

FINDING OF NO SIGNIFICANT IMPACT
CROOKED CREEK LAKE MASTER PLAN UPDATE
ALLEGHENY RIVER WATERSHED

The US Army Corps of Engineers, Pittsburgh District (Corps) is proposing to adopt a new Master Plan (MP) as the strategic planning document to guide comprehensive management of all recreational, natural and cultural resources at Crooked Creek Lake in southwestern Pennsylvania. The original MP was completed in 1948 and last updated in 1987. Changes in Corps regulations and community needs necessitate a revision to the MP. The revised MP will replace the existing version and provide a balanced, up to date management plan that follows current Federal laws and Corps regulations while sustaining natural resources and providing outdoor recreational experiences.

In compliance with the National Environmental Policy Act, the Corps prepared an Environmental Assessment (EA) that evaluated impacts to the physical environment, biological environment, and community setting. The EA examines two alternatives: No Action, and the Preferred Alternative of adopting a revised MP. The Preferred Alternative includes changes to the land and water classifications, most notably the addition of environmentally sensitive areas. The Preferred Alternative also lays out future recommendations for management of both recreation and natural resources, and for facility modernizations within the existing footprint.

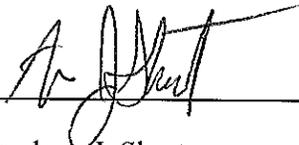
The No Action alternative does not meet the purpose of providing a strategic land use management plan that balances the development of recreation features with environmental stewardship practices and natural resource conservation or shoreline protection. Under the No Action alternative, outdated guidance would prevent a proactive approach to resource management.

The MP and EA were circulated for a 30-day public review period between 4 November and 4 December 2020. No comments on the EA or FONSI were received.

I have reasonably determined that implementation of the Preferred Alternative will not constitute a major Federal action significantly affecting the quality of the human environment, as defined in the Council on Environmental Quality's current regulations for implementing the National Environmental Policy Act. The preparation of an environmental impact statement is therefore unwarranted and the public interest will be best served by the implementation of the Preferred Alternative. This determination precedes the Corps' final decision concerning this proposed action.

22 FEB 2021

Date



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Colonel, Corps of Engineers
District Engineer

Environmental Assessment

Crooked Creek Lake 2021 Master Plan



December 2020

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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. A 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. In compliance with the National Environmental Policy Act (NEPA), the Corps Pittsburgh District (District) is preparing an Environmental Assessment (EA) for the revision of the current MP that was prepared in 1987 for the Crooked Creek Lake.

Authorized by the Flood Control Acts of 1936 and 1938, Crooked Creek Lake (Project), located in Armstrong County, Pennsylvania, is one of 16 flood control facilities in the Pittsburgh District which, in conjunction with other reservoirs in the District, provides flood control along the Allegheny and Upper Ohio Rivers. In addition to flood control, incidental benefits including fish and wildlife management and recreation use were authorized under the Fish and Wildlife Coordination Act (Public Law (PL) 85-624) and the Flood Control Act of 1944 (PL 78-537), respectively.

The original MP was completed in 1948 and last updated in 1987. The revised MP will replace former versions and provide a balanced, up-to-date management plan that follows current Federal laws and Corps regulations while sustaining the Project's natural resources and providing outdoor recreational experiences.

This EA has been prepared in accordance with NEPA and the Council on Environmental Quality's (CEQ) Regulations (40 CFR §1500-1508), as reflected in the Corps Engineer Regulation (ER) 200-2-2.

1.2 Project Area

The Project is located in Armstrong County, PA, and provides a water storage system for flood control for the Allegheny and upper Ohio Rivers. The Project consists of a total of 2,775.2 acres including road and flowage easements. Drainage area above the dam totals 277 square miles. The Corps leases 1,625.7 acres of Project lands to the Pennsylvania Game Commission (PAGC), 388 acres of water to the Pennsylvania Fish and Boat Commission (PAFBC), and 31.1 acres to the Armstrong Center for Community Learning. A project area map is located in Appendix B, Plate 2 of the MP.

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. The purpose is to provide a strategic land use

management plan that balances the development of recreation features with environmental stewardship practices and natural resource conservation. Such a plan is in compliance with current regulations, policies and laws governing MPs. The original 1948 MP focused on developing strategies to yield the greatest amount of incidental recreation benefits from the Project consistent with its primary authorized purposes. The 1987 revision updated data on existing conditions, maintenance, and expansion of recreational facilities. That version is the current working version of the MP; however, it no longer serves its intended purpose based on a combination of age and substantial changes to 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 Engineer Pamphlet (EP) 1130-2-550 Change 5, dated 30 January 2013) which includes updating the categories of land classifications used to define project lands.

An evaluation of the 1987 MP identified a number of deficiencies that indicated a need for an updated MP. There have been significant changes in regional natural resources management, including the listing of special status species, competing interests for resources, invasive species, and development of state wildlife plans. Changes in area demographics and culture have also changed the types of recreation. In order to meet these new directives and comply with Corps policy requiring regular updates to MPs, the District proposes to adopt the revised Crooked Creek Lake MP with updated land classifications and a revised set of recommendations for future developments and improvements. This EA addresses the proposed adoption and implementation of the revised Crooked Creek Lake MP. The EA analyzes potential impacts of implementing the MP upon the natural, cultural, and human environment. The EA references and supports the Crooked Creek Lake MP.

Often, the typical focus of NEPA compliance consists of environmental impact assessments for individual projects, rather than for long-range planning. However, application of NEPA to broader and more strategic decisions not only meets the CEQ 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.

This EA analyzes potential impacts of the proposed changes in land as associated with the implementation of the new MP. It also assesses the impacts of known development requests, as described in Section 7 of the Master Plan and below in Section 2 of this EA.

The District will comply on a site-by-site basis with all applicable environmental statutes listed in Section 4.5 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 Land Allocations and Classifications

As part of updating the MP, land allocations and use classifications will be updated to ensure consistency with authorized purposes.

1.4.1 Land Allocations

Allocations identify the congressionally authorized purposes for which the Corps lands were acquired. Per EP 1130-2-550, land allocations include:

Operations

Lands acquired for the congressionally authorized purpose of constructing and operating the Project. All of the 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 management, or mitigation.

Recreation

Lands 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”. No specific parcels at the Project were acquired for or assigned to the purpose of recreation.

Fish and Wildlife

Lands 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”. No specific parcels at the Project were acquired for or assigned to the purpose of fish and wildlife.

Mitigation

Lands 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”. No specific parcels at the Project were acquired for or assigned to the purpose of mitigation.

1.4.2 Land Classifications

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

Land classifications indicate the primary use for which Project lands are managed. Classifications provide for development and resource management consistent with authorized

purposes and other Federal laws. The previous MP used an obsolete classification scheme that has been rectified in this document to meet current standards. Land classifications, described below, include Project operations, high-density recreation, environmentally sensitive areas (ESAs), multiple resource managed lands, and water surface.

Project Operations

This classification includes lands required for the dam and associated structures, administrative offices, maintenance compound, and other areas that are used to operate and maintain the Project. 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. Public access to these areas is often restricted. 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.

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.

Environmentally Sensitive Areas (ESAs)

This classification consists of areas where scientific, ecological, cultural, or aesthetic features have been identified. The Corps generally prohibits development for public use on lands within this classification to ensure that these sensitive areas are not adversely impacted. Agricultural uses are not permitted on lands with this classification.

Multiple Resource Management Lands

These lands can be divided into four sub-classifications including Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. These sub-classifications are described as follows:

- **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-facility roads, and water and sewer pipelines, may be permitted under conditions that minimize adverse effects on the natural environment.
- **Wildlife Management:** Proper management techniques will be applied wherever the opportunity exists to improve conditions for scenic value, timber stand improvement, wildfire prevention, pest control, and watershed protection.
- **Vegetative Management:** Vegetative 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 state fish and wildlife management regulations where these activities are not in conflict with the safety of visitors and facility personnel.
- **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.

Water Surface

This refers to collected waters on the surface of the grounds, such as rivers, reservoirs, and wetlands. 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.

1.5 Prior NEPA Documentation

The original 1948 MP predates NEPA requirements. An EA with a Finding of No Significant Impact (FONSI) was prepared in 1985 for the operation and maintenance of Crooked Creek Lake. The 1987 MP referenced the 1985 EA and FONSI.

2 Alternatives

This EA examines two alternatives: a No-Action Alternative, in which the current MP from 1987 would continue to guide operations and management, and a Preferred Alternative of adopting a revised MP.

Data collection, public comments, and findings of the MP team determined that the Preferred Alternative was the only alternative that would meet the purpose, need, and objectives of the master planning process for Crooked Creek Lake. The Preferred 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 outdated management practices and brings them in line with current practices.

No Action Alternative

Inclusion of the No-Action Alternative is prescribed by CEQ regulations and serves as the baseline against which Federal actions can be compared. Under this alternative, the Corps would not approve the adoption or implementation of a revised MP and would not meet current regulations or goals to regularly update a master planning document.

The 1987 MP would continue to provide the only source of comprehensive management guidance; however, this information is out of date and no longer adequately addresses the needs of the District, other management partners, or users of Crooked Creek Lake. Furthermore, the 1987 MP does not include the revised land classifications (See MP Section 3.2) in accordance with current the Corps regulations.

Preferred Alternative: Adoption of the Revised MP

Adopting this course of action is the District's preferred alternative, as retaining the current MP would prevent a proactive approach to managing Crooked Creek Lake; if the MP was not updated, future major developments or resource management policies would require approval on a case-by-case basis and would be using outdated guidance. The revision changes the land and water classifications, most notably the addition of environmentally sensitive areas and water

surface classifications. The revised MP also lays out future recommendations for management of both recreation and natural resources, with emphasis on conservation and low-impact development.

The management recommendations were developed through public meeting workshops, and comments provided by the public at the workshops and online. These management recommendations are non-regulatory and available for use by any citizen, group, or agency. Potential partners for the implementation are groups with the resources best suited to assist in meeting these objectives, such as the Armstrong Center for Community Learning, National Wild Turkey Federation, Indiana University of Pennsylvania, Lenape Tech, Rachel Carson Trail Conservancy, a future “Friends of Crooked Creek Lake” group, other conservancy groups, sportsmen’s clubs, and cultural and recreational groups.

Table EA-1. Existing and Proposed Land Classification/Land Use Category Names and Acreages.*

1987 Master Plan		2021 Master Plan	
Existing	Existing Acreage	Proposed	Proposed Acreage
Wildlife Management Reserve Forest Land	374 1,387.6	Wildlife Management Areas Environmentally Sensitive Areas	313.5 432.2
Project Operations	62	Project Operations	77.3
Recreation Intensive Use	337.1	High Density Recreation	69.3
Recreation Low Density Use	36.5	Low Density Recreation	1,386.1
Unclassified Land	94.2	n/a	0.0
n/a	n/a	Future Recreation	13.1
n/a	n/a	Vegetative Management	0.0
No Boating	19.4	Restricted	32.3
Open Boating	68.6	Open Recreation	143.9
Minimum Speed – No Wake	285.8	Designated No-Wake	202.1
Unclassified Water	4.4	n/a	0.0

***Acreage numbers for historical land use classifications were calculated in GIS software by scanning, georeferencing, and digitizing the 1987 Land Use Classification Map. Due to the scale and other limitations of the original hand-drawn map, acreages should be considered approximate.**

The total real estate at the Project encompass 2,775.2 acres, of which 2,669.8 acres are fee land and water and 105.4 acres are road and flowage easement. While these land use classifications may be updated in the future, those described in this document 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 Operational Management Plan (OMP) for the Project.

Since the 1987 MP, the Corps has changed the land classification nomenclature, which is concurrent with new land surveys. This change is defined in Engineering Pamphlet (EP) 1130-2-

550, change 5, dated 30 January 2013. The changes are outlined in Table EA-1. Wildlife Management has been reclassified as Wildlife Management Areas and Reserve Forest Lands are now classified under Multiple Resource Management Lands. A portion of the Reserve Forest Lands will be changed to Environmentally Sensitive Areas, which are inclusive of specific types of land, including wetlands and sites with archaeological potential. The majority of acreage under Reserve Forest Lands will be classified as Low Density Recreation lands. Under the Low Density Recreation classification, these lands contain minimal development or infrastructure and support passive public recreational use such as primitive camping, fishing, hunting, trails, and wildlife viewing. These uses are similar to current public recreational use of the areas categorized as Reserve Forest Lands. This change is in name only.

The 1987 existing land use classifications do not specifically identify lands reserved for future recreation. The proposed land use class includes 13.1 acres of land reserved for future recreation. Other changes from 1987 to 2021 are nomenclature, but the functions are similar.

The MP conceptually establishes and guides the management decisions for all natural, cultural, and recreational resources at the Project. The MP also provides specific project management recommendations including: coordinating partnerships with state and federal agencies, stakeholders and the community; modernizing facilities within existing footprints and prioritizing actions that improve visitor safety and experience; updating land classifications; adding paddlecraft access areas, isolated camping areas, a soccer field, an additional 9 holes of disc golf, designating a volunteer host site at the campground, a reservable picnic shelter at the beach area, removing existing change stations at the beach and replacing them with a mobile change station/restroom, adding shower facilities to the campground and extending electric and water lines to campsites; increasing trail opportunities by expanding and creating new multi-use trails, adding a dog park, conserving wildlife management and environmentally sensitive areas through continued coordination with resource agency partners; and managing threatened and endangered species through U.S. Fish & Wildlife Service Recovery Plans (see MP Section 7).

The proposed paddlecraft access areas, soccer field and additional holes of disc golf will be located in the land use areas classified as future recreation areas. The volunteer host site will be located at the existing campground along with the extension of electric, water, and shower facilities. Updates at the beach area include the removal of the outdated changing station, and the addition of a mobile change station/restroom and a new picnic shelter. Future recreation areas are shown in Appendix B, Plate 6.

The modernizing facilities recommendation includes improvements to the floating dock at the public boat launch site and improvements to the government boat launch site including adding gravel to an approximately 3,000 square foot area at the approach of the boat launch, and minor grading of the existing launch area. The grading will cover an area approximately 30 feet in width extending into the water approximately 15 feet in length with gravel placement over the newly graded area.

A minor amount of earth disturbance is expected with the addition of shower facilities to the existing campground restroom. The shower facilities will be constructed on a new concrete pad and will tie into the existing utilities. No tree clearing is anticipated. The extension of electric and water to the existing campsites will occur in previously disturbed areas along the edge of the roadway leading to the campsites and will tie into existing utility infrastructure.

The new picnic shelter will be constructed in a previously disturbed area with no tree clearing anticipated.

The existing change station walls will be demolished leaving the concrete slab in place and a mobile change restroom will be added and will tie into the existing utilities. No new ground disturbance is anticipated.

Three paddlecraft access areas will be created. Signage will be placed at all three areas identifying access and gravel will be laid on top of the existing ground at the paddlecraft access area located closest to the dam in the proposed future recreation land classification area. No ground disturbance or tree clearing is anticipated.

Isolated camping areas will be designated by signage. No ground disturbance or tree clearing is anticipated.

The soccer field will be located in an existing open grassy area. Minimal brush clearing and the addition of soccer nets will occur. No earth disturbance or tree clearing is anticipated.

The expansion of the disc golf course includes the addition of nine 4-inch metal pipes driven into the ground approximately 2 feet, where disc golf baskets are attached. Markers and signage will be installed. No tree clearing or other earth disturbance is anticipated.

The dog park will be located adjacent to Overlook Road near the campground restrooms. Chain link fencing will be installed to create an enclosed rectangular area approximately 1.5 acres in size. No tree clearing or other earth disturbance is anticipated.

While all of the recommendations were considered in this EA, there are not enough details available to fully evaluate the environmental impacts of all of the recommendations. Table EA-2 details the proposed recommendations and lists whether the recommendations have been fully or partially evaluated for environmental impacts in this EA. When specific plans and details are available in the future, the expansion of the multi-use trails will need to be evaluated for environmental compliance.

Table EA-2. Recommendations and level of environmental compliance evaluation.

Recommendation	Full compliance	Partial compliance
Coordinating partnerships	Yes	

Modernizing facilities	No	Evaluation for NHPA compliance and consultation with PA State Historic Preservation Office (SHPO) still needed for government boat launch site.
Updating land classifications	Yes	
Paddlecraft access areas	Yes	
Isolated camping areas	Yes	
Soccer field	Yes	
Disc Golf Expansion	No	Evaluation for NHPA compliance and consultation with PA SHPO still needed.
Volunteer host site	Yes	
Picnic shelter	Yes	
Removal of change stations and replacement with mobile changing stations	Yes	
Addition of shower facilities	Yes	
Extending water/electric lines to campsites	Yes	
Expanding multi-use trails	No	Evaluation for compliance with ESA, NHPA, and CWA will be needed once plan details are finalized.
Addition of dog park	No	Evaluation for NHPA compliance and consultation with PA SHPO still needed.
Conservation of wildlife management areas and ESAs	Yes	
Managing T&E species with USFWS recovery plans	Yes	

3 Affected Environment

3.1 Physical Environment

3.1.1 Hydrology and Floodplains

Crooked Creek is part of a comprehensive system of storage reservoirs for flood control for the Allegheny and Upper Ohio Rivers. The Crooked Creek Dam reservoir drainage area above the dam is 227 square miles. The Project is located in the Pittsburgh Plateaus Section of the Appalachian Plateaus Province, which is characterized by rounded hills and open valleys. Floodplains are present adjacent to areas along the reservoir.

3.1.2 Water Quality

Historically, coal mining was prevalent in the basin and acid mine drainage (AMD) caused water quality impairments including low pH, and increased sulfate and heavy metal concentrations. Since 1990, improvements in water quality (pH, alkalinity, and sulfate) related to the demise of the mining industry within the basin have been noted. Current water quality stressors in the basin include excessive amounts of fine sediment in stream and reservoir-bed material, waste water point sources, agricultural run-off, and climate. Increases in nutrient loading (nitrogen and phosphorus), water temperature, total dissolved solids (TDS), and turbidity are also affecting water quality in the basin. Water quality monitoring will continue as a critical part of the water-quality management strategy for Crooked Creek Lake to meet applicable federal and state environmental laws, criteria, and standards. See MP section 2.1.7.

3.1.3 Air Quality

The Clean Air Act requires the United States Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants, known as criteria air pollutants. These pollutants include lead, sulfur dioxide, particulate matter (PM-2.5 and PM-10), ozone, carbon monoxide, and nitrogen dioxide (USEPA, 2020a). The NAAQS are the concentrations of these principal pollutants, above which, adverse effects on human health may occur. Areas that persistently exceed the standards are designated as nonattainment areas. Federal actions must not cause or contribute to new violations, worsen existing violations, or delay attainment of national ambient air quality standards.

The Project is located in the Southwest Pennsylvania Intrastate Air Quality Control Region (40 CFR 81.23) and is in attainment for all the national ambient air quality standards (USEPA, 2020b) (Table EA-3). The Project is located within a rural area and de minimis emissions likely occur from vehicle traffic, lawn care equipment, and construction equipment on a regular basis.

Table EA-3. National Ambient Air Quality Standards (NAAQS) and air quality status for Armstrong County as of July 7, 2020 (USEPA 2020b).

Pollutant	NAAQS (standards)	Averaging Time	Status
Carbon Monoxide	9 ppm (10 mg/m ³)	8-hour	Full Attainment
	35 ppm (40 mg/m ³)	1-hour	Full Attainment
Lead	0.15 µg/m ³	Rolling 3-Month Avg	Full Attainment
Nitrogen Dioxide	53 ppb	Annual	Full Attainment
	100 ppb	1-hour	Full Attainment
Particle pollution	150 µg/m ³	24-hour	Full Attainment
Particle pollution	12.0 µg/m ³	Annual	Full Attainment
	35 µg/m ³	24-hour	Full Attainment
Ozone	0.075 ppm	8-hour	Full Attainment
Sulfur Dioxide	75 ppb	1-hour	Full Attainment

The USEPA index for reporting air quality is the U.S. Air Quality Index (AQI). Values range from 0 to 500 (Airnow, 2020). As AQI values increase, air pollution levels increase. An AQI value range between 0-50 is considered “good” with little to no risk of air pollution causing health problems. AQI values ranging from 51-100 are considered “moderate” where air quality is acceptable, but populations sensitive to air pollution may have an increased risk of health problems. AQI values greater than 100 are considered unhealthy. AQI values in Armstrong County generally range between good to moderate (Figure 1).

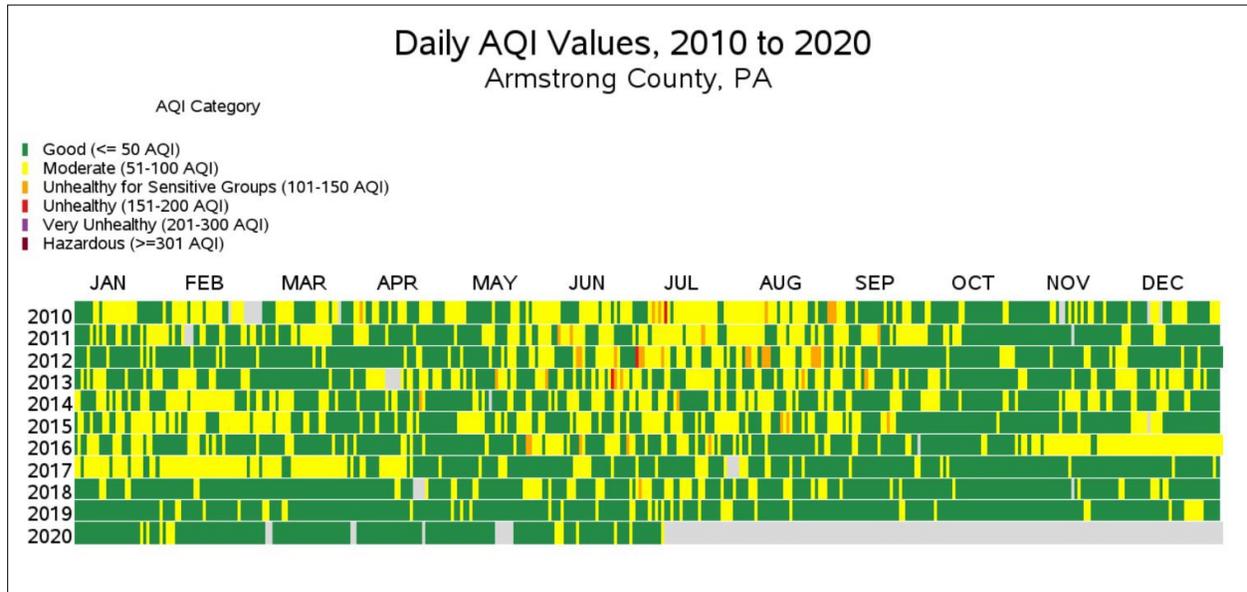


Figure 1 – Daily AQI values from Jan 2010 to July 2020 for Armstrong County (USEPA, 2020c)

3.1.4 Climate

Armstrong County lies along the northern border of the Southwest Plateau climatic division. The climate is humid continental. Most weather systems that affect this area develop in the Central Plains or the Midwest and are steered eastward by the prevailing winds. The primary source of warm air and moisture is the Gulf of Mexico. Cold air comes from Canada (USACE, 1987). Over the past 10 years (2010-2019), average precipitation rates for southwestern Pennsylvania totaled 42.53 inches (NOAA, 2020a). July is the warmest month with a 30-year mean temperature of 72.6°F, while January is the coldest month with a 30-year mean temperature of 28.4°F (NOAA, 2020b).

Climate change is expected to continue to warm the region throughout the 21st century, with temperature increases projected to occur relatively evenly throughout the year (USACE, 2017) (Table EA-4). 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. There is potential for water management and water quality

difficulties, such as not being able to make summer pool in time for the recreation season. There is also the possibility of increased storm runoff, due to climate change, which could potentially result in greater inputs of pollution, which in turn can affect water quality of the reservoir and downstream of Crooked Creek. 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.

Table EA-4. Summary of General Projections for Regional Water Resources for 21st Century (USACE, 2017).

Hydrologic Aspects	Projections, including Confidence Levels
Precipitation	Increase in winter precipitation as rain. Small to no increase in summer precipitation. Increase in heavy precipitation events. [high confidence for winter, lower for summer]
Snowpack	Substantial decrease in snow cover extent and duration. [high confidence]
Runoff	Overall increase, but mainly due to higher winter runoff. Decrease in summer runoff due to higher evapotranspiration. [moderate confidence]
Soil moisture/ droughts	Decrease in summer and fall soil moisture. Increased frequency of short and medium-term soil moisture droughts. [moderate confidence]
Evapotranspiration	Increase in temperature throughout the year. Increase in evapotranspiration during spring, summer and fall. [high confidence]
Groundwater	Increase in recharge due to reduced frozen soil and higher winter precipitation when plants are not active and evapotranspiration is low. [moderate confidence]
Stream temperature	Increase in stream temperature for most streams likely. Some spring-fed headwater streams less affected. [high confidence]
Floods	Decrease of rain-on-snow events, but more summer floods and higher flow variability. [moderate confidence]
Water Quality	Flashier runoff and increasing water temperatures might negatively impact water quality. [moderate confidence]

3.1.5 Geology, Topography and Soils

The ecoregion in which the Project falls under is the Western Allegheny Plateau. This region covers most of the central Appalachian Plateau and includes southwestern Pennsylvania, southeastern Ohio, northwestern West Virginia, and a small portion of the Bluegrass Region of Kentucky. The hilly and wooded terrain of the Western Allegheny Plateau was not subject to glaciation and is more rugged than the plains of the Erie Drift Plain and the Eastern Corn Belt Plains to the north and west. The forest area is mostly mixed oak and mixed temperate forests, and, today, most of its rounded hills remain in forest, dairy, livestock, and general farms as well as residential developments, concentrated in the valleys. Horizontally-bedded sedimentary rock underlying the region has been mined for bituminous coal (USGS, 2020).

In general two basic soil associations are found at the Project. The Rainsboro-Melvin-Steff association, consisting of moderately well-drained to poorly drained, deep, nearly level to gently sloping soils, is found on the flood plains and terraces. The Weikert-Gilpin association is found on the steeper upland slopes. It consists of well-drained, and shallow to moderately deep soils (USACE, 1985). Typical soils around Crooked Creek include Ernest silt loam, Gilpin-Weikert channery silt loam, Monongahela silt loam, and Wharton silt loam (NRCS, 2020).

3.1.6 Noise

The area surrounding the Project is mainly rural. Noise sources include watercraft motors, vehicular traffic, and human voices at areas of concentrated use (for example, day use areas and campgrounds). Noises along the reservoir 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

There are no active or abandoned coal mines on Project property; however abandoned mines are located adjacent to the Project and throughout Armstrong County (USEPA, 2020d). Since the construction of the Project, there has been increased oil and natural gas activities in the region. There is one inactive gas well and 14 active gas wells located on Corps fee owned property. If any developments on the Corps property are proposed, Federal law requires site-specific environmental 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 (CERCLA), Oil Pollution Act, Toxic Substances Control Act, and related guidelines established by the Corps and the Commonwealth of 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

The Project's forested habitat, scrub-shrub uplands, wetlands, streams, and river/reservoirs support a variety of wildlife species common to Pennsylvania. Common avian species likely to occur include osprey (*Pandion haliaetus*), turkey (*Meleagris gallopavo*), red-winged blackbirds (*Agelaius phoeniceus*), robins (*Turdus migratorius*), song sparrows (*Melospiza melodia*), common mergansers (*Mergus merganser*), and mallards (*Anas platyrhynchos*).

Mammal diversity is typically associated with large, intact forested areas. Common mammals include white-tailed deer (*Odocoileus virginianus*), red fox (*Vulpes vulpes*), virginia opossum, (*Didelphis virginiana*), 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 (*Pekania pennanti*) are present. The hairy-tailed mole (*Parascalops breweri*), smoky shrew (*Sorex fumeus*), and eastern woodrat (*Neotoma floridana*) are rare species that may exist. Five species of bats were positively identified in an acoustic bat diversity survey conducted at the Project in July 2020: big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and tri-colored bat (*Perimyotis subflavus*).

The Project also provides habitat for a diverse assemblage of fish including smallmouth and largemouth bass (*Micropterus sp.*), walleye (*Sander vitreus*), yellow perch (*Perca flavescens*), black crappie (*Pomoxis nigromaculatus*), muskellunge (*Esox masquinongy*) catfish (*Ictalurus punctatus*, *Ameiurus catus*, etc.), carp (*Cyprinus carpio*), white sucker (*Catostomus commersonii*), and golden redbreast (*Moxostoma erythrurum*).

Fish surveys conducted at the Project in 2020 identified an additional 36 species of fish including yellow perch (*Ameiurus natalis*), central stoneroller (*Campostoma anomalum*), white sucker (*Catostomus commersonii*), redbreast dace (*Clinostomus elongatus*), mottled sculpin (*Cottus bairdi*), spotfin shiner (*Cyprinella spiloptera*), streamline chub (*Erimystax dissimilis*), greenside darter (*Etheostoma blennioides*), rainbow darter (*Etheostoma caeruleum*), bluebreast darter (*Etheostoma camurum*), fantail darter (*Etheostoma flabellare*), Johnny darter (*Etheostoma nigrum*), banded darter (*Etheostoma zonale*), Northern hog sucker (*Hypentelium nigricans*), green sunfish (*Lepomis cyanellus*), pumpkinseed (*Lepomis gibbosus*), bluegill (*Lepomis macrochirus*), American brook lamprey (*Lethenteron appendix*), striped shiner (*Luxilus chrysocephalus*), common shiner (*Luxilus cornutus*), shorthead redbreast (*Moxostoma macrolepidotum*), river chub (*Nocomis micropogon*), golden shiner (*Notemigonus crysoleucas*), emerald shiner (*Notropis atherinoides*), silverjaw minnow (*Notropis buccatus*), rosyface shiner (*Notropis rubellus*), mimic/channel shiner (*Notropis volucellus*), brindled madtom (*Noturus miurus*), logperch (*Percina caprodes*), gilt darter (*Percina evides*), blackside darter (*Percina*

maculata), bluntnose minnow (*Pimephales notatus*), white crappie (*Pomoxis annularis*), Western blacknose dace (*Rhinichthys obtusus*), brown trout (*Salmo trutta*), and creek chub (*Semotilus atromaculatus*).

The Project also supports a variety of amphibians and reptiles including several species of frogs, turtles, salamanders, and snakes. Herpetofauna surveys were conducted from July to October of 2020 using a variety of techniques: drift fences, pit falls, and funnel traps. The following species were identified: eastern American toad (*Bufo americanus*), bullfrog (*Rana catesbeiana*), green frog (*Rana clamitans*), wood frog (*Rana sylvatica*), Allegheny mountain dusky salamander (*Desmognathus ochrophaeus*), eastern Long-tailed Salamander (*Eurycea longicauda*), northern red salamander (*Pseudotriton ruber*), northern slimy salamander (*Plethodon glutinosus*), red-spotted newt (*Notophthalmus viridescens*), two-lined salamander (*Eurycea bislineata*), valley and ridge salamander (*Plethodon hoffmani*), and eastern gartersnake (*Thamnophis sirtalis*).

3.2.2 Terrestrial Vegetation and Land Cover

Virtually all of the Project has been timbered and much has been grazed or farmed since European settlement in the eighteenth century. Consequently, forest cover on the Project has been extensively altered, and is currently comprised of second and third growth stands, which dominate the Project land cover. See the land cover map located in Appendix B, Plate 4 of the MP.

3.2.3 Threatened and Endangered Species

The presence of federally listed threatened and endangered species at the Project property has not been confirmed. However, potentially occupied habitat may be present for the northern long-eared bat (*Myotis septentrionalis*), a threatened mammal species, the Indiana bat (*Myotis sodalis*), an endangered mammal species, and three species of endangered mussels, including the northern riffleshell (*Epioblasma torulosa rangiana*), snuffbox (*Epioblasma triquetra*), and rayed bean (*Villosa fabalis*). During the summer months, the northern long-eared bat resides underneath bark, in cavities or crevices of both live trees and snags (dead trees), and hibernates during winter months in caves and mines. The Indiana bat roosts under the peeling bark of dead and dying trees during the summer months, and hibernates during the winter months in caves or abandoned mines. The three mussel species are typically found buried in sand or gravel substrates. The northern riffleshell can be found in a wide variety of streams, both large and small. The snuffbox typically inhabits small to medium sized creeks with swift currents. The rayed bean typically inhabits smaller, headwater creeks (USFWS, 2020).

3.2.4 Invasive Species

The most common invasive terrestrial plant species occurring at the Project are: Japanese honeysuckle (*Lonicera japonica*), Japanese knotweed (*Polygonum cuspidatum*), autumn-olive (*Elaeagnus umbellata*), buckthorns (*Rhamnus frangula*, *R. cathartica*), purple loosestrife

(*Lythrum salicaria*), common reed or phragmites (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), garlic mustard (*Alliaria petiolata*), multiflora rose (*Rosa multiflora*), giant hogweed (*Heracleum mantegazzianum*), and bush honeysuckles (*Lonicera maackii*, *L. tatarica*, *L. morrowii*). The most common invasive insects are: emerald ash borer (*Agrilus planipennis*), gypsy moth (*Lymantria dispar*), and the hemlock woolly adelgid (*Adelges tsugae*). Project staff have documented the Asian clam (*Corbicula fluminea*) in the outflow of the dam. See MP Section 2.1.4.

3.2.5 Wetlands

According to the USFWS National Wetland Inventory Map (NWI), the Project includes approximately 730.6 acres of wetlands. There are 204.5 acres of riverine wetlands, 334.8 acres of reservoir wetlands, and 191.3 acres of freshwater forested/shrub wetlands. Wetlands serve important water quality and wildlife habitat functions. See MP Appendix B, Plate 5 for a wetlands map.

3.3 Community Setting

3.3.1 Cultural Resources

The Project area is one of rich cultural history. Five different cultural resources surveys have been completed within the Project area. Approximately 2,566 acres or 92% of Project lands have been surveyed. The intent of some of these surveys was to identify cultural resources for future management, while others were associated with specific projects and undertakings. Additional research is still necessary to identify the locations of all cultural resources within the Project area to ensure that they're managed appropriately. Using archaeological projective models the Project lands are considered areas of high probability for archaeological sites. Archaeological research indicates that the area has been inhabited from Archaic times (4,850 BP. – 11,700 BP.) to the 21st century. A total of 33 cultural resources have been identified within Project lands. These include archaeological sites, historic buildings and structures.

Two of the most prominent cultural resources within the Project area are the Crooked Creek Dam and the existing Damtenders' Dwellings. These structures were determined eligible for inclusion in the National Register in 1998. The National Register is the official list of the nation's historic places worthy of preservation. The Crooked Creek Dam and Damtenders' Dwellings were determined eligible due to their association with events that have made a significant contribution to the broad patterns of our history. The Damtenders' Dwellings were also determined eligible because they exhibit distinctive characteristics of a type or method of construction. See MP Section 2.2.

3.3.2 Socio-Economic Profile

The Project was constructed on Crooked Creek and is located south of the Borough of Ford City in Armstrong County Pennsylvania, near Allegheny, Beaver, Butler, Indiana, and Westmoreland

Counties. The Project receives visitors primarily from these counties. In 2018, the estimated population of Armstrong County was 65,263 (Census.gov, 2020). In 2017 the median household income in Armstrong County was \$45,949 while the poverty rate was 12.7% (USCB, 2020). County employment is primarily in the fields of manufacturing, health care, social assistance, and retail trade. See MP Section 2.3.

3.3.3 Recreation

The Project is a popular local attraction with a campground, boat launch, swim beach, and picnic area. Other recreation opportunities include hunting and fishing access areas at Robbs Fording, Mill Hill Access Area, Cochran's Mill, and Rearicks Fording. These areas are managed by the PAGC. Armstrong Center of Community Learning manages the Outdoor Discovery Center for interpretive and instructional environmental programming. Recreation facilities managed by the Corps include an Information Center, reservable picnic shelters, swim beach, boat launch, play grounds, disc golf course, and trail systems. See MP Section 2.4.

3.3.4 Transportation

The Project is located approximately one hour northeast of downtown Pittsburgh. Crooked Creek Lake is accessible from the south by Pennsylvania Route 28 and Pennsylvania Route 66, from the north by Pennsylvania Route 8, U.S. Route 422, and Pennsylvania Route 66, and from east-west by U.S. Route 422 and Pennsylvania Route 66. Developed roads and parking lots exist at the Project. These roads and parking lots are confined to areas that support developed recreational sites. The undeveloped portions of the Project have limited transportation infrastructure.

4 Environmental Consequences

This section describes and compares effects of the alternatives to existing conditions within each environmental resource 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 revised MP would help define the approval process for future actions affecting Project lands, depending on whether the actions are specifically included in the MP, or not included in the MP, but are consistent with the MP. Other proposed actions not addressed in the MP would be analyzed on a case-by-case basis. The approval process for those proposed actions would still require adequate NEPA consideration (whether categorically excluded or requiring an additional EA) and compliance with other environmental laws and regulations prior to initiating construction.

The MP recommendations in the MP Section 7 include creating partnerships, modernizing facilities within existing footprints including improving the floating dock at the public boat

launch and improving the launch area at the government boat launch, updating land classifications, adding three paddlecraft access areas and isolated camping areas throughout the Project, adding a soccer field, adding 9 holes to the disc golf course, designating a volunteer host site at the campground, constructing a picnic shelter at the beach area, adding shower facilities at the campground and extending electric and water lines to campsites, removing outdated change stations at the beach area and replacing it with a mobile change station/restroom, increasing trail opportunities by expanding and creating new multi-use trails throughout the Project, adding a dog park, developing survey methods to identify and delineate areas that can be classified as ESAs, and managing Federally listed threatened and endangered species according to USFWS Recovery Plans. While

all of these recommendations were considered in this EA, there are not enough details available to fully evaluate all of the environmental impacts. See Table EA-2.

Table EA-5 presents a summary of potential impacts. Impacts are described in detail by environmental resource category.

Table EA- 5. Summary of Impact Analysis for Alternatives

Resource	No-Action Alternative	Preferred Alternative
<i>Physical Environment</i>		
Hydrology & Floodplains	No Impact	No Impact
Water Quality	No Impact	Minor beneficial impact with implementation of erosion control plans. Improvements to government boat launch comply with Nationwide Permit #36 for boat ramps, which includes 401 Water Quality Certification.
Air Quality	No Impact	No Impact
Climate	No Impact	No Impact
Geology, Topography, & Soils	Long-term degradation from unaddressed soil erosion	Minor beneficial impact from addressing erosion through creation of habitat restoration plan.

Noise	Minor impacts may occur with construction activities. Impacts are expected to be temporary and not adverse.	Minor impacts due to increased noise during construction activities. Impacts are expected to be temporary and not adverse.
Hazardous Materials	No Impact	No Impact
<i>Biological Environment</i>		
Fish & Wildlife	No Impact	Beneficial impact for wildlife sanctuaries, habitat areas, and ESAs that will be properly identified and managed.
Terrestrial Vegetation & Land Cover	No Impact	Minor impact to land cover may occur with trail expansion.
Threatened & Endangered Species	No Impact	No Impact. Multi-use trail expansion development will need to be evaluated for impacts to ESA species once plans are developed.
Invasive Species	No Impact	Minor beneficial impact with control and management of invasive species.
Wetlands	No Impact	No Impact
<i>Socioeconomic Environment</i>		
Cultural Resources	No Impact	Beneficial impacts from proper land designation and proactive management in the updated MP.
Socioeconomic Profile	No Impact	Beneficial impact from addition of recreational opportunities that are expected to increase visitation.

Transportation	No Impact	No Impact
Recreation	No Impact	Beneficial impact from proactive management approach and identification of recreational needs.

4.1 Physical Environmental Impacts

4.1.1 Hydrology and Floodplains

No-Action, Preferred Alternative. Neither alternative impacts hydrology nor floodplains. All actions occurring within floodplains must be consistent with EO 11988, Floodplain

Management, and related Corps policy. This would include improvements to existing recreation facilities, addition of buildings/facilities to previously disturbed areas, addition or improvement to boat launches, docks, and maintenance dredging and disposal of sediment. Improvements to the floating dock at the public boat launch will not affect hydrology or floodplains. Minor grading and the addition of gravel to the government boat launch will not change hydrology.

4.1.2 Water Quality

No-Action. No impact to water quality would occur.

Preferred Alternative. A minor beneficial impact is expected with the implementation of erosion control plans, which would reduce the amount of sedimentation entering the reservoir. Clean Water Act permits would be completed, as needed, when project specific information is obtained for the multi-use trail expansion. The improvements to the government boat launch comply with the requirements of Nationwide Permit 36 (Boat ramps). While the width of the boat ramp exceeds 20 feet, the discharge of fill into waters of the United States will result in minimal impacts. The improvements to the grade of the existing launch and the addition of gravel will reduce the amount of sedimentation and turbidity that occurs currently when the Corps launches boats, so it is expected that there would be a minor improvement to water quality once the improvements are completed.

4.1.3 Air Quality

No-Action, Preferred Alternative. No impact to air quality would occur under either alternative. Air quality within the Project boundary can be influenced by exhaust from motor vehicles and boats, and the use of grills and fire pits, but these impacts are de minimis due to their temporary and localized nature.

4.1.4 Climate

No-Action, Preferred Alternative. Neither of the alternatives will significantly impact current or future expected climate conditions.

4.1.5 Geology, Topography and Soils

No-Action. The current MP does not address soil erosion. Long-term degradation from unaddressed soil erosion would be expected to occur with minor negative impacts to this resource.

Preferred Alternative. The revised MP includes goals to identify erosion and implement erosion control plans. The MP specifies the creation of a habitat restoration plan to minimize or mitigate negative impacts through revegetation, soil stabilization, and erosion reduction measures. Existing oil and gas well locations will be managed to control erosion.

4.1.6 Noise

No-Action, Preferred Alternative. Neither alternative will have a significant impact on existing noise levels. Construction activities may occur with the no action alternative, but without the benefit of an updated MP. For the preferred alternative, construction activities associated with facility modernization, trail creation and expansion, the addition of gravel to paddlecraft access areas, the addition of the reservable picnic shelter, removal of the outdated changing stations at the campground, extension of water and electric utility lines at the campground, installing fencing at the dog park, and the expansion of the disc golf course may create temporary and local noise impacts. By avoiding any known sensitive areas, such as nesting sites or culturally important quiet areas, and using adaptive management as needed to correct any unforeseen impacts, no significant impact to noise levels is expected.

4.1.7 Hazardous Materials

No-Action, Preferred Alternative. No impacts are expected from hazardous materials with either alternative. As needed, further site-specific reviews of any development would be conducted for compliance with CERCLA, Hazardous Toxic Radioactive Waste policies, and the Corps real estate requirements.

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 would be using outdated guidance from a MP that does not adequately reflect current land uses.

Preferred Alternative. This alternative would have an overall beneficial impact on fish and wildlife resources through a systematic approach to management of Project land and water

resources. Designating “Wildlife Management” as “Wildlife Management Areas” and “Reserve Forest Lands” as “Environmentally Sensitive Areas” and “Low Density Recreation” lands, is more reflective of current land usage. Low Density Recreation Areas include wildlife viewing, fishing, hunting, and trail use, which are the same types of activities conducted under the current “Reserve Forest Land” classification. The land classification change would have no effect on fish and wildlife resources. 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.

4.2.2 Terrestrial Vegetation and Land Cover

No-Action. The No-Action alternative will not have a significant impact on vegetation or terrestrial land cover.

Preferred Alternative. This alternative will not have a significant impact on vegetation or terrestrial land cover. Existing Corps policies managing the removal or modification of vegetation will continue. Minor impacts to terrestrial land cover may occur with expansion of the multi-use trails, but these impacts are not expected to be significant or adverse.

4.2.3 Threatened and Endangered Species

No-Action, Preferred Alternative. Neither alternative would have any effect on threatened or endangered species. Best management practices, to include seasonal restrictions on tree and vegetation removal, would ensure that no impact would occur. These restrictions would be species specific, based on recovery plans. Once site specific details are available for the expansion of the multi-use trails, those plans will be reviewed to determine compliance with the Endangered Species Act (ESA). Consultation with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act will be initiated if it is determined that those activities may affect ESA listed species. Prior to any clearing of vegetation or construction activities, coordination with the U.S. Fish & Wildlife Service will be performed and surveys for Indiana bats, northern long-eared bats, and northern riffleshell, snuffbox, and rayed bean mussels, would be conducted as necessary to ensure compliance. By avoiding sensitive areas and sensitive seasons (April-October for trees equal to or greater than 3-inches diameter at breast height (dbh) that may be used as bat habitats) and using adaptive management as needed to correct any unforeseen impacts, no significant impact to threatened or endangered species is expected.

4.2.4 Invasive Species

No-Action. No impact. The original MP does not address invasive species, and is out of date 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. Minor beneficial impact. The revised MP proactively addresses invasive species issues and will follow current District policy by using a formalized process of adaptive

and best management practices in prevention, education, early detection, rapid response, and containment to try to control and manage invasive species.

4.2.5 Wetlands

No-Action, Preferred Alternative. Neither alternative would impact wetlands. Wetlands are regulated under Sections 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 Crooked Creek and the surrounding tributaries and jurisdictional wetlands. Further direction is provided by EO 11990: Protection of Wetlands and related Corps' regulations. Recommendations included within the preferred alternative or any future proposed project will need to comply with Clean Water Act regulations and permitting prior to the initiation of any discharge of fill. Any proposed development would avoid impacting wetlands. If wetland impacts could not be avoided, then further analysis and mitigation would be required. Wetland areas are identified in the MP in areas classified as ESAs. Additionally, site specific wetland investigations will need to be conducted prior to construction activities to identify jurisdictional wetlands and to ensure compliance with the Clean Water Act.

4.3 Socio-Economic Environment Impacts

4.3.1 Cultural Resources

No-Action. The current MP does not include cultural resources within a specific land classification; however, the No-Action Alternative would have no impact on 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.

Preferred Alternative. The revised MP would have a beneficial impact on cultural resources by allowing these locations to be managed accordingly through ESA designation in the MP. The MP prescribes developing survey methods to identify and delineate areas that can be classified as ESAs. Due to prior earth grading during the late 1930s through the early 1950s in the Project's operations area for construction of the dam, reservoir, supporting facilities, and infrastructure, the addition of shower facilities and the extension of utility lines at the campground, soccer field addition, the demolition of the changing station, and the construction of the picnic shelter have no potential to cause effects. Because the proposed multi-use trails are in undisturbed areas that have not been surveyed, Section 106 consultation would be required prior to construction. Section 106 consultation is also required for the government boat launch site, the dog park, and the disc golf expansion area.

4.3.2 Socio-Economic Profile

No-Action, Preferred Alternative. Neither alternative will have a significant impact to the local economy or to low-income and minority populations. All Project actions will remain within the existing footprint. Existing trails, camping areas, and boat launches are unaffected and there is no harm caused to local economies. Visitation of the Project Area continues to increase, which has a beneficial impact to local economies and it is expected that the proposed addition of paddlecraft access areas, isolated camping areas, a soccer field, expansion of disc golf, and expansion of multi-use trails would result in an increase of visitation.

4.3.3 Transportation

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

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.

Preferred Alternative. The recreational needs of the public would be better accommodated through the implementation of the proposed alternative and is reflective of the changes in land usage since 1987. Potential beneficial impacts also include the delineated 69.3-acre area for designated high-density recreation and 1386.1-acre area for low-density recreation. While there is a decrease in the amount of land designated as high-density recreation (currently classified as recreation intensive-use), this change is a classification change only. The actual uses of these lands will not change as much of the area currently classified as recreation intensive-use is wooded and undeveloped. The proposed classification is representative of actual land uses. The low-density recreation areas are primarily comprised of the existing reserve forest lands classification and will be used in the same manner as they have been. Open recreation area for navigation has increased to 143.9 acres from the former Open Boating's 68.6 acres of surface water. The updated MP also includes 13.1 acres proposed for future recreation use. A recent assessment determined that the new classifications are more compatible with adjoining land use. No recreational capacity or facilities are lost on account of this reclassification. The addition of the paddlecraft access areas, isolated camping areas, expansion of multi-use trails, soccer field, expansion of disc golf, the dog park, and the picnic shelter provide beneficial recreation improvements.

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 the Project. Past actions include the construction and operation of the reservoir and surrounding recreation areas. Concurrent regional development includes residential and commercial construction throughout the region, natural gas exploration and extraction, in addition to historical industries including coal mining. All of these developments have had varying levels of adverse impacts on the physical and natural resources in the region. Many of these developments have had beneficial impacts on the region's socioeconomic resources.

Current actions include updating the MP to reflect operations under existing congressional authorizations, taking into account changes in basin hydrology and demands from years of growth and development, new or rehabilitated structural features, legal developments, and environmental issues.

In recent years, oil and gas development has boomed across the region, creating direct impacts from earth disturbance associated with construction of wells and pipelines, and indirect effects from the growth of local service industries and population increases. Any gas and oil development encroaching on public lands at the Project would be addressed on a case-by-case basis, ensuring the continued protection of environmental resources.

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

Under the No-Action Alternative (baseline conditions), land management would continue, somewhat inefficiently, using out-of-date guidance from a MP that does not adequately reflect current land use.

Under the Preferred Alternative, ongoing land management would be enhanced by new processes for efficient management of environmental resources and integrating any future actions with minimal adverse impacts. Such a system would be responsive to both changes in the environment and recreational demands. This emphasis will preserve the region's aesthetics, maintain thriving ecosystems and habitats, and enhance recreation activities. The planned approach will continue to attract visitors, benefitting the local economy. The programmatic

approach to land management, included in this EA and the associated MP, would allow for future development plans and mitigation responses to be adapted to address any 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.

4.5 Compliance with Environmental Statutes

Table EA-6 provides documentation of how the agency’s preferred alternative complies with all applicable Federal environmental laws, statutes, and executive orders.

Table EA-6. Preferred alternative compliance status.

Federal Policy	Compliance Status
16 U.S.C. 469, et seq., Archaeological and Historic Preservation Act	Full Compliance
42 U.S.C. 1857h-7, et seq., Clean Air Act, as amended	Full Compliance
33 U.S.C. 1857h-7, et seq., Clean Water Act	Meets all requirements for this stage of planning, but recommendations for future development or actions contained within this EA may require additional action for compliance.
42 U.S.C. 9601 et seq., Comprehensive Environmental Response, Compensation, and Liability Act	Meets all requirements for this stage of planning, but recommendations for future development or actions contained within this EA may require additional action for compliance.
16 U.S.C. 4601-12) to 4601- 21, Federal Water Project Recreation Act	Full Compliance
16 U.S.C. 703-712, Migratory Bird Treaty Act	Corps activities will not result in the taking of bird species.
16 U.S.C. 1271, et seq., Wild and Scenic Rivers Act	Not Applicable
EO11988, Floodplain Management	Corps activities will avoid building in floodplains or altering the floodplain.
EO11990, Protection of Wetlands	Meets all requirements for this stage of planning, but recommendations for future development or actions contained within this EA may require additional action for compliance.
EO12898, Environmental Justice in Minority Populations and Low-Income Populations	Existing operations will remain within the current footprint and will not create a burden on low-income or minority populations.
EO13112, Invasive Species	The preferred alternative addresses invasive species in order to control, manage, and contain invasive species in the Project Area.
PL101-601, Native American Graves Protection & Repatriation Act	Full Compliance

PL59-209, Antiquities Act of 1906	Full Compliance
PL74-292, Historic Sites Act of 1935	Full Compliance
PL78-534, Flood Control Act of 1944	Full Compliance
PL85-500, Rivers and Harbor Act of 1958	Not Applicable
PL85-624, Fish and Wildlife Coordination Act 1934	Meets all requirements for this stage of planning, but recommendations for future development or actions contained within this EA may require additional action for compliance.
PL86-717, Forest Conservation	The MP provides for the conservation of forested areas at the reservoir to meet intended purposes.
PL87-874, Rivers and Harbors Act of 1962	Not Applicable
PL88-578, Land and Water Conservation Fund Act of 1965	Full Compliance
PL89-90, Water Resources Planning Act (1965)	Full Compliance
PL89-272, Solid Waste Disposal Act, as amended by PL 94-580, dated October 21, 1976	Full Compliance
PL89-665, National Historic Preservation Act of 1966	The Crooked Creek Dam and the Damtenders' Dwellings are historic structures listed on the NRHP. All requirements have been met thus far, however, actions suggested in the preferred alternative may require additional consultation with the Pennsylvania State Historic Preservation Office. See section 4.3.1.
PL90-483, River and Harbor and Flood Control Act of 1968, Mitigation of Shore Damages	Not Applicable
PL91-611, River and Harbor and Flood Control Act of 1970	Full Compliance
PL92-463, Federal Advisory Committee Act	Full Compliance
PL92-500, Federal Water Pollution Control Act Amendments of 1972	Full Compliance
PL92-516, Federal Environmental Pesticide Control Act of 1972	Full Compliance
PL93-81, Collection of Fees for Use of Certain Outdoor Recreation Facilities	Full Compliance
PL93-251, Water Resources Development Act of 1974	Full Compliance

PL93-291, Archeological Conservation Act of 1974	Full Compliance
PL93-303, Recreation Use Fees	Full Compliance
PL93-523, Safe Drinking Water Act	Full Compliance
PL98-63, Supplemental Appropriations Act of 1983	Full Compliance
PL99-662, The Water Resources Development Act of 1986	Full Compliance
PL99-88, Supplemental Appropriations Act of 1985	Full Compliance
PL101-640, Water Resource Development Act of 1990	Full Compliance
PL101-646, Coastal Wetlands Planning, Protection, & Restoration Act of 1990	Not Applicable
PL101-676, Water Resource Development Act of 1988	Full Compliance
PL102-580, Water Resource Development Act of 1992	Full Compliance
PL104-303, Water Resource Development Act of 1996	Full Compliance
PL106-53, Water Resource Development Act of 1999	Full Compliance
PL106-541, Water Resource Development Act of 2000	Full Compliance
PL109-58, Energy Policy Act of 2005	Full Compliance
PL110-114, Water Resource Development Act of 2007	Full Compliance
PL113-121, The Water Resources Reform and Development Act of 2014	Full Compliance
16 U.S.C. 668-668d, Bald and Golden Eagle Protection Act of 1940 as amended	Corps operations would take nesting locations into consideration and avoid creating disturbances.
16 U.S. C. 1531-1544, Endangered Species Act of 1973	Meets all requirements for this stage of planning, but recommendations for future development or actions contained within this EA may require additional action for compliance. See section 4.2.3.
16 U.S.C. 1001, et seq., Watershed Protection and Flood Prevention Act	Full Compliance
PL85-500, River and Harbor Act of 1958	Full Compliance

PL89-90, Water Resources Planning Act (1965)	Full Compliance
PL91-190, National Environmental Policy Act of 1969 (NEPA)	This EA and a Finding of No Significant Impact (FONSI) have been prepared in accordance with the CEQ's NEPA Implementing Regulations (40 CFR 1500-1508). An Environmental Impact Statement (EIS) is not required.

5 Coordination and Public Involvement

Agency and public involvement were initiated in 2019, when the District published notices announcing its plan to revise the MP. Partner and public meetings were held on 21 November 2019. The draft MP was completed in October 2020. A 30-day public comment period for the draft MP, EA and FONSI was held from 4 November 2020 to 4 December 2020. No comments pertaining to the EA or FONSI were received. Public involvement activities and comments are described in detail in Section 6 of the MP.

6 Conclusion

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

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