91- 224), established the basic tenet of uniform State standards for water quality. PL92-500 strongly affirms the Federal interest in this area. "The objective of this act is to restore and maintain the chemical, physical and biological integrity of the Nation's waters."

B.20 PL92-516, Federal Environmental Pesticide Control Act of 1972: This act completely revises the Federal Insecticide, Fungicide and Rodenticide Act. It provides for complete regulation of pesticides to include regulation, restrictions on use, actions within a single State, and strengthened enforcement.

B.21 PL93-81, Collection of Fees for Use of Certain Outdoor Recreation Facilities: This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended to require each Federal agency to collect special recreation use fees for the use of sites, facilities, equipment, or services furnished at Federal expense.

B.22 PL93-251, Water Resources Development Act of 1974: Section 107 of this law establishes a broad Federal policy which makes it possible to participate with local governmental entities in the costs of sewage treatment plan installations.

B.23 PL93-291, Archeological Conservation Act of 1974: The Secretary of the Interior shall coordinate all federal survey and recovery activities authorized under this expansion of the 1960 act. The Federal Construction agency may transfer up to one percent of project funds to the Secretary with such transferred funds considered non-reimbursable project costs.

B.24 PL93-303, Recreation Use Fees: This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended, to establish less restricted criteria under which federal agencies may charge fees for the use of campgrounds developed and operated at federal areas under their control.

B.25 PL93-523, Safe Drinking Water Act: The act assures that water supply systems serving the public meet minimum national standards for protection of public health. The act (1) authorizes the Environmental Protection Agency to establish federal standards for protection from all harmful contaminants, which standards would be applicable to all public water systems, and (2) establishes a joint federal-state system for assuring compliance with these standards and for protecting underground sources of drinking water.

B.26 PL94-422, Amendment of the Land and Water Conservation Fund Act of 1965: Expands the role of the Advisory Council. Title 2 - Section 102a amends Section 106 of the Historical Preservation Act of 1966 to say that the Council can comment on activities which will have an

adverse effect on sites either included in or eligible for inclusion in the National Register of Historic Places.

B.27 PL98-63, Supplemental Appropriations Act of 1983: The act authorized the Corps of Engineers Volunteer Program. The United States Army Chief of Engineers may accept the services of volunteers and provide for their incidental expenses to carry out any activity of the Army Corps of Engineers except policy making or law or regulatory enforcement.

B.28 PL99-662, The Water Resources Development Act of 1986: Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

B.29 PL99-88, Supplemental Appropriations Act of 1985: This act authorized the partnership of local and federal government and private interests to develop ecosystem improvements and recreational opportunities in the Des Moines River Corridor.

B.30 PL101-640, Water Resource Development Act of 1990: Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

B.31 PL101-646, Coastal Wetlands Planning, Protection, & Restoration Act of 1990: Provides authorization to carry out projects for the protection, restoration, or enhancement of aquatic and associated ecosystems, including projects for the protection, restoration, or creation of wetlands and coastal ecosystems.

B.32 PL101-676, Water Resource Development Act of 1988: Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

B.33 PL102-580, Water Resource Development Act of 1992: Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

B.34 PL104-303, Water Resource Development Act of 1996: Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation’s water resources infrastructure.

B.35 PL106-53, Water Resource Development Act of 1999: Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation’s water resources infrastructure.

B.36 PL106-541, Water Resource Development Act of 2000: Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation’s water resources infrastructure.

B.37 PL109-58, Energy Policy Act of 2005: Directed the Secretaries of Agriculture, Commerce, Defense, Energy and Interior to identify corridors for oil, gas, and hydrogen pipelines and electrical

transmission and distribution facilities on federal lands and to schedule prompt action to identify, designate, and incorporate the corridors into the applicable land use plans.

B.38 PL110-114, Water Resource Development Act of 2007: Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

B.39 PL113-121, The Water Resources Reform and Development Act of 2014: This act authorizes the U.S. Army Corps of Engineers to carry out missions to develop, maintain, and support the nations vital ports and waterways infrastructure needs and support effective and targeted flood protection and restoration needs.

B.40 30 U.S.C. 181, Mineral Leasing Act of 1920 as amended by the Federal Onshore Oil and Gas Leasing Reform Act of 1987: Authorizes and governs leasing of public lands for developing deposits of coal, petroleum, natural gas, and other hydrocarbons, in addition to phosphates, sodium, sulfur, and potassium.

B.41 30 U.S.C. 226, Lease of Oil and Gas Lands: Authorizes the use of public lands for oil and gas exploration and development.

B.42 16 U.S.C. 661-664, Fish and Wildlife Coordination Act of 1934 as amended by PL85-624: Provides the basic authority of the U.S. Fish & Wildlife Service to become involved in the evaluation of impacts to fish and wildlife from proposed water resource development projects or when federal actions result in the control or modification of a natural stream or body of water.

B.43 16 U.S.C. 668-668d, Bald and Golden Eagle Protection Act of 1940 as amended: Prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles (Haliaeetus leucocephalus), including their nests or eggs.

B.44 16 U.S. C. 1531-1544, Endangered Species Act of 1973: Provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend.

B.45 16 U.S.C. 703-712, Migratory Bird Treaty Act of 1918: Makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations.

B.46 AR 405-30, Mineral Exploration and Extraction of 1984: Governs exploration and extraction of minerals on Department of Army property.

B.47 43 CFR § 3503.20 Title 43 – Public Lands: Interior Code of Federal Regulations [CFR] Subpart 3160: Gives the Bureau of Land Management authority to issue permits or leases on public lands.

APPENDIX B

MAP PLATES

Maps are for graphical purposes only. They do not represent a legal survey. While every effort has been made to ensure that the data is accurate and reliable within the limits of the current state of the art, US Army Corps of Engineers, Pittsburgh District, cannot assume liability for any damages caused by any errors or omissions in the data, nor as a result of the failure of the data to function on a particular system. US Army Corps of Engineers, Pittsburgh District, makes no warranty, expressed or implied, nor does the fact of distribution constitute such a warranty.

APPENDIX C

Design Memorandums/Studies/Contracted Work

Design Memorandums/Studies/Contracted Work Related to Woodcock Creek Lake
GENERAL
Outside Interests (1984-)
DESIGN, COMPS & ESTIMATES
Design Corres - (1988-)
Design Comps - Misc Comps (1963-1970)
DESIGN MEMOS
General Design Memo - Part II & III
DM #3 - Preliminary Master Plan - Part of the Master Plan – Feb 1967
DM #7 - Dam, Spillway & Outlet Works – Jan 1970
DM #8 - Master Plan – Jul 1975
GEOTECH
Corres & Reports - General (1983-)
Bank Erosion and Gabion Protection
Bank Erosion and Gabion Protection (1983-)
Misc Notes & Comps
Foundation Reports - Core Trench - Foundation Report #1
Foundation Reports - Random Fill - Foundation Report #2
Foundation Reports - Tower & Conduit Foundation - Foundation Report #3
Foundation Reports - Spillway Weir Area – Foundation Report #4
Lab Test Results - Dam - File 1 of 2
Lab Test Results - Hwy Reloc - File 2 of 2
Lab Test Results - Piezometer Installation
Soils Data & Permeability Comps
Soils Profile & Report - Hwy Relocation 20065 - Section #1
Field Control Data - Reports to WES, OCE & ORD - Field Co Control Data
Instrumentation - Piezometer Readings up to Aug 1973 Construction Readings
Post Stability Analysis - Sept 1973
Stability Analysis & Comps - 1966
HYDROELECTRIC POWER
Hydrology (1966-)
Hydrology - Drought Contingency Plan (1992) (For General file on Drought Contingency Plan see 1110-2-1403a - Drought Reports & Surveys)
LAND
General - (1966 -)

Design Memorandums/Studies/Contracted Work Related to Woodcock Creek Lake
Land - Annual Mgt Plan (1984-
Rights of Entry
Utilization Inspection Report
OPERATION & MAINTENANCE
General (1967 -)
Dam Safety - Flood Emergency Plan
Operation & Maintenance Manual - 1976
Periodic Inspection – corres (1973 -)
Periodic Inspection Reports - 1st – 1973
Periodic Inspection Reports - 2nd – 1974
Periodic Inspection Reports - 3rd – 1977
Periodic Inspection Reports - 4th – 1979
Periodic Inspection Reports - 5th – 1984
Periodic Inspection Reports - 6th – 1989
Periodic Inspection Reports - 7th – 1994
Periodic Inspection Reports - 8th – 1999
Periodic Inspection Reports - 9th – 2004
1st Periodic Bridge Inspection Report – Aug 1994
Periodic Inspection Reports - Photos for 4th Periodic Inspection Filed Separately
2nd Periodic Bridge Inspection Report – Sep 1999
Intermediate Inspection – Jan 2003
Intermediate Inspection Report – Sep 2012
11th Woodcock Periodic Inspection Report – 16 Jun 2014
Woodcock Creek Dam 2015 Intermediate Inspection 13 Aug 2015
Woodcock Creek Dam 2016 Intermediate Inspection Report 24 Aug 2016
CORRESPONDENCE
Periodic Inspection – 13 Dec 2011
RECREATION & LAND USE
Recr & Land Use - State Agencies (1969)
Operational Management Plan - DRAFT (1988-)
SEDIMENTATION & SILTING
Reservoir Sedimentation Data
UTILITIES & PLANTS
Utilities & Plants - General
Saegertown Treatment Plant - DA-81-C-0100
WATER & WATER SUPPLY

Design Memorandums/Studies/Contracted Work Related to Woodcock Creek Lake
Water & Water Supply - (1987-)
Water & Water Supply - Water Supply Potential of Woodcock Creek Lake - Feb 1988
MISC SPECS
Constr of Bossard Area Restrooms - DeVore Construction Co DA-82-C-0098 & Transmittals
Construction of Sanitary Tie-In - Mon Valley Construction Co DA-84-C-0091 & Transmittals
Sealing Cracks in Sluices; Mosquito & Woodcock Creek Lake Structural Preservation Systems, Inc - DA-86-M-0268
Parking Area Addition - Polivka Paving Co Inc - DA-87-C-0042
Access Road & Pump Station Repairs - Costello Industries Inc DACW59-89-C-0017
Change Area Renovations & Misc Repair - Colonel Crawford Recr Area - Lopez Constr Co - DACW59-90-C-0014 (CANCELLED)
Change Area Renovations & Misc Repair - Colonel Crawford Recr Area - Richard L. Wood - d/b/a Wood Gravel Co - DACW59-59-91-C-0003
Sanitary Sewer Line Renovations at Colonel Crawford Recreation Area - Investment & Enterprises, Inc. DACW59-96-C-0030

APPENDIX D

Summary of Public Comments

APPENDIX E

ENGINEER REGULATIONS, PAMPHLETS, AND MANUALS

E.1 ER 200-1-5, Environmental Quality – Policy for Implementation and Integrated Application of the U.S. Army Corps of Engineers Environmental Operating Principles and Doctrine, 30 Oct 2003

E.2 ER 200-2-2, Environmental Quality – Procedures for Implementing the National Environmental Policy Act, 4 Mar 1988

E.3 ER 1105-2-100, Planning Guidance, 22 April 2000 (with Appendices D and G revised Jun 2004 and Appendix F revised Jan 2006)

E.4 ER 1130-2-540, Environmental Stewardship Operations and Maintenance Policies, 4 Nov 2002

E.5 ER 1130-2-550, Project Operations – Recreation Operations and Maintenance Guidance and Procedures (Change 5; 30 Jan 2013)

E.6 Executive Order (EO) 13751 - Safeguarding the Nation From the Impacts of Invasive Species (FR: 08 Dec 2016; amending EO 13112)

E.7 EO 11987 - Exotic Organisms (FR: 24 May 1977)

E.8 Engineer Manual 1110-1-400, Engineering and Design – Recreation Facility and Customer Service Standards, 1 Nov 2004

APPENDIX F

PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

Table of Contents

1 Purpose and Need 1
1.1 Introduction and Background 1
1.1.1 Land Allocation Categories 1
1.1.2 Current Land Classication Categories 1
1.2 Project Area 3
1.3 Purpose and Need 3
1.4 Prior NEPA Documentation 4
2 Alternatives 4
2.1 No Action 5
2.2 Revised MP – 40%-60% Conservation/Recreation Mix (Preferred Alternative) 5
2.3 Revised MP – 90%-100% High-Density Recreation 6
3 Affected Environment 7
3.1 Physical Environment 7
3.1.1 Hydrology and Floodplains 7
3.1.2 Water Quality 7
3.1.3 Air Quality 7
3.1.4 Climate 7
3.1.5 Geology, Topography and Soils 8
3.1.6 Noise 8
3.1.7 Hazardous Materials 8
3.2 Biological Environment 8
3.2.1 Fish and Wildlife 8
3.2.2 Terrestrial Vegetation and Land Cover 9
3.2.3 Threatened and Endangered Species 9
3.2.4 Invasive Species 9
3.2.5 Wetlands 9
3.3 Community Setting 9
3.3.1 Cultural Resources 9
3.3.2 Socio- Economic Profile 9
3.3.3 Recreation 9

3.3.4 Transportation 9
4 Environmental Consequences 10
4.1 Physical Environmental Impacts 11
4.1.1 Hydrology and Floodplains 11
4.1.2 Water Quality 12
4.1.3 Air Quality 12
4.1.4 Climate 12
4.1.5 Geology, Topography and Soils 12
4.1.6 Noise 12
4.1.7 Hazardous Materials 13
4.2 Biological Environmental Impacts 13
4.2.1 Fish and Wildlife 13
4.2.2 Terrestrial Vegetation and Land Cover 13
4.2.3 Threatened and Endangered Species 14
4.2.4 Invasive Species 14
4.2.5 Wetlands 14
4.3 Community Setting Impacts 15
4.3.1 Cultural Resources 15
4.3.2 Socio- Economic Profile 15
4.3.3 Transportation 15
4.3.4 Recreation 15
4.4 Cumulative Impacts 16
4.5 Compliance with Environmental Statutes 18
5 Coordination and Public Involvement 18
6 Conclusion 19
Appendix A……20

1 Purpose and Need

1.1 Introduction and Background

The US Army Corps of Engineers (Corps) is responsible for the maintenance, restoration, and stewardship of natural resources on the multipurpose reservoir projects it manages. To facilitate the management and use of these lands, the District maintains a Master Plan (MP) for each reservoir project. An MP is a strategic land use management document that guides the comprehensive administration and conservation of natural and cultural resources, and the development of recreation at Corps reservoirs. The Pittsburgh District is proposing to adopt and implement a revision to the Woodcock Creek Lake MP.

Authorized by the Flood Control Act of 1944, Woodcock Creek Lake became operational in 1973 after a two-year construction period. It is one link in a system of 16 Flood Control Projects and provides protection for the Upper Allegheny River Valley along French Creek.

The original MP was completed in 1967 and last updated in 1975. Changes in Corps regulations and community needs necessitate a revision. The revised MP will replace the former version and provide a balanced, up-to-date management plan that follows current Federal laws and Corps regulations, while sustaining Woodcock Creek Lake's natural resources and providing outdoor recreational experiences. The revised MP applies changes to the land and water classifications and lays out future recommendations for management of both recreation and natural resources.

1.1.1 Land Allocation Categories

In updating the MP, land allocation and land use classifications are revised to ensure consistency with the land's authorized purpose. Land allocations identify the authorized purposes for which Corps' lands were acquired. There are four categories of allocation:

1. Operations: These are the lands acquired for the congressionally authorized purpose of constructing and operating the Project. The location of all dam facilities as well as the lake, are included in this allocation.
2. Recreation: These lands were acquired specifically for the congressionally authorized purpose of recreation. These lands are referred to as separable recreation lands. Lands in this allocation can only be given a land classification of "Recreation."
3. Fish and Wildlife: These lands were acquired specifically for the congressionally authorized purpose of fish and wildlife management. These lands are referred to as separable fish and wildlife lands. Lands in this allocation can only be given a land classification of "Wildlife Management".
4. Mitigation: These lands were acquired specifically for the congressionally authorized purpose of offsetting losses associated with development of the project. These lands are referred to as separable mitigation lands. Lands in this allocation can only be given a land classification of "Mitigation".

1.1.2 Current Land Classication Categories

Land classifications refine the land allocations and considers public desires, legislative authority, regional and Project-specific resource requirements, and suitability. Land classification indicates

the primary use for which Project lands are managed, providing for development and resource management consistent with authorized purposes and other Federal laws.

Project Operations
This classification includes lands required for the dam and associated structures, powerhouse, operations center, administrative offices, maintenance compounds, and other areas that are used to operate and maintain the Lakes. Where compatible with operational requirements, Project Operations lands may be used for wildlife habitat management and recreational use. Licenses, permits, easements, or other outgrants are issued only for uses that do not conflict with Project operational requirements.

High Density Recreation
These lands are designated for intensive levels of recreational use to accommodate and support the recreational needs and desires of visitors. They include lands on which existing or planned major recreational facilities are located and allow for developed public recreation facilities, concession development, and high-density or high-impact recreational use. In general, any uses of these lands that interfere with public enjoyment of recreation opportunities are prohibited. Low-density recreation and wildlife management activities compatible with intensive recreation use are acceptable, especially on an interim basis. No agricultural uses are permitted on those lands, except on an interim basis for maintenance of scenic or open space values. Permits, licenses, and easements are not issued for non-compatible manmade intrusions, such as pipelines, overhead transmission lines, and non-project roads, except where warranted by the public interest and where no viable alternative area or route is available.

Environmentally Sensitive Areas (ESAs)
This classification consists of areas where scientific, ecological, cultural, or aesthetic features have been identified. Any development of public use on lands classified as such is normally prohibited to ensure that these sensitive areas are not adversely impacted. For example, agricultural uses are not permitted on lands with this classification.

Multiple Resource Management Lands
This classification includes lands managed for one or more of the following activities:

- Low Density Recreation. These lands are designated for dispersed and/or low- impact recreation use. Development of facilities on these lands is limited. Emphasis is on providing opportunities for non-motorized activities, such as walking, fishing, hunting, or nature study. Site-specific, low-impact activities, such as primitive camping and picnicking, are allowed. Facilities may include boat ramps, boat docks, trails, parking areas and vehicle controls, vault toilets, picnic tables, and fire rings. Manmade intrusions, including power lines, non-project roads, and water and sewer pipelines, may be permitted under conditions that minimize adverse effects on the natural environment. Vegetation management, including agricultural activities that do not greatly alter the natural character of the environment, are permitted for a variety of purposes, including erosion control, retention and improvement of scenic qualities, and wildlife management. Hunting and fishing are allowed, pursuant to tribal or state fish and wildlife management regulations, where these activities are not in conflict with the safety of visitors and project personnel.

- Wildlife Management. Proper management techniques will be applied wherever the opportunity exists to improve conditions for wildlife, recreation, scenic value, timber, wildfire prevention, pest control, and watershed protection.
- Future or Inactive Recreation Areas. This sub-classification consists of lands for which recreation areas are planned for the future or lands that contain existing recreation areas that have been temporarily closed

Water Surface
There are four possible sub-classifications:

- Restricted. Water areas restricted for project operations, safety, and security purposes.
- Designated No-Wake. To protect environmentally sensitive shoreline areas, recreational water access areas from disturbance, and/or public safety.
- Fish and Wildlife Sanctuary (FWS). Annual or seasonal restrictions on areas to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning.
- Open Recreation. Those waters available for year-round or seasonal water-based recreational use.

1.2 Project Area

The Project Area is defined as the land held by the Corps in fee at Woodcock Creek Lake, located on French Creek in the Allegheny River watershed in Crawford County, northwestern Pennsylvania (PA). It consists of about 1,732-acres, including flowage easement that will be covered by this revised MP. A project area map is located in Appendix B, Plate 1.

1.3 Purpose and Need

A MP conceptually establishes and guides the orderly development, administration, maintenance, preservation, enhancement, and management of all natural, cultural, and recreational resources of Corps lands, providing a strategic land use management plan that balances the development of recreation features with environmental stewardship practices and natural resource conservation, in compliance with current regulations, policies, and laws. The original 1967 draft MP focused on construction and development recommendations for recreation areas. The 1975 revision updated data on existing conditions, maintenance, and expansion of recreational facilities, but no longer serves its intended purpose, due to regulatory changes and the substantial evolution of the Project, regional demographics, and surrounding land usage. The Corps has also updated its policies directing the development and implementation of MPs (most notably in EP-1130-2-550 Change 5, dated 30 January 2013), which includes updating the categories of land classifications used to define project lands.

The need for the update was determined by a MP evaluation that identified a number of deficiencies that no longer made it a viable document. There have been significant changes in regional natural resources management, including: the naming of special status species, competing interests for resources, energy extraction, invasive species, and development of state wildlife plans. Changes in area demographics and culture have also changed the types of recreation demanded. Philosophical changes in agency management have occurred, notably, the 2009 establishment of a Non-Recreational Outgrant Policy that altered permitted land-use on all

Corps properties. Significant data gaps were also identified. In order to meet these new directives and comply with Corps policy requiring regular updates to MPs, the District proposes to adopt the revised Woodcock Creek Lake MP with updated land classifications and a revised set of recommendations for future development and improvements.

This Environmental Assessment (EA) addresses the proposed adoption and implementation of the revised Woodcock Creek Lake MP – Preferred Alternative/Recreation Development. It analyzes potential impacts of implementing the MP upon the natural, cultural, and human environment. The EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended; regulations of the Council on Environmental Quality (CEQ); and Corps regulations, including Engineer Regulation 200-2-2, Procedures for Implementing NEPA. The EA references the attached Woodcock Creek Lake MP.

The typical focus of NEPA compliance consists of environmental impact assessments for individual projects, rather than for long-range management plans. However, application of NEPA to broader and more strategic decisions not only meets the CEQ implementing regulations and Corps regulations for implementing NEPA, but also allows the Corps to begin considering the environmental consequences of their actions long before any physical activity is undertaken.

Environmental documents prepared concurrently with the MP can influence and modify strategic land use decisions. The intention of the MP is to develop land classifications that will guide the sustainable development of resources at Woodcock Creek Lake. This EA evaluates a variety of approaches to assess potential environmental impacts of proposed future recreation features. It examines recreational activities in broad categories listed as “high” and “low” density based on developmental needs, rather than specific projects. Additional coordination and documentation will be conducted, as appropriate, for future projects that are initialized by this proposed MP. If the District determines it is in the best interest of the public to accept the MP and reclassify Corps-managed lands, the District would perform additional site-specific compliance with Section 106 of the National Historic Preservation Act and Section 7 of the Endangered Species Act and obtain any required permits for specific future projects/actions. Future projects would also be reviewed to identify which actions discussed within this EA may be classified as categorical exclusions in accordance with Paragraph 9 of ER 200-2-2, consistent with CEQ definitions under 40 CFR 1508.4, and which actions would require additional analysis under a tiered NEPA document.

1.4 Prior NEPA Documentation

A *Statement of Findings, Woodcock Creek Lake*, was prepared in advance of the 1975 MP revision.

2 Alternatives

This EA examines three alternatives: a No-Action Alternative, in which the current MP (circa 1975) would continue to guide operations and management; a preferred alternative of adopting a revised MP with an emphasis on a conservation/recreation mix scenario (40%-60% of the land is used for conservation/recreation); and a high-density recreation intensive alternative (90%-100% of the land is used for recreation).

Data collection, public comments, and findings of the MP team determined that the Preferred Alternative conservation/recreation mix was the only alternative that would meet the purpose, need, and objectives of the master planning process for Woodcock Creek Lake. The alternative also meets the need for sustainable management and conservation of natural resources within the project, while providing for current and future quality outdoor recreational needs of the public, and providing consistency with updated Corps regulations. Compared to the No-Action Alternative, the preferred alternative presents minor changes to existing management practices and brings them in line with current practices.

2.1 No Action

Inclusion of the No-Action Alternative is prescribed by CEQ regulations and serves as the baseline against which Federal actions must be compared. Under this alternative, the District would not approve the adoption or implementation of a revised MP, thereby failing to meet current regulations or goals regarding regularly updating master plans, i.e., the 1975 MP would continue to provide the only source of comprehensive management guidance, although out-of-date and no longer adequately addressing the needs of the District, other management partners, or users of Woodcock Creek Lake. Furthermore, the 1975 MP does not include the revised land classifications, in accordance with current Corps regulations (see Chapter 3.2). Finally, retaining the 1975 MP would prevent a proactive approach to managing Woodcock Creek Lake, given future major developments or resource management policies would require approval on a case-by-case basis without the benefit of evaluation within the context of an overall plan.

2.2 Revised MP – 40%-60% Conservation/Recreation Mix (Preferred Alternative)

Adopting this course of action is the District's preferred alternative. The revision changes the land and water classifications, most notably the addition of sensitive area and water surface classifications. The revised MP also lays out future recommendations for management of both recreation and natural resources.

The management recommendations were developed through comments, interviews, public meeting workshops, and the completion of surveys. These management recommendations are non-regulatory and available for use by any citizen, group, or agency. Development of new, modern facilities would potentially include partnering with stakeholders to share in the cost, operation, and maintenance of any such asset. Further detail regarding these recommendations is available within the MP (Sections 1.5 and 1.6, and 7). Below are the recommendations, grouped by similar impact types:

Enhance and protect public lands:

- Inventory natural and cultural resources
- Identify and assess threats to the Project
- Establish working relationships with federal, state, academy, and NGOs to achieve and maintain desired resource conditions

Cultivate volunteers, public-private partnerships, and grants:

- Develop MOU or MOA with potential partners
- Establish educational programs
- Create incentives for volunteer groups

- Establish a “Friends” group, Student Conservation Association, or American Conservation Experience organization
- Complete 18 hole disc golf course

Provide safe, memorable connections as part of multiple destination points:

- Improve ranger safety through improved communications and monitoring devices
- Improve visitor safety through routine inspections of playground equipment, boat patrols, and emergency response access
- Connect with other District lakes and locks through a brochure that lists all Projects and explores different activities and amenities
- Coordinate with local tourism bureaus, chambers of commerce, and regional planning commissions
- Establish an annual signature event to promote and raise awareness of the Project

Leverage emerging technology to the Corps stories and enhance visitor experiences:

- Public interaction occurs through technology
    - Interpretive programming and updated educational signage is included in Operational Management Plan annual updates
    - Use of QR codes for bulletin boards, trail heads, and visitor center for information about the Project or activities
    - Visitors encouraged to submit photos on social media
- Embrace emerging technology to improve information collection (e.g., fish habitat structures, disc golf course, other amenities)
- Enhance public outreach
    - Create an app or link to other apps
    - Update bulletin boards and kiosks
    - Use social media to promote outdoor recreational activities
    - Use the Public Affairs Office to promote success stories
    - Install new and updated signage

2.3 Revised MP – 90%-100% High-Density Recreation

An alternative revision for recreation use is to expand existing developed areas and seek to create new ones. Development of up to 90 percent of the low-density recreation to high-density recreation could occur under this alternative. This would necessitate the creation of additional impervious surfaces (roads and parking lots), plus extension of existing water and electricity utilities, and possible construction of new permanent structures. All of which would require regular maintenance and services, increasing O&M costs.

This is not the preferred plan because of the initial cost of the development and the recurring costs of operation and maintenance of added facilities. With a significant increase in funding and visitor numbers, feasibility of this alternative could improve in the future.

3 Affected Environment

3.1 Physical Environment

3.1.1 Hydrology and Floodplains

See MP sections 2.1 Hydrology and 2.3.7 Water Quality & Sedimentation for information.

3.1.2 Water Quality

See MP section 2.3.7 Water Quality & Sedimentation for information.

3.1.3 Air Quality

Woodcock Creek Lake is located in a generally rural area of Northwestern Pennsylvania that exhibits fair air quality compared to more urbanized areas. There are only minor sources of air contamination within the project area, primarily associated with vehicles. The following table provides current air quality standards for six principal air pollutants, as defined by the Clean Air Act, and their current levels (i.e., "status"), averaged across Armstrong, Indiana, and Jefferson Counties. The National Ambient Air Quality Standards (NAAQS) are the concentrations of these principal pollutants, above which, adverse effects on human health may occur.

Table EA- 1. National Ambient Air Quality Standards (NAAQS) and air quality status (either attained on non-attained) for Crawford County as of Feb. 13, 2017.

Pollutant	NAAQS (standards)	Averaging Time	Status (County) *
Carbon Monoxide (as of 2011)	9 ppm (10 mg/m^3)	8-hour	Full Attainment
	35 ppm (40 mg/m^3)	1-hour	Full Attainment
Lead (as of 2008)	0.15 µg/m^3	Rolling 3-Month Avg	Full Attainment
Nitrogen Dioxide (as of 2010)	53 ppb	Annual	Full Attainment
	100 ppb	1-hour	Full Attainment
Particle pollution (PM_{10} as of 2012)	150 µg/m^3	24-hour	Full Attainment
Particle pollution ($PM_{2.5}$ as of 2012)	12.0 µg/m^3	Annual	Full Attainment
	35 µg/m^3	24-hour	Full Attainment
Ozone (as of 2008)	0.075 ppm	8-hour	Full Attainment
Sulfur Dioxide (as of 2010)	75 ppb	1-hour	Full Attainment

*Status obtained from the USEPA Green Book (https://www3.epa.gov/airquality/greenbook/qbstateb.html)

3.1.4 Climate

The climate in the project area is temperate and humid, with an appreciable seasonal variation in temperature. It is geographically in a region of variable frontal activity, being subjected to alternate polar and tropical air-mass invasion. The prevailing wind direction is from the west or has a westerly component. Summer precipitation is usually associated with thunderstorms resulting from convectional activity, and is generally confined to small areas, with short durations and high intensities. In the late fall, winter, and early spring months, precipitation is

usually the result of the passage of low-pressure system over the basin. Occasional stagnation and stationary development produce prolonged precipitation. Snowmelt is frequently a contributing factor to winter and early spring flood runoff. A study of floods indicates a possibility of serious flooding during any season of the year. The frequency of flooding however is highest for the late winter-early spring season.

The future effects of anticipated climate change on water resources are of increasing concern. It is considered highly likely that the region will continue to warm throughout the 21st century, with temperature increases projected to occur relatively evenly throughout the year. Such change may impact interconnected hydrologic aspects, including: precipitation, snowpack, runoff, soil moisture & drought, evapotranspiration, groundwater, stream temps, floods and water quality.

Generally, it is possible that the region's climate will become warmer and more extreme in the future, with longer dry periods and precipitation events of greater intensity. The most significant effects predicted for stream and wetland communities are increased water temperature and increased variability of the water environment. The latter may be reflected in changing seasonal patterns of water levels, reduced stream flows during dry periods, larger floods and longer droughts.

3.1.5 Geology, Topography and Soils

See MP section 2.2 for information.

3.1.6 Noise

The area surrounding Woodcock Creek Lake is mainly rural and there are no apparent intrusive noise sources from around the lakes. At the lakes themselves, noise sources include watercraft motors, vehicular traffic, and human voices at areas of concentrated use (e.g., day use areas, campgrounds). Noises along the creek vary as a function of proximity to human noise sources as sections by more populated areas or transportation corridors can have substantial noise from those sources.

3.1.7 Hazardous Materials

The EPA's Envirofacts website lists no specific sites within close proximity to Woodcock Creek Lake as of July 2018. As there are no specific plans to develop federal lands and adjacent properties are undeveloped, the potential for discovery of hazardous materials is remote. In the event that any developments on Corps property are proposed, however, Federal law requires site-specific due diligence on a case-by-case basis before development can occur. Hazardous materials are regulated by the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act, Oil Pollution Act, Toxic Substances Control Act, and related guidelines established by the Corps and Pennsylvania. Any change in the storage or use of hazardous materials must comply with these regulations.

3.2 Biological Environment

3.2.1 Fish and Wildlife

See MP section 2.3.1 for information.

3.2.2 Terrestrial Vegetation and Land Cover

Lands at Woodcock Creek Lake are predominately vegetated by deciduous forest. The following table lists the vegetation type and amount of acres at the project.

Table EA- 2. Terrestrial Vegetation Types

Predominant Vegetation Type	Acres
Herbaceous	465
Deciduous Forest	17,648
Shrub/Scrub	155
Evergreen Forest	962
Hay/Pasture	4,736
Mixed Forest	786

Land Cover within the watershed consists of a variety of forested, agricultural, and developed areas. A land cover map is located in Appendix B, Plate 9. Land cover acreage encompasses area outside Federal boundaries and includes the project.

3.2.3 Threatened and Endangered Species

See MP section 2.3.3 and Table 2-1 for information.

3.2.4 Invasive Species

See MP section 2.3.4 for information.

3.2.5 Wetlands

See MP section 2.3.6 for information.

3.3 Community Setting

3.3.1 Cultural Resources

See MP section 2.4 for information.

3.3.2 Socio- Economic Profile

See MP sections 2.5 and 2.6 for information.

3.3.3 Recreation

See MP section 2.7 for information.

3.3.4 Transportation

Located approximately 90 minutes away from downtown Pittsburgh, Woodcock Creek Lake is bounded by several roads including Ravenna-Warren Road, Wayland Road, and Rock Spring Road. Developed roads and parking lots exist on project lands. These roads and parking lots are confined to areas that support developed recreational sites. The undeveloped portions of the project have limited transportation infrastructure. The transportation corridor map is in Appendix B, Plate 2.

4 Environmental Consequences

This section describes and compares effects of the alternatives to existing conditions within each environmental media category. NEPA requires consideration of context, intensity, and duration of adverse and beneficial impacts (direct, indirect, and cumulative) and measures to mitigate for impacts. These elements are considered in the following impact analysis.

Adoption of the proposed MP would help define the approval process for future actions affecting project lands, depending on whether the actions are: 1) specifically included in the MP; 2) not included in the MP, but consistent with the Plan; or 3) not included and not consistent with the recommendations, objectives, and policies stated in Corps regulation. For actions that are identified in the MP, the approval process would still require adequate NEPA consideration (whether categorically excluded or requiring an additional tiered EA) and compliance with other environmental laws and regulations, prior to initiating construction.

The following table (Table EA-3) presents a summary of potential impacts, described in detail by environmental media category:

Table EA- 3. Summary of Impact Analysis for Alternatives

Resource	No-Action Alternative	Preferred Alternative	Hi-Density Rec Alternative
Physical Environment			
Hydrology & Flood Plains	No Impact	No Impact	No Impact
Water Quality	Potential long-term degradation from outdated planning	Beneficial Impact	Additional stormwater runoff from increased impervious surfaces
Air Quality	No Impact	No Impact	Minor impacts from increased traffic
Climate	No Impact	No Impact	No Impact
Geology, Topography, & Soils	No Impact	No Impact	No Impact
Noise	No Impact	No Impact	Temporary impacts from construction, potential increases during usage
Hazardous Materials	No Impact	No Impact	No Impact
Biological Environment			
Fish & Wildlife	Potential long-term degradation from outdated planning	Beneficial Impact	Beneficial Impact
Terrestrial Vegetation & Land Cover	Potential long-term degradation from outdated planning	Beneficial Impact	Minor impacts from clearing and earth moving
Threatened & Endangered Species	No Impact	No Impact	No Impact
Invasive Species	No Impact	Beneficial Impact	Beneficial Impact
Wetlands	No Impact	No Impact	No Impact
Community Setting			
Cultural Resources	No Impact	No Impact	No Impact
Socioeconomic Profile	Potential long-term degradation from outdated planning	Beneficial impacts to local economy	Beneficial impacts to local economy
Transportation	No Impact	No Impact	Potential traffic increases on local roads
Recreation	Minimal Adverse Impact	Beneficial Impact	Beneficial Impact

4.1 Physical Environmental Impacts

4.1.1 Hydrology and Floodplains

No-Action, Preferred Alternative/High-Density Recreation. None of the alternatives would have a significant impact to hydrology or floodplains. In order to meet the missions of the Corps and the other management partners, many developed sites and facilities are located within the

floodplain. Most of these structures have been designed to withstand and not interfere with the conveyance of floodwaters. This is important, as periodically it becomes necessary for these lands to be flooded to achieve the Corps' flood risk management purpose. All actions occurring within floodplains must be consistent with EO 11988, Floodplain Management, and related Corps policy. Any construction activities would not impede the flood storage capacity of the Project. This would include improvements to existing recreation facilities, addition of buildings/facilities to previously disturbed areas, addition or improvement to boat launches, and maintenance dredging and disposal of sediment.

4.1.2 Water Quality

No-Action. No significant impact to water quality would occur. The Corps would continue to operate the Project, but without the benefit of an updated MP as guidance for management decisions. Without an updated MP, it is possible that Project-wide consideration of individual actions may be lost, leading to an overall degradation of water resources over time.

Preferred Alternative. There is a beneficial impact. The updated MP provides a framework to address water quality issues in conjunction with other activities, thereby preventing or addressing potential adverse effects.

High-Density Recreation. There is a potential for temporary minor impacts from earth disturbance during construction of facility areas. The creation of additional impervious surfaces, such as access roads or parking areas, would create additional stormwater runoff, thereby necessitating a stormwater management plan. Construction impacts would have to be mitigated through approved erosion and sedimentation plans, as needed.

4.1.3 Air Quality

No-Action, Preferred Alternative. Air quality within the project boundary can be influenced by exhaust from motor vehicles and boats, the use of grills and fire pits. The large open area that is created by the reservoir allows for strong breezes to blow through the project area. These breezes can rapidly reduce and/or eliminate any localized air quality concerns caused by these pollutants. Neither the No-Action Alternative nor the Preferred Alternative/Recreation alternatives would have significant adverse impacts to air quality.

High-Density Recreation. There is a potential for additional exhaust pertaining to traffic, dependent upon the time of year and activities.

4.1.4 Climate

No-Action, Preferred Alternative/High-Density Recreation. None of the alternatives will be significantly impacted by current or future expected climate conditions.

4.1.5 Geology, Topography and Soils

No-Action, Preferred Alternative/High-Density Recreation. No impacts will occur to geology, topography or soils from either alternative.

4.1.6 Noise

No-Action, Preferred Alternative. Neither of the alternatives would have a significant impact on existing noise levels.

High-Density Recreation. Construction activities and habitat maintenance activities could have local, temporary impacts. Activities at these newly created facilities could add to the ambient noise level. Avoidance of any known sensitive areas, such as nesting sites, would mitigate impacts.

4.1.7 Hazardous Materials

No-Action, Preferred Alternative/High-Density Recreation. No impacts are expected to hazardous materials from any alternative. As needed, further site-specific reviews of any development site would be conducted for compliance with the Comprehensive Environmental Response, Compensation and Liability Act and Corps real estate requirements (Environmental Condition of Property/Preliminary Assessment Screening).

Additionally, thoughtful preparation and planning for the projected increase in non-recreational requests (e.g., natural gas transmission lines) will protect the Project resources from any negative impacts. Designation of ESAs and FWSs will protect the most sensitive sites on Project lands.

4.2 Biological Environmental Impacts

4.2.1 Fish and Wildlife

No-Action. No significant impact to fish and wildlife would occur. The Corps would continue to operate the Project but without the benefit of an updated MP as guidance for management decisions. Without an updated MP, it is possible that Project-wide consideration of individual actions may be lost, leading to an overall degradation of the land and water resources over time.

Preferred Alternative/High-Density Recreation. These alternatives would have an overall beneficial impact on fish and wildlife resources through a systematic approach to management of Project land and water resources. The monitoring, adaptive management and habitat improvement efforts will all have beneficial impacts. Protection and management of sensitive areas through the designation of ESAs and FWSs will also be beneficial. Additionally, increased outreach and public education regarding fish and wildlife resources can increase awareness and sensitivity, as well as community feelings of responsibility, ownership, and protection of the resource.

Construction activities associated with the planned projects would have short duration negative impacts due to increased noise and human disturbance. Also the development of new trails into new areas of the Project could disturb individual animals. Prior to any clearing of trees or construction activities, surveys for nesting birds or protected species would be conducted as necessary to ensure compliance. By avoiding sensitive areas and sensitive seasons (nesting, bat roosting, etc.) and using adaptive management as needed to correct any unforeseen impacts, no significant impact to fish and wildlife is expected. See Section 4.1.4.2 of the MP for additional information.

4.2.2 Terrestrial Vegetation and Land Cover

No-Action. No significant impact to vegetation and land cover would occur. The Corps would continue to operate the Project but without the benefit of an updated MP as guidance for management decisions. Without an updated MP, Project-wide consideration of individual actions may be lost, leading to an overall degradation of the land and water resources over time.

Preferred Alternative. High-Density Recreation. Vegetation would be surveyed and a management plan implemented under these alternatives. Removal of invasive species and addition of environmentally sensitive areas would improve native terrestrial vegetation within the area. Additionally, increased outreach and public education can increase awareness and sensitivity, as well as community feelings of responsibility, ownership, and protection of the resource.

Proposed construction and maintenance activities could have local impacts to vegetation, however in the context of the overall size of the natural areas within the Project, these impacts would not be significant.

High-Density Recreation. There would be potential temporary impact from soil disturbance during construction. Erosion and sediment control plans would be used, as required, to limit adverse effects.

4.2.3 Threatened and Endangered Species

No-Action, Preferred Alternative/High-Density Recreation. None of the alternatives would have any effect on threatened or endangered species. Best management practices, to include seasonal restrictions on vegetation removal, would insure that no impact would occur. Any recommended development actions that may impact protected species would require consultation with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act once site specific details are available.

4.2.4 Invasive Species

No-Action. The original MP does not address invasive species, and is out of date and non-compliant with current laws and regulations. However, under the No Action alternative the District would continue to implement best management practices with regards to invasive species management.

Preferred Alternative/High-Density Recreation. The Preferred Alternative would address invasive species issues and will follow current District policy by using adaptive and best management practices in prevention, education, early detection, rapid response, and containment to try to control and manage invasive species. Overall a positive effect with regard to reducing the prevalence of invasive species is anticipated as a result of the preferred alternative.

4.2.5 Wetlands

No-Action, Preferred Alternative/High-Density Recreation. None of the alternatives would impact wetlands. Wetlands are regulated under Section(s) 401 and 404 of the Clean Water Act. Section 401 Water Quality Certification ensures compliance with water quality standards. Section 404 regulates activities within Waters of the U.S., which includes Woodcock Creek Lake and their surrounding tributaries. Further direction is provided by EO11990: Protection of Wetlands and related Corps regulations. Recommendations included within the Preferred Alternative will need to comply with Clean Water Act regulations and permitting prior to initiation of construction. Any proposed development would avoid impacting wetlands. If wetland impacts could not be avoided, then further analysis and coordination would be needed for that action.

4.3 Community Setting Impacts

4.3.1 Cultural Resources

None of the alternatives would impact historic or archeological resources. Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations 36 CFR Part 800 require Federal agencies to take into account the effect of an undertaking on historic and archeological resources if that Project is under the direct or indirect jurisdiction of the agency or has been licensed or assisted by that agency.

4.3.2 Socio- Economic Profile

No-Action. No significant impact to socioeconomics would occur. The Corps would continue to operate the Project but without the benefit of an updated MP as guidance for management decisions. Without an updated MP, it is possible that Project-wide consideration of individual actions may be lost, leading to an overall degradation of the land and water resources over time. Degradation of the resources could potentially reduce the recreation opportunities and, therefore, recreation related business opportunities.

Preferred Alternative/High-Density Recreation. The Preferred Alternative would not adversely impact regional socioeconomics, minority populations, low-income populations or children. Future plans could enhance concessions in the area with a likely small positive impact to the local economy.

4.3.3 Transportation

No-Action, Preferred Alternative/ Neither alternative would impact transportation. Recommendations for improvements and construction projects could have short-term adverse impact on transportation within the region from traffic diversions during construction; however, no significant long-term adverse impacts are anticipated.

High-Density Recreation. There is a potential for additional traffic in the area, dependent upon time of year and activities.

4.3.4 Recreation

No-Action. Although maintenance of current recreational facilities would continue under the No-Action Alternative, continued use of the existing MP would not accurately reflect the current status of facilities or existing and future recreational needs which would impact the recreation activities within the project area. . The Corps would continue to operate the Project but without the benefit of an updated MP as guidance for management decisions. Without an updated MP, it is possible that Project-wide consideration of individual actions may be lost, leading to an overall degradation of the land and water resources over time.

Preferred Alternative. The recreational needs of the public would be best accommodated through the implementation of the Preferred Alternative. Potential beneficial impacts include modernizing and upgrading existing facilities and increased management of natural resources through some of the Resource Plan recommendations.

High-Density Recreation. There would be some benefits through construction of modern facilities and upgrading existing ones; however, additional considerations would have to be made and mitigative measures implemented on a project-by-project basis to balance conservation needs and to limit adverse effects.

4.4 Cumulative Impacts

The CEQ regulations that implement NEPA require assessment of cumulative impacts in the decision-making process for Federal projects. Cumulative impacts are defined as impacts which result when the impact of the preferred alternative is added to the impacts of other present and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7).

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impacts of activities in and around Woodcock Creek Lake. Past actions include the construction and operation of the reservoir and the construction of recreation areas. Concurrent regional development included construction of residential, commercial, and industrial facilities in surrounding counties. All of these developments have had varying levels of adverse impacts on the physical and natural resources in the region. Many of these developments, however, have had beneficial impacts on the region's socioeconomic resources.

The development of the dam and reservoir created new natural and physical conditions, and altered French Creek's hydrology, which, through careful management by the District and other management partners, have created new and successful habitats and other natural resource conditions. The District and the other management partners have also brought a wide variety of high-quality recreational opportunities to the reservoir.

Existing and future actions also contribute to the cumulative impacts in and around the reservoirs. Existing and future actions include the operation of project facilities, upgrades and maintenance of recreation sites, as well as residential, commercial, and industrial development throughout the region.

Under the No-Action Alternative (baseline conditions), project operations would continue, somewhat inefficiently, using out-of-date guidance. Consequently, threats such as invasive species could become established prior to detection and remediation, potentially harming local ecosystems. Existing recreational activities would continue, but no new types would be generated. Modernized emergency response systems would not be implemented, thus leaving safety degraded. No new visitors, who would otherwise benefit the local economy, would be attracted.

Under the Preferred Alternative, ongoing project operations would be enhanced by new processes for efficient management of environmental resources and integrating any future recreational activities in a manner with minimal adverse impacts. Such a system would be responsive to both changes in the environment and recreational demands. The emphasis on conservation will preserve the region's aesthetics, maintain thriving ecosystems and habitats, and enhance recreation activities. The planned approach will continue to attract visitors and potentially bring in new ones, benefitting the local economy. The programmatic approach to project management, included in this EA and attached MP, would allow for future development plans and mitigation responses to be adapted to address any unanticipated adverse actions. This would allow the District and other management partners to continue to reduce the negative contribution of its activities to regional cumulative impacts through proactive actions and adaptive resource management strategies.

Under the High-Density Recreation Alternative, project management would be improved and attract visitors, but at the expense of resource conservation in favor of additional development. While there would be potential economic benefits to the region, enactment of this alternative would require additional coordination and mitigation on a project-by-project basis.

4.5 Compliance with Environmental Statutes

Federal Policy	Compliance Status
Archaeological and Historic Preservation Act, 16 U.S.C. 469, et seq.	Full Compliance
Bald and Golden Eagle Protection Act, 16 U.S.C. 668-668c	Full Compliance
Clean Air Act, as amended, 42 U.S.C. 1857h-7, et seq.	Full Compliance
Clean Water Act, 33 U.S.C. 1857h-7, et seq.	Full Compliance
Comprehensive Environmental Response, Compensation, and Liability Act 42 U.S.C. 9601 et seq.	Full Compliance
Endangered Species Act, 16 U.S.C. 1531, et seq.	Full Compliance*
Federal Water Project Recreation Act, 16 U.S.C. 460-1(12), et seq.	Full Compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 601, et seq.	Full Compliance*
Land and Water Conservation Fund Act, 16 U.S.C. 460/-460/-11, et seq.	Full Compliance
Migratory Bird Treaty Act 16 U.S.C. 703-712	Full Compliance
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	Full Compliance**
National Historic Preservation Act, 16 U.S.C. 470a, et seq.	Full Compliance*
River and Harbors Act, 33 U.S.C. 403, et seq.	Full Compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	Not Applicable
Wild and Scenic Rivers Act, 16 U.S.C. 1271, et seq.	Full Compliance
Flood Plain Management (EO11988)	Full Compliance
Protection of Wetlands (EO11990)	Full Compliance*
Environmental Justice in Minority Populations and Low-Income Populations (EO12898)	Full Compliance
Invasive Species (EO13112)	Full Compliance

*Having met all requirements for this stage of planning, but future recommendations contained within this EA may require additional action for compliance.

**Full compliance anticipated after public review and District Commander signs FONSI.

5 Coordination and Public Involvement

Agency and public involvement was initiated in 2017, when the District published notices announcing its intention to revise the MP. This notice was followed by public comment periods, agency meetings, and additional public open houses. These public involvement activities and comments are described in detail in Chapter 7 of the MP and Appendix B, Agency and Public Coordination.

The Woodcock Creek Lake MP, Environmental Assessment, and draft Finding of No Significant Impact will be circulated for a 30-day public review period.

6 Conclusion

The Preferred Alternative meets currently foreseeable recreation and environmental stewardship needs and addresses environmental issues, with no significant environmental impacts anticipated. The recommended alternative also brings the MP into compliance with current Corps regulations. An Environmental Impact Statement is not required and a FONSI will be prepared.

Appendix A

Response to Public Comments

During a recent visit to the Woodcock Project, I received a copy of the Environmental Assessment, Woodcock Creek Lake Master Plan Update, and the Manager informed me of a public meeting scheduled Tuesday, August 14, which I am unable to attend. Presuming this public meeting to be tied to the public review period for the FONSI/EA, I am providing the following comments. Please note that I do not have access to a draft FONSI or to the Master Plan itself, as the District website Master Plan page link for the Woodcock Lake Master Plan Update does not "work". **First, the EA copy I received is watermarked "draft." NEPA regulations do not recognize a "draft" EA, only draft and final versions for the FONSI. I will assume the draft watermark on this copy available to the public to be an oversight. However there are a number of obvious errors in this copy characteristic of a draft working version. For example, the footer on each page carries the "Mahoning Creek Lake Master Plan" title, a carryover from a previous document. Also there were apparent references in the text to Mahoning Creek or its area that were retained, such as in the 3.1.3 Air Quality section. Another example is Table EA-2 listing over 20,000 project acres rather than the 1,732 acres cited in 1.2. Section 3.34 lists local roads from M.J. Kirwan Reservoir project.**
USACE apologizes that you had difficulty finding the Master Plan and FONSI for your review. These were posted on the District website at https://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Woodcock-Creek-Lake/Woodcock-Creek- Lake-Master-Plan/ on August 1, 2018, and, upon receipt of your comment, was verified to be up and available to the public. A "draft" EA is submitted for public review, indicating that the document is subject to revision before a final version becomes record. To release a "final" EA would indicate that the subject is closed and no longer accepting input. The Mahoning Creek references have been identified and removed.
In the Purpose and Need section, "significant changes in regional natural resources management" and "significant data gaps" are listed only as generalities. Some specificity should be included to provide the background for a meaningful assessment of how the MP Update addresses each of these changes. As it is, the EA description of the preferred alternative in Section 2.2 is also generalities. Changes in "land and water classifications" furnish no quantitative data or locational data relative to existing and future conditions, nor do the classification changes describe how these changes will affect project land usage. The remainder of the recommendations focus on partnering, communication, promotion, and public safety that have no environmental impact component.
Land management is discussed in MP Sections 1.5 (management goals) and 1.6 (resource objectives). A reference to these sections is made in Section 2.2 of the EA.

Section 4 mentions that NEPA consideration of future actions identified in the MP would still require adequate NEPA consideration, possibly requiring "an additional tiered EA". Please note that NEPA documentation may only be tiered off a Final EIS, not an EA. It would be better to say "individual EAs".
The differentiation is noted. One significant function of the MP and its supporting EA is identify potential future projects and to facilitate possible implementation if public demand and funding supports. At this time, without specifics of scope or location, these aspirational projects are not yet ripe for review. As such, they require review at a later time when they are more defined. However, these later, narrower reviews may refer to the latest iteration of the MP to show consideration of the broader context of the action. This can, under certain circumstances, allow for a more streamlined review if the impacts of the narrower action are identified and analyzed in the broader NEPA document (as allowed under 40 CFR 46.140).
The basis for impact analyses of individual resources is questionable based on the limited information provided. For example Water Quality: No Action states no significant impact, but then apparently contradicts this assessment, by following with a statement that it may lead to overall degradation over time. Then, the preferred alternative claims a beneficial impact through the MP framework to address potential adverse effects. Regardless of whether any future activities are proposed under either the old or updated MPs, consideration of these activities on WQ would have to be performed under NEPA, CWA, ESA, etc. There is already a framework of law and regulations to address WQ impacts, so how can the MP Update benefit the resource, and the lack of an update lead to degradation from "lack of Project-wide consideration of individual actions"?
The assessment was written to mean that there is no immediate impact if current management processes continue and adverse impacts are not imminent and are hypothetical. Some of the master plans predate NEPA and some of the other environmental compliance laws. The new master plan's language confirms that these laws and regulations will be followed.
In the Fish and Wildlife impact section, mention of monitoring, adaptive management and habitat improvement projects with beneficial impacts are introduced without prior description. Benefits of designation of ESAs and FWSs, mentioned in general earlier, are claimed apart from any specific information as to the nature and locations of the resources and why these new designations would be of benefit.
This is covered in Section 4.1.4.2 of the MP. A reference has been inserted into the EA Section 4.2.1.
Invasive Species: Would not the District follow current laws, policies, & BMPs under either the old or updated MP? How then does the Update provide a positive effect over no action? Would no effect be more accurate?
The revised MP formally codifies a new conservation-based land management strategy that emphasizes identification and remediation of invasive species.
Wetlands section cites no impacts based on future compliance requirements. However, Cultural Resources section cites a beneficial impact to the resource for the Preferred Alternative based on

future compliance requirements, while at the same time citing no effect for the other alternatives for future compliance requirements. This appears inconsistent.
Cultural Resources was reconsidered and amended to having no effect on any of the alternatives. It is acknowledged that the preferred alternative cannot provide any more benefit than is provided by Section 106.
Introduction: Was the original MP actually completed 6 years before the project became operational?
Yes, based on the documentation.
Prior NEPA documentation might also list the original construction document, and any subsequent NEPA compliance for individual undertakings. **The EA heavily references the Updated MP for information and figures, but neither this document nor a draft FONSI were available for my review. As a standalone document the EA does not provide adequate documentation and analysis to support a FONSI determination. The above comments should be interpreted in light of this circumstance.**
The EA was not written as a standalone document, but rather as an appendix to the master plan. References to sections within the master plan were done to avoid duplication of effort. It is unfortunate you were not able to see the complete document.