Indian Rock Dam

Master Plan

Final Submittal
January 2020

Indian Rock Dam
Master Plan
York County, PA

Final Submittal
January 2020

For:
Indian Rock Dam
2933 Access Road
West Manchester Township, PA 17408

Under Contract With:
U.S. Army Corps of Engineers—Baltimore District
2 Hopkins Plaza
Baltimore, Maryland 21201
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Indian Rock Dam
Master Plan

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FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT FOR THE INDIAN ROCK DAM MASTER PLAN

YORK COUNTY, PENNSYLVANIA

In accordance with the National Environmental Policy Act of 1969 (NEPA), including guidelines in 33 Code of Federal Regulations (CFR) Part 230 (Procedures for Implementing NEPA), the Baltimore District of the U.S. Army Corps of Engineers (USACE) has assessed the potential impacts of the 2019 Indian Rock Dam Master Plan (2019 Master Plan). The Indian Rock Dam Project was authorized and constructed for the primary purpose of managing flood risks in the Codorus Creek Watershed and Lower Susquehanna River Basin. A major secondary use of the project lands and waters is to support recreation. Implementation of the Indian Rock Dam Master Plan and proposed land use changes must recognize and be compatible with the authorized purpose of flood risk management and the USACE Environmental Operating Principles.

The 2019 Master Plan will provide guidance for stewardship of natural resources and management for long-term public access to, and use of, the natural resources of Indian Rock Dam, including the land use classification of the USACE-managed lands. USACE manages project lands in accordance with land use classifications that have been determined in the project land's master plan. Thus, land use classifications are fundamental to project lands management. Land use classifications (see Table S-1) provide for development and resource management consistent with authorized purposes and other Federal laws. The 2019 Master Plan provides a comprehensive description of Indian Rock Dam (the Project), a discussion of factors influencing resource management and development, new resource management objectives, a synopsis of public involvement and input into the planning process, descriptions of existing development, and consideration of future development activities.

Under the No Action Alternative, the USACE would take no action, which means no new resource analysis or land use reclassifications would occur. The operation and management of Indian Rock Dam would continue as outlined in the 1959 Master Plan.

The Proposed Action includes adopting the 2019 Master Plan to reflect changes in land management and land use classifications, USACE regulations and guidance that have occurred since the 1959 Master Plan, and coordination with the public. The 2019 Master Plan refines land classifications to meet authorized project purposes and current resource objectives. This includes a mix of natural resource and recreation management objectives that are compatible with Chesapeake Bay Program watershed goals established by stakeholders and USACE during the master planning process, recognize outdoor recreation trends, and are responsive to public comments. The purpose of the Proposed Action is to ensure that the conservation and sustainability of the land, water, and recreational resources at Indian Rock Dam comply with applicable environmental laws and regulations and to maintain quality land for future use, including the 2014 Chesapeake Bay Agreement goals and management strategies for restoring and maintaining the health of the watershed. The 2019 Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years, which reflects changes that have occurred since 1959 in outdoor recreation trends, regional land use, population, legislative requirements, USACE management policy, and wildlife habitat at Indian Rock Dam.

The Proposed Action is needed to update the Indian Rock Dam Master Plan in accordance with January 2013 updates to the Engineering Regulation (ER) and Engineering Pamphlet (EP) 1130-2-550.

Table S-1 identifies the required land and water surface classification changes associated with the Proposed Action.

Table S-1. Proposed Changes to Land Use Classifications at Indian Rock Dam

Classification	1959 Master Plan (acres)[a]	2019 Master Plan (acres)	Description
Project Operations	125	95	Lands associated with the dam and spillway structures that are operated and maintained for fulfilling the flood risk management and water storage missions of Indian Rock Dam. Although unrelated to USACE project operations, this classification also includes the private firing range leased and managed by the Fraternal Order of Police.
Wildlife and Game Management	1,634	N/A	The 1959 Master Plan included this classification, however, the proposed 2019 Master Plan update divides lands within this classification into multiple resource management lands.
High-Density Recreation[b]	ND	0	Lands used for intensive recreational activities. This land use classification is not proposed for Indian Rock Dam in the 2019 Master Plan update.
Multiple Resource Management Lands			
Low-Density Recreation	ND	2	Lands with minimal development or infrastructure that support passive public recreation use, such as fishing, hunting, wildlife viewing, or hiking. This includes approximately 2 acres of land within the Project encompassing the five parking areas for hunting, fishing, and wildlife viewing activities as well as the Hanover Trolley Trail. There are no future plans for the existing low-density recreation lands.
Vegetative Management	ND	1,588	This land use classification includes an ecosystem-based management approach and is designated for stewardship of forest, prairie, and other native vegetative cover. The primary objective for these lands is to manage the forest to ensure a healthy, diverse, and visual aesthetic continuous forest canopy throughout the Indian Rock Dam property. The provision and protection of wildlife habitat and the availability of these lands for passive recreation activities are also important objectives. Pennsylvania Game Commission manages approximately 350 acres of Prescribed Burn Zones within this classification to manage the vegetative areas. Pennsylvania Game Commission also manages several Habitat Restoration Areas in order to support a healthy ecosystem for both the plants and animals in the area. Current recreational use of these lands includes, but is not limited to hunting, bank fishing, wildlife viewing, and hiking. Future uses include all existing uses with the possibility of enhancing these uses with amenities like signage or new primitive access trails.
Water Surface			
Restricted	ND	1	Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. The Restricted water surface at Indian Rock Dam, which operates as a dry reservoir, is limited to the areas around the dam and the spillway.
Open Recreation Area	ND	69	Open Recreation area includes all water surface areas available for year-round or seasonal water-based recreational use. As Indian Rock Dam is a dry reservoir, areas with water surface open recreation include all remaining water surface area outside of the restricted zones (e.g. Main Branch of Codorus Creek).

[a] The 1959 Master Plan did not include land classifications. When Indian Rock Dam was established, the only land allocation category that applied to the Project was Operations, which includes lands required to operate the dam and accomplish the primary authorized purposes of the Project.

[b] As the High-Density Recreation land classification does not occur in the 1959 Master Plan and is not proposed in the 2019 Master Plan, this classification is not carried for analysis within the EA.

N/A = not applicable; ND = Not Defined; USACE = U.S. Army Corps of Engineers

USACE chose the Proposed Action because it would meet Chesapeake Bay Program watershed goals associated with good stewardship of land and water resources, meet regional recreation goals, and allow for continued use and development of project lands without violating national policies or public laws.

USACE used the Environmental Assessment (EA) and comments received from other agencies to determine whether the Proposed Action requires the preparation of an Environmental Impact Statement (EIS). This included assessment of all environmental, social, and economic factors that are relevant to the recommended alternative considered in this assessment. The EA determined negligible impact would occur to the following resources: air quality, greenhouse gases and climate, noise, geology, cultural resources, groundwater, wild and scenic rivers, utilities, hazardous materials and waste, socioeconomics and environmental justice, and traffic and transportation (see Section 3.1 of the EA). Minor adverse impacts could occur to water resources, soils, and biological resources, primarily during construction of future amenities like signage or new primitive access trails (see Sections 3.2 through 3.5 of the EA). Adverse impacts would be reduced through the use of standard construction best management practices (BMPs) to reduce disturbance, soil erosion, and sedimentation into adjacent surface waters and wetlands. Construction and operations of these projects would use BMPs associated with prevention of impacts to sensitive species, including removal of vegetation outside of nesting seasons for bird species (April 28 – September 10). Additionally, areas proposed for disturbance would be surveyed for wetlands within 300-feet of the proposed construction footprint; wetlands areas identified would be assessed for suitable bog turtle habitat by a qualified surveyor prior to disturbance and activities coordinated with the U.S. Fish and Wildlife Service. Prior to future master planning project implementation involving new construction, sites with the potential for archaeological resources (e.g., undisturbed locations) would be surveyed and the USACE would consult with the Pennsylvania State Historic Preservation Office for National Historic Preservation Act Section 106 concurrence.

Beneficial impacts could occur to water resources, soils, biological resources, and land use and recreation from establishment of improved trails. The improved trails would reduce disturbance elsewhere at the Project by encouraging use of maintained designated access points. Beneficial impacts to soil and biological resources would also occur through establishing a vegetative management land use classification that recognizes an ecosystem-based approach with a focus on native vegetation cover and maintaining protective cover for soils.

Conclusion

Based on the summary of effects evaluated in the EA, I have determined that the Proposed Action will not have a significant effect on the natural and human environment. For this reason, no Environmental Impact Statement is required.

19 DEC 19

Date

John T. Litz
Colonel, U.S. Army
Commander and District Engineer

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1 Introduction

1.1 PROJECT AUTHORIZATION

The Indian Rock Dam project on Codorus Creek was authorized by the Flood Control Act of June 22, 1936 (Public Law 74-738, 74th Congress, 2nd Session), as amended by the Flood Control Act of June 22, 1938 (House Do. 702, 77th Congress, 2nd Session), in order to manage flood risk in the Susquehanna River Watershed in southern New York and eastern Pennsylvania. In addition to Indian Rock Dam, the Codorus Creek Improvement Project was also approved by the Flood Control Act of 1936 and provided flood damage reduction by way of a levee system and other channel improvement projects. The focus of this document is strictly on the Indian Rock Dam project. However, a brief description of the Codorus Creek Improvement Project is included in Section 1.4 for informational purposes.

Congressional authority for the recreational program at reservoir projects under the control of the Department of the Army is contained in the Flood Control Act approved December 22, 1944 (Public Law 534, 78th Congress, 2nd Session) and amended by additional acts as follows: the Flood Control Act approved July 24, 1946 (Public Law 526, 79th Congress, 2nd Session), the Flood Control Act approved September 3, 1954 (Public Law 780, 83rd Congress, 2nd Session), and the Flood Control Act approved October 23, 1962 (Public Law 87-874, substantially in accordance with House Document 469, 87th Congress, 2nd Session).

This Update to the Indian Rock Dam Master Plan is required according to January 2013 updates to the Engineer Regulation (ER) and Engineering Pamphlet (EP) 1130-2-550. The United States Army Corps of Engineers (USACE) is also required to prepare the appropriate National Environmental Policy Act (NEPA) documentation to support the Master Plan, which is included in the appendix of this document.

1.2 PROJECT PURPOSE

Indian Rock Dam was authorized and constructed for the primary purpose of managing flood risk in the Susquehanna River Watershed. The project provides immediate flood protection for the city of York, Spring Garden Township and York County, all located within Pennsylvania, and has a drainage area equivalent to 41 percent of the watershed upstream from York. A major secondary use of the project lands and waters is recreation. The project area is heavily utilized by individuals and groups from near and far who participate in a variety of activities, like hunting, wildlife viewing, hiking, and enjoying the great outdoors.

1.3 PURPOSE AND SCOPE OF MASTER PLAN

The purpose of this document is to update the Master Plan, written in 1959, and the Environmental Assessment (EA) for Indian Rock Dam. It should be noted that USACE, Baltimore District is currently creating an EA for the Codorus Creek Improvement Project. This EA is expected to be completed in 2019. The Indian Rock Dam Master Plan is the strategic land use management document that guides the comprehensive management and development of all recreational, natural, and cultural resources throughout the life of the project. It is the basic document guiding USACE responsibilities pursuant to Federal Laws to preserve, conserve, restore, maintain, manage, and develop the project lands, waters, and associated resources.

Since the construction of the dam, the original objective of flood risk management continues to be achieved, allowing the increased opportunity for numerous recreation activities around the dam. This document updates the existing Master Plan, written in 1959. This Plan provides an analysis of and guidance for future recreation enhancement and development activities at Indian Rock Dam in response to the increased demand for improvements to existing recreation resources, as well as additional new recreation resources on the project site.

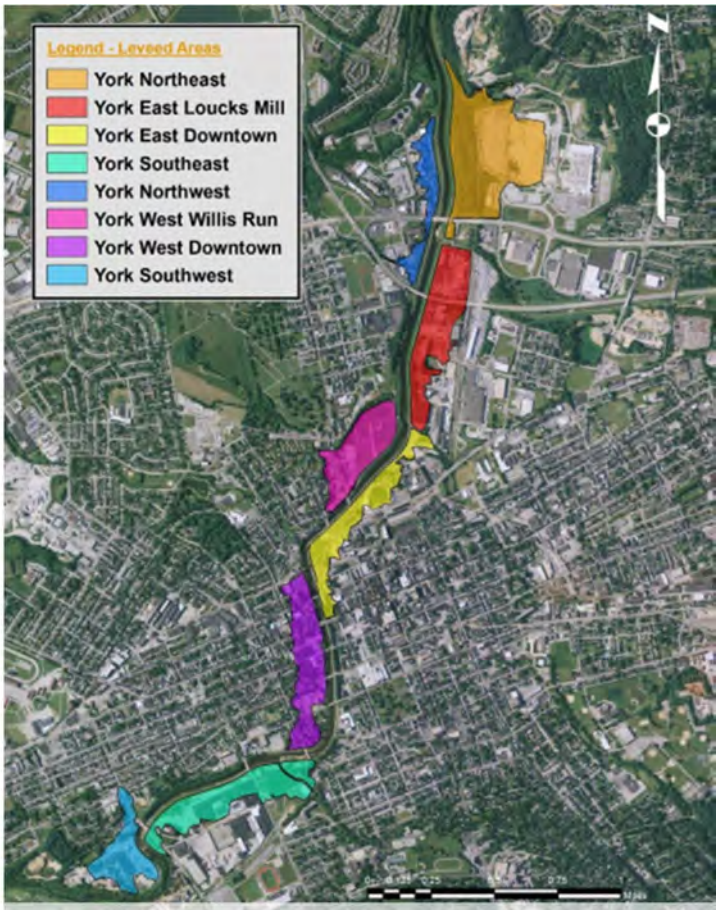
This document presents a re-evaluation of the assets, needs, and potentials of Indian Rock Dam. This Plan reflects changes that have occurred to the project site, in the region, in recreation trends, and in USACE policy, in the 60 years since the original master plan. It provides a management framework that balances the stewardship of natural resources and provision of high-quality recreation activities with the primary project purpose of flood risk management. This Plan addresses expressed public interest in the overall stewardship and management of all project resources and includes graphics showing the most desirable and feasible enhancements to existing facilities, as well as locations and types of new facilities needed to meet the identified needs.

Implementation of the Indian Rock Dam Master Plan and proposed land use changes must recognize and be compatible with the authorized purpose of flood risk management and the USACE Environmental Operating principles. Recreation facility development and natural resources management activities proposed in this Plan are dependent on the availability of appropriated funds, but may also be achieved through partnerships, donations, and volunteer efforts.

1.4 DESCRIPTION OF PROJECT AND WATERSHED

Indian Rock Dam is located on the Main Branch of Codorus Creek in York County, Pennsylvania, approximately 3 miles upstream of the city of York and approximately 15 miles upstream of Codorus Creek's confluence with the Susquehanna River, as shown in Figure 1-1 on page 1-5. The

Main Branch joins the South Branch to form Codorus Creek, at a point 2.5 miles north of the southernly limits of the city of York, Pennsylvania. The dam site is on the Main Branch, approximately 700 feet above its confluence with the South Branch. Project lands occupy approximately 1,755 acres of land, with 1,660 fee simple acres and 95 flowage easement acres. Indian Rock Dam controls a drainage area of 94 square miles, 100 percent of the drainage area of the Main Branch of Codorus Creek and approximately 41 percent of the total drainage area upstream of York. Figure 1-2 is a site map of Indian Rock Dam and can be found on page 1-6.



The 8 levee systems of the Codorus Creek Improvement Project

Construction of the dam and levee system began in February 1940 and took almost 3 years to complete. Upon completion in September 1942, the final government cost was $5,061,000. Indian Rock Dam was originally designed as a dry dam due to the pollution of the creek by papermill wastes at Spring Grove, located in the upper reaches of the reservoir. The paper mill is still operational and Indian Rock Dam remains a dry dam to this day. There have been no formal considerations about converting the dam from dry to a permanent pool, but overall feasibility, including the presence of upstream water pollutants and the associated high operation and maintenance costs, remains an effective blockade to development. The original 1959 master plan stated that if a small recreation pool was supported, it would total approximately 100 acres at elevation 390 feet National Geodetic Vertical Datum (NGVD) and it would store approximately 800 acre-feet of water, which is equivalent to 0.16 inch of runoff.

Combined with Indian Rock Dam, the Codorus Creek Improvement Project provides flood damage reduction to the City of York and other downstream communities. The Codorus Creek Improvement Project is 4.8 miles in length and consists of 8 hydraulically independent levee systems (shown to the right), a widened and deepened creek channel, floodwalls, and bank protection elements. The project is entirely within York County, Pennsylvania and passes through 3 townships, 1 borough, and the city of York. Although USACE owns, operates, and maintains the Codorus Creek levee system, USACE does not own the lands. USACE only possesses a channel improvement easement. There are also 54 outgrants, including the Heritage Rail Trail County Park, located on the Codorus Creek levee system, but all structures or surfaces must not inhibit the easement rights of USACE.

1.5 DESCRIPTION OF DAM

The normally dry reservoir area of Indian Rock Dam as a storage capacity of 28,000 acre-feet, or 9.1 billion gallons of water, at spillway crest and 46,000 acre-feet when the spillway is surcharged

to 10.5 feet. Reservoir storage is currently only utilized in times of flood. The reservoir is operated by regulating the gate openings in such a manner that the total flow in the creek will not exceed the capacity of the downstream channel. When the reservoir is full to spillway crest, the lake formed will have a surface area of 1,430 acres and a main valley length of about 7.8 miles. The dam controls a drainage area of 94 square miles, totaling 100 percent of the drainage area of the Main Branch of Codorus Creek and approximately 41 percent of the total drainage area upstream of York.

A major portion of the 1,755 acres of project lands lie below the elevation 435 feet NGVD, or the top of the full flood control pool at spillway crest. The dam does not support a permanent pool, all lands within the project boundary are subject to inundation to varying depths at infrequent intervals during the operation of the dam for flood control. The typical top elevation at low water is 372.5 feet NGVD.

1.5.1 Embankment

The dam is a rolled-fill earth embankment with rock facings extending across the Codorus Creek Valley. The dam stands 83 feet above the streambed and stretches approximately 1,000 feet long. The top elevation of the dam is 452.5 feet NGVD.

1.5.2 Spillway

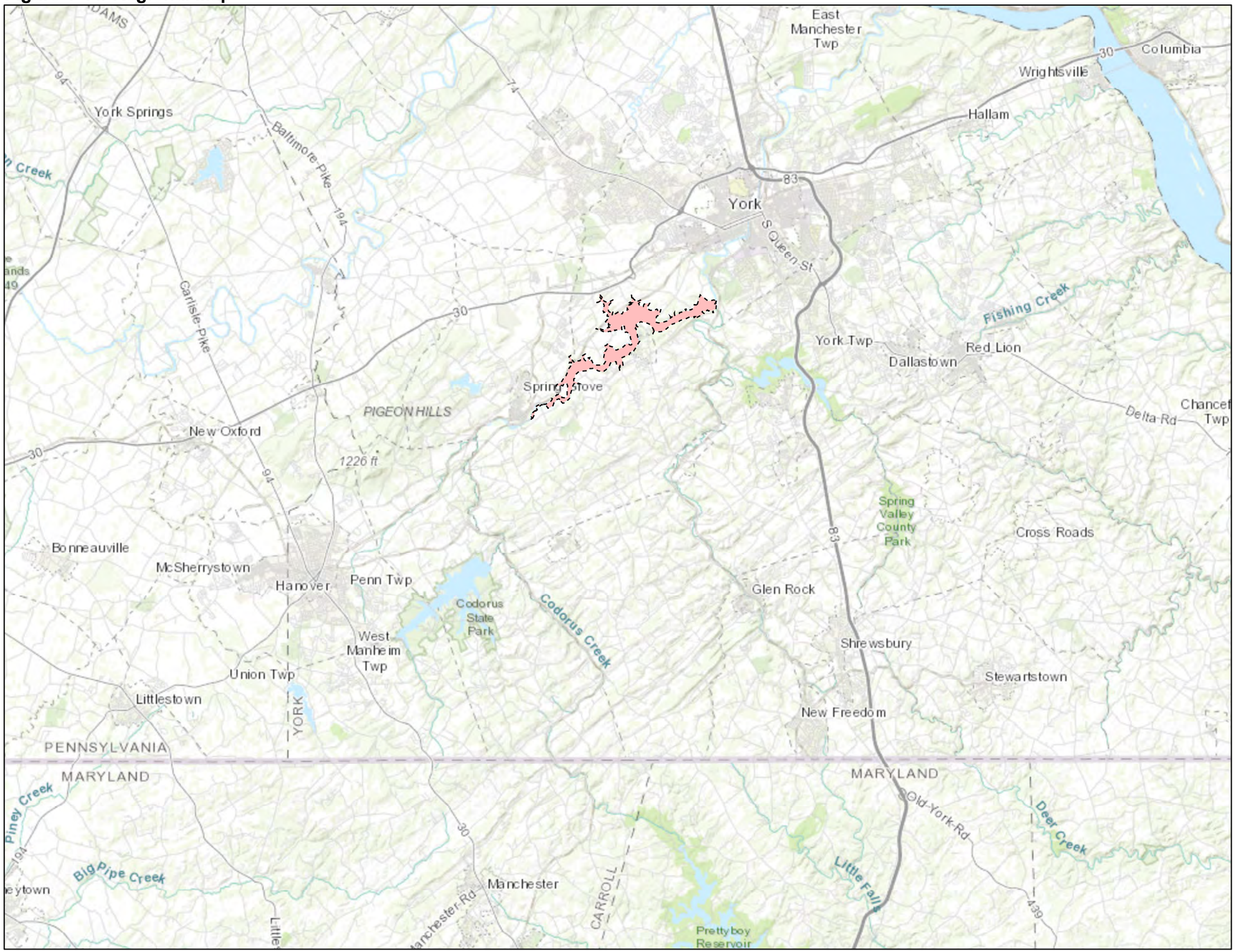
The concrete spillway, located on the right abutment, has a crest length of 461 feet and height of 65 feet. It is a side-channel and ogee weir type with a concrete overflow section, a concrete-lined discharge channel, and a stilling basin at the outfall of the discharge channel. The spillway crest at elevation 435 feet NGVD is 17.5 feet below the top of the dam and was designed to discharge 62,000 cubic feet per second (cfs). The channel is 750 feet in length. The side walls of the channel are built in blocks, approximately 20 square feet, and are anchored to the rock slope. The concrete spillway is only used in the event of a flood that exceeds reservoir capacity.

1.5.3 Flood Control Outlet Works

The outlet works for releasing impounded water from the reservoir consist of an approach channel, intake tower and operating house, tunnel, stilling basin, and outlet channel located near the right abutment of the dam. The discharge of impounded water is controlled by three 6-foot by 13-foot vertical-lift tractor gates of the Broome type. A 15-foot circular tunnel, 432 feet long including intake, has been excavated through quartzite rock in the right abutment. The intake transition is 36 feet and 6 inches long, tapering from a rectangular section about 13 feet high and 27 feet wide upstream, to the 15-foot diameter circular section at the downstream end. The outlet transition is 20 feet long, tapering from the circular section at the upper end to a horseshoe section at the portal.

Indian Rock Dam Embankment and Inlet

Figure 1-1 // Regional Map



Indian Rock Dam Master Plan

Regional Map

Legend

IRD Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, ©

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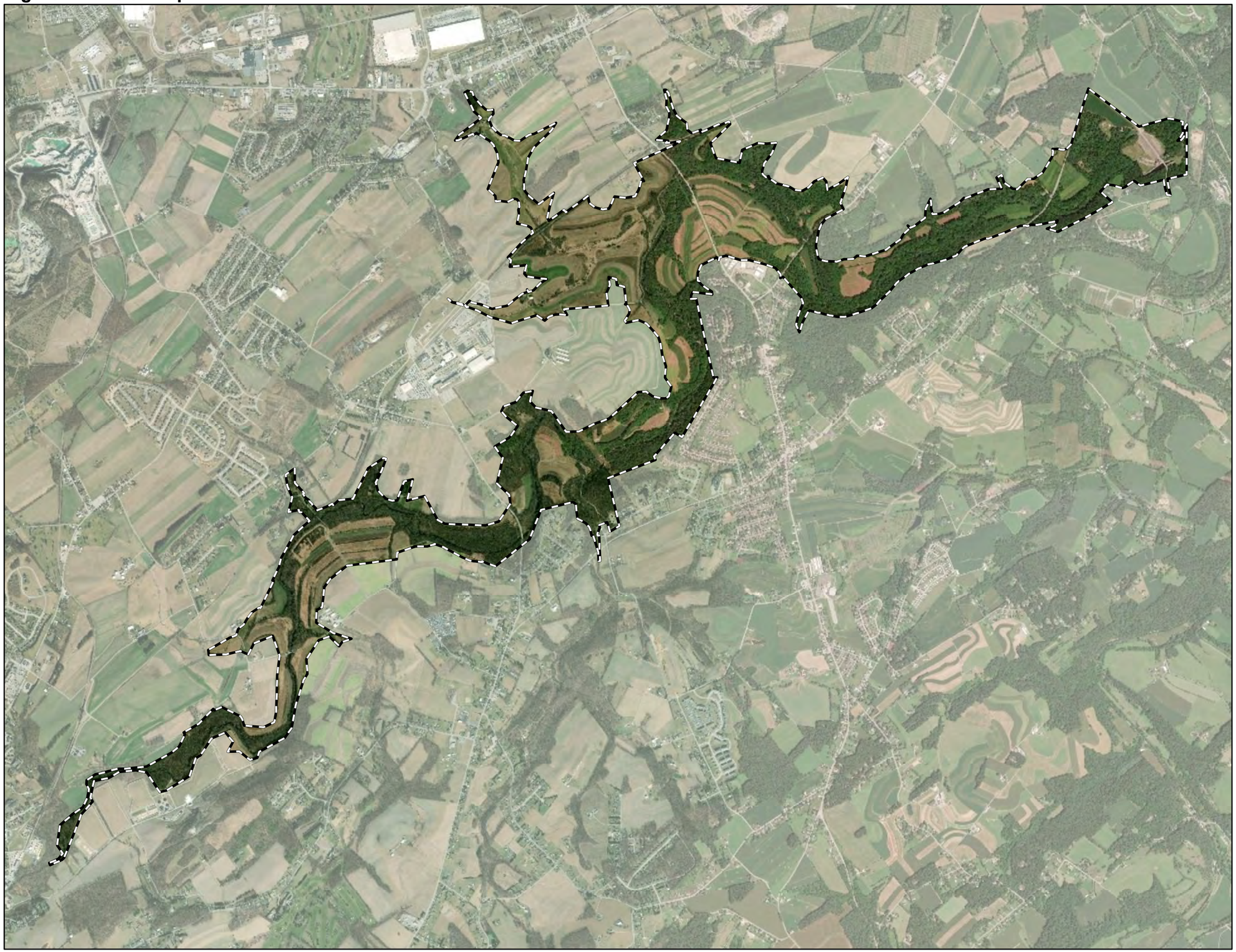
Figure 1-2 // Site Map



Indian Rock Dam
Master Plan

Site Map

Legend

IRD Boundary

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 2,500 5,000 Feet

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1.6 PROJECT ACCESS

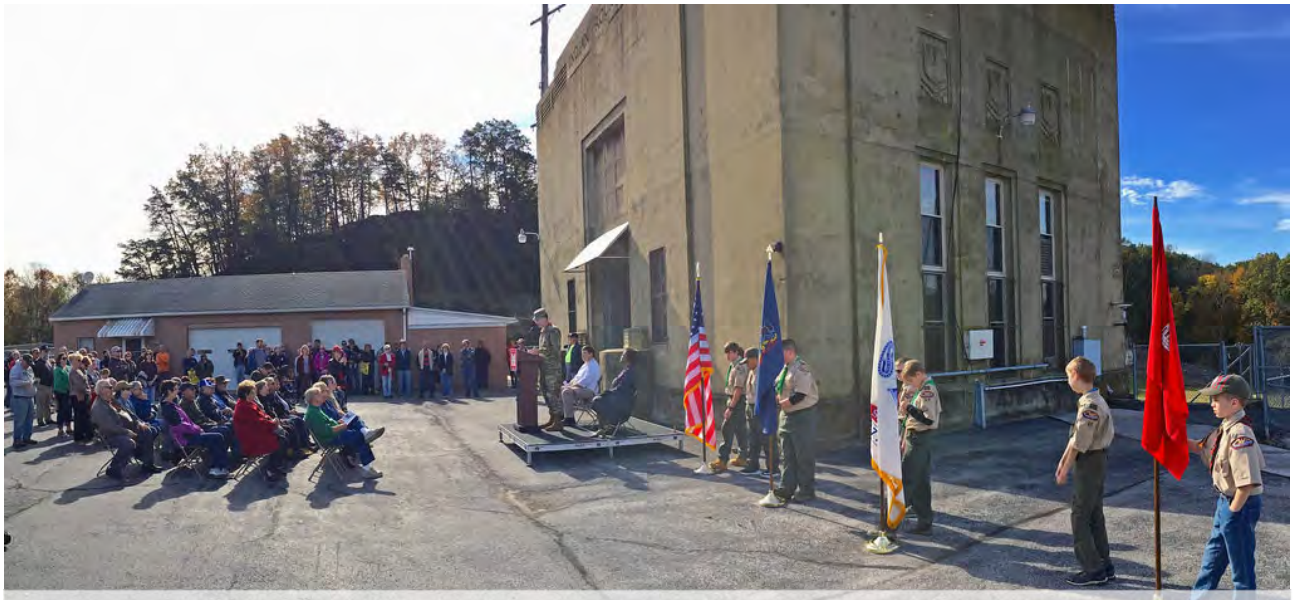
Indian Rock Dam is well-served by a network of Federal, State, and county highways providing site accessibility to population centers east and west of York. U.S. Highway 30 runs between the city of York and the borough of Gettysburg. It passes within 1 mile of the site to the north. State Routes 616, 116, 516, and 498 lead from U.S. Highway 30 across the reservoir area. Interstate 83 is the closest major interstate to the site. It connects York with Harrisburg to the north and Baltimore to the south. The interstate passes approximately 3 miles from the site to the east with several secondary roads leading from the highway to the reservoir area. State Route 182, better known as Indian Rock Dam Road, borders the property to the north and east. There is also a thru access road, fittingly named Access Road, that passes over the dam itself.

The Heritage Rail Trail County Park also meanders near project lands. This 21-mile rail trail provides pedestrian and cyclist access to the project site from downtown York and surrounding townships. Phased development and future extensions to the Hanover Trolley Trail, which has a small portion located within project easement lands, to the west and the 150-acre John C. Rudy County park to the east. The Heritage Rail Trail currently connects with Maryland's 20-mile Torrey C. Brown Trail. This seamless connection at the state line creates more than 40 miles of off-street trails for pedestrians, cyclists, and horseback riders.

1.7 PERTINENT PRIOR REPORTS AND RELATED STUDIES

Documents and studies related to the Master Plan update are listed in this section with the dates of publication. The Bibliography section contains the full annotation for each report or study.

- *Indian Rock Reservoir Master Plan, 1959*
- *Indian Rock Dam / Codorus Creek Flood Risk Management Rehabilitation Project Environmental Assessment, Ongoing – Expected 2019*
- *Indian Rock Dam Environmental Baseline Survey, 2003*
- *Flood Risk Management, Value to the Nation: Indian Rock Dam*
- *Master Manual for Reservoir Regulation – Indian Rock Dam, 1972 and 1987*



Indian Rock Dam 75th Anniversary Ceremony, October 2017

- *Pennsylvania Chesapeake Watershed Implementation Plan Phase 1, 2010*
- *Pennsylvania Chesapeake Watershed Implementation Plan Phase 2, 2012*
- *Wildlife Management Current Practices at Baltimore District Dry Dam Projects, 1982*

1.8 PERTINENT PROJECT INFORMATION

Table 1-1 below provides pertinent information regarding existing storage capacity at Indian Rock Dam.

Table 1-1: Water Storage Capacity and Related Pertinent Data at Indian Rock Dam.

	Elevation (Feet NGVD)	Storage (Acre-feet)	Acres
Top of Dam	452.5	—	—
Maximum Pool (Spillway Surcharge)	445.5	46,000	2,150
Full Flood Control (Spillway Crest)	435	28,000	1,430

Source: 1959 Indian Rock Dam Master Plan

Table 1-2 provides pertinent information regarding acreages by land use classifications at Indian Rock Dam. Acreages were calculated by Geographical Information Systems (GIS) data.

Table 1-2: Current Land Classifications at Indian Rock Dam.

Land Classifications	Acres
Project Operations	95
High-Density Recreation	0
Multiple Resource Management	1,590
Low Density Recreation	2
Vegetative Management	1,588*
Water Surface	70
Restricted	1
Open Recreation	69
Total	1,755

Source: GIS Data

* All lands that are not designated operations, water surface, or low density recreation, fall under vegetative management.

2.1 PHYSIOGRAPHIC SETTING

2.1.1 Ecoregion Overview

Indian Rock Dam is located within the Piedmont Uplands Ecoregion, which stretches from Washington D.C. in the south to Philadelphia in the north. The ecoregion is defined by rounded hills, low ridges, relative high relief, and narrow valleys and is underlain by metamorphic rock. The Susquehanna River is the major water body found within the ecoregion. Ruggedness of the terrain increases towards the river, where relief can reach upwards of 600 feet. The Piedmont Uplands Ecoregion is a subset of the larger Northern Piedmont Ecoregion.

2.1.2 Climate

Indian Rock Dam is located within a portion of the Susquehanna River Basin, which falls within the National Oceanic and Atmospheric Administration (NOAA) Climate Division 36-4 (Pennsylvania – Lower Susquehanna). This area is characterized by a temperate climate, with the average annual temperature in 2017 being approximately 54 degrees Fahrenheit and the average annual precipitation being approximately 42 inches. The greatest monthly precipitation in the basin occurs from May through August and the least precipitation occurs in the late fall and winter. The winters are not considered severe, but are usually accompanied by moderate to heavy snowfall.

2.1.3 Topography

Indian Rock Dam falls within the Uplands Section of the Piedmont Physiographic Province, which is characterized by broad, rounded to flat-topped hills and narrow valleys. The underlying metamorphic rock type is mainly schist, gneiss, and quartzite, with some saprolite.

The project occupies a narrow, shallow valley. The project site is a relatively flat and open area with a slight southward slope. The region surrounding the site has land used for agricultural purposes (farming and open pasture) and timber.

2.1.4 Hydrology

Codorus Creek is a 42.4-mile long tributary of the Susquehanna River, which falls entirely within York County, Pennsylvania. The source of the stream is located just 2 miles north of the Pennsylvania-Maryland line. The Main Branch, also referred to as the West Branch, flows northwest to Menges Mills, then turns northeast and flows through Spring Grove and New Salem. Indian Rock Dam is located less than a mile upstream of the confluence between the West Branch and the South Branch. Codorus Creek then flows through the city of York and continues until it meets the Susquehanna River approximately 15 miles downstream of the Dam near the community of Saginaw.

The normally dry reservoir area has a storage capacity of 28,000 acre-feet (9.1 billion gallons) at spillway crest and controls a drainage area of 94 square miles, equivalent to 41 percent of the Codorus Creek watershed upstream from the city of York.

2.1.5 Soils, Sedimentation, and Shoreline Erosion

The project's soils are primarily derived from Glenville, Codorus, Lindside, Elk, Mt. Airy and Manor, and Conestoga silt loams. Most of these soils are highly productive, well drained, and well suited to agricultural practices. Most soils on project lands have less than 15 percent slopes, except for Mt. Airy and Manor soils that have between 3 to 60 percent slopes and Glenelg silt loams that have between 3 to 25 percent slopes.

Two borrow areas immediately southwest from the existing embankment were used to construct the earthen dam. The material obtained from the borrow areas was principally composed of brown silt, some sand, and traces of clay and small rock fragments. Borrow areas and existing soil composition are detailed in Figure 2-1 on Page 2-5.

Sedimentation and shoreline erosion are not major concerns at Indian Rock Dam, because the dam is dry. Part of the Codorus Creek Improvement Project, which USACE plays a role in, includes the protection of bank slopes.

2.2 ECOREGION AND NATURAL RESOURCES ANALYSIS

Natural resources include the vegetation, wetland, wildlife, fisheries, and aquatic resources, and the endangered and threatened species present near Indian Rock Dam.

2.2.1 Vegetation

The land within and surrounding the Indian Rock Dam drainage area can be separated into two categories, the valley areas and the slope/upland areas. Most of the land within the valley areas has been previously disturbed by human activities and includes agricultural fields, abandoned fields, and some bottomland forests. Most of the vegetative ecosystems remain in immature stages of succession as a result of human disturbances.

The forested areas that exist in the area are remnant of the natural vegetative cover. Indian Rock Dam is located within the transition zone between Northern Oak-Chestnut and Southern Oak-Hickory forest communities. Species composition differ between the bottomlands and uplands forested areas. Species such as beech, red oak, and basswood are dominant in bottomland forests, while species such as chestnut oak and white oak dominate upland forested areas. Very little primary vegetation remains, although groups of remnant trees exist along Codorus Creek. Forested areas on the project range from a narrow continuous strip along the creek to areas of several acres. No other silviculture practices have been employed by USACE on project lands, except timber sales, which have resulted from the theft of several walnut trees.

The slope/upland areas are mostly open, due to the result of past farming practices. These open-land areas are essential for small game wildlife. In order to support a healthy diversity of open game species, the Pennsylvania Game Commission continues to maintain and enhance the following habitat elements: 1) domestic grain and seed producing annual plants such as corn, wheat and millet; 2) domestic perennial grasses and herbaceous legumes such as timothy, alfalfa, and reed canary grass, 3) wild perennial grasses and weeds such as goldenrod, ragweed and pokeweed; and 4) deciduous trees, shrubs or vines such as oaks, dogwoods, grapes and briars.

There are also several private agricultural leases within project lands. Common crops include corn, soybeans, wheat, and hay.

2.2.2 Wetlands

There are numerous natural and constructed wetlands located on the project lands, totaling around 275 acres. A majority of the wetlands are Freshwater Forested/Shrub with PFO1A classification. See Table 2-1 below for a breakdown of the PFO1A classification. There are approximately 213 acres of Freshwater Forested/Shrub wetlands on project lands. Other major wetlands within project lands include Riverine totaling 43 acres, Freshwater Emergent totaling 14 acres, and Freshwater Pond totaling 3 acres. Figure 2-2 on page 2-6 shows the four types of wetlands that can be found at York Indian Rock.

Table 2-1. PFO1A Wetland Classification Summary.

Code	Name and Class	Description
P	Palustrine (System)	All nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens.
FO	Forested (Class)	Characterized by woody vegetation that is 6 meters in height or taller.
1	Broad-Leaved Deciduous (Sub-class)	Wetland includes woody trees or shrubs with relatively wide, flat leaves that are shed during the cold or dry season.
A	Temporary Flooded (Water Regime)	Surface water is present for brief periods during the growing season, but the water table usually lies well below the ground surface for most of the season.

Source: National Wetlands Inventory, produced by the United States Fish and Wildlife Service (USFWS).

2.2.3 Wildlife

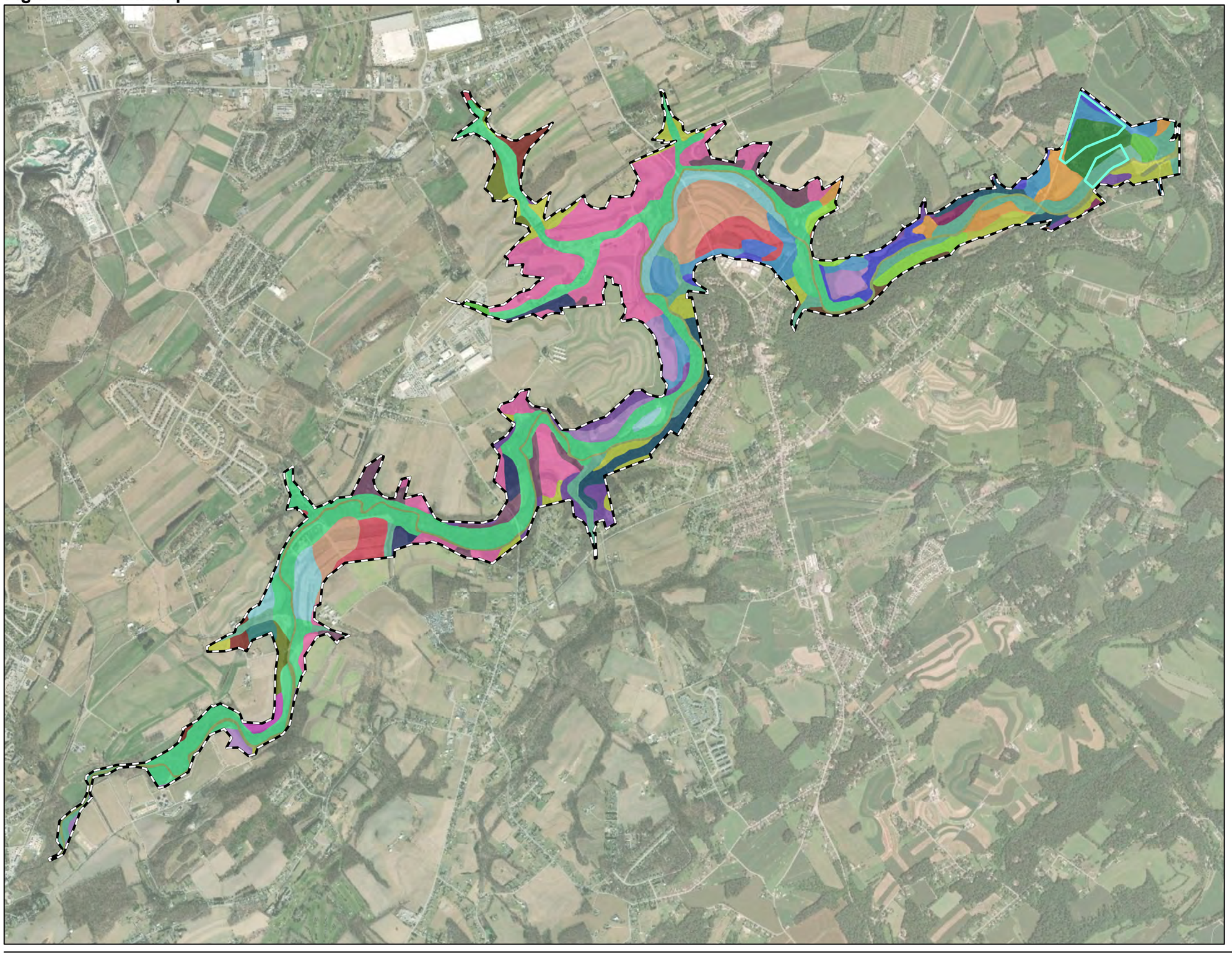
There are numerous game and non-game species present in the vicinity of the project. These species can be broken down into two major categories, open land wildlife and woodland wildlife. Open-land wildlife includes birds and mammals commonly associated with crop fields, meadows, pastures and non-forested overgrown lands. Examples of open-land wildlife in the project area are eastern cottontail rabbits, ring-necked pheasants, skunks, mourning doves, woodchucks, hawks, owls and songbirds. Woodland wildlife in the Indian Rock Dam area includes birds and mammals such as raccoons, red foxes, opossums, white tailed deer, ruffed grouses, grey squirrels, black bears, wild turkeys, and long-tailed weasels.

USFWS produced a wildlife conservation and game management plan in 1957, approved by the Pennsylvania Game Commission (PGC), the Secretary of the Army, and the Assistant Secretary of the Interior. This plan gives the Commonwealth of Pennsylvania a 25-year renewable license to develop, use, and control, for the purpose of wildlife and game management, with the exception of fish, and to administer and enforce the laws of the Commonwealth pertaining to all fee-simple acres of the project except the 95 acres contiguous to the dam withheld for project operations. Although the leased project lands used for agricultural and grazing purposes did not fall under this plan, PGC used these leases to increase the food supply for wildlife on the project. The goals of this plan to conserve wildlife and promote certain species, including deer and pheasants, to provide an annual recreational hunting harvest are complementary to the objectives of both PGC and USACE.

2.2.4 Threatened and Endangered Species

As of 2018, there is only one federally listed endangered or threatened species known to exist within the project impact area, the bog turtle (*Clemmys muhlenbergii*).

Figure 2-1 // Soil Map



Indian Rock Dam
Master Plan

Soil Map

Legend

- Borrow Areas
- IRD Boundary

USDA Soil Classifications

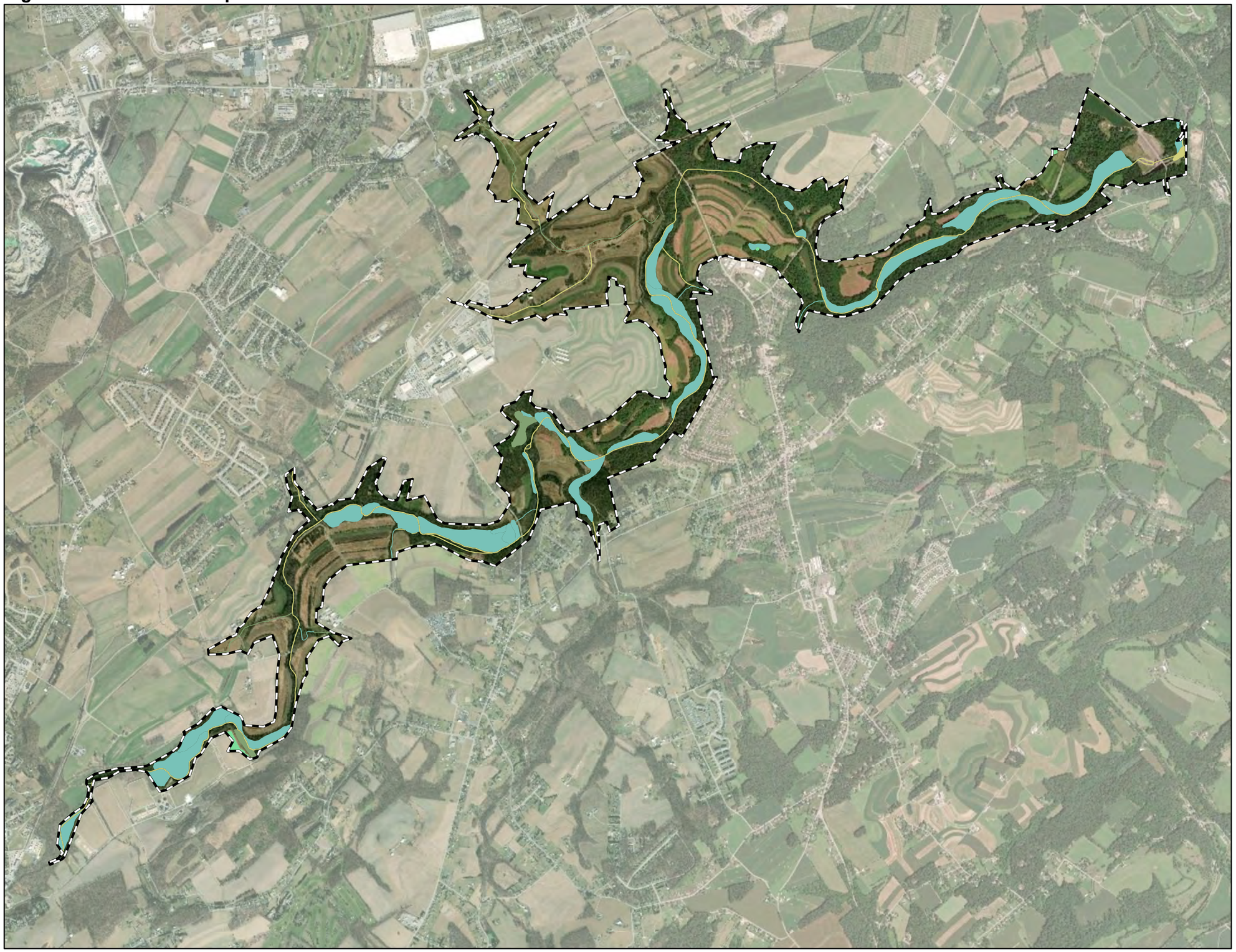
- Ba
- Cd
- CeB
- CeC
- CkA
- CkB
- Cm
- CnB
- CnC
- DuA
- DuB
- DuC
- EkA
- EkB
- GbB
- GbC
- GbD
- GdA
- GdB
- Lw
- MOB
- MOC
- MOD
- MOE
- MRF
- Pt
- Uc
- UdB
- W

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 2,500 5,000 Feet

N

Figure 2-2 // Wetlands Map



Indian Rock Dam
Master Plan

Wetlands Map

Legend

IRD Boundary

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 2,500 5,000 Feet

N

The bog turtle is the smallest turtle found in the United States and lives in a mosaic of open, sunny, spring-fed wetlands and scattered dry areas. Major threats to the species include the animal black market, erratic weather patterns and the alteration of hydrological cycles, habitat fragmentation by roads and other development, and invasive species, like Purple Loosestrife, that dry out large areas of suitable habitat.


Bog Turtle.

There are three migratory birds that are known to breed within the project boundary that are USFWS Birds of Conservation Concern and are protected under the Migratory Bird Treaty Act, the cerulean warbler (*Dendroica cerulea*), the red-headed woodpecker (*Melanerpes erythrocephalus*), and the wood thrush (*Hylocichla mustelina*). The cerulean warbler is a small songbird that likes to breed in older deciduous forests, especially along river valleys, with tall trees and an open understory. In recent years, their numbers have declined due to the loss of suitable habitat and increase of cowbird parasitism in these smaller patches of forest. The red-headed woodpecker favors open country lands, forest edges, and groves of tall trees in open country over unbroken forest habitats. Once a very common species throughout the east, it has been decreasing and is predicted to continue to decrease in numbers. Reasons for decline include loss of potential nesting sites, competition with other birds for nest cavities, and collision with automobiles. The Wood Thrush breeds in the understory of deciduous woodlands and are more numerous in damp forests and near streams. In recent decades, numbers have declined drastically. As forests are cut into smaller fragments, cowbirds are able to take over wood hrush nests, thus resulting in thrushes raising mainly cowbirds rather than young of their own.


Cerulean Warbler.


Red-headed Woodpecker.


Wood Thrush.

Bald eagles can also be found on project lands. Bald eagles were removed from the federal list of threated or endangered species in August of 2007. Although bald eagles are no longer a federally threatened or endangered species, the species is still protected under the Bald and Golden Eagle Protection Act, and known nesting locations are protected from impact.

Insect pollinators, including bees, pollen wasps, ants, flies, butterflies, moths, and flower beetles, in the region have also decreased drastically in recent years. Alongside mammal pollinators, like birds and bats, these insects help pollinate over 75 percent of the United States' flowering plants and nearly 75 percent of the United States' crops. One species of the frittillary butterfly is considered endangered due to the loss of habitat through fragmentation and frequent water inundation. PGC continues to restore the habitat of the butterfly and is considering supporting a

"trap and transfer" project in order to relocate individuals to habitats away from frequently flooded areas.

2.2.5 Invasive Species

Invasive species are defined as non-native species whose introduction into an ecosystem is likely to cause environmental, human, or economic harm. Non-native, or exotic species, have not evolved with the natural checks and balances that normally keep population growth in check, thus they can spread rapidly and completely take over natural areas. These species are often difficult and expensive to manage. Like almost all ecological systems, Indian Rock Dam hosts several invasive species, both terrestrial and aquatic.

The biggest hurdle for project lands managed by PGC is invasive species control. There are numerous species present, including Japanese silt grass (*Microstegium vimineum*), poison hemlock (*Conium maculatum*), Johnson grass (*Sorghum halepense*), Japanese honeysuckle (*Lonicera japonica*), and purple loosestrife (*Lythrum salicaria*). Japanese silt grass is a summer annual and spreads quickly through seed in already disturbed soils in both sun and shade. Seeds can remain viable for up to 3 years in soils, so it is important to remove the grass before it goes to seed. It can take over large patches and out compete native grasses and plants. Poison hemlock is a biennial weed that is acutely toxic to people and animals. It can spread quickly in sunny areas, fields, vacant lots, and along roadsides. Johnson grass is a grass native to the Mediterranean region that was originally used to stop erosion on crop fields and pastures. It grows and spreads quickly which allows it to choke out other crops planted by farmers. It can now be found in other open and disturbed lands, like abandoned fields, rights-of-ways, forest edges, and along streambanks. It has also become resistant to common herbicides, making it very hard to eradicate. Japanese honeysuckle is a twining vine able to climb up trees reaching heights of over 30 feet. The vines aggressively grow over and choke out native shrubs and trees, which can ultimately create mat-like monocultures that alter the succession cycle. Purple loosestrife is a perennial plant that spreads rapidly in wetlands, shorelines, and roadside ditches. It grows in thick, dense patches and can crowd out native plants and reduce food, shelter, and nesting sites for wildlife, including birds, frogs, and turtles. Purple loosestrife is a major threat to the bog turtle as seen in the previous section.


Poison Hemlock.

2.2.6 Mineral and Timber Resources

Much of the area around Indian Rock Dam is underlain with metamorphic rock, including schist, gneiss, quartzite, and some saprolite.

The primary timber type of the project lands is northern hardwoods, with a significant presence of walnut. The forest resources at the project are well-suited for timber production, but have suspended timber sales have not occurred since the early 1970s. Over the years, there have been some walnut theft issues. There are talks to reconsider allowing walnut timbering as a

source of revenue for the project. In accordance with ER 1130-2-550, all forest products generated through clearing, salvage operations, sanitation cuts, or operation and maintenance, and not required for USACE use, will be sold after approval of a disposal plan.

2.2.7 Water Quality

Indian Rock Dam falls within the Codorus Creek watershed. The watershed has a wide diversity of land uses including agricultural, forest, residential, commercial, and industrial. The water quality of the Codorus drainages varies from those supporting wild trout populations, to those heavily influenced by watershed modifications. Field observations indicate good water quality, supporting a diversity of benthic macroinvertebrate and fish populations. The streams in the watershed are far from reaching their full potential as a biological and recreational resource due to severe bank erosion, high sediment loads, industrial pollution, and thermal warming.

There are also concerns about the quality of the surface water within and adjacent to the project due to the presence of a papermill upstream of the site. The paper mill is currently being monitored for pollution by the Department of Environmental Protection.

2.3 CULTURAL RESOURCES

2.3.1 Prehistoric

Prehistoric cultural periods in south-central Pennsylvania have typically been separated into 4 periods: Paleo-Indian (15,000 BC – 8000 BC), Archaic (8000 BC – 1000 BC), Woodland (1000 BC-1500 AD), and Proto-Historic (1500 AD – 1750 AD).

A hunting and gathering lifestyle characterized the Paleo-Indian Period. Small nomadic groups traveled frequently in search of food and other resources. Only short-term base camps would have been created at a variety of locations, though it is possible that these base camps would have been revisited on a periodic basis.

Due to the changes in subsistence patterns and technological variation over the 7,000-year period, the Archaic Period is typically divided into the Early (8000 BC – 6000 BC), Middle (6000 BC – 4000 BC), and Late (4000 BC – 1000 BC) Archaic Periods. Hunting and gathering was still the most popular lifestyle during the entirety of this period. Seasonally occupied base camps are the most common site types associated with this period. During the Late Archaic period, population densities increased, and sites became increasingly unique and differentiated. Populations began to locate camps within river valleys due to the stabilization of alluvial environments.

The Woodland Period is also divided into Early (1000 BC – 200 AD), Middle (200 AD – 1000 AD), and Late (1000 AD – 1500 AD) Periods. During this period, populations continued to increase, social organizations gained in complexity, settlements became more permanent and sedentary, and agriculture was introduced. Food also became seasonally abundant due to the creation of ceramics vessels and subterranean storage pits. Seasonal hunting and gathering still dominated in the Early and Middle Woodland Periods, while agriculture and a more sedentary village life became more popular in the Late Woodland Period. The bow and arrow was also introduced in the Late Woodland Period.

The Susquehannock Indians moved into central Pennsylvania during the Proto-Historic Period, gradually replacing the earlier Woodland cultures. The Susquehannocks were an Iroquoian group that typically built large stockade villages near major rivers in central Pennsylvania. They later

controlled the fur trade in the early 17th century. By 1660, they dominated the entire region. In 1681, William Penn founded the Pennsylvania colony to establish a safe haven for persecuted religious minorities. At the time, most lands were controlled by the Susquehannock, Shawnee, and Delaware Indians and Penn forbade intrusion into their territories until the lands had been legally purchased, slowing the rate of development of the frontier. In 1736, a treaty between the European settlers and the Iroquois ceded all lands west of the Susquehanna River to the Penn's. The lands making up present-day York County were included in this treaty. The town of York was established in 1741, while York County wasn't established until 1749 after it broke away from Lancaster County due to the distance from the main governing body, Lancaster Court. York County was a focal point for early industry, especially regarding iron works since there was plenty of iron ore for extraction.

2.3.2 Historic

During the mid-18th century and early 19th century, there were numerous industrial sites operating within county lines. Also during this time period, York County was involved in major bouts of warfare. Battles and attacks from the French and their Native American allies were common during the French and Indian Wars in the late 1750s. York County was also involved in the Revolutionary War, when they provided military support by forming militias and dividing the county into five battalions. Toward the end of the war, in 1777 and 1778, the town of York served as the meeting location of the Continental Congress. Growth continued during the Industrial Revolution. Then, during the Civil War, many residents volunteered as Union soldiers, but the town was taken over by the Confederate Army in 1863. Later, the City of York became a commercial center during the mid-20th century.

2.3.3 Previous Investigations

There have been no previous cultural investigations or studies completed at Indian Rock Dam.

2.3.4 Recorded Cultural Resources

There are no known historic structures or archaeological sites in the project boundary that are eligible for or listed on the National Register of Historic Places (NRHP), though there are almost 100 historic properties and districts located within York County. The Samuel Stoner Homestead, a historic home and farm, is located just outside of the project boundary off of Indian Rock Dam Road. USACE recently received funding to conduct a study to determine whether any project features at the site are eligible for NRHP. There is no set time frame for this study, but it is expected to be completed by 2020.

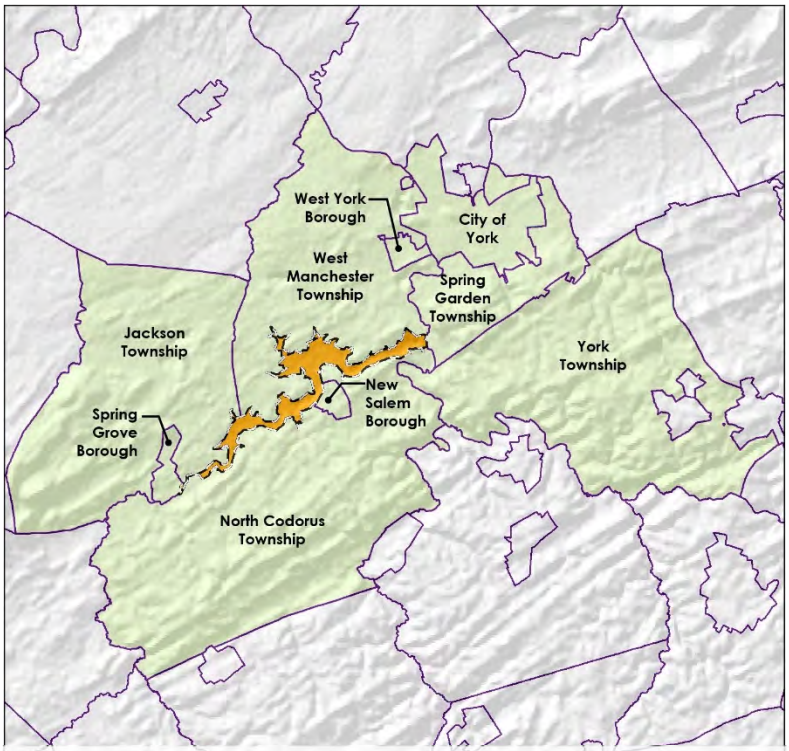
2.3.5 Long-term Objectives for Cultural Resources

There has been no Cultural Resources Management Plan (CRMP) completed for Indian Rock Dam.

2.4 DEMOGRAPHIC AND ECONOMIC RESOURCES

2.4.1 Current Demographics, Economics, Trends and Analysis

The zone of interest for the socio-economic analysis of the Indian Rock Dam project consists of York County. The entire project area falls within York County. There are numerous Townships and Boroughs that are located within York County and are in the vicinity of Indian Rock Dam, including York Township, West Manchester Township, Spring Garden Township, North Codorus Township, Jackson Township, New Salem Borough, West York Borough, and Spring Grove Borough. The City of York is also located upstream of the dam. For analysis purposes, only county wide data was used to calculate the demographic data for the zone of interest. The tables include data for the townships, boroughs, and cities, but these are only used for context.



Surrounding Townships and Boroughs.

2.4.2 Population

According to the 2016 American Community Survey (ACS) 5-year Population estimate, the total population for the zone of interest is 440,604 people, up from 428,175 people in 2010. The population in the zone of interest makes up approximately 3.5 percent of the total population of Pennsylvania (12,783,977 people). From 2016 to 2030, the population in the zone of interest is expected to increase to 484,497 people. The City of York is also near the site and has a total population of 43,848 people, up from 43,592 people in 2010. All Townships and Boroughs in and around Indian Rock Dam saw a slight increase in population from 2010 to 2016 with the exception of West York Borough, which saw a decrease of 6 people. Table 2-2 below shows these population estimates and projections.

Table 2-2: Population Estimates and 2030 Projections.

Geographical Area	2010 Population Estimate	2016 Population Estimate	2030 Population Projection
Pennsylvania	12,612,705	12,783,977	13,759,594
York County (Zone of Interest)	**428,175**	**440,604**	**484,497**
Adjacent Municipalities			
City of York	43,592	43,848	No Data
York Township	27,225	28,301	No Data
West Manchester Township	18,668	18,851	No Data
Spring Garden Township	12,393	12,840	No Data
North Codorus Township	8,780	8,996	No Data
Jackson Township	7,280	7,740	No Data
West York Borough	4,586	4,580	No Data
Spring Grove Borough	2,303	2,358	No Data
New Salem Borough	604	813	No Data

Source: U.S. Bureau of Census, Population Division (2010 & 2016 Estimates) and The Center for Rural Pennsylvania, Pennsylvania Population Projections 2010-2040 (2030 Projection).

The distribution of the population among gender, as shown in Table 2-3 below, is approximately 51 percent (222,946) female and 49 percent (217,658) male in the zone of interest, which is the same as Pennsylvania and the City of York who also have a slightly larger female population than male population. All townships and boroughs near the project site, with the exception of North Codorus Township, Jackson Township, and New Salem Borough have a slightly larger female population than male population.

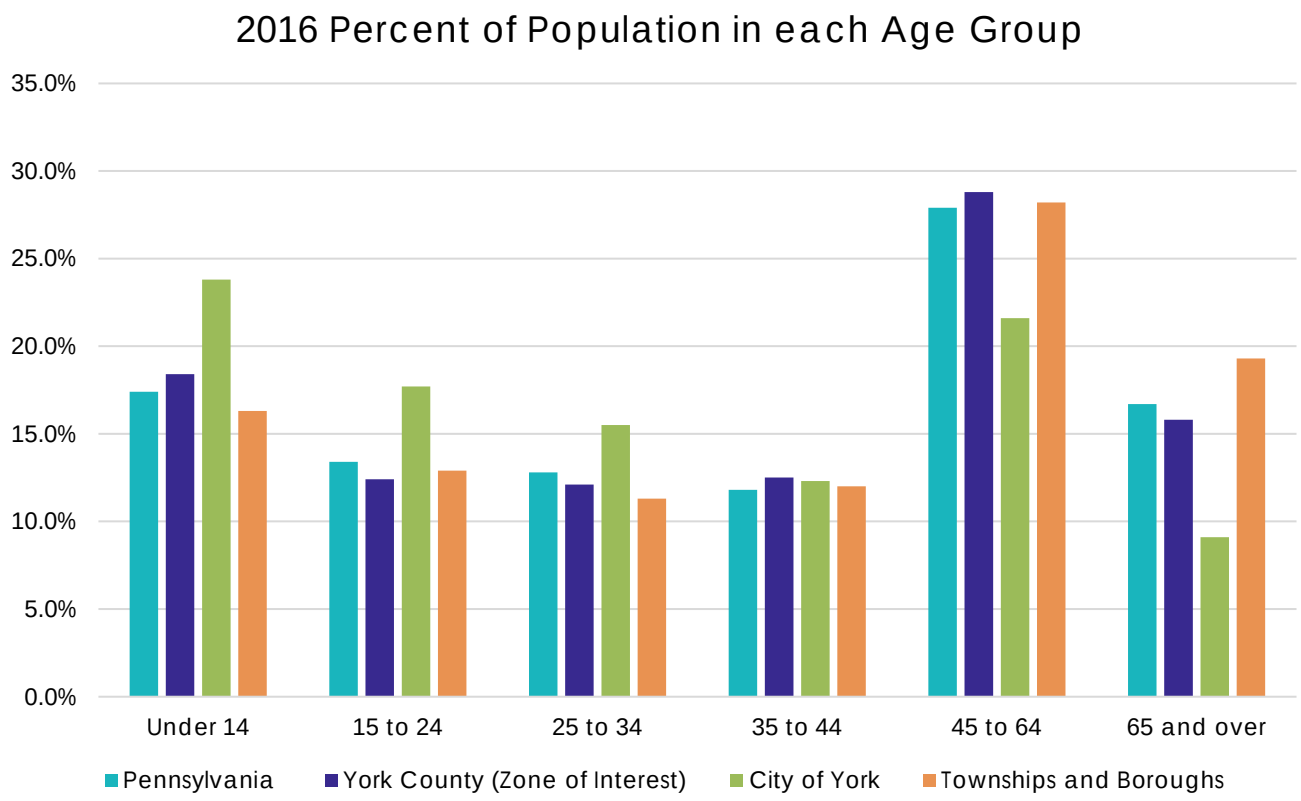
Table 2-3: 2016 Percent of Population Estimate by Gender.

Geographical Area	Male	Female
Pennsylvania	6,251,365	6,532,612
York County (Zone of Interest)	**217,658**	**222,946**
Adjacent Municipalities		
City of York	21,482	22,366
York Township	13,466	14,835
West Manchester Township	9,268	9,583
Spring Garden Township	5,996	6,844
North Codorus Township	4,696	4,300
Jackson Township	3,906	3,834
West York Borough	2,283	2,297
Spring Grove Borough	1,091	1,267
New Salem Borough	416	397

Source: U.S. Bureau of Census, 2012-2016 ACS 5-Year Estimates (2016 Estimate).

Table 2-4 below shows the population by age group. The distribution by age group is relatively similar among York County, the state of Pennsylvania, and the surrounding Townships and Boroughs in terms of percentages of the respective population trending older, while the City of York trends younger. The top age group for York County, the State of Pennsylvania, and the surrounding Townships and Boroughs is between 45 and 64 years. The top age group for the City of York is between 0 and 14 years. The City of York has higher percentages of younger people (Under 14, 15 to 24, and 25 to 34 age groups), and lower percentages of older people (45 to 64 and 65 and over age groups) than the state of Pennsylvania, York County, and the surrounding Townships and Boroughs. All four statistical areas have similar percentages of middle-aged people (35 to 44 age group).

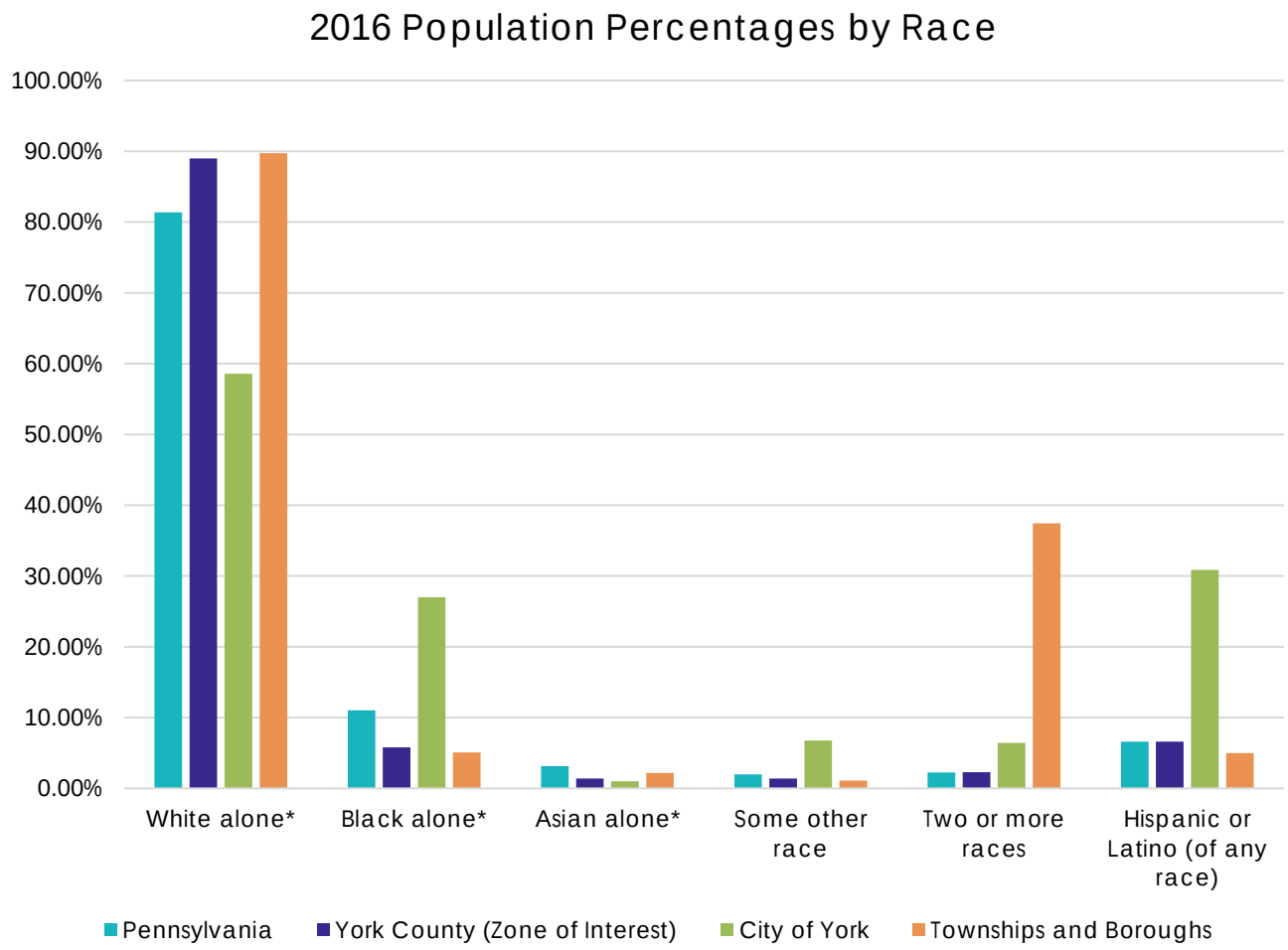
Table 2-4: 2016 Percent of Population by Age Group



Source: U.S. Bureau of Census, 2012-2016 ACS 5-Year Estimates (2016 Estimates)

Population by race is displayed in Table 2-5 on the following page. For the zone of interest, approximately 89.0 percent of the population is White, 5.8 percent Black, 1.4 percent Asian, 1.4 percent Some other race, and 2.3 percent Two or more races. At the time of data collection, 6.6 percent of the York County population identified as Hispanic/Latino. The entire state of Pennsylvania, the City of York, and the Surrounding Townships and Boroughs, also have majority white populations with 81.4 percent, 58.6 percent, and 89.7 percent respectively. The City of York has the most diverse population with 58.6 percent White, 27.0 percent Black, and 1.0 percent Asian. 6.8 percent Some other race, 6.4 percent Two or more races. The City of York also has the largest Hispanic or Latino population at 30.9 percent.

Table 2-5: 2016 Population Percentages by Race

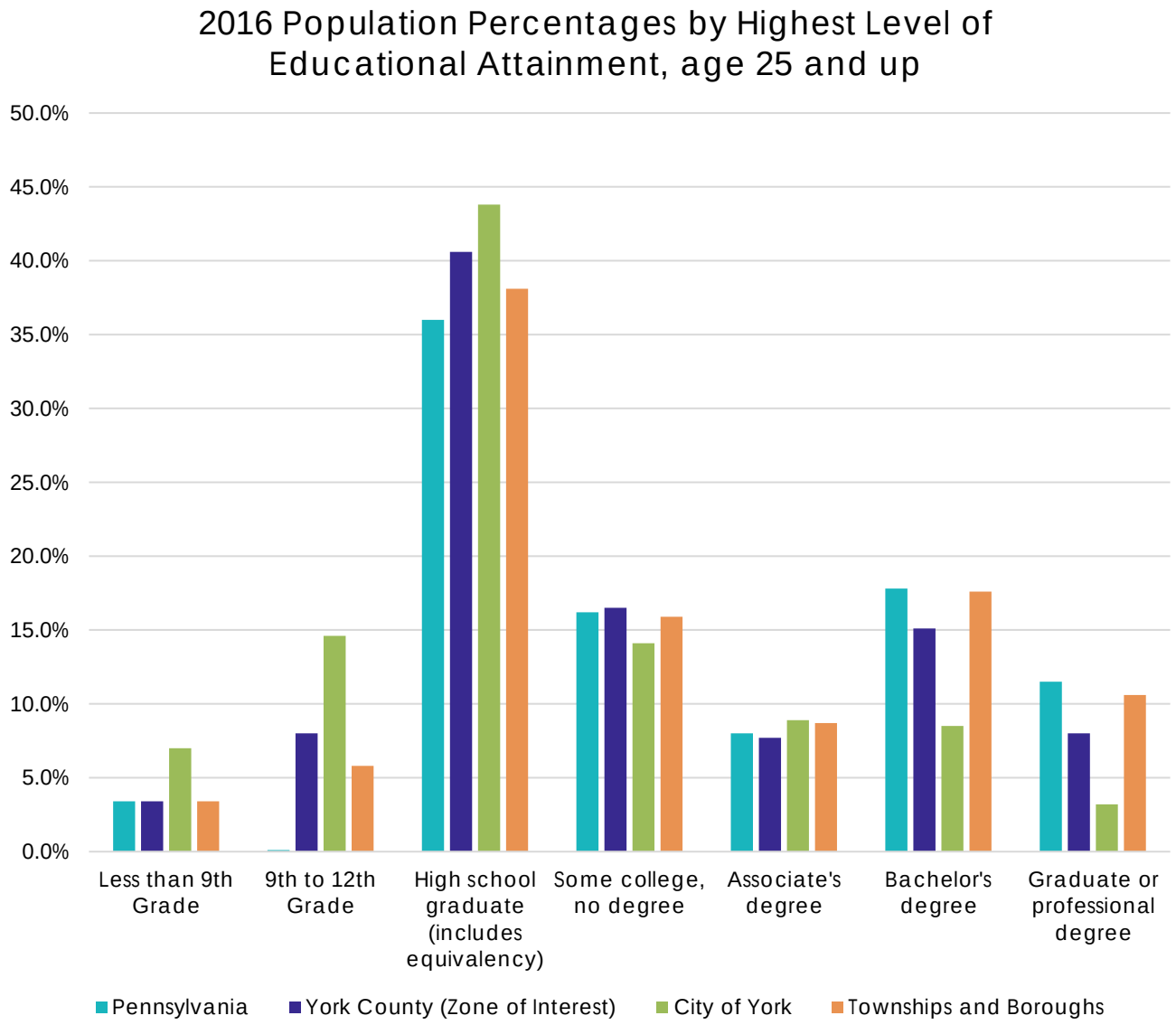


Source: U.S. Bureau of Census, 2012-2016 ACS 5-Year Estimates (2016 Estimates).
* Note that alone in this case means only one race and does not say anything about ethnicity. There may be some overlap with the Hispanic or Latino category.

2.4.3 Education and Employment

In the zone of interest, for approximately 40.6 percent of the population age 25 and older, the highest level of education attained is a high school diploma or equivalent (123,672 people). Approximately 16.5 percent have some college education, but no degree (50,196 people), 15.1 percent have a Bachelor's degree (45,907 people), 7.7 percent have an Associate's degree (25,356 people), 8.0 percent have a Graduate or Professional degree (24,485 people), 8.0 percent have a 9th to 12th grade education (24,425 people), and 3.4 percent have less than a 9th grade education (10,484 people). The State of Pennsylvania and the Surrounding Townships and Boroughs have similar educational attainment trends as York County. Most of the population in the City of York have a high school diploma or equivalent (43.8 percent), but there are fewer people with a bachelor's degree (8.5 percent) or a Graduate or Professional degree (3.2 percent) than in the other areas of interest. Table 2-6 on the following page shows the highest level of education attained for persons residing in the state of Pennsylvania, York County, the City or York, and the Surrounding Townships and Boroughs.

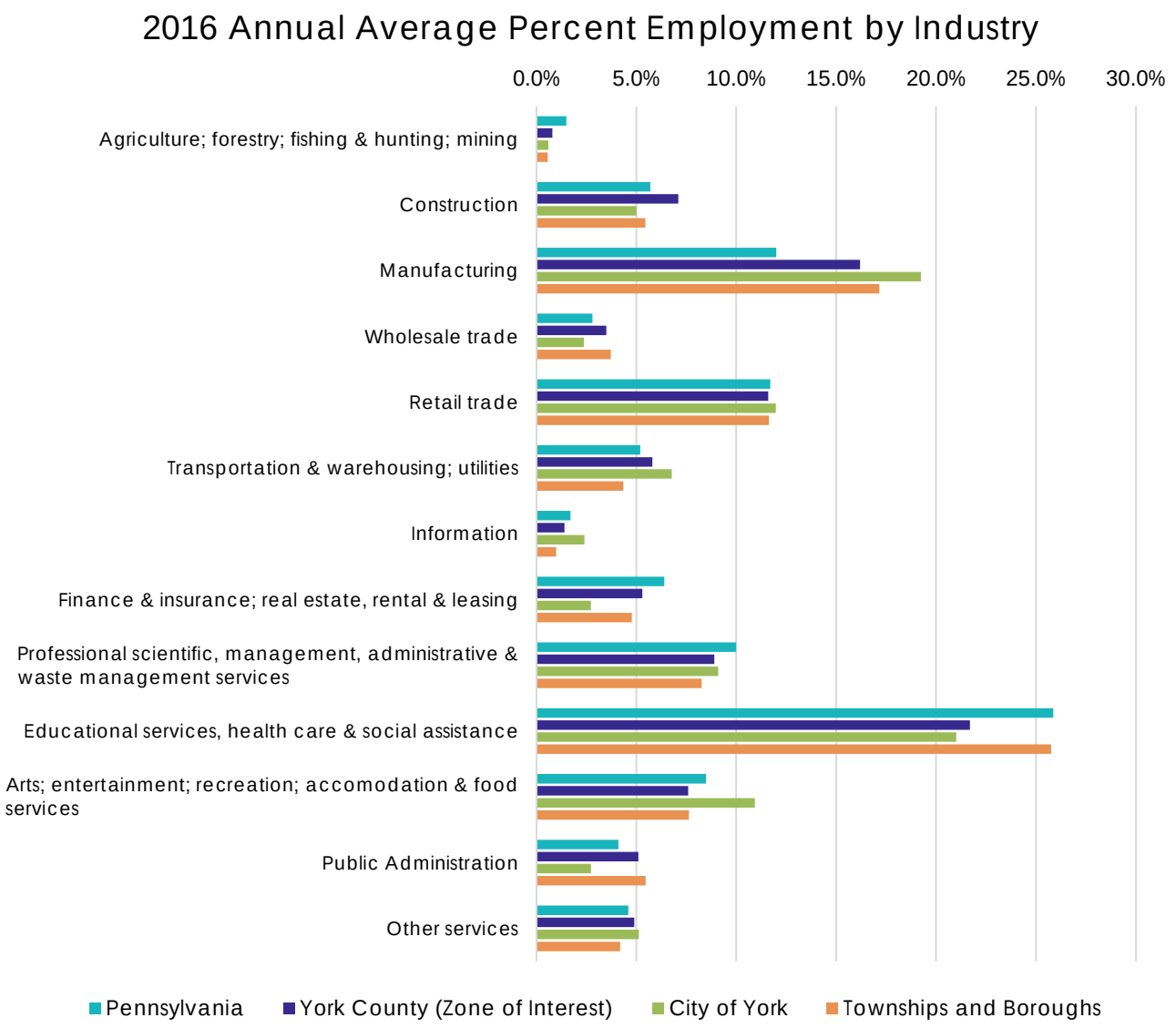
Table 2-6: 2016 Population Percentages by Highest Level of Educational Attainment, Population 25 Years of Age and Older.



Source: U.S. Bureau of Census, 2012-2016 ACS 5-Year Estimates (2016 Estimates)

The largest employment sector in the zone of interest is in the Educational Services, Health Care and Social Assistance industry at approximately 22 percent, followed by 16 percent in Manufacturing, 12 percent in Retail Trade, 9 percent in Professional Scientific, Management, and Administrative, and Waste Management Services, 8 percent in Arts, Entertainment, Recreation, Accommodation, and Food Service, 7 percent in Construction, 6 percent in Transportation and Warehousing, Utilities, 5 percent in Finance and Insurance, and 5 percent in Public Administration. The remaining industries employed less than 5 percent each of the York County civilian workforce. The top two industries in the State of Pennsylvania, the City of York, and the Surrounding Townships and Boroughs are (1) Educational Services, Health Care and Social Assistance and (2) Manufacturing. Table 2-7, on the following page, shows the distribution of employment by industry.

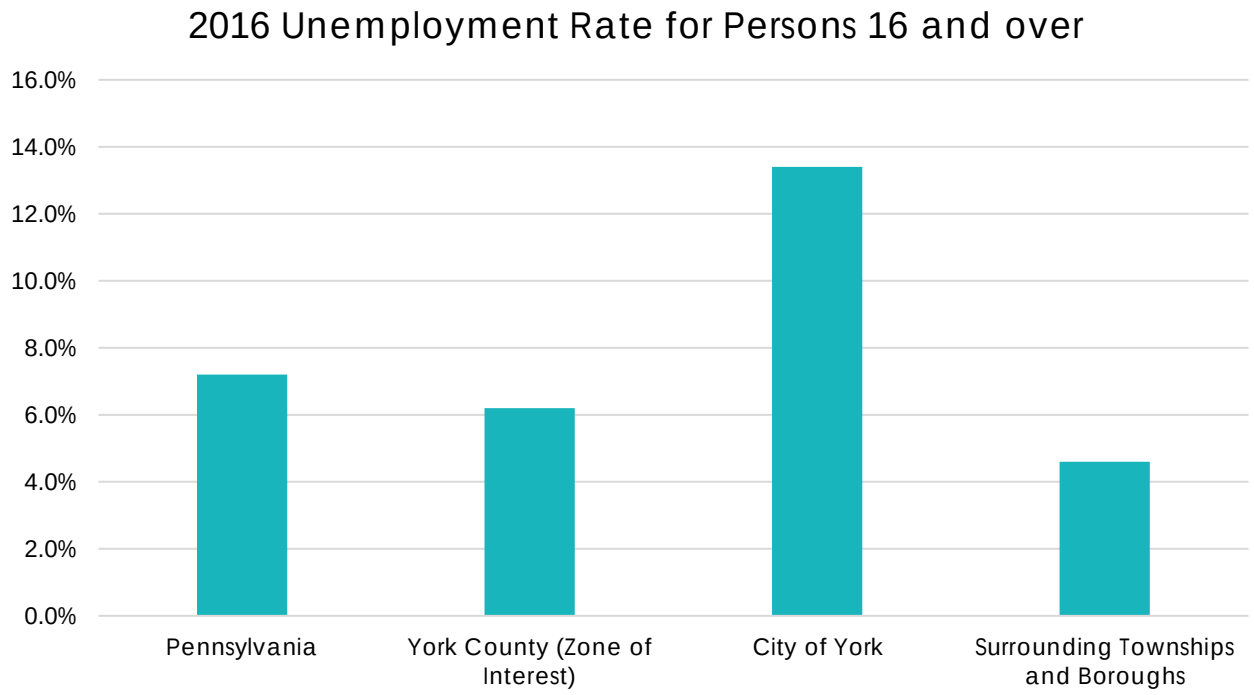
Table 2-7: 2016 Annual Average Percent Employment by Industry.



Source: U.S. Bureau of Census, 2012-2016 ACS 5-Year Estimates (2016 Estimates)

The unemployment rate for persons age 16 and over, within the zone of interest is approximately 6.2 percent and is slightly lower than the unemployment rate for the overall state of Pennsylvania at 7.2 percent, as displayed in Table 2-8. The unemployment rate for the City of York, at 13.4 percent, is higher than the study area and overall state average, while the surrounding townships and boroughs features a lower rate at 4.6 percent. For the surrounding Townships and Boroughs, North Codorus Township has the lowest unemployment rate at 1.8 percent and New Salem Borough has the highest unemployment rate at 9.0 percent. West Manchester Township and West York Borough also have high unemployment rates at 7.4 percent and 6.5 percent respectively. The other 4 townships (York Township at 3.0 percent, Jackson Township at 3.6 percent, Spring Grove Borough at 5.3 percent, and Spring Garden Township at 5.7 percent) have lower unemployment rates than the zone of interest.

Table 2-8: 2016 Unemployment Rate.

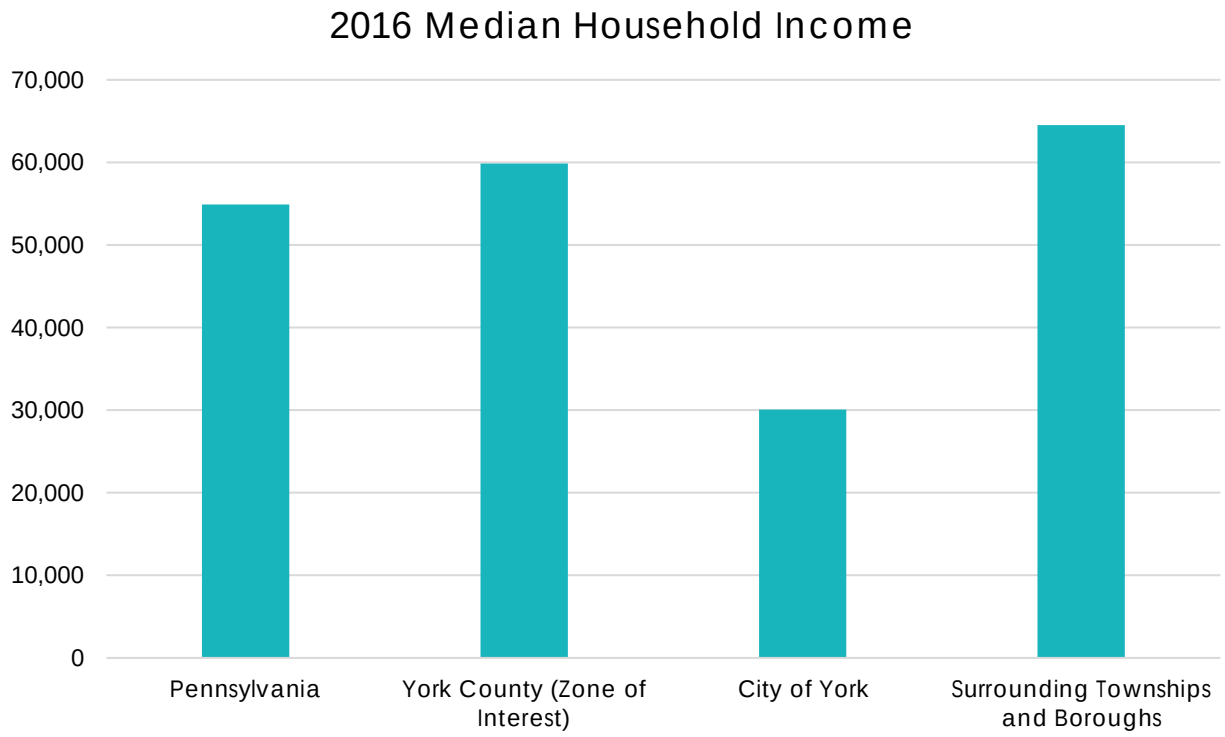


Source: U.S. Bureau of Census, 2012-2016 ACS 5-Year Estimates (2016 Estimates)

2.4.4 Households and Income

There are approximately 4,961,929 households in Pennsylvania, 168,008 households within the zone of interest, 16,280 households within the City of York, and 28,818 households within the surrounding Townships and Boroughs. The median household income, shown on Table 2-9, is higher in York County than Pennsylvania overall. The median household income in York County is $59,863 while the median household income for Pennsylvania is $54,895. Both are higher than the median income for the City of York ($30,068). All three are lower than the median income for the surrounding Townships and Boroughs, which is $64,514. New Salem Borough and North Codorus Township have the highest median household incomes at $81,705 and $75,059 respectively, while West York Borough and Spring Grove Borough have the lowest at $40,611 and $52,419 respectively. The other Townships and Boroughs have higher median household incomes than the zone of interest, state of Pennsylvania, and City of York (West Manchester Township at $60,324; York Township at $62,649; Jackson Township at $66,379; and Spring Garden Township at $70,729).

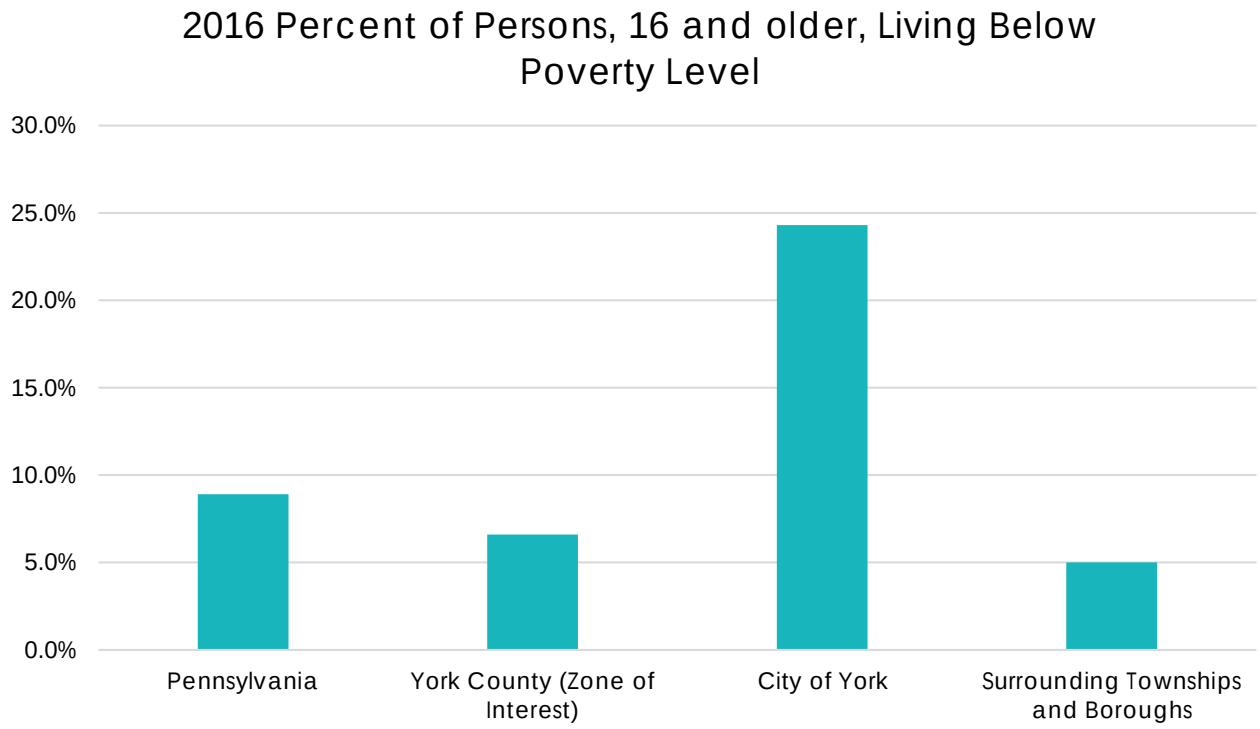
Table 2-9: 2016 Median Household Income.



Source: U.S. Bureau of Census, 2012-2016 American Community Survey 5-Year Estimates (2016 Estimates)

The percent of persons, age 16 and older, living below the poverty level is slightly lower in York County than in the state of Pennsylvania. York County has 6.6 percent of its population living below the poverty level while the state of Pennsylvania has 8.9 percent of its population living below the poverty level. The City of York has more people living below the poverty line (24.3 percent). The surrounding Townships and Boroughs have a smaller percentage of persons living below the poverty level (5.0 percent) than in York County, Pennsylvania, and the City of York. West York Borough and Spring Grove Borough have the highest percentage of persons living below the poverty level at 13.8 percent and 6.4 percent respectively. New Salem Borough and North Codorus Township have the lowest percentage of persons living below the poverty level at 3.3 percent and 3.5 percent respectively. All the other Townships and Boroughs fall around the average (5.0 percent). Table 2-10 shows the distribution of persons living below the poverty level within the zone of interest's county, the state of Pennsylvania, the City of York, and the Surrounding Townships and Boroughs.

Table 2-10: 2016 Percent of Persons, 16 and older, Living Below Poverty Level.



Source: U.S. Bureau of Census, 2012-2016 ACS 5-Year Estimates (2016 Estimates)

2.5 RECREATION FACILITIES, ACTIVITIES, AND NEEDS

2.5.1 Zone of Interest

The primary area of interest for Indian Rock Dam is York County, Pennsylvania. Data from this one-county region provides the basis for summarizing the population characteristics of Indian Rock Dam in the previous section.

2.5.2 Visitation Profile

Most visitors to Indian Rock Dam come from York County. These visitors come with a wide variety of interests, with hunting, hiking, bird watching, and wildlife viewing being the most popular recreation activities. There is no formal tracking system for the number of visitors pursuing these recreation activities at Indian Rock Dam.

2.5.3 Recreation Facilities

Although the primary function of the dam is flood risk management, the project is also used for recreation opportunities around the dam. The only formal recreational facilities within the project area are the 5 small designated parking areas used by hunters, anglers, bird watchers, and wildlife viewers, and the small portion of the Hanover Trolley Trail that passes through part of the flowage easements. Neither formal recreational facilities are managed by USACE. PGC manages and maintains the designated parking areas and the York County Rail Trail Authority (YCRTA) manages and maintains the Hanover Trolley Trail. All other recreational facilities are natural areas and have no physical or permanent structures or surfaces.

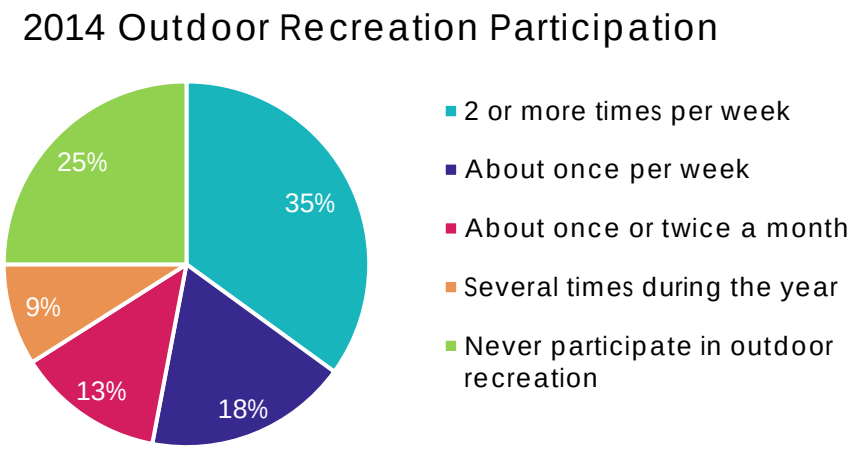
Public lands, like Indian Rock Dam, have allowed nature-based recreation to become an important and growing segment of the regional economy. The existing recreational opportunities and future potential of Indian Rock Dam is of great importance within the project's zone of interest.

2.5.4 Recreation Analysis

Indian Rock Dam passive recreation areas and the water surface of the Main Branch Cordorus Creek add to the attractiveness, vitality, and increased appreciation for the outdoors by users. These areas provide a sense of place and allow nearby urban populations to enjoy outdoor recreation opportunities in a rural, natural setting. Outdoor recreation at Indian Rock Dam primarily falls within land-based recreation. The Main Branch Codorus Creek could provide recreational opportunity for kayaking, fishing, and wildlife viewing. The area around the creek provides great natural areas for hunting, hiking, wildlife viewing, bird watching, and enjoying the great outdoors. Recreation management objectives in this Plan project future direction and actions necessary to meet the public's needs for land and/or water-based recreation.

The most recent recreational trends and analysis for the state of Pennsylvania were summarized in the Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2014-2019, produced by the Pennsylvania Department of Conservation and Natural Resources (PDCNR). Recreation trends findings and analysis within the SCORP are a good representation of the recreation trends in the vicinity of the Indian Rock Dam site. As part of the SCORP, three unique surveys were used in order to better represent Pennsylvanians across the state. Almost three-quarters of respondents said they participate in outdoor recreation activities and over half (approximately 53 percent) do so one or more times per week. Table 2-11 below shows the breakdown of outdoor recreation participation among survey respondents. Pennsylvanians said providing more long-distance trails and pathways and protecting and encouraging more natural settings at outdoor recreation areas and facilities would be the most effective way to participate more in outdoor recreation.

Table 2-11: 2014 Pennsylvania Outdoor Recreation Participation.

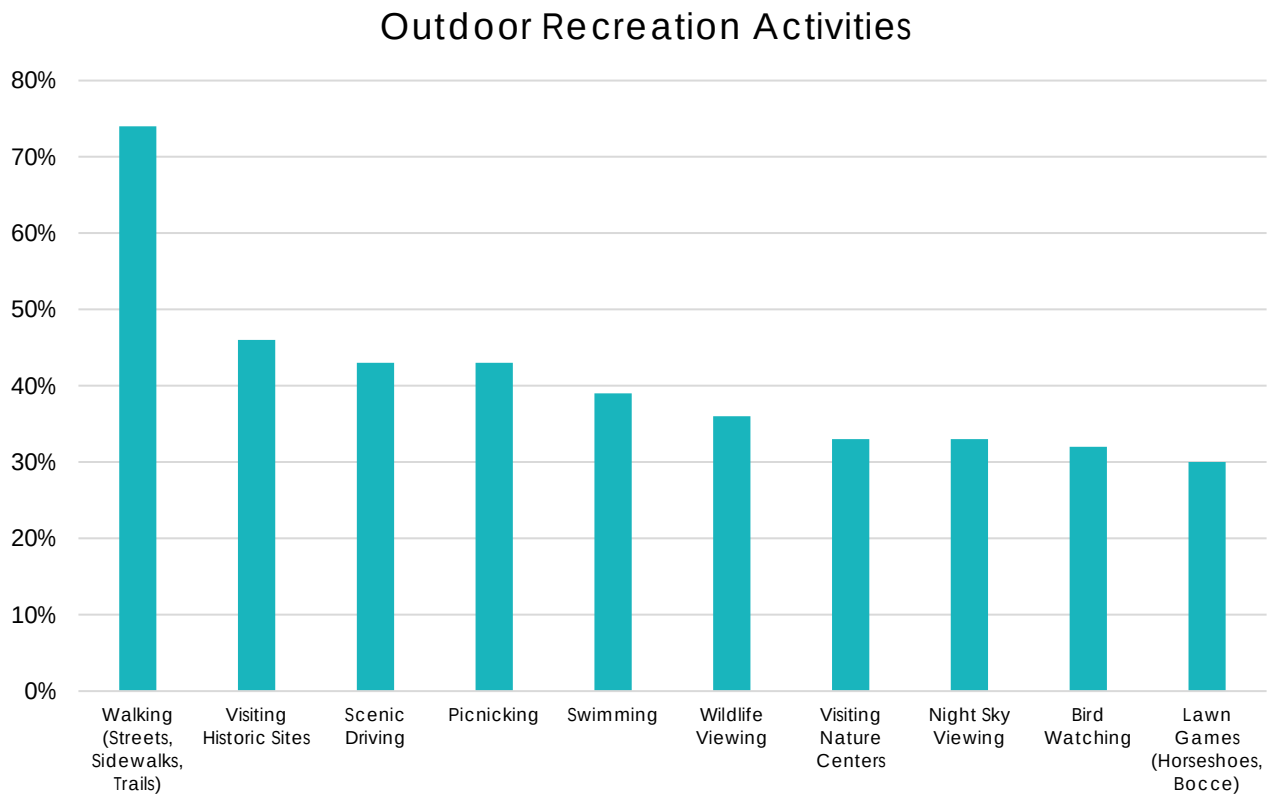


Source: Pennsylvania SCORP 2014-2019, produced by PDCNR.

Pennsylvanians place high value on the recreational and natural amenities in their community. Of 10 choices of what best represents what they value most in a community, 90 percent of respondents listed the trails, natural areas and waterways category as a choice and 75 percent listed the surrounding countryside and farmland as well as local parks and public spaces as top

choices. The next highest choice, residential neighborhoods, was selected by only 35 percent of respondents. These very popular recreational and natural amenities support a wide variety of outdoor recreation activities. The most popular activity by far is walking (74 percent of respondents). Visiting historic sites is the next most popular activity at 46 percent. The remaining top 10 outdoor recreation activities include scenic driving, picnicking, swimming, wildlife viewing, visiting nature centers, night sky viewing, bird watching, and lawn games. Both bird watching and wildlife viewing have seen big gains in participation since 2004. See Table 2-12 below for a percentage breakdown of the top 10 outdoor recreation activities in 2014.

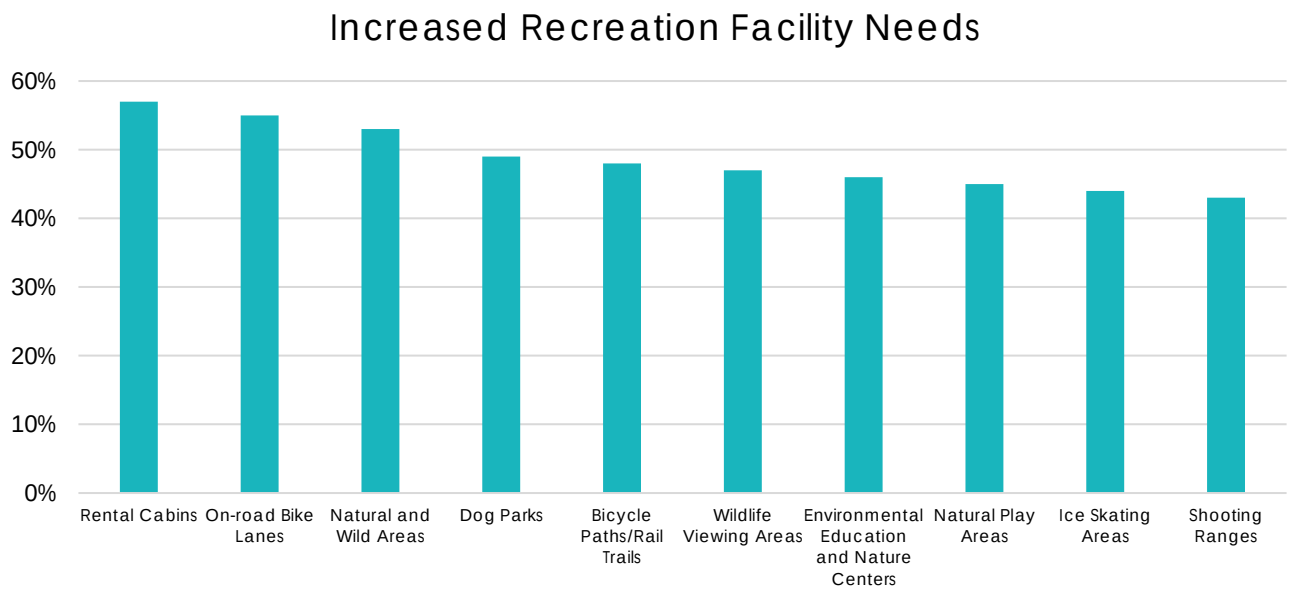
Table 2-12: Top 10 Outdoor Recreation Activities for Pennsylvanians in 2014.



Source: Pennsylvania SCORP 2014-2019, produced by PDCNR.

Survey participants were asked if certain facilities and areas were adequate or needed to be increased. Pennsylvanians seemed to be most satisfied with the number of golf courses, ice-fishing areas, waterfowl hunting areas, downhill skiing/snowboarding areas, and baseball/softball fields. Fifty-seven percent of respondents stressed a need for an increased number of rental cabins. Other increased recreation facility needs included on-road bicycle lands, natural and wild areas, dog parks, bicycle paths, rail trails, wildlife viewing areas, environmental education/nature centers, natural play areas, ice skating areas, and shooting ranges. See Table 2-13 below for a percentage break down of the increased facility needs for Pennsylvanians in 2014.

Table 2-13: Top Recreation Areas and Increased Facility Needs for Pennsylvanians in 2014.



Source: Pennsylvania SCORP 2014-2019, produced by PDCNR.

One of the main priorities of the SCORP was Resource Management and Stewardship. Three of the SCORP Resource Management and Stewardship Objectives were to:

- Conserve and protect Pennsylvania's natural places.
- Maintain existing park, trail, and recreation areas, and prioritize other infrastructure needs.
- Cultivate support to protect wildlife and fish habitat through wildlife viewing, fishing, and hunting.

2.5.5 Recreation Carrying Capacity

Recreational carrying capacity is considered by USACE to ensure that visitors have a high quality and safe recreational experience, and that natural resources are not compromised at Indian Rock Dam.

The plan formulated herein proposes to provide a variety of activities and to encourage optimal use of present public use areas, where possible, based on the carrying capability of the land. The carrying capability of the land is determined primarily by the distinct characteristics of the site. These characteristics, both natural and manmade, are development constraints that often determine the type of facilities that should be provided.

Having amenities that cater to a variety of tastes and different members of the family will encourage visitors to enjoy the creek and natural areas. Presently, PGC and YCRTA manage recreation areas using best professional judgment to address recreation areas considered to be overcrowded, overused, underused, or well balanced. The partnership will continue to identify possible causes and effects of overcrowding and overuse and apply appropriate best management practices including site management, and regulating visitor behavior.

2.6 REAL ESTATE

In 1940, approximately 1,663 acres were acquired in fee and 95 acres were placed under flowage easements for the construction of Indian Rock Dam. The project was designed to be a dry dam and remains a dry dam to this day. Approximately 3 acres were disposed in 1940. Currently, the fee simple lands total approximately 1,660 acres and the flowage easements total approximately 95 acres.

Since completion of the dam in September 1942, project lands continue to be outleased for agriculture, grazing, and wildlife management purposes. At the time of the original master plan, 1,630 acres of the 1,755 project acres were under lease for agriculture, grazing, and wildlife management purposes to 20 separate lessees, while 125 acres contiguous to the dam were withheld for project operations. The largest out-lease, totaling approximately 1,539 acres, was the 25-year renewable license which was granted to PGC to develop use, and control, for the purpose of wildlife and game management, except for fish, and to administer and enforce the laws of the Commonwealth pertaining to all fee-simple acres of the project except the area designated for dam operations. In 1957, a 38-acre property within the 125 acres classified as Project Operations was out-leased to the Fraternal Order of Police to be used as a firing range and training area. Currently, there are 54 out-leases located within project lands; one to PGC for Wildlife and Game management, one to the Fraternal Order of Police, and several for private agricultural and grazing purposes as well as public roads and private rail lines.

2.7 PERTINENT PUBLIC LAWS AND ORDERS

The following public laws are applicable to Indian Rock Dam.

2.7.1 Federal Law

Public Law 59-209, Antiquities Act, 1906. The first Federal law established to protect 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.

Public Law 74-292, Historic Sites Act, 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".

Public Law 78-534, Flood Control Act, 1944. Section 4 of the act as last amended in 1962 by Section 207 of Public Law 87-874 authorizes USACE 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.

Public Law 85-624, Fish and Wildlife Coordination Act, 1958. This act as amended in 1965 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.

Public Law 86-717, Forest Conservation, 1960. This act provides for the protection of forest and other vegetative cover for reservoir areas under this jurisdiction of the Secretary of the Army and the Chief of Engineers.

Public Law 87-874, Rivers and Harbors Act, 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.

Public Law 88-578, Land and Water Conservation Fund Act, 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.

Public Law 89-90, 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.

Public Law 90-483, River and Harbor and Flood Control Act, Mitigation of Shore Damages, 1968. Section 210 restricted collection of entrance fee at USACE lakes and reservoirs to users of highly developed facilities requiring continuous presence of personnel.

Public Law 91-190, National Environmental Policy Act (NEPA), 1969. 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.

Public Law 91-611, River and Harbor and Flood Control Act, 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.

Public Law 92-500, Federal Water Pollution Control Act Amendments, 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. Public Law 92-500 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."

Public Law 92-516, Federal Environmental Pesticide Control Act, 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.

Public Law 93-81, Collection of Fees for Use of Certain Outdoor Recreation Facilities, 1973. 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.

Public Law 93-291, Archeological Conservation Act, 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.

Public Law 93-303, Recreation Use Fees, 1974. 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.

Public Law 93-523, Safe Drinking Water Act, 1974. 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.

Public Law 94-422, Amendment of the Land and Water Conservation Fund Act, 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 NRHP.

Public Law 99-662, The Water Resources Development Act, 1986. Provides the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

2.7.2 Executive Orders

EO 11514, Protection and Enhancement of Environmental Quality – EO 11514 requires federal agencies to provide leadership in protecting and enhancing the quality of the Nation's environment to sustain and enrich human life. The 2019 Master Plan would improve natural resource management and recreational opportunities.

EO 11593, Protection and Enhancement of Cultural Environment – EO 11593 requires federal agencies to administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations. There are no known historic structures or archaeological sites in the Project boundary. USACE would evaluate future master planning projects contained within the 2019 Master Plan and compliance with the Archeological and Historic Preservation Act (AHPA) and NHPA on an individual basis during the design process as projects become funded.

EO 11990, Protection of Wetlands – EO 11990 requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in executing federal projects. The Proposed Action complies with EO 11990. Changes in the proposed land use classifications would not adversely impact wetlands; erosion and sediment BMPs would be used to prevent sedimentation into wetland areas.

EO 11988, Floodplain Management – This EO directs federal agencies to evaluate the potential impacts of proposed actions in floodplains. The operation and management of the existing project complies with EO 11988. Changes in proposed land use classifications comply with EO 11988.

EO 12898, Environmental Justice – This EO directs federal agencies to achieve environmental justice to the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review. Agencies are required to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The 2019 Master Plan would not result in a disproportionate adverse impact on minority or low-income population groups.

EO 13045, Protection of Children from Health Risks & Safety Risks – This EO directs federal agencies to evaluate environmental health or safety risks that may disproportionately affect children. The 2019 Master Plan would not result in environmental health or safety risks to children.

EO 13112, Invasive Species – This EO directs federal agencies to evaluate the occurrence of invasive species, the prevention for the introduction of invasive species, and measures of their control to minimize the economic, ecological, and human health impacts. The 2019 Master Plan would not result in an introduction or increase of invasive species. Land use classification would serve for management of vegetation and high-use areas more prone to invasive species.

EO 13175, Consultation and Coordination with Indian Tribal Governments – This EO reaffirms the federal government's commitment to tribal sovereignty, self-determination, and self- government by ensuring agencies consult with Indian tribes and respect tribal sovereignty as they develop policy on issues that impact Indian communities. Future projects would be managed per the facility's ICRMP which includes coordination with tribes listed in Appendix B of the ICRMP.

EO 13186, Migratory Bird Habitat Protection – Sections 3a and 3e of EO 13186 direct federal agencies to evaluate the impacts of their actions on migratory birds, with emphasis on species of concern, and inform the USFWS of potential negative impacts on migratory birds. The 2019 Master Plan would not result in adverse impacts on migratory bird habitat. USACE would evaluate future master planning projects contained within the 2019 Master Plan on an individual basis during the design process as projects become funded.

EO 13508, Chesapeake Bay Protection and Restoration – This EO directs federal agencies to implement best management practices to restore and maintain the health of the Chesapeake Bay. The 2019 Master Plan would not adversely affect the resources within the Chesapeake Bay region.

2.7.3 State Law

Commonwealth of Pennsylvania, Act 8 Project 70 Land Acquisition and Borrowing Act, 1964. This act created funding for PGC to acquire land for conservation.

Commonwealth of Pennsylvania, Act 170 Wild Resource Conservation Act, 1982. This law was passed to protect endangered plants and animals.

Commonwealth of Pennsylvania, Environmental Stewardship and Watershed Protection Act, 1999. This law provides money to protect open space and critical habitat, conserve river resources, create greenways, build community parks, and enhance tourism.

Commonwealth of Pennsylvania, Clean Streams Law, 1937. This law provided Pennsylvania with the authority to protect streams from pollution. It prohibits littering or dumping that effects the waters and can fine up to $10,000 for offenses.

Commonwealth of Pennsylvania, Article 1 Section 27 Environmental Rights Amendment, 1969. This article provides two rights to a clean environment for Pennsylvania's citizens: a right to clean air, pure water, and the preservation of the natural, scenic, historic, and aesthetic values of the environment; and a right to have public natural resources conserved and maintained by the Commonwealth for the benefit of present and future generations.

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3.1 INTRODUCTION

This chapter sets forth goals and objectives necessary to achieve the USACE vision for the future of Indian Rock Dam. The terms "goals" and "objectives" are often defined as synonymous, but in the context of this Plan, goals express the overall desired end state of the cumulative land and recreation management programs at Indian Rock Dam. Resource objectives specify task-oriented actions necessary to achieve the master plan goals.

3.2 MANAGEMENT GOALS

The following goals are the priorities for consideration when determining management objectives and development activities. Implementation of these goals is based upon time, manpower, and budget. The objectives provided in this chapter are established to provide high levels of stewardship to USACE managed lands and resources while still providing a high level of public service. These goals will be pursued using a variety of mechanisms such as: assistance from volunteer efforts, hired labor, contract labor, permit conditions, remediation, and special lease conditions. It is the intention of Indian Rock Dam staff to provide a realistic approach to the management of all resources.

- **Goal A** Provide the best management practices to respond to regional needs, resource capabilities and capacities, and expressed public interests consistent with authorized project purposes.

- **Goal B** Protect and manage project natural and cultural resources through sustainable environmental stewardship programs.
- **Goal C** Provide public outdoor recreation opportunities that support project purposes and public interests while sustaining project natural resources.
- **Goal D** Recognize the unique qualities, characteristics, and potentials of the project.
- **Goal E** Provide consistency and compatibility with national objectives and other state and regional goals and programs.

In addition to the above goals, USACE management activities are guided by USACE-wide Environmental Operating Principles (EOPs) as follows:

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

• Recognize the interdependence of life and the physical environment. Proactively consider environmental consequences of USACE programs and act accordingly in all appropriate circumstances.

• Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.

• 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.

• Seek ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full life cycle of our processes and work.

• Build and share an integrated scientific, economic and social knowledge base that supports a greater understanding of the environment and impacts of our work.

• Respect the views of individuals and groups interested in USACE 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.

3.3 RESOURCE OBJECTIVES

Resource objectives are defined as clearly written statements that respond to identified issues and that specify measurable and attainable activities for resource development and/or management of the lands and waters under USACE jurisdiction. The objectives stated in this master plan support the Plan's goals, USACE 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.

The objectives in this Master Plan are intended to provide project benefits, meet public needs, and foster environmental sustainability for Indian Rock Dam to the greatest extent possible.

Resource Objective 1. Improve infrastructure and utilities.

Supporting Objectives:

- Address key safety concerns.

Resource Objective 2. Enhance existing recreation sites and amenities.

Supporting Objectives:

- Maintain the natural character of the area.
- Focus on projects that enhance the existing low-density recreation activities on project lands, including hunting, hiking, and wildlife viewing.

Resource Objective 3. Expand recreational opportunities in key areas.

Supporting Objectives:

- Consider low impact recreational amenity development, like soft surface trails, kayak intake areas, or designated parking areas in order to support an increased recreational demand while also maintaining the natural character of the project.

Resource Objective 4. Invest in key operational and support facilities.

Supporting Objectives:

- Provide proper maintenance and care for dam works and administrative / maintenance facilities.

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4.1 LAND ALLOCATION

All project lands, for USACE water resource development projects, are allocated by USACE into one of four categories, in accordance with the congressionally authorized purpose for which the project lands were acquired; including Operations, Recreation, Fish and Wildlife, and Mitigation. When Indian Rock Dam was established, the only land allocation category that applied to the project was Operations, which includes lands required to operate the dam and accomplish the primary authorized purposes of the project.

4.2 LAND CLASSIFICATION

The objective of classifying project lands is to identify how a given parcel of land shall be used now and in the foreseeable future. Land classification is a central component of this plan, and once a classification is established any significant change to that classification would require a formal process including public review and comment. Ongoing and planned management practices for each classification are set forth in Chapter 5 – Resource Plan.

4.2.1 Prior Land Classifications

Land classification was completed when the project was originally constructed. The classification process refines the land allocations to fully utilize project lands and must consider public desires, legislative authority, regional and project specific resource requirements, and suitability.

The 1959 Master Plan for Indian Rock Dam divided the fee ownership land into two categories of land classification, Project Operations and Wildlife and Game Management, where the Project Operations area was not open for out-leasing, while the Wildlife and

Game Management Area was already leased or had the potential to be leased in the future. In the 60 years since the previous Master Plan was published, although most of the land remains under lease for wildlife and vegetative management purposes, USACE documentation and policies have experienced changes and updates, thus classification revisions are necessary. A summary of prior land use classifications and newly proposed current land use classifications is provided in Table 4-1 below.

Table 4-1 Land Classification Summary

Prior (1959) Land Classifications	Acres
Project Operations	125
Wildlife and Game Management	*1,634
Total	*1,759

Proposed Land Classifications	Acres
Project Operations	95
High-Density Recreation	0
Multiple Resource Management	1,590
Low Density Recreation	2
Vegetative Management	**1,588
Water Surface	70
Restricted	1
Open Recreation	69
Total	1,755

*The 1959 Master Plan stated that 1,664 acres of land, of which 1,539 acres fell under the classification of Wildlife and Game Management and 125 acres fell under the classification of Project Operations, were acquired in fee, while 95 acres were under flowage easements. For the sake of consistency, flowage easement and fee-simple acreages were combined for the Prior Land Classifications, where the 95 acres of flowage easements were classified as Wildlife and Game Management.

** All lands that are not designated operations, water surface, or low density recreation, fall under vegetative management.

Figure 4-1 // Land Classification Map

Indian Rock Dam
Master Plan

Land Classification Map

Legend

IRD Boundary

Classification

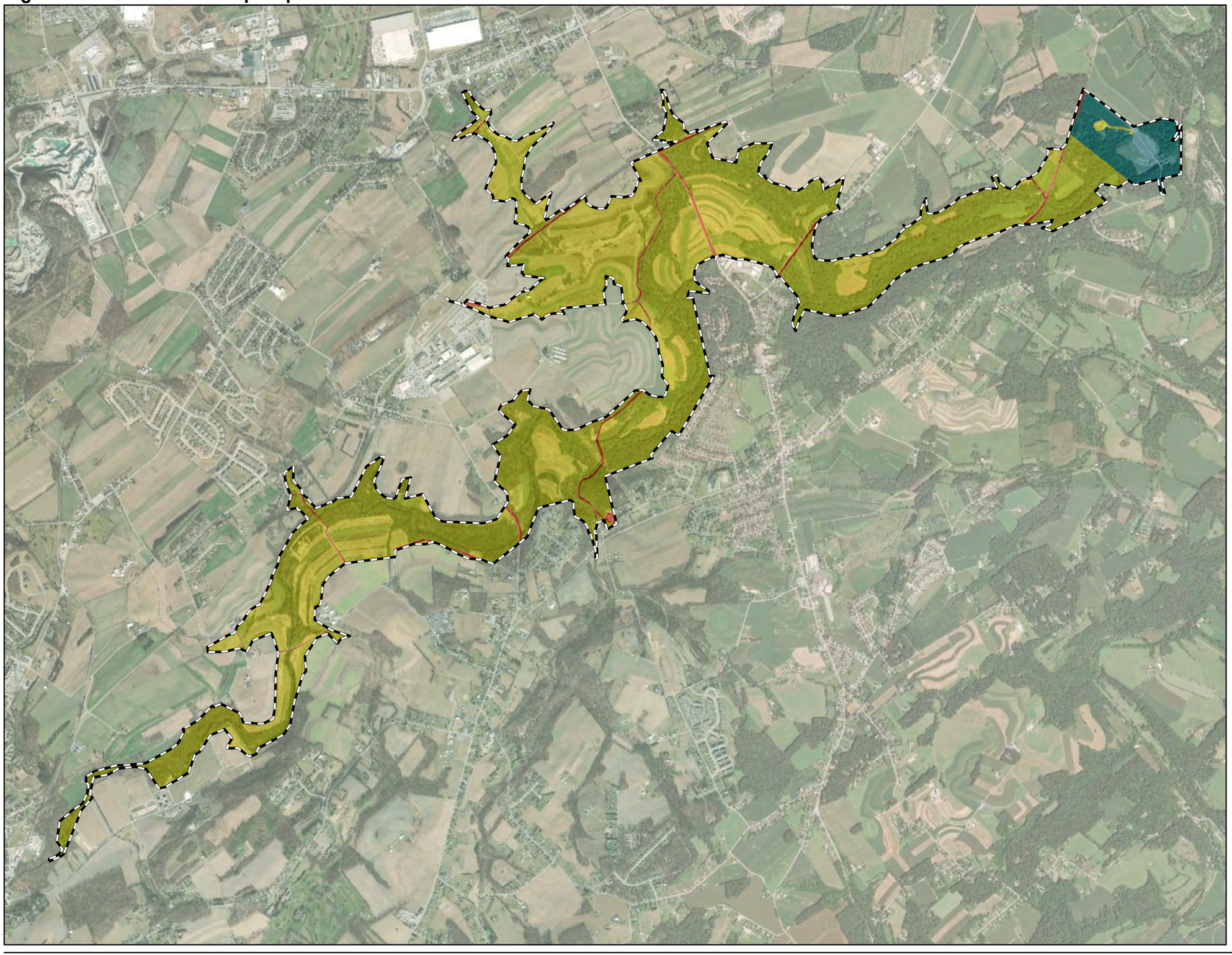
- Project Operations
- MRML - Low Density Recreation
- MRML - Vegetative Management
- Water Surface - Restricted
- Water Surface - Open Recreation
- Owned by Other Entities

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 2,500 5,000 Feet

N

Figure 4-2 // Land Ownership Map



Indian Rock Dam
Master Plan

Land Ownership Map

Legend

IRD Boundary

Land Ownership Type

Easement Lands

Leased Lands

Project Operations

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 2,500 5,000 Feet

N

4.2.2 Proposed Land Classifications

Land Classification indicates the primary use for which project lands are managed. There are 4 categories of classification identified in USACE regulation EP 1130-2-550, Chapter 3, including: Project Operations, High Density Recreation, Multiple Resource Management Lands, and Water Surface. Figure 4-1 on page 4-3 shows the breakdown of land classifications at Indian Rock Dam. Figure 4-2 on page 4-4 shows the breakdown of total land acreages, either leased or under easement, for the site. Project Easements are also explained in section 4.3 on page 4-6.

4.2.2.1 Project Operations

This classification category includes all project lands required for the structure, operation, administration, or maintenance of the project and which must be maintained to carry out the authorized purpose of flood risk management. Approximately 95 acres at Indian Rock Dam are allocated to project operations, encompassing dam operations including the dam, control tower, maintenance facility, spillway, restricted access roads, and administration offices. This classification also includes a private firing range and training facility that is leased and managed by the Fraternal Order of Police. This facility has no effect on dam operations.

4.2.2.2 High Density Recreation

These are lands developed for intensive recreational activities. There are no areas within the project boundary that are designated High Density Recreation.

4.2.2.3 Multiple Resource Management

This classification category identifies the predominant use of an area with the understanding that the other compatible uses can occur within the area. This classification is divided into three sub-classifications identified as: Low Density Recreation, Vegetative Management, and Wildlife Management. A given tract of land may be classified using one or more of these sub-classifications. There are 1,590 acres of land that are under this classification. The following identifies the amount contained in each sub-classification of Multiple Resource Management Lands (MRML).

<u>Low Density Recreation</u>

These are lands with minimal development or infrastructure that support passive public recreation use, like fishing, hunting, hiking, or wildlife viewing. Low density recreation areas include 5 PGC-maintained dedicated parking areas as well as the Hanover Trolley Trail, which crosses over part of the flowage easements on the property. There are less than 2 acres under this classification.

<u>Vegetative Management</u>

These are lands designated for stewardship of forest, prairie, and other native vegetative cover. The primary objective for these lands is to manage the forest to ensure a healthy, diverse, and visual aesthetic continuous forest canopy throughout the Indian Rock Dam property. The provision and protection of wildlife habitat and the availability of these lands for passive recreation activities are also important objectives. PGC completes prescribed burns on 350 acres of land under this sub-classification in order to stabilize the vegetative areas. They also manage several Habitat Restoration Areas in order to support a healthy

ecosystem for all plant and animal species in the area. There are 1,588 acres classified as MRML - Vegetative Management.

4.2.2.4 Water Surface

There is no permanent pool at Indian Rock Dam. In accordance with national USACE guidance set forth in EP 1130-2-550, the water surface of the portion of the Main Branch of Codorus Creek that runs within the project boundary may be classified using the following two classifications: Restricted and Open Recreation. There are 70 acres of water surface within the project boundary, using the bed area of the creek. The following water surface classifications are designated at Indian Rock Dam.

Restricted

Restricted water surface includes those areas where recreational fishing and kayaking is prohibited or restricted for project operations, safety and security purposes. The Restricted water surface at Indian Rock Dam include a small area around the dam and intake tower as well as the spillway. The total acreage of Restricted water surface is less than 1 acre.

Open Recreation

Open Recreation includes all water surface areas available for year-round or seasonal water-based recreational use along the section of the Main Branch of Codorus Creek that runs within the project boundary. With the exception of the Restricted areas described in the above paragraphs, the remaining water surface of approximately 69 acres at Indian Rock Dam is designated as Open Recreation.

4.3 PROJECT EASEMENT LANDS

Easement lands include all lands for which USACE holds an easement interest but not fee title. This could describe a situation in which USACE agreed to easement rights on fee title property, or pursued easement rights on land outside the original fee simple purchase. There are several utility easements on original fee title property at Indian Rock Dam. Public roads and private rail lines within the project property total approximately 10 acres. PGC leases approximately 1,539 acres of land for wildlife and vegetative management purposes. The Fraternal Order of Police leases 38 acres for a private shooting range at the far end of the dam. There are also several private agricultural out-leases scattered throughout project lands that total approximately 150 acres. Additionally, USACE has the right to flood approximately 95 acres of lands that are within flowage easements at Indian Rock Dam.

5 Resource Plan

5.1 RESOURCE PLAN OVERVIEW

This chapter sets forth a resource plan describing, in broad terms, how each land classification within the Master Plan will be managed. All management goals described in Section 3.2 apply to each land classification, but the primary goal(s) for each classification is listed below for emphasis. Refer to Section 3.2 for a listing of management objectives applicable to each management goal.

Management of all lands, recreation facilities, and related infrastructure must take into consideration the effects of pool fluctuations associated with the authorized flood risk management mission. Management actions are dependent on congressional appropriations, the financial capability of lessees and other key stakeholders, and the contributions of labor and other resources by volunteers. The land classifications and applicable management goals for each classification for Indian Rock Dam include the following:

Table 5-1 Land Classification & Applicable Management Goals

Land Classification	Goals
Project Operations	A, E
High Density Recreation	Not Applicable
Low Density Recreation	C, E
Vegetative Management	B, D, E
Wildlife Management	B, D, E
Water Surface, Restricted Area	A, E
Water Surface, Open Recreation	A, C, E

A more descriptive and detailed plan for managing project lands can be found in Indian Rock Dam – Operations Management Plan (OMP) which is an annually-updated, task and budget-oriented plan identifying tasks necessary to implement the Resource Plan and achieve the goals and objectives of the Master Plan.

5.2 PROJECT OPERATIONS

This land is associated with the dam and spillway structures that are operated and maintained for the purpose of fulfilling the flood risk management mission of Indian Rock Dam, as well as with the 35-acre private firing range leased to the Fraternal Order of Police to use for training and administrative purposes. There are 95 acres of lands under this classification.

USACE does not manage the firing range nor do they provide direct maintenance within the area, but they do review requests and ensure compliance with applicable laws and regulations for proposed activities, like creating an indoor firing range facility within the leased lands. USACE works with the Fraternal Order of Police to ensure that the firing range is managed and operated in accordance with the goals and objectives prescribed in Chapter 3.

5.3 HIGH DENSITY RECREATION

Lands classified for High Density Recreation are currently developed for intensive recreational activities. Indian Rock Dam does not have any distinct areas within this sub classification.

5.4 MULTIPLE RESOURCE MANAGEMENT LANDS

MRML are, as the name implies, lands that serve multiple purposes, but that are sub-classified and managed for a predominant use. The following paragraphs describe the various sub-classifications of these lands at Indian Rock Dam, the number of acres in each sub-classification, and the management plan for these lands.

Low Density Recreation

Future management of these lands calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics while also supporting low impact recreational opportunities. The general public may use these lands for bank fishing, hiking, wildlife viewing, and for access to the shoreline. Hunting is allowed in select areas that are a reasonable and safe distance from dam operations and adjacent residential properties. There are currently less than 2 acres of MRML – Low Density Recreation at Indian Rock Dam. There are no future plans for the existing low-density recreation lands. Figure 5-1 on page 5-5 calls out all existing recreational interests located on project lands.

Vegetative Management

In general, vegetative resources on USACE lands are managed for multiple purposes including wildlife habitat, landscape aesthetics, and timber. Management of forest on USACE lands nationwide is guided, in part, by policy set forth in Public Law 86-717, the Forest Cover Act, which states that "…project lands shall be developed and maintained to assure a future supply of timber through sustained yield programs to the extent that such management is practicable and compatible with other uses of the project." Additional forest management guidance is set forth in USACE regulations ER & EP 1130-2-540, which specifies that stewardship of project land shall be

ecosystem based. PGC completes prescribes burns on 350 acres of land under this sub-classification in order to manage the vegetative areas.

Current recreational use of these lands includes, but is not limited to hunting, bank fishing, wildlife viewing, and hiking. Future uses include all existing uses with the possibility of enhancing these uses with amenities like signage or new primitive access trails. There are 1,588 acres of land classified as MRML – Vegetative Management at Indian Rock Dam.

5.5 WATER SURFACE

There is no permanent pool at Indian Rock Dam. In accordance with national USACE guidance set forth in EP 1130-2-550, the water surface of the portion of the Main Branch of Codorus Creek that runs within the project boundary may be classified using the following two classifications:

- Restricted
- Open Recreation

There are 70 acres of water surface within the project boundary, using the bed area of the creek. The following water surface classifications are designated at Indian Rock Dam.

Restricted

Restricted water surface includes those areas where recreational fishing and kayaking is prohibited or restricted for project operations, safety and security purposes. The Restricted water surface at Indian Rock Dam includes a small area around the dam and intake tower as well as the spillway. The total acreage of Restricted water surface is less than 1 acre.

Open Recreation

Open Recreation includes all water surface areas available for year-round or seasonal water-based recreational use. Except for the Restricted areas described in the above paragraphs, the remaining water surface of approximately 69 acres at Indian Rock Dam is designated as Open Recreation.

5.6 PROJECT EASEMENT LANDS

Future management of easement Lands at Indian Rock Dam includes routine inspection of these areas to ensure that the Government's rights specified in the easement deeds are protected. Placement of any structure that may interfere with the USACE flood risk management mission may be prohibited.

5.7 DEVELOPMENT COURSE OF ACTION

The planning team met with Indian Rock Dam and PGC representatives in November 2018 and hosted a Town Hall in June 2019. From these meetings, no future development initiatives were identified for project lands. Any proposed future development courses of action will remain in the out-leased portions of the property. Low density recreation opportunities, like hunting and shoreline fishing, will continue to be pursued on project lands. Most land will remain classified as MRML – Vegetative Management and any enhancements will be aimed at enhancing the natural features of the area.

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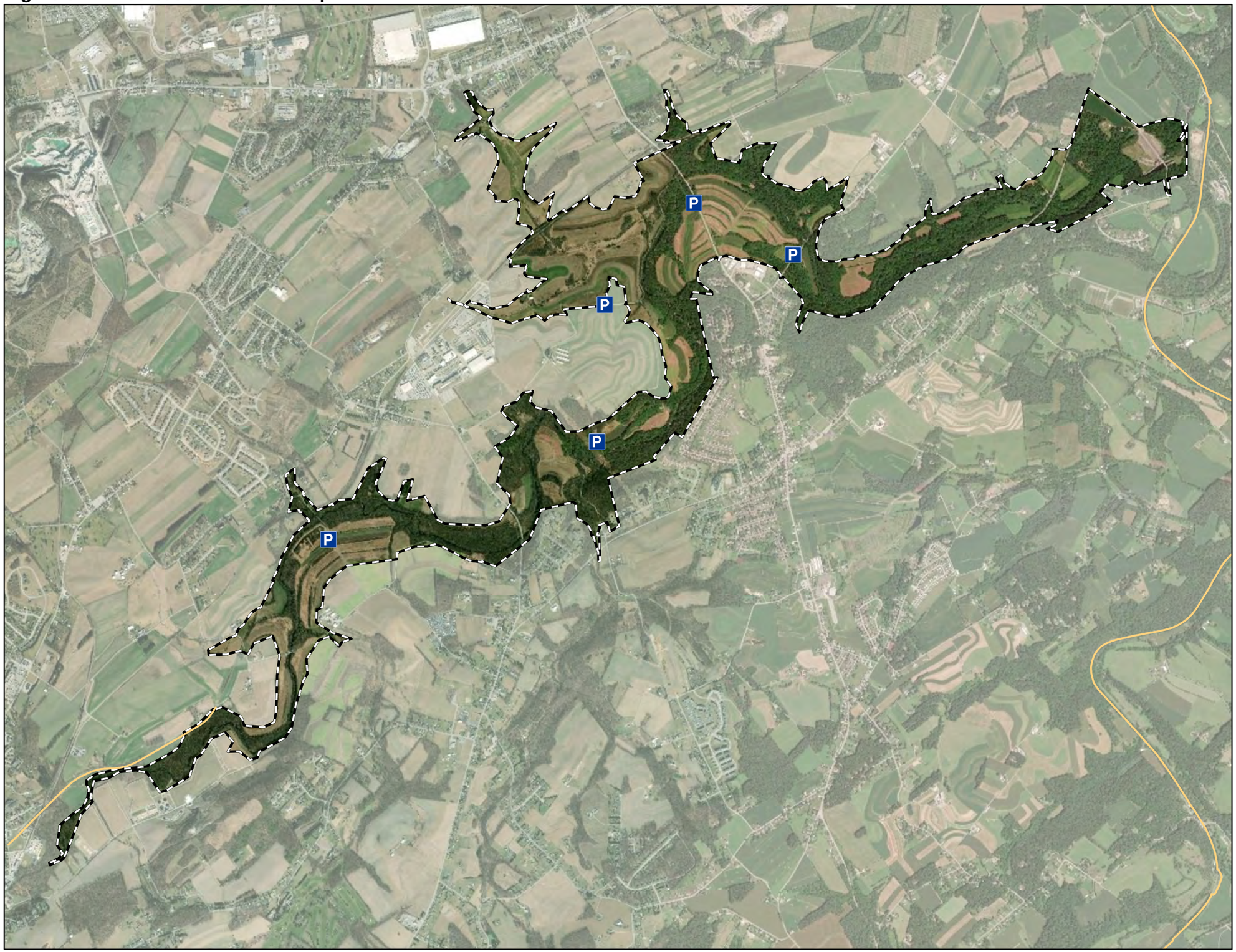
Figure 5-1 // Recreation Features Map



Indian Rock Dam
Master Plan

Recreation Features Map

Legend

Existing Recreation Features

- Designated Parking Area
- Multi-Use Trails
- IRD Boundary

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 2,500 5,000 Feet

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6 Special Topics, Issues, and Considerations

6.1 ADDITIONAL MISSIONS

Indian Rock Dam operates under the single authorized purpose of flood risk management. This mission serves a critical need to the local community and will remain paramount to project operations in the future. Other projects like Indian Rock Dam have taken on additional mission-sets, which provide additional services to the local community, such as recreational amenities, while continuing to support of the primary mission.

6.2 PERMANENT POOL

Accepting the additional missions is only possible if the primary mission is not compromised by the service requirements of additional mission-sets, while ensuring the natural environment is unharmed. One frequent topic of discussion for Indian Rock Dam is the possibility of hosting a permanent pool to support recreation activities or water supply requirements. Key considerations of this possibility are discussed below.

- There is an operational papermill upstream of the project. Although the papermill is under strict environmental guidelines and overall pollution has decreased over the years, the papermill still pollutes Codorus Creek. Until the papermill is no longer operational, there will always be a pollution issue for Codorus Creek.
- The dam was originally built as a dry dam. The overall design and building materials used may not hold up with a permanent increase in water level. For example, the cables used for the flood gates were not designed to be constantly submerged in water. If a permanent pool was supported, then the cables may need to be replaced more frequently. Thus, maintenance and overall costs would most likely increase.
- Lake Redman and Lake Williams recreation areas are located near the site, providing water-based recreation opportunity and fulfilling potential recreation-demand for a permanent pool at IRD.

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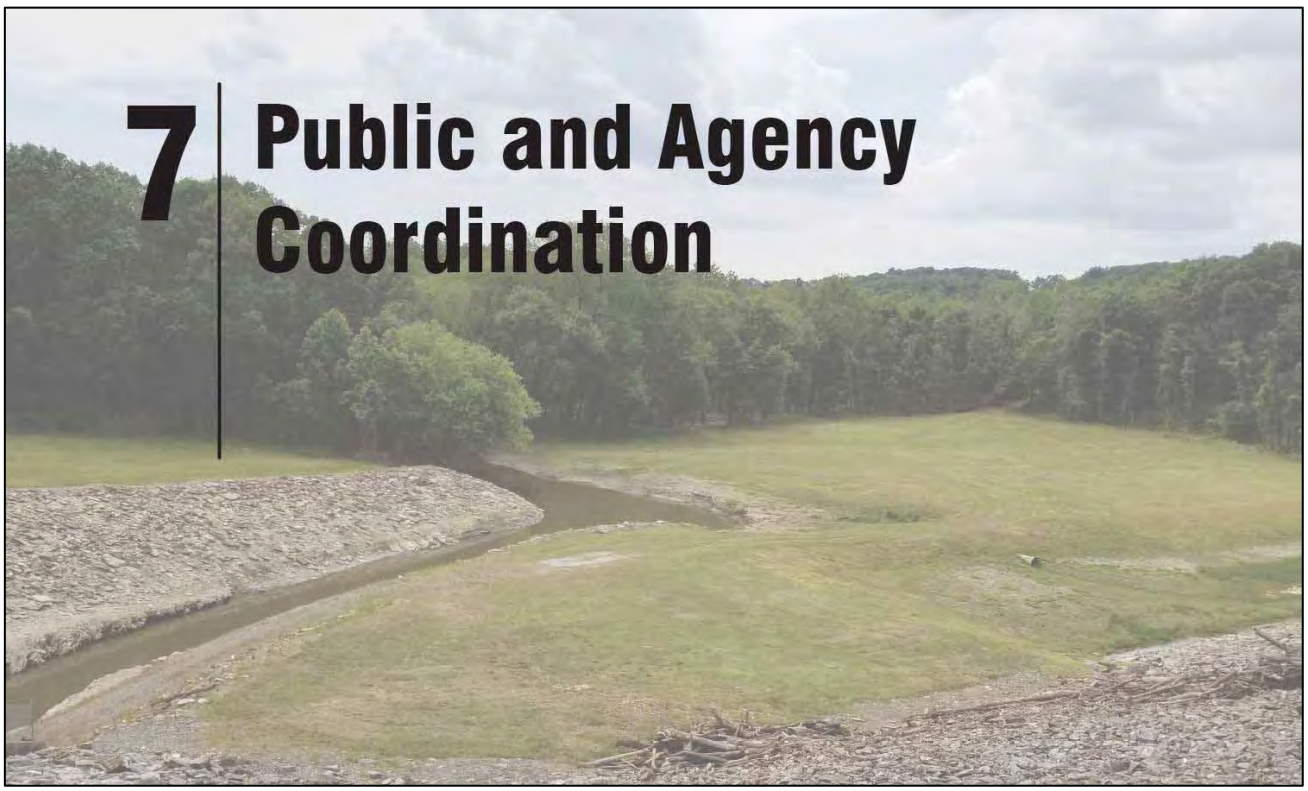

7 Public and Agency Coordination

USACE policy guidance in ER 1130-2-550, Change 7, January 30, 2013 and EP 1130-2-550, Change 5, January 30, 2013 requires thorough public involvement and agency coordination throughout the master plan revision process including any associated environmental assessment process. Public involvement is especially important at Indian Rock Dam to ensure that future management actions are both environmentally sustainable and responsive to public outdoor recreation needs within the region. The following milestones provide a brief look at the overall process of revising the Indian Rock Dam Master Plan.

- 13 November 2018, the planning team visited Indian Rock Dam where initial introductions, site orientation, a site tour, and concept discussions took place.
- Pre-Draft Master Plan & Environmental Assessment (EA) Submittal to project staff and USACE: 15 February 2019.
- Draft Master Plan & EA Submittal (Public Review): 25 April 2019.
- A Public Review—Town Hall Meeting was held on 06 June 2019 at the New Salem Fire Company. This meeting was intended to give stakeholders the opportunity to discuss the Draft Master Plan with the project team and USACE representatives.
- Prefinal Master Plan & EA Submittal: 21 June 2019.
- Final Master Plan and EA Submittal: 13 December 2019.
- EA Administrative Record: 31 January 2020.

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8 Summary of Recommendations

8.1 SUMMARY OVERVIEW

The preparation of the Indian Rock Dam Master Plan follows the USACE master planning guidance in ER 1130-2-550 and EP 1130-2-550, both dated 13 January 2013. Three major requirements set forth in the guidance include (1) the preparation of contemporary Resource Objectives, (2) Classification of project lands using the approved classification standards, and (3) the preparation of a Resource Plan describing in broad terms how the land in each of the land classifications will be managed into the foreseeable future. Additional important requirements include rigorous public involvement throughout the process, and consideration of regional recreation and natural resource management priorities identified by other federal, state, and municipal authorities. The study team followed this guidance to prepare a master plan that provides opportunity to enhance existing public recreation area, improve environmental quality, and foster a management philosophy conducive to existing and projected staff levels at Indian Rock Dam. Factors considered in the Plan were identified through discussions with project representatives, USACE, PGC, and the general public. This Master Plan will ensure the long-term sustainability of the USACE-managed recreation program and natural resources associated with the Indian Rock Dam project.

8.2 LAND RECLASSIFICATION PROPOSALS

While proposed changes in land classification at the project, as presented in Section 4, are indicative of future development initiatives, it should be noted that most land classification changes at Indian Rock Dam reflect classification criteria change more than any planned development. A summary of land classification changes and justifications are provided in Table 8-1.

Table 8-1 Land Classification Summary

Prior (1959) Land Classifications	Acres
Project Operations	125
Wildlife and Game Management	*1,634
Total	*1,759

Proposed Land Classifications	Acres
Project Operations	95
High-Density Recreation	0
Multiple Resource Management	1,590
Low Density Recreation	2
Vegetative Management	**1,588
Water Surface	70
Restricted	1
Open Recreation	69
Total	1,755

*The 1959 Master Plan stated that 1,664 acres of land, of which 1,539 acres fell under the classification of Wildlife and Game Management and 125 acres fell under the classification of Project Operations, were acquired in fee, while 95 acres were under flowage easements. For the sake of consistency, flowage easement and fee-simple acreages were combined for the Prior Land Classifications, where the 95 acres of flowage easements were classified as Wildlife and Game Management.

** All lands that are not designated operations, water surface, or low density recreation, fall under vegetative management.

Land classification criteria is now more specific and conservative than previous versions of Master Planning guidance. The changes are in large part semantics, with no real modification to land use at the site. A summary of land classification changes and justification is provided in Table 8-2 on the following page.

Indian Rock Dam Inlet and Spillway

Table 8-2 Land Classification Change Justifications

Land Classification	Totals (acreage)	Justification
Project Operations	1959: 125 2019: 95	Under the current land use classification criteria, Project Operations is limited to land providing direct support to the operations of the project's primary missions. Although unrelated to USACE project operations, this classification also includes the private firing range leased and managed by the Fraternal Order of Police.
High-Density Recreation	1959: 0 2019: 0	Under the new criteria, areas developed specifically to support recreation activities meet the intent of the high-density recreation classification. There are no areas designated High Density Recreation within the project boundary.
Multiple Resource Management Land—Low Density Recreation	1959: 0 2019: 2	There was no previous classification that addressed low density recreation. The 1959 Master Plan designated all areas not associated with project operations as Wildlife and Game Management Areas. When applying the current definition to the land classification, it leaves only areas with minimal development to support passive recreation use, i.e. the five parking areas for hunting, fishing, and wildlife viewing activities as well as the Hanover Trolley Trail within a part of the flowage easements. There are less than 2 acres fitting the current criteria.
Multiple Resource Management Land—Vegetative Management	1959: 0 2019: 1,588	This classification was not considered in the previous Master Plan. Under the current criteria, this category includes land designated for stewardship of forest, prairie, and other native vegetative cover. The land may or may not be protected from development but is currently (and for the foreseeable future) undeveloped green space. There are 1,588 acres that fall within the current criteria. The 350-acres of Prescribed Burn Zones, managed by PGC, are included within the sub-classification. PGC also manages several Habitat Restoration Areas in order to support a healthy ecosystem for plant and animal species in the area.
Multiple Resource Management Land—Wildlife Management	1959: 1,634 2019: 0	The previous classification of Wildlife and Game Management Area is comparable to the intent of Wildlife Management, but the classification also included Vegetative Management areas. The current regulations separate the two classifications. The Wildlife Management criteria includes land designated for stewardship of fish and wildlife resources. There are no areas that fall within the current criteria.

Land Classification	Totals (acreage)	Justification
Water Surface, Restricted	1959: 0 2019: 1	At the time of the original 1959 Master Plan, there was no classification that addressed the water surface of the Main Branch of Codorus Creek within the project boundary. Indian Rock Dam is a dry dam; the only restricted water surface includes the areas around the dam and the spillway. There is less than an acre under this sub-classification
Water Surface, Open Recreation	1959: 0 2019: 69	At the time of the original 1959 Master Plan, there was no classification that addressed the water surface of the Main Branch of Codorus Creek that runs within the project boundary. Indian Rock Dam is a dry dam, so the Water Surface – Open Recreation Areas include all remaining water surface area outside of the restricted zones.

9 Appendices

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APPENDIX A: ACRONYMS AND ABBREVIATIONS

ac	Acres
ACS	American Community Survey
cfs	Cubic Feet Per Second
CRMP	Cultural Resources Management Plan
EA	Environmental Assessment
EOP	Environmental Operating Principle
EP	Engineering Pamphlet
ER	Engineering Regulation
ft	Feet
GIS	Geographic Information Systems
MRML	Multiple Resource Management Lands
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
OMP	Operations Management Plan
PDCNR	Pennsylvania Department of Conservation and Natural Resources
PGC	Pennsylvania Game Commission
SCORP	State Comprehensive Outdoor Recreation Plan
UFC	Unified Facilities Criteria
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
YCRTA	York County Rail Trail Authority

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APPENDIX B: REFERENCES

A number of documents and reference materials, including reports, presentations, plans, engineering studies, programming documents, inventories, maps, graphics, and memoranda, were provided by USACE-Baltimore District. This data has been essential in developing the Project Support Documentation. The following is a list of the principal references used in the course of this Master Plan Update.

Center for Rural Pennsylvania. 2014. Pennsylvania Population Projections 2010-2040. Pennsylvania General Assembly.

National Wetlands Inventory. National Wetlands Mapper. United States Fish and Wildlife Service (USFWS).

Pennsylvania Department of Conservation and Natural Resources. 2014. Pennsylvania's Statewide Comprehensive Outdoor Recreation Plan 2014-2019. Commonwealth of Pennsylvania.

Pennsylvania Game Commission. 2017. Draft Comprehensive Management Plan for Indian Rock Dam Wildlife Mitigation Area (Area 416). Pennsylvania Game Commission, Southcentral Region.

USACE. 1959. Indian Rock Reservoir Master Plan. USACE, Baltimore District.

USACE. 1972. Master Manual for Reservoir Regulation: Susquehanna River Basin: Volume II – Lower Basin, Appendix D, Indian Rock Dam. USACE, Baltimore District.

USACE. 1982. Wildlife Management Current Practices. USACE, Baltimore District.

USACE. 1987. Master Manual for Reservoir Regulation: Susquehanna River Basin: Volume II – Lower Basin, Appendix D, Indian Rock Dam. USACE, Baltimore District.

USACE. 2003. Draft Environmental Baseline Survey Land Exchange at Indian Rock Dam Property Tract Number RA34. USACE, Baltimore District.

USACE. 2010. Record of Environmental Consideration: Service Facility for Rapid Response Vehicles at Indian Rock Dam. USACE, Baltimore District.

USACE. 2018. Draft Environmental Assessment: Indian Rock Dam / Codorus Creek Flood Risk Management Rehabilitation Project. USACE, Baltimore District.

USACE. 2013. ER 1130-2-550, Project Operations, Recreation Operations and Maintenance Guidance and Procedures. USACE, HQ.

USACE. 2013. EP 1130-2-550, Project Operations, Recreation Operations and

Maintenance Guidance and Procedures. USACE, HQ.

US Census Bureau. 2018. 2012 to 2016 American Community Survey 5-Year Estimates, 2016 Estimate. American Fact Finder.

US Census Bureau, Population Division. 2018. 2010 and 2016 Population Estimates. American Fact Finder.

US Fish and Wildlife Service. 2017. National Wetlands Inventory website. US Department of the Interior, Fish and Wildlife Service, Washington DC. http://fws.gov/wetlands/

York Indian Rock
Master Plan Update
Data Gathering Site Visit

3225 Shallowford Rd NE
Suite 830
Marietta, GA 30062
Telephone 770.321.4040

TO: MAJ Terrence Harrington, USACE-Baltimore District, Planning Division
Melanie Mathesz, USACE-Baltimore District, Planning Division, Assistant Project Manager
Phil Cwiek, USACE-Baltimore District, Operations Division, Natural Resource Management Specialist
Steve Young, Head Dam Operator
Eric Horsch, Pennsylvania Game Commission, Land Manager

CC: Patrick West, JG&A
Caitlin Crawford, JG&A

FROM: John Minter, JG&A
04 December 2018

ACTIVITY: Site Visit Kickoff Meeting and Site Tour
DATE/TIME: 13 November 2018 / 1000 hrs
LOCATION York Indian Rock-Dam Operations Office
ATTENDEES Phil Cwiek, Steve Young, John Minter, and Caitlin Crawford

The planning team met with United States Corps of Engineers (USACE) and Indian Rock Dam (IRD) representatives to discuss the intent of the update to the IRD Master Plan. Key points from the introductory discussion are presented below:

- The background data for the project area is unclear. A lot of markers are inaccurate and it's unclear where the boundary ends. Generally follows te 435 foot elevation line. Contacting Real Estate will dictate the total acreage.
- The primary mission of IRD is flood-risk management.
  - No other missions at this time.
- There was a spillway event in 1972 (Hurricane Agnes).
- Discussions about converting into a recreation pool.
  - Not a viable option as long as the paper mill is still operational upstream.
    - Major source of pollution.
  - Not economically feasible due to cables and increase in maintenance.
  - There is a large recreational lake already near the site.
- There are no known borrow areas at IRD.
- USACE operates and manages the dam and small area surrounding area.
  - A majority of the rest of project lands are managed by the Pennsylvania Gaming Commission.

    - Offers 1,400+ acres of hunting.
- There is a shooting range located within project lands that is leased to the Fraternal order of police (35 acres).
    - They have a desire to build an indoor range, but this would require a 50 year lease.
- USACE also participates in the Cordorus Creek Project due to a majority of the projects being located within USACE flowage easements.
    - The project is managed by USACE, York Township, and other various entities.
    - Located downstream of the dam.
    - Projects include 265 drainage structures, levees, concrete floodwalls, embankments, channel improvements, etc.
- There is a popular rail trail that meanders on project and easement lands.
    - Currently in phased development.
        - Phase 2 is located on top of levee
        - Phase 3 is also located within flow easements
        - Phase 4 has just begun
- USACE owns the road that runs on top of the dam. This is a thru road that is also open to the public.
- There are some encroachment issues due to boundary line discrepancies and lost monuments.

USACE representatives guided the planning team while visiting each of the important activity nodes. Below is a listing of locations that were visited and explained:

- York Indian Rock Dam and Operations area
- Town of York
- Multiuse Rail Trail
- Cordorus Creek Project
- Flowage easements
- Dedicated parking areas for hunting

ACTIVITY: Pennsylvania Game Commisssion Conference Call
DATE/TIME: 13 November 2018
LOCATION East Sidney Lake-Dam Operations Office
ATTENDEES Eric Horsch, Phil Cwiek, Steve Young, John Minter, and Caitlin Crawford

The planning team talked with USACE and Pennsylvania Game Commission (PGC) representatives through phone conversation to discuss the leased lands and environmental conservation aspects of IRD. Below is a summary of the topics covered:

- The biggest hurdle for project lands managed by PGC is invasive species control.
    - Numerous species present, including silt grass, poison gemlock, johnson grass, honey suckle, etc.
    - Experimenting with new herbicides that attack non-native annuals and affect native species less.

- Agriculture pattern is majority share-cropping but is now moving more towards native habitats and invasive species control areas.
    - There are still currently 150 acres of project lands dedicated to share-cropping.
- PGC just completed a 350 acre prescribed fire burn plan for the site.
- Foresters have shown the desire to harvest timber on-site.
    - There is concern about the that activity jeopardizing the flood-risk management mission
    - There is a IRD Comprehensive Management Plan currently in the works which will set forth plans for both the forested areas and the herbaceous areas.
        - This plan will include the history of the site as well as objectives and strategies for the future management of the site. All information and recommendations will be concurrent with dam strategies.
- There is also a desire to place constructed wetlands on project lands.
    - The contractor is Skelly and Lloyd.
    - Concerns about this due to the future ongoing management (in perpetuity) of the wetland areas.
    - Wetlands developed on site in the past all failed and ended up draining completely.
    - There would need to be a very detailed management process that would guide the mitigation agreement.
- There are no Threatened or Endangered Flora species on site.
- There are some Threatened or Endangered Fauna species on site.
        - Pollinators have taken a hit in the region in the recent years.
            - Restoring habitat of the Fritillary Butterfly.
            - Could potentially support a “trap and transfer” project in order to relocate the habitats away from frequently flooded areas.
    - PGC does not do anything with fish.
        - The Pennsylvania Fish Commission is in charge of aquatic species.
            - Fishing is popular within stilling basin and along Cordorus Creek.
        - There are no known fish management or fish habitat restoration areas on site.
    - Hunting is allowed throughout project lands managed by PGC.
        - Must follow all state-wide hunting rules and regulations.
        - Dedicated parking areas exist throughout the site and are maintained by PGC.
        - Mostly small-game species like pheasants and deer.
    - PGC has a GIS guy – Jeremy – who can share information with JG&A.
        - Information available includes data on dedicated parking areas, habitat restoration areas, prescribed burn areas, share-crop fields, and forested areas.
    - Project lands are covered in walnut trees.
        - There was a high number of timber sales in the early history of the project.
        - Sales stopped in the early 70s due to mismanagement and disagreements.
            - There has been walnut theft issues recently.
        - Could reconsider allowing walnut timbering as a source of revenue for the project.
    - The upstream paper mill is currently being monitored for pollution.
        - The Department of Environmental Protection monitors the discharges.
        - Still a major water quality concern in the area.

Please direct additions or corrections to these minutes to JG&A in writing within seven days of receipt; they become our official record of the meeting at that point in time. Thank you.

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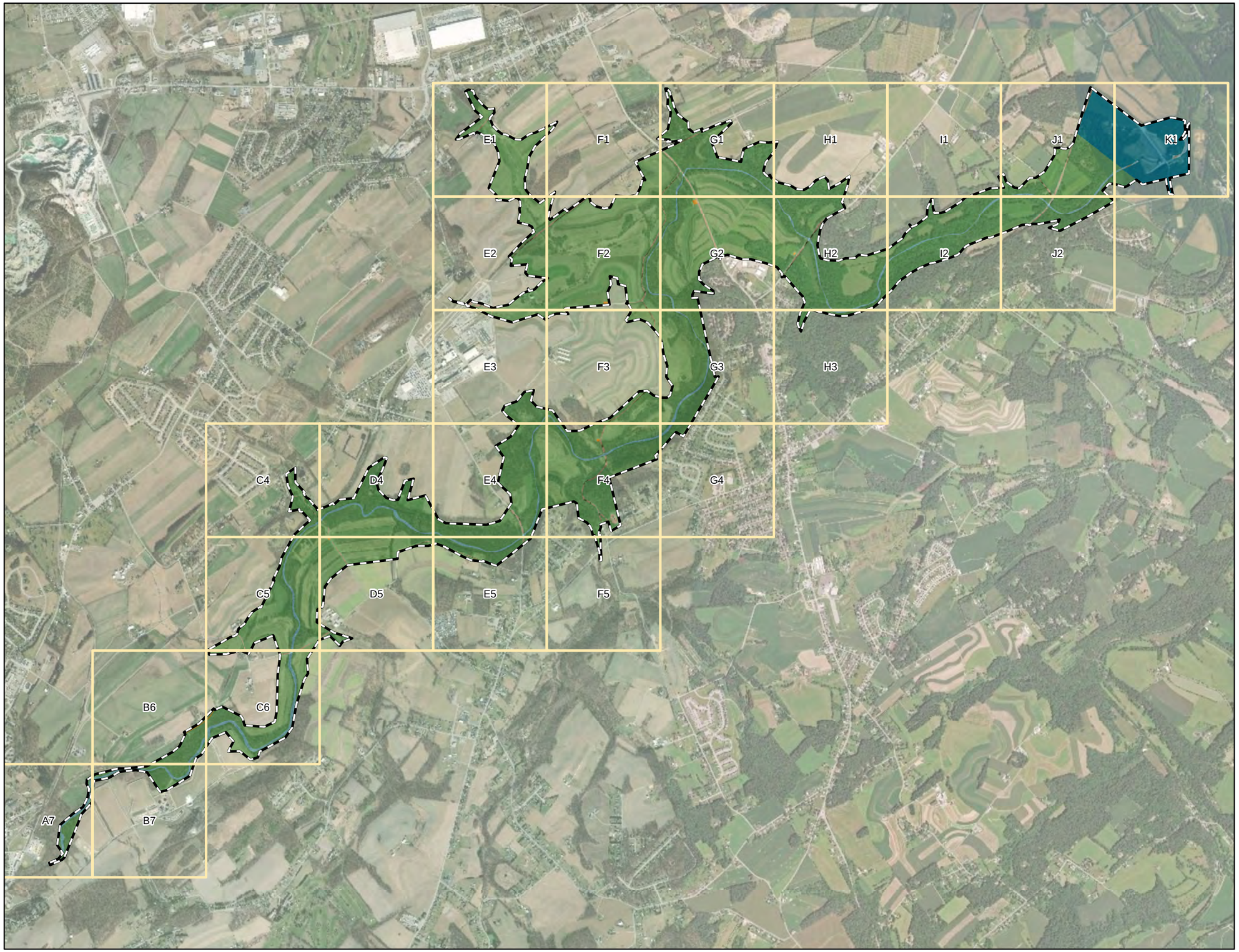
Indian Rock Dam Master Plan

Land Classification | Grid View



Legend

- YIR Boundary
- Grid

Classification

- Project Operations
- MRML - Low Density Recreation
- MRML - Vegetative Management
- Water Surface - Restricted
- Water Surface - Open Recreation
- Owned by Other Entities

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 2,500 5,000 Feet

N

Indian Rock Dam Master Plan

Land Classification | Grid View

Legend

- YIR Boundary
- Grid

Classification

- MRML - Vegetative Management
- Water Surface - Open Recreation

Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

Land Classification | Grid View

Legend

- YIR Boundary
- Grid

Classification

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- MRML - Vegetative Management
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Overall IRD Site

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Indian Rock Dam Master Plan

Land Classification | Grid View

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- Grid

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Indian Rock Dam Master Plan

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Indian Rock Dam Master Plan

Land Classification | Grid View

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0 330 660 Feet

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Indian Rock Dam Master Plan

Land Classification | Grid View

C5

D5

C6

B6

B7

Legend

- YIR Boundary
- Grid

Classification

- MRML - Low Density Recreation
- MRML - Vegetative Management
- Water Surface - Open Recreation
- Owned by Other Entities

Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Indian Rock Dam Master Plan

Land Classification | Grid View

Legend

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- Grid

Classification

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Overall IRD Site

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Indian Rock Dam Master Plan

Land Classification | Grid View

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N

Indian Rock Dam Master Plan

Land Classification | Grid View

Legend

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Classification

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Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Indian Rock Dam Master Plan

Land Classification | Grid View

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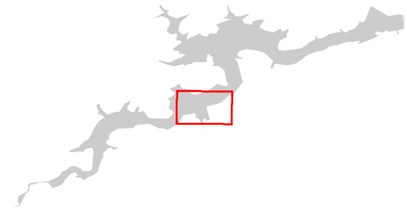

Overall IRD Site

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- Owned by Other Entities

Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

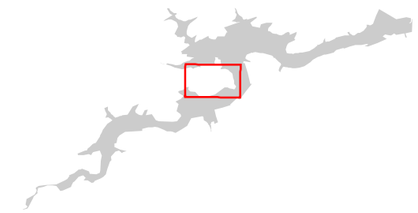
Land Classification | Grid View

Legend

- YIR Boundary
- Grid

Classification

- MRML - Low Density Recreation
- MRML - Vegetative Management
- Water Surface - Open Recreation
- Owned by Other Entities



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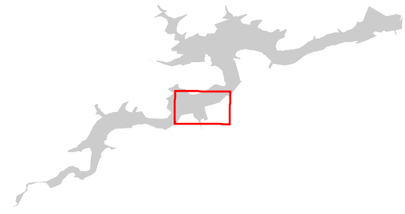

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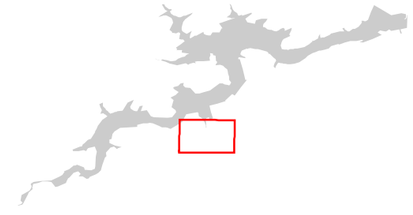

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0 330 660 Feet

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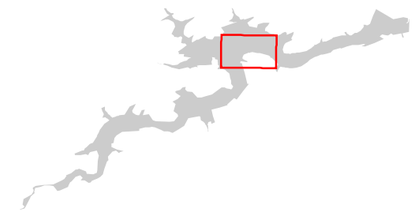


Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

Land Classification | Grid View

F2 G2 H2

F3 G3 H3

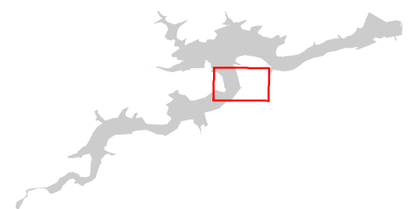
F4 G4

Legend

- YIR Boundary
- Grid

Classification

- MRML - Vegetative Management
- Water Surface - Open Recreation
- Owned by Other Entities



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Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

Land Classification | Grid View

F3 G3 H3

F4 G4

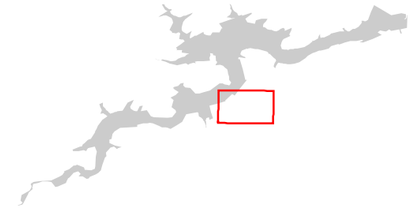
F5

Legend

- YIR Boundary
- Grid

Classification

- MRML - Vegetative Management
- Water Surface - Open Recreation



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Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

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Indian Rock Dam Master Plan

Land Classification | Grid View

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- Grid

Classification

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Land Classification | Grid View

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Classification

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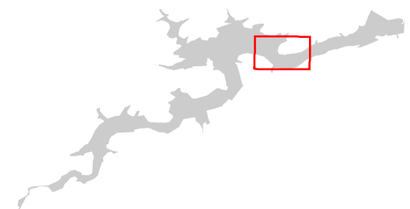

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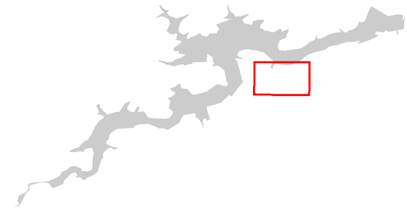

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Indian Rock Dam Master Plan

Land Classification | Grid View

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Overall IRD Site

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0 330 660 Feet

N

Indian Rock Dam Master Plan

Land Classification | Grid View

Legend

- YIR Boundary
- Grid

Classification

- MRML - Vegetative Management
- Water Surface - Open Recreation

Overall IRD Site

0 330 660 Feet

N

Indian Rock Dam Master Plan

Land Classification | Grid View

Legend

- YIR Boundary
- Grid

Classification

- Project Operations
- MRML - Vegetative Management
- Water Surface - Restricted
- Water Surface - Open Recreation
- Owned by Other Entities

Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

Land Classification | Grid View

Legend

- YIR Boundary
- Grid

Classification

- MRML - Vegetative Management
- Water Surface - Open Recreation
- Owned by Other Entities

Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

Land Classification | Grid View

Legend

- YIR Boundary
- Grid

Classification

- Project Operations
- MRML - Vegetative Management
- Water Surface - Restricted
- Water Surface - Open Recreation
- Owned by Other Entities

Overall IRD Site

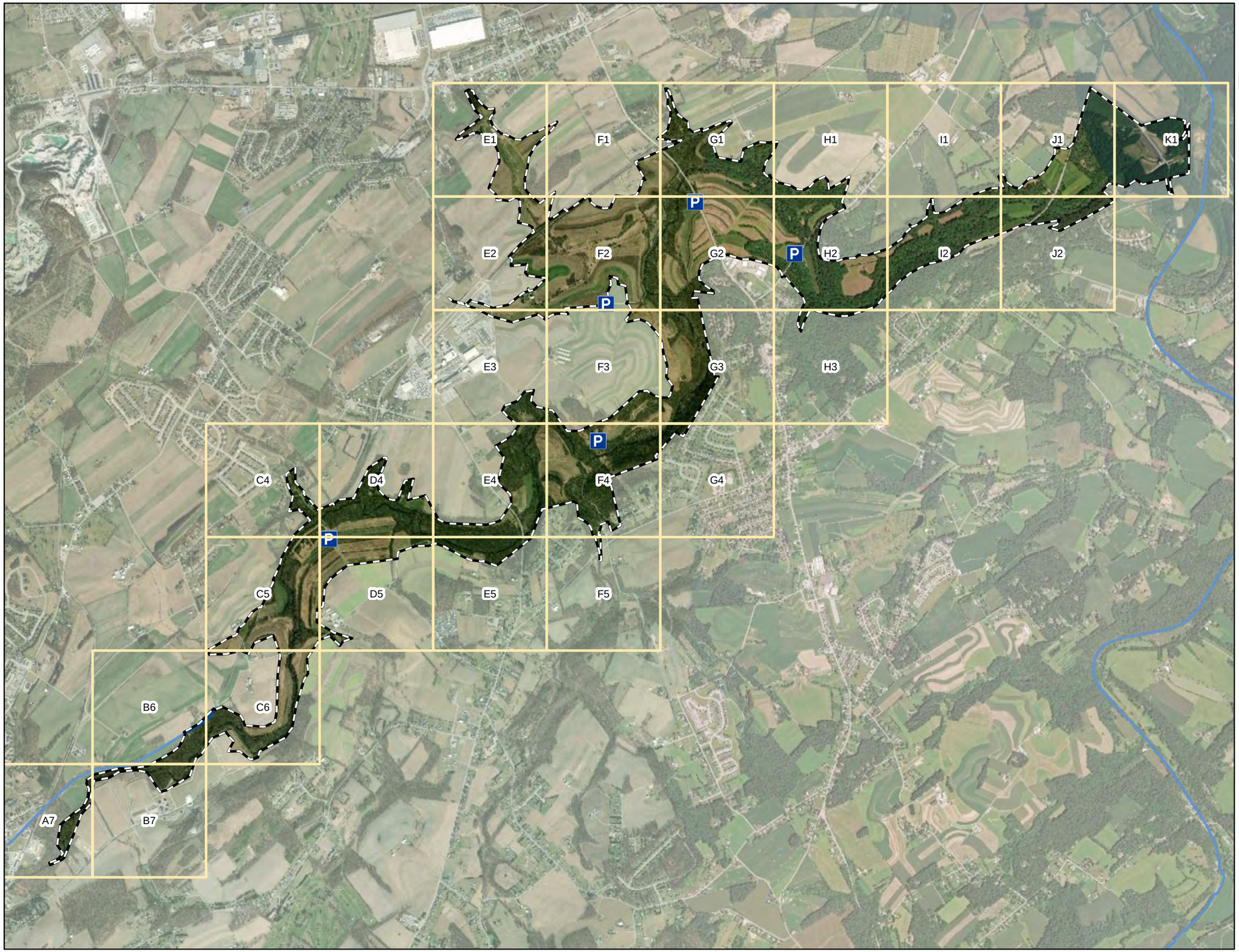
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

Recreation Features | Grid View



Legend

- Grid
- YIR Boundary

Existing Recreation Features

- Designated Parking Area
- Multi-Use Trails

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 2,500 5,000 Feet

N

Indian Rock Dam Master Plan

Recreation Features | Grid View

Legend

- Grid
- YIR Boundary
- Multi-Use Trails

Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

Recreation Features | Grid View

Legend

- Grid
- YIR Boundary
- Multi-Use Trails

Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

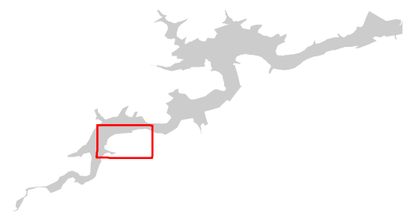
Recreation Features | Grid View

Legend

- Grid
- YIR Boundary

Existing Recreation Features

- P — Designated Parking Area



Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Indian Rock Dam Master Plan

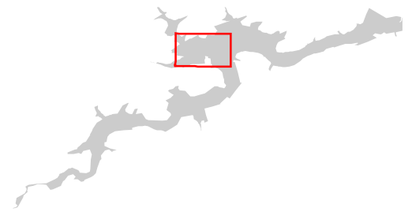
Recreation Features | Grid View

Legend

- Grid
- YIR Boundary

Existing Recreation Features

- Designated Parking Area



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0 330 660 Feet

N

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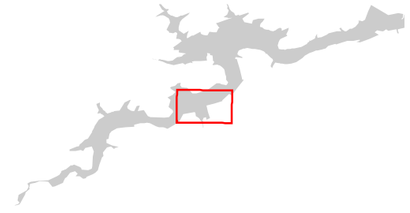
Recreation Features | Grid View

Legend

- Grid
- YIR Boundary

Existing Recreation Features

- P — Designated Parking Area



Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

Recreation Features | Grid View

F1 G1 H1

F2 G2 H2

F3 G3 H3

Legend

- Grid
- YIR Boundary

Existing Recreation Features

- Designated Parking Area

Overall IRD Site

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 330 660 Feet

N

Indian Rock Dam Master Plan

Recreation Features | Grid View

Legend

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Existing Recreation Features

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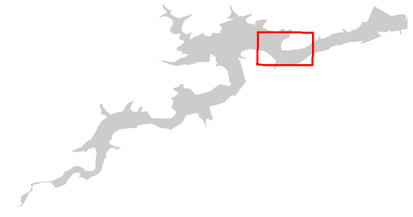

Overall IRD Site

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Final Submittal
Environmental Assessment for the Indian Rock Dam Master Plan

York County, Pennsylvania

January 2020

BALTIMORE DISTRICT

FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT FOR THE INDIAN ROCK DAM MASTER PLAN

YORK COUNTY, PENNSYLVANIA

In accordance with the National Environmental Policy Act of 1969 (NEPA), including guidelines in 33 Code of Federal Regulations (CFR) Part 230 (Procedures for Implementing NEPA), the Baltimore District of the U.S. Army Corps of Engineers (USACE) has assessed the potential impacts of the 2019 Indian Rock Dam Master Plan (2019 Master Plan). The Indian Rock Dam Project was authorized and constructed for the primary purpose of managing flood risks in the Codorus Creek Watershed and Lower Susquehanna River Basin. A major secondary use of the project lands and waters is to support recreation. Implementation of the Indian Rock Dam Master Plan and proposed land use changes must recognize and be compatible with the authorized purpose of flood risk management and the USACE Environmental Operating Principles.

The 2019 Master Plan will provide guidance for stewardship of natural resources and management for long-term public access to, and use of, the natural resources of Indian Rock Dam, including the land use classification of the USACE-managed lands. USACE manages project lands in accordance with land use classifications that have been determined in the project land's master plan. Thus, land use classifications are fundamental to project lands management. Land use classifications (see Table S-1) provide for development and resource management consistent with authorized purposes and other Federal laws. The 2019 Master Plan provides a comprehensive description of Indian Rock Dam (the Project), a discussion of factors influencing resource management and development, new resource management objectives, a synopsis of public involvement and input into the planning process, descriptions of existing development, and consideration of future development activities.

Under the No Action Alternative, the USACE would take no action, which means no new resource analysis or land use reclassifications would occur. The operation and management of Indian Rock Dam would continue as outlined in the 1959 Master Plan.

The Proposed Action includes adopting the 2019 Master Plan to reflect changes in land management and land use classifications, USACE regulations and guidance that have occurred since the 1959 Master Plan, and coordination with the public. The 2019 Master Plan refines land classifications to meet authorized project purposes and current resource objectives. This includes a mix of natural resource and recreation management objectives that are compatible with Chesapeake Bay Program watershed goals established by stakeholders and USACE during the master planning process, recognize outdoor recreation trends, and are responsive to public comments. The purpose of the Proposed Action is to ensure that the conservation and sustainability of the land, water, and recreational resources at Indian Rock Dam comply with applicable environmental laws and regulations and to maintain quality land for future use, including the 2014 Chesapeake Bay Agreement goals and management strategies for restoring and maintaining the health of the watershed. The 2019 Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years, which reflects changes that have occurred since 1959 in outdoor recreation trends, regional land use, population, legislative requirements, USACE management policy, and wildlife habitat at Indian Rock Dam.

The Proposed Action is needed to update the Indian Rock Dam Master Plan in accordance with January 2013 updates to the Engineering Regulation (ER) and Engineering Pamphlet (EP) 1130-2-550.

Table S-1 identifies the required land and water surface classification changes associated with the Proposed Action.

Table S-1. Proposed Changes to Land Use Classifications at Indian Rock Dam

Classification	1959 Master Plan (acres)[a]	2019 Master Plan (acres)	Description
Project Operations	125	95	Lands associated with the dam and spillway structures that are operated and maintained for fulfilling the flood risk management and water storage missions of Indian Rock Dam. Although unrelated to USACE project operations, this classification also includes the private firing range leased and managed by the Fraternal Order of Police.
Wildlife and Game Management	1,634	N/A	The 1959 Master Plan included this classification, however, the proposed 2019 Master Plan update divides lands within this classification into multiple resource management lands.
High-Density Recreation[b]	ND	0	Lands used for intensive recreational activities. This land use classification is not proposed for Indian Rock Dam in the 2019 Master Plan update.
Multiple Resource Management Lands			
Low-Density Recreation	ND	2	Lands with minimal development or infrastructure that support passive public recreation use, such as fishing, hunting, wildlife viewing, or hiking. This includes approximately 2 acres of land within the Project encompassing the five parking areas for hunting, fishing, and wildlife viewing activities as well as the Hanover Trolley Trail. There are no future plans for the existing low-density recreation lands.
Vegetative Management	ND	1,588	This land use classification includes an ecosystem-based management approach and is designated for stewardship of forest, prairie, and other native vegetative cover. The primary objective for these lands is to manage the forest to ensure a healthy, diverse, and visual aesthetic continuous forest canopy throughout the Indian Rock Dam property. The provision and protection of wildlife habitat and the availability of these lands for passive recreation activities are also important objectives. Pennsylvania Game Commission manages approximately 350 acres of Prescribed Burn Zones within this classification to manage the vegetative areas. Pennsylvania Game Commission also manages several Habitat Restoration Areas in order to support a healthy ecosystem for both the plants and animals in the area. Current recreational use of these lands includes, but is not limited to hunting, bank fishing, wildlife viewing, and hiking. Future uses include all existing uses with the possibility of enhancing these uses with amenities like signage or new primitive access trails.
Water Surface			
Restricted	ND	1	Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. The Restricted water surface at Indian Rock Dam, which operates as a dry reservoir, is limited to the areas around the dam and the spillway.
Open Recreation Area	ND	69	Open Recreation area includes all water surface areas available for year-round or seasonal water-based recreational use. As Indian Rock Dam is a dry reservoir, areas with water surface open recreation include all remaining water surface area outside of the restricted zones (e.g. Main Branch of Codorus Creek).

[a] The 1959 Master Plan did not include land classifications. When Indian Rock Dam was established, the only land allocation category that applied to the Project was Operations, which includes lands required to operate the dam and accomplish the primary authorized purposes of the Project.

[b] As the High-Density Recreation land classification does not occur in the 1959 Master Plan and is not proposed in the 2019 Master Plan, this classification is not carried for analysis within the EA.

N/A = not applicable; ND = Not Defined; USACE = U.S. Army Corps of Engineers

USACE chose the Proposed Action because it would meet Chesapeake Bay Program watershed goals associated with good stewardship of land and water resources, meet regional recreation goals, and allow for continued use and development of project lands without violating national policies or public laws.

USACE used the Environmental Assessment (EA) and comments received from other agencies to determine whether the Proposed Action requires the preparation of an Environmental Impact Statement (EIS). This included assessment of all environmental, social, and economic factors that are relevant to the recommended alternative considered in this assessment. The EA determined negligible impact would occur to the following resources: air quality, greenhouse gases and climate, noise, geology, cultural resources, groundwater, wild and scenic rivers, utilities, hazardous materials and waste, socioeconomics and environmental justice, and traffic and transportation (see Section 3.1 of the EA). Minor adverse impacts could occur to water resources, soils, and biological resources, primarily during construction of future amenities like signage or new primitive access trails (see Sections 3.2 through 3.5 of the EA). Adverse impacts would be reduced through the use of standard construction best management practices (BMPs) to reduce disturbance, soil erosion, and sedimentation into adjacent surface waters and wetlands. Construction and operations of these projects would use BMPs associated with prevention of impacts to sensitive species, including removal of vegetation outside of nesting seasons for bird species (April 28 – September 10). Additionally, areas proposed for disturbance would be surveyed for wetlands within 300-feet of the proposed construction footprint; wetlands areas identified would be assessed for suitable bog turtle habitat by a qualified surveyor prior to disturbance and activities coordinated with the U.S. Fish and Wildlife Service. Prior to future master planning project implementation involving new construction, sites with the potential for archaeological resources (e.g., undisturbed locations) would be surveyed and the USACE would consult with the Pennsylvania State Historic Preservation Office for National Historic Preservation Act Section 106 concurrence.

Beneficial impacts could occur to water resources, soils, biological resources, and land use and recreation from establishment of improved trails. The improved trails would reduce disturbance elsewhere at the Project by encouraging use of maintained designated access points. Beneficial impacts to soil and biological resources would also occur through establishing a vegetative management land use classification that recognizes an ecosystem-based approach with a focus on native vegetation cover and maintaining protective cover for soils.

Conclusion

Based on the summary of effects evaluated in the EA, I have determined that the Proposed Action will not have a significant effect on the natural and human environment. For this reason, no Environmental Impact Statement is required.

19 DEC 19

Date

John T. Litz
Colonel, U.S. Army
Commander and District Engineer

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ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) evaluates the effects to the natural and human environment from the 2019 Indian Rock Dam Master Plan. The EA will facilitate the decision-making process regarding the Proposed Action and alternatives.

CHAPTER 1 INTRODUCTION, PURPOSE, NEED, AND SCOPE summarizes the purpose of and need for the Proposed Action, provides relevant background information, and describes the scope of the EA. This Chapter also includes public involvement and agency coordination efforts conducted during preparation of the EA.

CHAPTER 2 PROPOSED ACTION AND ALTERNATIVES examines alternatives for implementing the Proposed Action and describes the recommended alternative.

CHAPTER 3 ENVIRONMENTAL SETTING AND CONSEQUENCES describes the existing natural and human environments, and identifies the potential effects of implementing the Proposed Action and alternatives.

CHAPTER 4 CUMULATIVE EFFECTS describes the impact on the environment that may result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions.

CHAPTER 5 COMPLIANCE WITH ENVIRONMENTAL LAWS provides a listing of environmental protection statutes and other environmental requirements.

CHAPTER 6 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES identifies any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented.

CHAPTER 7 SUMMARY OF ENVIRONMENTAL CONSEQUENCES summarizes the potential environmental consequences of implementing the Proposed Action and alternatives.

CHAPTER 8 REFERENCES provides bibliographical information for cited sources.

CHAPTER 9 LIST OF PREPARERS identifies persons who prepared the document and their areas of expertise.

APPENDIX A PUBLIC AND AGENCY CORRESPONDENCE provides relevant documentation of correspondence with the public and agencies.

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ACRONYMS

Acronym	Definition
AHPA	Archeological and Historic Preservation Act
BMP	Best Management Practice
Ce	Chester Silt Loam
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Cm	Codorus Silt Loam
Cn	Conestoga Silt Loam
CRIS	Cultural Resource Information System
EA	Environmental Assessment
EIS	Environmental Impact Statement
Ek	Elk Silt Loam
EO	Executive Order
EP	Engineering Pamphlet
ER	Engineering Regulation
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
GIS	Geographical Information System
Lw	Lindside Silt Loam
MBTA	Migratory Bird Treaty Act
MF	Migratory Fishes
MO	Mt. Airy and Manor soils
ND	Not Defined
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
ROI	Region of Influence
SME	Subject Matter Expert
T/A/Y	Tons Per Acre Per Year

Acronym	Definition
TSF	Trout Stocking
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
Vo	Volusia Channery Silt Loam

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FINAL SUBMITTAL

ENVIRONMENTAL ASSESSMENT

INDIAN ROCK DAM MASTER PLAN

YORK COUNTY, PENNSYLVANIA

CHAPTER 1 INTRODUCTION, PURPOSE, NEED, AND SCOPE

1.1 INTRODUCTION

The Indian Rock Dam Project (also referred to as the Project) was authorized and constructed for the primary purpose of managing flood risks in the Codorus Creek Watershed and Lower Susquehanna River Basin. A major secondary use of the project lands and waters is to support recreation. The Master Plan for Indian Rock Dam is the strategic land use management document that guides the comprehensive management and development actions related to all project recreational, natural, and cultural resources throughout the life of the Project. Implementation of the Master Plan and proposed land use changes must recognize and be compatible with the authorized purpose of flood risk management and the USACE Environmental Operating Principles (USACE 2019a).

The U.S. Army Corps of Engineers (USACE) produces and uses the Master Plan to guide the responsible stewardship of USACE-administered lands and resources for the benefit of present and future generations. The Master Plan presents an inventory and analysis of land resources, resource management objectives, land use classifications, resource use plans for each land use classification, current and projected park facility needs, an analysis of existing and anticipated resource use, and anticipated influences on overall project operation and management. Specific to Indian Rock Dam, the Master Plan presents an evaluation of the assets, needs, and potential uses of Indian Rock Dam and provides direction for appropriate management, use, development, enhancement, protection, and conservation of the natural and man-made resources at the Project. The Master Plan is guided by Engineering Regulation (ER) and Engineering Pamphlet (EP) 1130-2-550. USACE land use classifications provide for development and resource management consistent with authorized purposes and other Federal laws.

The USACE is proposing adoption of a new Master Plan at Indian Rock Dam to reflect changes that have occurred to the Project, in the region, in recreation trends, and in USACE policy since the 1959 Master Plan. This Environmental Assessment (EA) considers the potential impacts to the natural and human environment from implementation of the 2019 Indian Rock Dam Master Plan (herein referred to as the "2019 Master Plan").

1.1.1 Project Location and Setting

Indian Rock Dam is in York County, Pennsylvania, on Codorus Creek, approximately 3 miles upstream from the City of York (see Figure 1-1). Project lands occupy approximately 1,756 acres of land with 1,660 fee simple acres and 95 flowage easement acres. The dam controls a drainage area of approximately 94 square miles, which is approximately 41 percent of the watershed upstream from York (USACE 2018).

The term "fee simple" refers to land owned by an entity or individual; in this case, land owned by the federal government. The USACE manages fee simple lands and also leases portions of the Project to other entities for recreational, resource management ,and agricultural purposes (see Section 3.5).

The term "easement" refers to land which a user has rights over; however is not owned by the user. The USACE has the right to flood 95 acres of non-USACE-owned land under flowage easements.

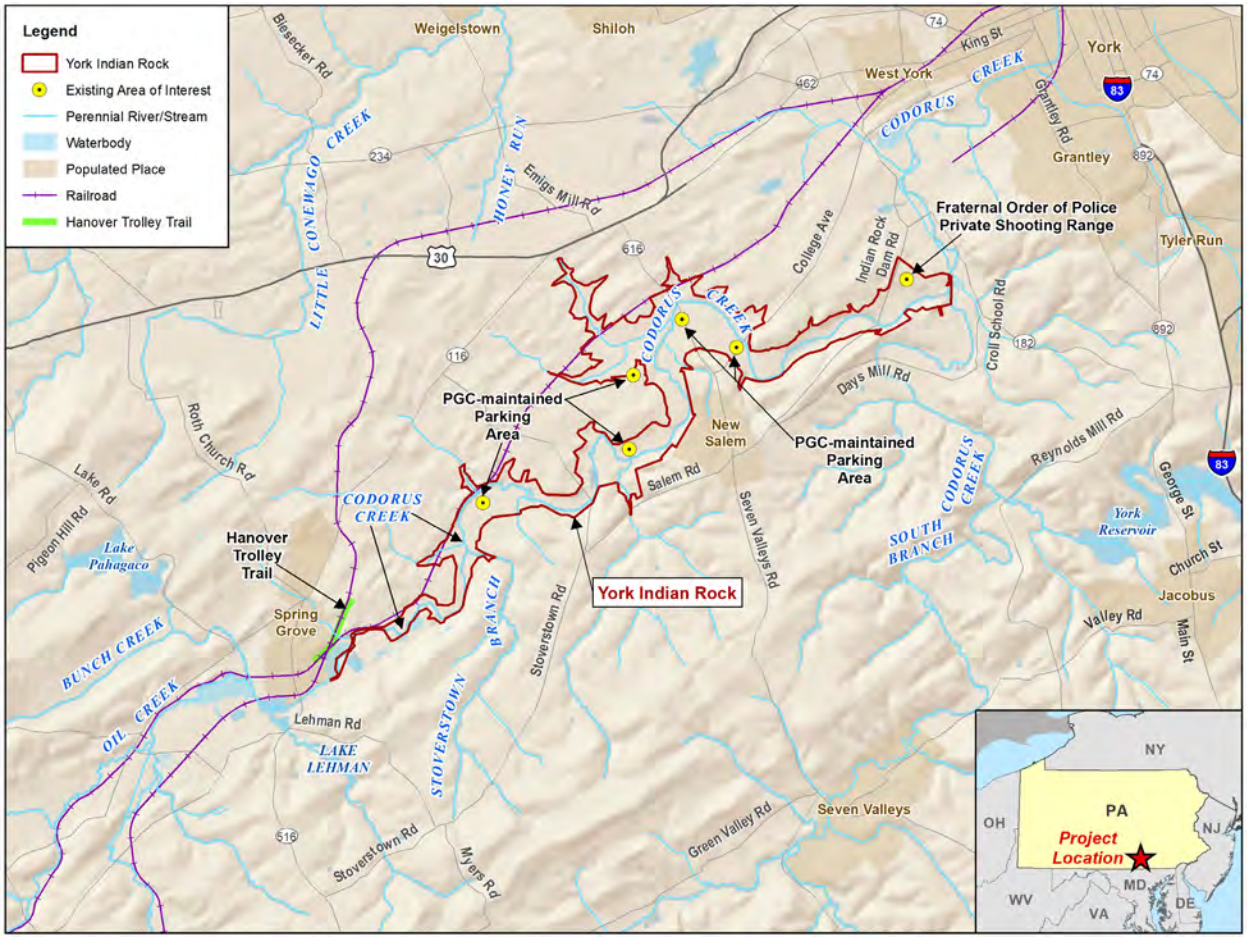


Figure 1-1. Project Location Map

1.1.2 Project Background

The Indian Rock Dam project on Codorus Creek was authorized by the Flood Control Act of June 22, 1936 (Public Law 74-738, 74th Congress, 2nd Session) in order to control floods in the Lower Susquehanna River Basin. The USACE completed the Indian Rock Dam project in 1950 for the primary purposes of managing floods in the Lower Susquehanna River Basin as part of a comprehensive flood control plan. The Project provides immediate flood protection for the valley downstream from the dam and assists in managing floods on Codorus Creek and the Susquehanna River. A major secondary use of the Project is to support recreation. The Project is heavily utilized by individuals and groups who participate in a variety of activities such as fishing, hiking, picnicking, and enjoying the great outdoors (USACE 2019b).

The dam consists of rolled earth and rockfill, rising 83 feet above the streambed and extending 1,000 feet across the valley. The dam controls a drainage area of 94 square miles: equivalent to 41 percent of the watershed upstream from York. The reservoir area behind the dam is normally dry; however, the reservoir area has a storage capacity of 28,000 acre-feet (9.1 billion gallons) at spillway crest (USACE 2019b). The Project also contributes to Executive Order (EO) 13508 goals to protect habitat and water quality and expand public access within the Chesapeake Bay Watershed (USACE 2019b).

1.2 PURPOSE AND NEED FOR THE ACTION

The purpose of the Proposed Action is to ensure that the conservation and sustainability of the land, water, and recreational resources at Indian Rock Dam comply with applicable environmental laws and regulations and to maintain quality land for future use, including the 2014 Chesapeake Bay Agreement goals and management strategies for restoring and maintaining the health of the watershed (CBP 2019). The 2019 Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years, which reflects changes that have occurred since 1959 in outdoor recreation trends, regional land use, population, legislative requirements, USACE management policy, and wildlife habitat at Indian Rock Dam.

The need for the Proposed Action is to update the Indian Rock Dam Master Plan in accordance with January 2013 updates to ER and EP 1130-2-550.

1.3 SCOPE OF THE EA

The USACE prepared this EA pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500–1517), and the USACE implementing regulations, Policy and Procedures for Implementing NEPA, ER 200-2-2 (USACE 1988) to evaluate existing conditions and potential impacts of implementing the 2019 Indian Rock Dam Master Plan. NEPA requires federal agencies to review potential environmental effects of federal actions, which includes the adoption of formal plans, such as master plans, approved by federal agencies upon which future agency actions will be based.

Alternatives considered within this EA focus on the proposed land use classifications as presented in the 2019 Master Plan and the types of future development projects that could occur within the land use classifications. The EA does not consider implementation of specific projects identified within the 2019 Master Plan during the master planning process as those projects are conceptual in nature. The USACE would conduct further NEPA analysis on projects identified within the 2019 Master Plan once funding is available and detailed project planning and design occur.

In accordance with the above regulations, the USACE intends to use this EA to meet USACE's regulatory requirements under NEPA and provide USACE with the information needed to make an informed decision about the potential effects to the natural and human environment associated with implementing the Proposed Action.

1.4 PUBLIC AND AGENCY INVOLVEMENT

The USACE invites public participation in the NEPA process. Consideration of the views of and information provided by all interested persons and stakeholders promotes open communication and enables better decision-making. USACE coordinated with agencies, organizations, and members of the public with a potential interest in the Proposed Action during development of the 2019 Master Plan and in preparation of this EA. A Public Notice was sent to interested parties on December 11, 2018, announcing that USACE was preparing an EA for the 2019 Master Plan update (see Appendix A). Stakeholders contacted included:

- City of York
- York County Parks
- York County Rail Trail Authority (YCRTA)
- Pennsylvania Game Commission
- Springettsbury Township
- Spring Garden Township
- York College of Pennsylvania
- Susquehanna Commerce Center
- West Manchester Township
- York New Salem
- Glatfelter Paper Company
- Pennsylvania Department of Transportation
- York Water
- North Codorus Township
- York Area Regional Police
- Lake Marburg

1.4.1 Public Review

The EA process included a 30-day public review period. A notice of availability was published in the York Daily Record, York Dispatch, PennLive/The Patriot-News and Press & Journal regarding the availability of the Draft EA. A hard copy of the Draft EA was available at the Glatfelter Memorial Library (Spring Grove, Pennsylvania) and the Martin Library (York, Pennsylvania). The Draft EA was also placed for review on the Project's website at the following URL address: https://www.nab.usace.army.mil/IRD-Master-Plan-Revision/. In addition, a Town Hall meeting on the Draft 2019 Master Plan and findings of the Draft EA was held on June 6, 2019 at the York New Salem Community Fire Company 1 in York New Salem, Pennsylvania. No public comments were received during the 30-day public comment period.

1.4.2 Agency Coordination

The USACE distributed the Draft EA to the U.S. Fish and Wildlife Service (USFWS) – Region 5, the Pennsylvania Department of Conservation and Natural Resources, the Pennsylvania Game Commission, and the Pennsylvania Fish and Boat Commission.

The USACE also coordinated with the USFWS Pennsylvania Ecological Services Field Office and the Pennsylvania Natural Heritage Program in preparation of this EA regarding the presence and potential affects to protected species. Information on protected species is included in Section 3.4.

Copies of agency correspondence are included in Appendix A of this EA.

CHAPTER 2 PROPOSED ACTION AND ALTERNATIVES

2.1 DEVELOPMENT OF ALTERNATIVES

USACE identified alternatives considered within this EA as part of the master planning process. This Chapter describes the master planning process, screening criteria for alternative development, and the alternatives carried forth for detailed analysis within this EA.

2.1.1 Master Planning Process

USACE guidance recommends the establishment of resource goals and objectives for the purposes of development, conservation, and management of natural, cultural, and human-made resources at a project location. Goals describe the desired end state of overall management efforts, whereas objectives are concise statements describing measurable and attainable management activities that support the stated goals. Goals and objectives are guidelines for obtaining maximum public benefits while minimizing adverse impacts on the environment and are developed in accordance with 1) authorized project purposes, 2) applicable laws and regulations, 3) resource capabilities and suitability, 4) regional needs, 5) other governmental plans and programs, and 6) expressed public desires. Table 2-1 outlines the goals and objectives proposed in the 2019 Indian Rock Dam Master Plan.

Table 2-1. Growth Concepts Identified within the 2019 Master Plan

Goal	Description	Objectives	Timeframe
1	Improve infrastructure and utilities	✓ Address key safety concerns	Short to Mid-range (within the next 1 to 10 years)
2	Enhance existing recreation sites and amenities	✓ Expand hiking trails – connect current system of trails	Short to Mid-range (within the next 1 to 10 years)
3	Expand recreational opportunities in key areas	No requirements identified for this goal.	Not Applicable
4	Invest in key operational and support facilities	No requirements identified for this goal.	Not Applicable

2.1.2 Screening Criteria

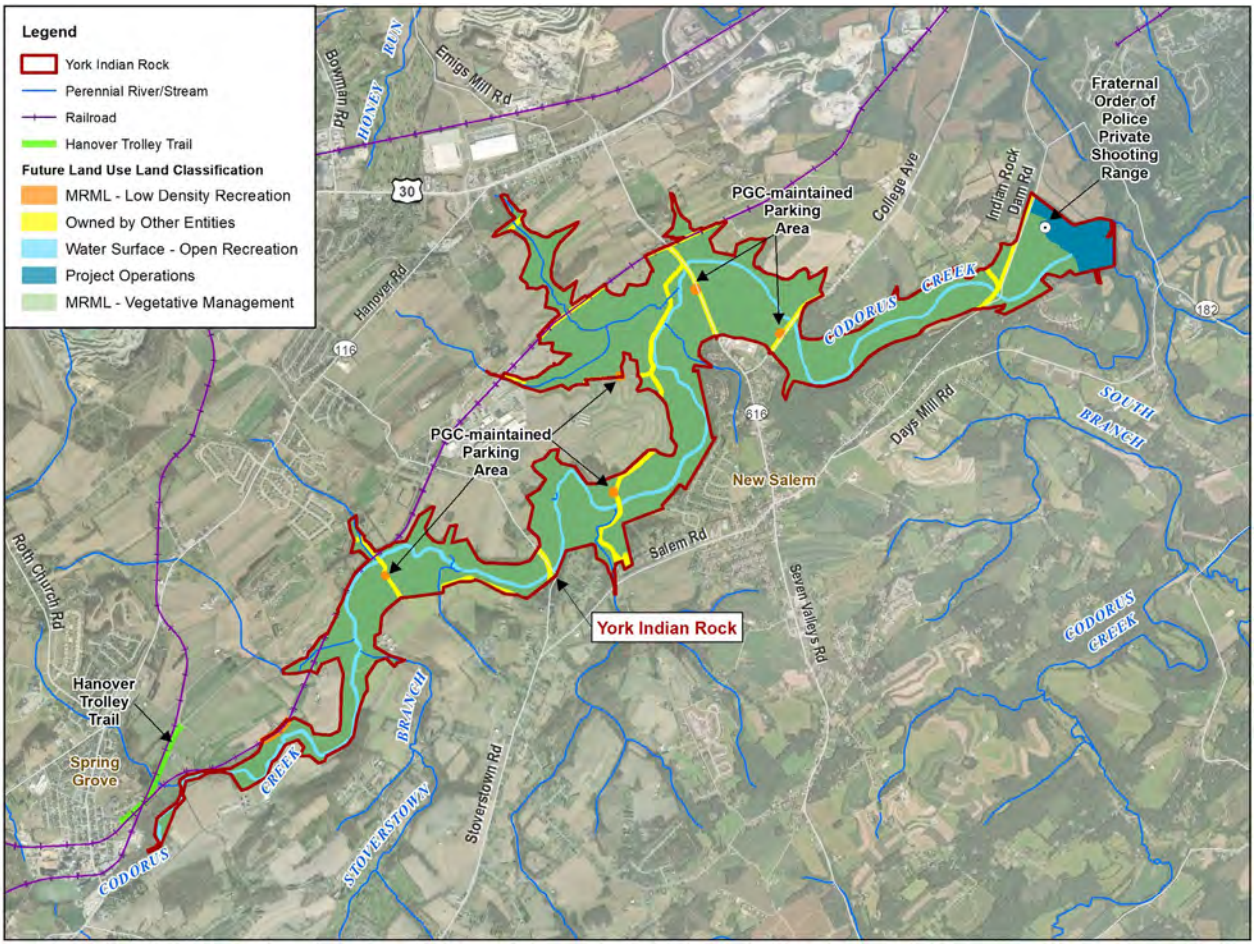
For an alternative to be considered viable, it must be compatible with the primary project missions of flood risk management, water quality control, and water supply. In addition, the alternative must meet management goal objectives and USACE-wide Environmental Operating Principles as described in Chapter 3 of the 2019 Master Plan. Based on these criteria, this EA evaluates the No Action Alternative (Section 2.2) and the Proposed Action Alternative (Section 2.3).

2.2 ALTERNATIVE 1: NO ACTION ALTERNATIVE

The No Action Alternative serves as a basis for comparison to the anticipated effects of the other action alternatives. Under the No Action Alternative, the USACE would take no action and would not adopt the 2019 Master Plan. The operation and management of Indian Rock Dam would continue as outlined in the current 1959 Master Plan. No new land use classifications would occur and a framework for future development at Indian Rock Dam would not occur.

2.3 ALTERNATIVE 2: PROPOSED ACTION ALTERNATIVE (PREFERRED ALTERNATIVE)

Under Alternative 2, the Proposed Action Alternative, the USACE would implement the 2019 Master Plan and associated changes in land management in compliance with USACE regulations and guidance. This alternative would adopt land classifications to updated USACE standards and include resource objectives that reflect current and projected needs compatible with Chesapeake Bay Program watershed goals. Required changes associated with the Proposed Action include classifications of land, classification of the water surface, and adoption of new resource management and recreation objectives. Figure 2-1 depicts the proposed new land use classifications within the 2019 Master Plan. Table 2-2 quantifies the proposed land and water surface reclassifications and provides a description of the land use classification along with types of future projects that could occur within each land use classification, as applicable.



Note: Indian Rock Dam operates as a dry reservoir. Surface Water classification includes land area occupied by Codorus Creek.
MRML = multiple resource management lands

Figure 2-1. Proposed 2019 Indian Rock Dam Master Plan Reclassification Map

Table 2-2. Proposed Changes to Land Use Classifications at Indian Rock Dam

Classification	1959 Master Plan (acres)[a]	2019 Master Plan (acres)	Description
Project Operations	125	95	Lands associated with the dam and spillway structures that are operated and maintained for fulfilling the flood risk management and water storage missions of Indian Rock Dam. Although unrelated to USACE project operations, this classification also includes the private firing range leased and managed by the Fraternal Order of Police.
Wildlife and Game Management	1,634	N/A	The 1959 Master Plan included this classification, however, the proposed 2019 Master Plan update divides lands within this classification into multiple resource management lands.
High-Density Recreation[b]	ND	0	Lands used for intensive recreational activities. This land use classification is not proposed for Indian Rock Dam in the 2019 Master Plan update.
Multiple Resource Management Lands			
Low-Density Recreation	ND	2	Lands with minimal development or infrastructure that support passive public recreation use, such as fishing, hunting, wildlife viewing, or hiking. This includes approximately 2 acres of land within the Project encompassing the five parking areas for hunting, fishing, and wildlife viewing activities as well as the Hanover Trolley Trail. There are no future plans for the existing low-density recreation lands.
Vegetative Management	ND	1,588	This land use classification includes an ecosystem-based management approach and is designated for stewardship of forest, prairie, and other native vegetative cover. The primary objective for these lands is to manage the forest to ensure a healthy, diverse, and visual aesthetic continuous forest canopy throughout the Indian Rock Dam property. The provision and protection of wildlife habitat and the availability of these lands for passive recreation activities are also important objectives. Pennsylvania Game Commission manages approximately 350 acres of Prescribed Burn Zones within this classification to manage the vegetative areas. Pennsylvania Game Commission also manages several Habitat Restoration Areas in order to support a healthy ecosystem for both the plants and animals in the area. Current recreational use of these lands includes, but is not limited to hunting, bank fishing, wildlife viewing, and hiking. Future uses include all existing uses with the possibility of enhancing these uses with amenities like signage or new primitive access trails.
Water Surface			
Restricted	ND	1	Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. The Restricted water surface at Indian Rock Dam which, operates as a dry reservoir, is limited to the areas around the dam and the spillway.
Open Recreation Area	ND	69	Open Recreation area includes all water surface areas available for year-round or seasonal water-based recreational use. As Indian Rock Dam is a dry reservoir, areas with water surface open recreation include all remaining water surface area outside of the restricted zones (e.g. Main Branch of Codorus Creek).

[a] The 1959 Master Plan did not include land classifications. When Indian Rock Dam was established, the only land allocation category that applied to the Project was Operations, which includes lands required to operate the dam and accomplish the primary authorized purposes of the Project.

[b] As the High-Density Recreation land classification does not occur in the 1959 Master Plan and is not proposed in the 2019 Master Plan, this classification is not carried for analysis within the EA.

N/A = not applicable; ND = Not Defined; USACE = U.S. Army Corps of Engineers

The Proposed Action would update the 1959 Master Plan compliant with ER and EP 1130-2-550, and would meet goals and objectives outlined in the 2019 Master Plan. Therefore, this alternative is the Preferred Alternative and will carry forward as the Proposed Action.

2.4 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

The USACE did not identify any other alternatives to the Proposed Action as part of the master planning charette process. As such, no other alternatives beyond the No Action and Preferred Alternative are being carried forward for analysis in this EA.

CHAPTER 3 ENVIRONMENTAL SETTING AND CONSEQUENCES

3.1 INTRODUCTION

This Chapter describes the natural and human environments that exist at the Project and the potential impacts of the No Action Alternative and Proposed Action (Preferred Alternative), outlined in Chapter 2. The description of baseline data sources and an approach for analyzing impacts are discussed in Sections 3.1.1 and 3.1.2, respectively.

Several resources were determined not to be affected by the Proposed Action; therefore, a detailed analysis of these topics is not presented in this chapter. Section 3.1.3 provides a discussion of resources carried through for further analysis within the EA, and justification for those resources dismissed from further analysis.

3.1.1 Description of Baseline Data and Data Sources

The EA used the following types of data to characterize the affected environment of the Project:

- Geographical Information System (GIS), including waters and wetlands inventory, floodplain mapping, and vegetation
- Aerial photography: U.S. Department of Agriculture (USDA), National Agriculture Imagery Program
- Regional and local reports: including Natural Resources Conservation Service (NRCS) Soil Surveys and previous studies conducted at Indian Rock Dam
- Agency databases including the USFWS and the U.S. Environmental Protection Agency (USEPA)
- Information presented within the 2019 Master Plan
- Agency consultation

3.1.2 Approach for Analyzing Impacts

Impacts (consequence or effect) can be either beneficial or adverse and can be either directly related to the action or indirectly caused by the action. Direct effects are caused by the action and occur at the same time and place (40 CFR 1508.8[a]). Indirect effects are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8[b]). As discussed in this chapter, the alternatives may create temporary (less than 1 year), short-term (up to 3 years), long-term (3 to 10 years following the Master Plan), or permanent effects.

Whether an impact is significant depends on the context in which the impact occurs and the intensity of the impact (40 CFR 1508.27). The context refers to the setting in which the impact occurs and may include society as a whole, the affected region, the affected interests, and the locality. Impacts on each resource can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. This analysis classifies the intensity of impacts as beneficial, negligible, minor, moderate, or significant. The intensity thresholds are defined as follows:

- Beneficial – Impacts would improve or enhance the resource.
- Negligible – A resource would not be affected, or the effects would be at or below the level of detection, and changes would not be of any measurable or perceptible consequence.

- Minor – Effects on a resource would be detectable, although the effects would be localized, small, and of little consequence to the sustainability of the resource. Mitigation measures, if needed to offset adverse effects, would be simple and achievable.
- Moderate – Effects on a resource would be readily detectable, long-term, localized, and measurable. Mitigation measures, if needed to offset adverse effects, would be extensive and likely achievable.
- Significant – Effects on a resource would be obvious and long-term and would have substantial consequences on a regional scale. Mitigation measures to offset the adverse effects would be required and extensive, and success of the mitigation measures would not be guaranteed.

As stated in Section 1.3, Scope of the EA, the analysis focuses on the proposed land use classifications as presented in the 2019 Master Plan and the types of future development projects that could occur within each land use classification. Specific future projects contained within the 2019 Master Plan are qualitatively considered within this EA, as these projects are conceptual in nature. The USACE would conduct further NEPA analysis on projects identified within the 2019 Master Plan once funding is available and detailed planning and design occur. As illustrated in Table 2-1, these projects would occur within two periods: short-range (within the next 1 to 5 years) and mid-range (within the next 6 to 10 years).

3.1.3 Level of Resource Area Analysis

All potentially relevant resource areas were initially considered for analysis in this EA. Consistent with NEPA implementing regulations and guidance, USACE focused the analysis on topics with the greatest potential for environmental impacts. This sliding-scale approach is consistent with NEPA (40 CFR 1502.2(b)), under which impacts, issues, and related regulatory requirements are investigated and addressed with a degree of effort commensurate with their importance. Some resource topics are limited in scope due to the lack of direct effect from the Proposed Action on the resource or because that resource is not located within the Project. For example, no body of water in the Indian Rock Dam watershed is designated as a federally wild or scenic river, so this resource will not be discussed. Table 3-1 provides justification for whether the EA carries a resource area through for detailed consideration.

In conducting this analysis, a qualified subject matter expert (SME) reviewed the potential direct and indirect effects of the No Action Alternative and the Proposed Action relative to each environmental and socioeconomic resource. The SME carefully analyzed and considered the existing conditions of each resource area within the Proposed Action's region of influence (ROI). Through this analysis, it was determined that, for several resource areas, negligible adverse effects would occur. This included air quality, greenhouse gases and climate, noise, geology, groundwater, cultural resources, wild and scenic rivers, utilities, hazardous materials and waste, socioeconomics and environmental justice, and traffic and transportation (see Table 3-1).

Table 3-1. Environmental Resource Area Assessment Criteria and Level of Assessment

Resource Area	ROI	Thresholds of Significance	Dismissed from further Analysis?	Rationale for Level of Assessment
Air Quality	South Central Pennsylvania Intrastate Air Quality Control Region	Significant impacts to air quality would occur if the Proposed Action generated emissions that: • Exceed the general conformity rule *de minimis* (of minimal importance) threshold values; or • Contribute to a violation of any federal air regulation.	Yes	Indian Rock Dam is an area meeting attainment for all criteria pollutants, and therefore, the General Conformity Rule does not apply (USEPA 2019). Changes to land use classifications under the Proposed Action would not affect air quality. Implementation of future master planning projects would generate temporary emissions from construction activities, including particulate matter and other criteria pollutants. Future development and increased recreational opportunities could also generate increased visitation and corresponding vehicle emissions. These increases, however, would be insignificant and would not affect air quality. Increases could also be offset by people travelling less distance to obtain recreational experiences previously not offered at the Project. As a result, this resource area is not further discussed in this EA.

Table 3-1. Environmental Resource Area Assessment Criteria and Level of Assessment

Resource Area	ROI	Thresholds of Significance	Dismissed from further Analysis?	Rationale for Level of Assessment
Greenhouse Gases and Climate	York County, Pennsylvania	Significant impacts to greenhouse gases would occur if the Proposed Action contributes to substantial greenhouse gas emissions and climate change.	Yes	York County is in Climate Zone 7 with an average annual temperature of 53°F (U.S. Climate Data 2019). Changes to land use classifications under the Proposed Action would not affect greenhouse gas emissions or climate. Implementation of future master planning projects would generate temporary emissions from construction activities, including greenhouse gases. Future development and increased recreational opportunities could also generate increased visitation and corresponding greenhouse gas emissions from vehicles. These increases, however, would be insignificant to greenhouse gas levels and to climate change contribution. Increases in greenhouse gas emissions could also be offset by people travelling less distance to obtain recreational experiences previously not offered at the Project. As a result, this resource area is not further discussed in this EA.
Geology and Topography	Geology and topography within and adjacent to (i.e., within 50 feet) master planning project footprints	Significant impacts would occur to geology and topography if the Proposed Action is located on a geologic unit or contains topography that is unstable, or would become unstable due to the project, potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	Yes	The Project falls within the Piedmont Upland physiographic province, which is characterized by broad, rounded to flat-topped hills and shallow valleys. Changes to land use classifications under the Proposed Action would not affect geology or topography. Construction activities associated with future development would not affect the geology and siting and design of future projects would consider the steep topography. As a result, this resource area is not further discussed in this EA.

Table 3-1. Environmental Resource Area Assessment Criteria and Level of Assessment

Resource Area	ROI	Thresholds of Significance	Dismissed from further Analysis?	Rationale for Level of Assessment
Water Resources	Watersheds, state-designated stream segments, wetlands, and groundwater aquifers associated with Indian Rock Dam	Significant impacts would occur to water resources if the Proposed Action: • Violates any water quality standards or waste discharge requirements; • Results in an excess sediment load in adjacent waters, affecting impaired resources; • Results in unpermitted direct impacts to waters of the United States; • Violates policies, regulations, and permits related to wetlands conservation and protection; • Substantially affects surface water drainage or stormwater runoff, including floodwater flows; or • Substantially affects groundwater quantity or quality.	No (surface water and wetlands) Yes (groundwater)	Indian Rock Dam is in the Codorus Creek watershed, Hydrologic Unit Code, 0205030607. Changes to land use classification and future master planning projects could have the potential to adversely impact surface waters and wetlands. As a result, these resources are further discussed in Section 3.2. Changes to land use classification and construction of future master planning projects are not anticipated to adversely affect the quality or availability of groundwater. Therefore, groundwater is not further discussed in this EA.
Soils	Soils within and adjacent to (i.e., within 50 feet) master planning project footprints	Significant impacts would occur to soils if the Proposed Action results in substantial soil erosion or topsoil loss.	No	Changes to land use classification and future master planning projects could affect soils susceptible to erosion and Prime Farmland soils. As a result, this resource area is further discussed in Section 3.3.

Table 3-1. Environmental Resource Area Assessment Criteria and Level of Assessment

Resource Area	ROI	Thresholds of Significance	Dismissed from further Analysis?	Rationale for Level of Assessment
Biological Resources	Biological resources within and adjacent to Indian Rock Dam	Significant impacts would occur to biological resources if the Proposed Action causes: • Substantial and permanent conversion or net loss of habitat at the landscape scale; • Long-term loss or impairment of a substantial portion of local habitat (species-dependent); • Loss of populations of species; or • Unpermitted or unlawful "take" of species protected under the Endangered Species Act, the Bald and Golden Eagle Protection Act, or the Migratory Bird Treaty Act.	No	Changes to land use classification and future master planning projects have the potential to impact biological resources from loss of habitat and habitat degradation. As a result, this resource area is further discussed in Section 3.4.
Noise	Indian Rock Dam and adjacent lands	Significant noise impacts would occur if the Proposed Action: • Violates any federal, state, or local noise ordinance; • Creates incompatible land uses for areas with sensitive noise receptors outside the project area; or • Creates noise loud enough to threaten or harm human health.	Yes	Indian Rock Dam is in a physical setting characterized as rural, with the City of York and surrounding suburbs located directly to the north and east. In rural areas most noise comes from transportation, and human and animal sources (Engineering Toolbox 2013). Noise is also generated at the Project from the firing range located in lands leased by the Fraternal Order of Police. Changes to land use classifications under the Proposed Action would not change the existing noise environment. Construction activities associated with implementation of future master planning projects would generate noise, however, these effects would be temporary and minor. Operational activities would be consistent with current noise levels. As a result, this resource area is not further discussed in this EA.

Table 3-1. Environmental Resource Area Assessment Criteria and Level of Assessment

Resource Area	ROI	Thresholds of Significance	Dismissed from further Analysis?	Rationale for Level of Assessment
Land Use and Recreation	Land use within and directly adjacent to Indian Rock Dam	Significant impacts would occur to land use and recreation if the Proposed Action: • Conflicts with applicable land use plans, policies, or regulation of an agency with jurisdiction over the project; • Conflicts with applicable habitat conservation plan or natural community conservation plan; or • Diminishes existing recreational opportunities.	No	As the Proposed Action implements changes to land use classifications and identifies future recreational projects within and adjacent to Indian Rock Dam, these resource areas are further discussed in Section 3.5.
Cultural Resources	Cultural resources within and adjacent to (i.e., within 50 feet) master planning project footprints	Significant impacts to cultural resources would occur if the Proposed Action: • Causes substantial adverse change in the significance of historical or archaeological resources as defined in the National Historic Preservation Act (NHPA); or • Disturbs any human remains, including those buried outside of formal cemeteries.	Yes	The USACE currently does not have an ICRMP for Indian Rock Dam. USACE performs Section 106 compliance on a project-by-project basis. Changes to land use classification would not adversely affect cultural resources, however, future master planning projects and uses have the potential to directly impact cultural resources from construction and grading activities or indirectly from erosion due to use. In regard to the 2019 Indian Rock Dam Master Plan, this would include establishment of new primitive access trails. Prior to future master planning project implementation involving new construction, sites with the potential for archaeological resources (e.g., undisturbed locations) would be surveyed and the USACE would consult with the Pennsylvania State Historic Preservation Office for Section 106 concurrence. As a result, this resource area is not further discussed in this EA.

Table 3-1. Environmental Resource Area Assessment Criteria and Level of Assessment

Resource Area	ROI	Thresholds of Significance	Dismissed from further Analysis?	Rationale for Level of Assessment
Utilities	Utilities within and near Indian Rock Dam	A significant impact would occur if the Proposed Action were to result in a substantial increase in any utility consumption to the extent that generation capacity is exceeded, based on currently available projections, or unacceptable demands are placed on infrastructure supply and distribution systems.	Yes	Changes to land use classifications and future projects identified under the Proposed Action would not affect utilities. Therefore, utilities are not further discussed in this EA.
Hazardous Materials and Wastes	Areas within and adjacent to (i.e., within 50 feet) of master planning project footprints	A significant impact would occur if the project were to create a significant hazard to the public or the environment through release of hazardous materials into the environment.	Yes	No known contaminated sites occur at Indian Rock Dam. Changes to land use classifications under the Proposed Action would not affect hazardous materials and wastes. Construction-related debris from future master planning projects would be managed, disposed, and recycled in accordance with state and federal requirements. Future development and related increased visitation could result in corresponding minor increases of waste generation, however, any waste generated during operations would be comparable to existing types generated and would be properly managed in accordance with state, and federal requirements. As a result, this resource area is not further discussed in this EA.

Table 3-1. Environmental Resource Area Assessment Criteria and Level of Assessment

Resource Area	ROI	Thresholds of Significance	Dismissed from further Analysis?	Rationale for Level of Assessment
Socio-economics and Environmental Justice	Areas within Indian Rock Dam and immediate surrounding communities and counties	Significant impacts to socioeconomics and environmental justice would occur if the Proposed Action: • Causes substantial change to the sales volume, income, employment or population of the surrounding ROI; • Displaces substantial numbers of existing housing units or people, necessitating the construction of replacement housing elsewhere; • Causes disproportionate adverse economic, social, or health impacts on minority or low-income populations; or • Causes disproportionate health or safety risk to children.	Yes	The Proposed Action would not result in any appreciable effects to the local or regional socioeconomic environment. Changes to land use classification would have no impact on socioeconomics or environmental justice. Construction of future master planning projects (primitive trails) would have negligible beneficial effects associated with temporary employment of construction personnel and transportation of goods and materials to the construction sites. There would be no effects on environmental justice since the Proposed Action would be located within federal lands and projects would benefit local residences by enhancing recreational opportunities. Potential effects from construction and operation of future master planning projects would not result in disproportionate adverse environmental or health effects on low-income or minority populations or children. As a result, socioeconomics and environmental justice are not discussed further in this EA.
Traffic and Transportation	Public roadways and key access points within and near Indian Rock Dam	Significant impacts to traffic and transportation would occur if the Proposed Action: • Causes an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system; • Substantially increases hazards due to a design feature; • Noticeably hinder emergency access; or • Overwhelm existing parking capacity.	Yes	Changes to land use classification would have no impact on traffic and transportation. Future master planning projects would result in temporary increased truck traffic during construction to haul materials and wastes to and from the construction sites. Road closures would not be anticipated for construction of primitive trails and increases in visitation and corresponding traffic would be negligible. As a result, traffic and transportation are dismissed from this EA.

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3.2 WATER RESOURCES

3.2.1 Affected Environment

3.2.1.1 Surface Waters and Wetlands

Indian Rock Dam is located along Codorus Creek, which is part of the greater Susquehanna River watershed. The dam controls about 41 percent of the Codorus Creek watershed upstream of York (USACE 2018). The watershed is a mosaic of forested, agricultural, and residential land use. Codorus Creek is the predominant surface water feature within the Project (see Section 3.2.1.2 regarding water quality and use designations).

Wetlands at Indian Rock Dam are concentrated along Codorus Creek within the 100-year floodplain. This includes a mix of forested and emergent wetlands (USFWS 2018). Wetlands are protected under Section 404 of the Clean Water Act and EO 11990 Protection of Wetlands. In accordance with the Clean Water Act, disturbance to, or filling in, of potential wetlands at the Project are avoided to the highest degree possible, but if necessary, the USACE Regulatory Branch is consulted for jurisdictional determination and possible permitting for wetlands disturbance.

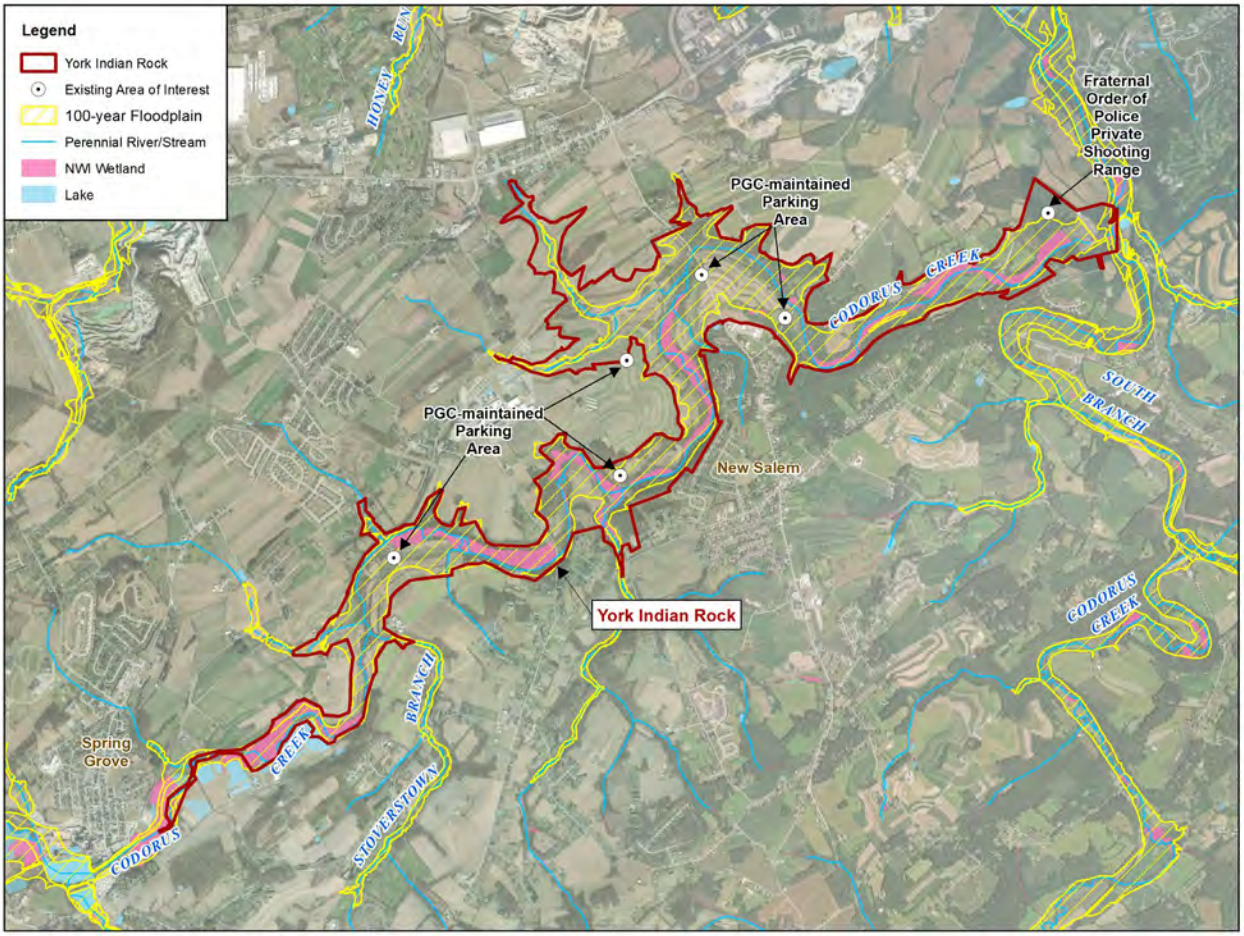
Figures 3.2-1 shows the location of surface water and wetlands within the Project.

3.2.1.2 Water Quality

The Codorus Creek watershed has historical impairment issues, primarily from severe bank erosion, high sediment loads, and thermal warming. To address the issues, the York County Conservation District and Codorus Creek Watershed Association prepared the Codorus Creek Nonpoint Source Pollution Control Watershed Implementation Plan under the Pennsylvania Department of Environmental Quality 319 Watershed Improvement Program (York County Conservation District 2007). The plan serves as a management tool for local governing agencies and entities, nonprofit organizations, watershed groups, and other stakeholders for future stream restoration efforts in the watershed to improve aquatic habitat, designated uses, and water quality of the Codorus Creek and its many streams and tributaries.

The Clean Water Act requires that states report on water quality of their waters. Through ambient water quality monitoring, states determine if a waterbody satisfies the water quality criteria associated with each state's designated uses. Section 401 of the Clean Water Act requires applicants of a federal license or permit provide a certification that any discharges from the facility would comply with the act, including state-established water quality standard requirements. When a state-defined designated use is not met or supported by the waterbody, it is deemed impaired. Designated uses are defined on a state-by-state basis and documented according to the reporting requirements of Clean Water Act Sections 303 and 305. According to the 2016 Final Pennsylvania Integrated Water Quality Monitoring and Assessment Report Section 305(b) Report and 303(d) List, the Codorus Creek watershed is an agricultural nonpoint source - impaired watershed and references the existing Watershed Implementation Plan (PADEP 2016). Indian Rock Dam must also comply with state regulations that are part of the Chesapeake Bay Program water quality goals.

According to the State of Pennsylvania's Chapter 93 Water Quality Standards, the State of Pennsylvania designates Codorus Creek in the Project as Migratory Fishes (MF) and Trout Stocking (TSF) (PADEP 2019). The MF designation is for waters supporting passage, maintenance and propagation of anadromous and catadromous fishes and other fishes that move to or from flowing waters to complete their life cycle in other waters. The TSF designation is for waters supporting maintenance of stocked coldwater trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna that are indigenous to a warm water habitat.



Source: FEMA 2019; USFWS 2018; USGS 2016; USDA-FSA 2017.

Figure 3.2-1. Surface Waters and Wetland Resources at Indian Rock Dam

3.2.1.3 Floodplains

Floodplains are areas of land adjacent to rivers and streams that convey overflows during flood events. The Federal Emergency Management Agency (FEMA) defines a floodplain as being any land area susceptible to being inundated by water from any source (FEMA 2018). FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate flood hazard areas, such as floodplains, for communities. These maps are used to administer floodplain regulations and to reduce flood damage. Typically, these maps indicate the locations of 100-year floodplains, which are areas with a 1 percent chance of flooding occurring in any single year. EO 11988, Floodplain Management, states that actions by federal agencies are to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplain development wherever there is a practicable alternative.

The National Flood Insurance Program (NFIP) requires local jurisdictions to issue permits for all development in the 100-year floodplain, as depicted on maps issued by FEMA. Development is broadly defined to include any man-made change to land, including grading, filling, clearing, dredging, extraction, storage, subdivision of land, and construction and improvement of structures and buildings. For any development to take place, all necessary permits must be obtained, which may include federal and State permits, as well as the local permit. To be properly permitted, proposed development may not increase flooding or create a dangerous situation during flooding, especially on another person's property. If a structure is involved, it must be constructed to minimize damage during flooding. The Pennsylvania

Emergency Management Agency acts as the Coordinating Office for the NFIP in Pennsylvania and is responsible for issuing floodplain development permits.

Floodplains are widely distributed along Codorus Creek at the Project (see Figure 3.2-1). FEMA classifies floodplains at the Project as Zone A (no base flood elevations determined) (FEMA 2019).

3.2.2 No Action – Environmental Consequences

Under the No Action Alternative, USACE would not implement the 2019 Master Plan and no new land use classifications or future development projects contained within the proposed 2019 Master Plan would occur. The operation and management of Indian Rock Dam and USACE lands would continue as outlined in the 1959 Master Plan. Although this alternative does not result in a Master Plan that meets current regulations and guidance, there would be no significant impacts to water resources on project lands.

3.2.3 Proposed Action – Environmental Consequences

The reclassifications required for the Proposed Action would result in negligible to minor adverse water resource impacts and beneficial impacts. Table 3.2-1 summarizes potential effects to surface waters and wetlands based on the proposed changes to land use classifications.

Table 3.2-1. Potential Water Resource Impacts from Changes to Land Use Classifications

Classification	1959 Master Plan (acres)	2019 Master Plan (acres)	Potential for Impact
Project Operations	125	95	**No Impact**. This land use classification would designate lands associated with the direct support for flood control operations, including dam and spillway structures. No new projects are proposed within this land use.
Wildlife and Game Management	1,634	N/A	**No Impact.** Although this classification is not proposed in the 2019 Master Plan, wildlife management is encompassed in the vegetative management and wildlife management classifications proposed in the 2019 Master Plan.
Multiple Resource Management Land			
Low-Density Recreation	ND	2	**No Impact**. This land use classification focuses on lands with minimal development or infrastructure that support passive public recreation use, such as fishing, hunting, wildlife viewing, or hiking. This includes approximately 2 acres of land within the Project encompassing the five parking areas for hunting, fishing, and wildlife viewing activities as well as the Hanover Trolley Trail. There are no future plans for the existing low-density recreation lands.
Vegetative Management	ND	1,588	**Minor Impact**. This land use includes an ecosystem-based management designated for stewardship of forest, prairie, and other native vegetative cover. According to USFWS NWI mapping, approximately 187 acres of forested wetland and 13.5 acres of emergent wetland occur within this land use classification. FEMA FIRM mapping also indicates approximately 1,138 acres of this land use classification occurs within the 100-year floodplain. Future new primitive access trails would have minor impacts on water resources, primarily due to the potential for direct disturbance during construction and indirect effects of sedimentation from erosion. Construction and operations of these projects would use BMPs associated with prevention of erosion. All projects would avoid disturbance to surface waters and wetlands, where possible. Any unavoidable impacts would be permitted through the Section 404 process. Improved trails would

Table 3.2-1. Potential Water Resource Impacts from Changes to Land Use Classifications

Classification	1959 Master Plan (acres)	2019 Master Plan (acres)	Potential for Impact
			reduce erosion elsewhere at the Project by encouraging use of maintained designated access points. Proposed projects are not anticipated to impact floodplain elevation or impede or affect flood water movement.
Water Surface			
Restricted	ND	1	**No Impact.** Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. No impacts to water resources would occur.
Open Recreation Area	ND	69	**No Impact.** Open Recreation areas include all water surface areas available for year-round or seasonal water-based recreational use. This change reflects new classification criteria and no actual change in water use, therefore, no impact would occur.

BMP = best management practice; ND = Not Defined; NWI = National Wetland Inventory; USFWS = U.S. Fish and Wildlife Service

3.3 SOILS

3.3.1 Affected Environment

According to the soil survey for York County, Pennsylvania, soils within the Project are predominantly mapped as Lindside silt loam (Lw), Conestoga silt loam (Cn), Codorus silt loam (Cm), Chester silt loam (Ce), Elk silt loam (Ek) and Mt. Airy and Manor soils (MO). The Lw and Cm soils tend to be moderately well drained and are located on floodplains. Cn, Ce, and MO soils are located along hillslopes and Ek soils along terraces, all of which are classified as well drained (NRCS 2019).

Prime Farmland

The President and Congress enacted the Farmland Protection Policy Act of 1981 to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses (Public Law 97-98). Prime farmland is defined by the NRCS as "having the best combination of chemical and physical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses" (NRCS 2019). Undeveloped land with high crop production potential may be classified as "prime farmland."

NRCS designates the following soil units, totaling approximately 1,275 acres, as Prime Farmland at Indian Rock Dam (NRCS 2019):

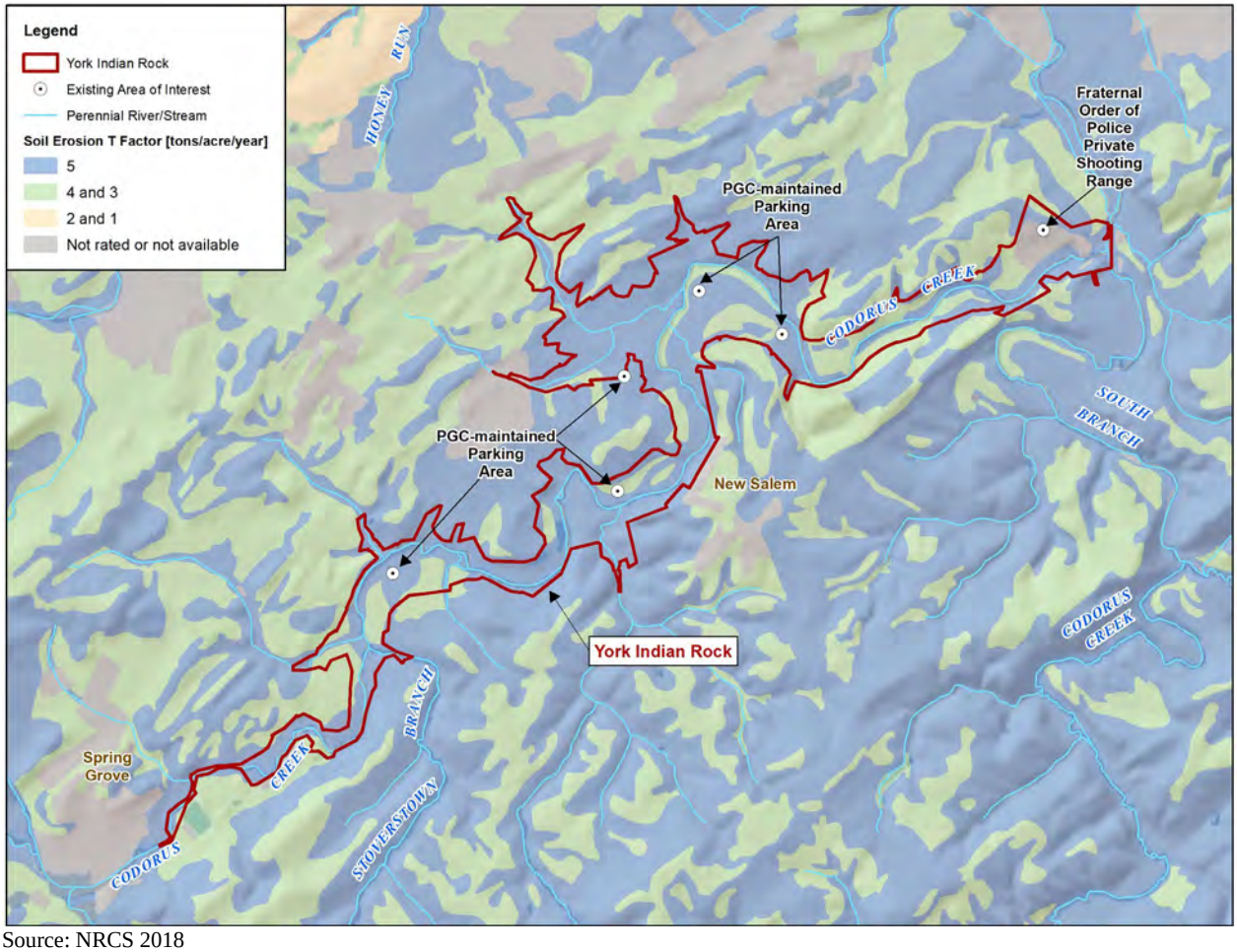
- Chagrin silt loam
- Chester silt loam
- Clarksburg silt loam
- Codorus silt loam
- Conestoga silt loam
- Duffield silt loam
- Elk silt loam
- Glenelg channery loam
- Lindside silt loam
- Mt. Airy and Manor soils

Soil Erosion

Soil particles and organic matter can become detached from the soil column by the impact of rain water, and the steep topography can result in erosion. The force of wind can also contribute to the potential for

soil erosion. At the moment soil particles become suspended in the runoff or in the air, soil changes from being a natural resource supporting plant growth to being a pollutant – sediment or dust. Soil erosion is less of a factor at Indian Rock Dam compared to other USACE projects due to the lack of steep topography. As stated in Section 3.2.1.2, however, sediment loading has historically caused water quality impairment in the watershed from agriculture and other land disturbances. The EA considers two soil classifications (discussed below) used by the NRCS to determine erosion potential at Indian Rock Dam.

Erosion T Factor is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur on a soil unit without affecting crop productivity (e.g., vegetation growth and cover) over a sustained period. The rate is in tons per acre per year (T/A/Y). A soil with a T Factor rating of 5 T/A/Y can tolerate 5 times as much erosion without a loss in productivity compared to a soil with a T Factor rating of 1 T/A/Y. Erosion T Factor is a good indicator of the overall soil erosion tolerance, and of the effect of erosion on a soil's ability to support plant growth, and can be used for understanding the various soil units' capacity for supporting plant growth following disturbance. As shown in Figure 3.3-1, a majority of the Project is classified as a 5 or 4 and 3 erosion T Factor, meaning the soils are resilient to wind and water erosion.

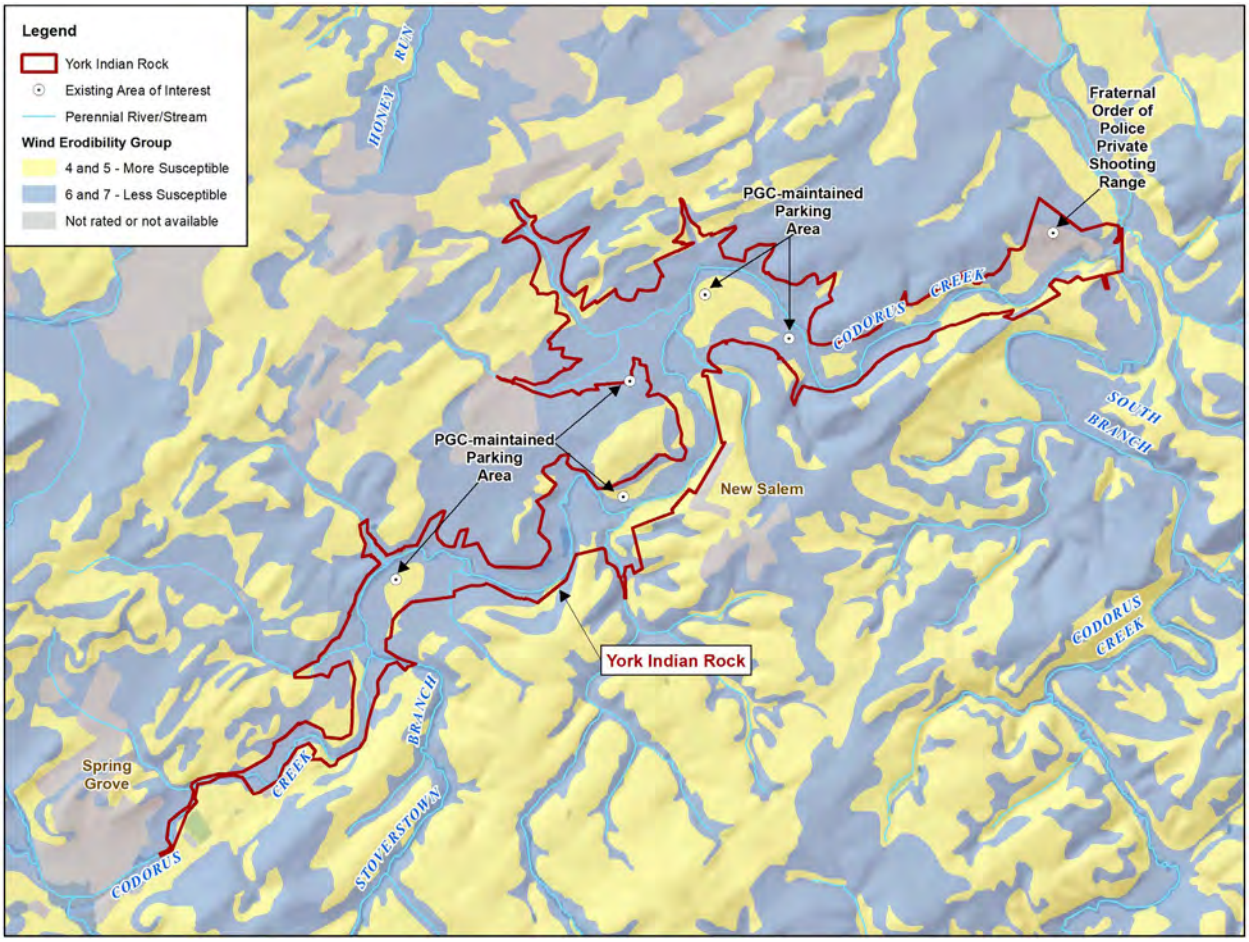


Source: NRCS 2018

Figure 3.3-1. Soil Erosion Potential Considering T Factor

Wind Erodibility Groups (Figure 3.3-2) are also used to determine erosion potential. Wind erodibility groups are assigned to soils based on their inherent susceptibility to wind erosion based on soil properties, primarily soil texture and structure. The group scale runs from Group 1 (being the most susceptible) to

Group 8 (being the least susceptible). As shown on Figure 3.3-2, most of Indian Rock Dam is classified as wind erodibility Groups 6 and 7, with pockets of wind erodibility groups 4 and 5, indicating a low to moderate susceptibility to wind erosion.



Source: NRCS 2018

Figure 3.3-2. Soil Erosion Potential Considering Wind Erodibility Groups

3.3.2 No Action – Environmental Consequences

Under the No Action Alternative, USACE would not implement the 2019 Master Plan and no new land use classifications or future development projects contained within the proposed 2019 Master Plan would occur. The operation and management of Indian Rock Dam and USACE lands would continue as outlined in the 1959 Master Plan. Although this alternative does not result in a Master Plan that meets current regulations and guidance, there would be no significant impacts to soil resources on project lands.

3.3.3 Proposed Action – Environmental Consequences

The reclassifications required for the Proposed Action would result in negligible to minor adverse and beneficial soil resource impacts. Table 3.3-1 summarizes potential effects to soil resources based on the proposed changes to land use classifications.

Table 3.3-1. Potential Soil Resource Impacts from Changes to Land Use Classifications

Classification	1959 Master Plan (acres)	2019 Master Plan (acres)	Potential for Impact
Project Operations	125	95	**No Impact**. This land use classification would designate lands associated with the direct support for flood control operations, including dam and spillway structures. No new projects are proposed within this land use.
Wildlife and Game Management	1,634	N/A	**No Impact.** Although this classification is not proposed in the 2019 Master Plan, wildlife management is encompassed in the vegetative management and wildlife management classifications proposed in the 2019 Master Plan.
Multiple Resource Management Land			
Low-Density Recreation	ND	2	**No Impact**. This land use classification focuses on lands with minimal development or infrastructure that support passive public recreation use, such as fishing, hunting, wildlife viewing, or hiking. This includes approximately 2 acres of land within the Project encompassing the five parking areas for hunting, fishing, and wildlife viewing activities as well as the Hanover Trolley Trail. Designation of this land use classification would not affect soil resources and no future projects are planned within this land use designation.
Vegetative Management	ND	1,588	**Minor Impact**. This land use includes an ecosystem-based management designated for stewardship of forest, prairie, and other native vegetative cover. Approximately 1,275 acres of soil are classified as prime farmland. Future new primitive access trails would have minor impacts on soil resources, primarily due to the potential for direct disturbance during construction and indirect effects of erosion. Construction and operations of these projects would use BMPs associated with prevention of erosion. Improved trails would reduce erosion elsewhere at the Project by encouraging use of maintained designated access points.
Water Surface			
Restricted	ND	1	**No Impact.** Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. No impacts to soil resources would occur.
Open Recreation Area	ND	69	**No Impact.** Open Recreation areas include all water surface areas available for year-round or seasonal water-based recreational use. This change reflects new classification criteria and no actual change in water use, therefore, no impact would occur.

BMP = best management practice; ND = Not Defined

3.4 BIOLOGICAL RESOURCES

3.4.1 Affected Environment

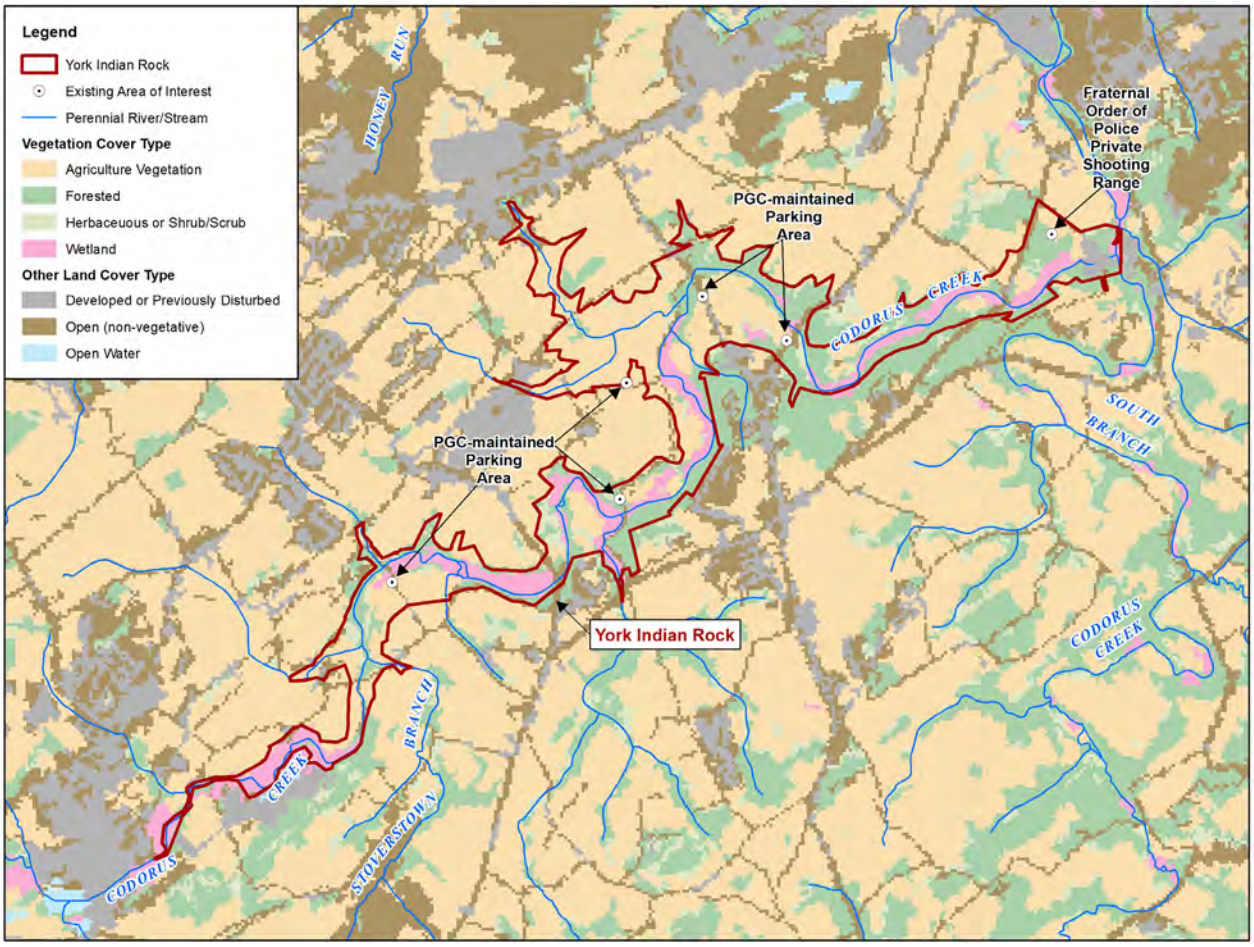
3.4.1.1 Vegetation

Indian Rock Dam is in Ecoregion 64c (Piedmont Uplands) and is characterized by rounded hills, low ridges, relative high relief, and narrow valleys (USEPA 1999). Typical mapped natural vegetation communities are Appalachian oak forest dominated by white and red oaks (*Quercus alba* and *Q. rubra*). Agriculture has transformed many areas within this ecoregion which is a dominant land use in the region (USEPA 1999). Figure 3.4-1 shows the distribution of vegetation communities at the Project. The predominant cover type is forested, herbaceous and agricultural cover.

3.4.1.2 Wildlife and Fisheries

The common species of mammals in the vicinity of Indian Rock Dam include white-tailed deer (*Odocoileus virginianus*), gray and red foxes (*Urocyon conereoargenteus, Vulpes vulpes*), squirrels (*Sciurus sp.*), opossums (*Didelphis virginiana*) raccoons (*Procyon lotor*), skunks (*Mephitis mephitis*), groundhogs (*Marmota monax*), beaver (*Castor canadensis*), and cottontail rabbits (*Sylvilagus floridanus*).

As stated in Section 3.2.1.2, Codorus Creek is designated as a warm water fishery which would support common carp (*Cyprinus carpio*), brown bullhead (*Ameiurus nebulosus*), rock bass (*Ambloplites rupestris*), pumpkinseed (*Lepomis gibbosus*), yellow perch (*Perca flavescens*), white sucker (*Catostomus commersonii*) and trout (*Oncorhynchus*).



Source: USGS 2016

Figure 3.4-1. Vegetation Communities at Indian Rock Dam

3.4.1.3 Species of Conservation Concern

As of 2019, only one federally protected species listed under the Endangered Species Act has the potential to occur at the Project, the bog turtle (*Clemmys muhlenbergii*) (see Appendix A, March 28, 2019 USFWS coordination letter). Table 3.4-1 provides information on this species.

Table 3.4-1. Federally Threatened, Endangered, and Protected Species that Could Occur at Indian Rock Dam

Common Name	Status	Habitat/Requirement
Bog Turtle	FT	Bog turtles live in spring fed meadows and bogs dominated by tussock sedge and grasses with a substrate consisting of deep mucky soils fed by groundwater seeps. They require shallow surface water or saturated soils present year-round and open conditions associated with early-successional wetland habitats. The turtle requires deep mucky soils for hibernation and thermoregulation and the low grasses and sedges for nesting areas and cover. Some wetlands occupied by bog turtles are located in agricultural areas and are subject to grazing by livestock.

FT = federally threatened

Bald eagles, a previously listed federally endangered species, were removed from the federal list in August 2007. Although this species is not listed as an endangered or threatened species, it is protected under the Bald and Golden Eagle Protection Act, as noted by USFWS. Bald eagles have the potential to occur at Indian Rock Dam (USFWS 2019).

A review of the USFWS Information for Planning and Conservation database identified four species of migratory birds of conservation concern that have the potential to occur at Indian Rock Dam (USFWS 2019). This includes the bald eagle, cerulean warbler (*Dendroica cerulea*), red-headed woodpecker (*Melanerpes erythrocephalus*), and wood thrush (*Hylocichla mustelina*).

The Migratory Bird Treaty Act (MBTA) (16 USC 703-712) prohibits the take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect), or the attempt to engage in any such conduct, of any migratory bird without authorization from the USFWS. All migratory birds (identified in 50 CFR 10.13) are protected under the MBTA. The U.S. Department of the Interior's Office of the Solicitor issued Memorandum M-37050 on December 22, 2017, which adopts the position that the MBTA prohibition on the "taking" or "killing" of migratory birds applies only to deliberate acts intended to take a migratory bird (U.S. Department of Interior 2017). The legal opinion reverses the position of prior administrations that the MBTA prohibits not only the intentional take of migratory birds but also the take of migratory birds that is incidental to otherwise lawful activity (i.e., unintentional). Unintentional take includes disturbance to species and nests during ground-clearing activities, such as clearing, where unobserved nests of migratory birds could be located. The breeding season ranges among species with the earliest having a start of April 28th and latest end of September 10th with the exception of the bald eagle which breeds September 1st to July 31st (USFWS 2019).

State Protected Species

The USACE reviewed the Pennsylvania Natural Heritage Program's Conservation Explorer to determine the potential presence of state-protected species at the Project. Their database includes records from the Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission and the Pennsylvania Department of Conservation and Natural Resources. The Conservation Explorer database did not include any occurrences of species at the Project (PANHP 2019). As stated in Section 1.4.2, USACE is coordinating with these three agencies in review of this EA to confirm Pennsylvania Natural Heritage Program's records.

3.4.1.4 Invasive Species

Invasive species are defined as non-native species whose introduction into an ecosystem is likely to cause environmental, human, or economic harm. Non-native, or exotic, species have not evolved the natural checks and balances that normally keep population growth in check, thus they can spread rapidly and completely take over natural areas. These species are often difficult and expensive to manage.

There are currently no invasive species reported within project boundaries. The Codorus Creek Watershed Implementation Plan lists the following invasive species of concern within the watershed: mile-a-minute weed (*Polygonum perfoliatum*), purple loosestrife (*Lythrum salicaria*), Japanese knotweed (*Polygonum cuspidatum*), garlic mustard (*Alliaria petiolata*), autumn olive (*Elaeagnus umbellata*), multiflora rose (*Rosa multiflora*), and Japanese honeysuckle (*Lonicera japonica*) (York County Conservation District 2007).

3.4.2 No Action – Environmental Consequences

Under the No Action Alternative, USACE would not implement the 2019 Master Plan and no new land use classifications or future development projects contained within the proposed 2019 Master Plan would occur. The operation and management of Indian Rock Dam and USACE lands would continue as outlined in the 1959 Master Plan. Although this alternative does not result in a Master Plan that meets current regulations and guidance, there would be no significant impacts to biological resources on project lands.

3.4.3 Proposed Action – Environmental Consequences

The reclassifications required for the Proposed Action would result in negligible to minor adverse and beneficial biological resource impacts. Table 3.4-2 summarizes potential effects to biological resources based on the proposed changes to land use classifications.

Table 3.4-2. Potential Biological Resource Impacts from Changes to Land Use Classifications

Classification	1959 Master Plan (acres)	2019 Master Plan (acres)	Potential for Impact
Project Operations	125	95	**No Impact**. This land use classification would designate lands associated with the direct support for flood control operations, including dam and spillway structures. No new projects are proposed within this land use.
Wildlife and Game Management	1,634	N/A	**No Impact**. Although this classification is not proposed in the 2019 Master Plan, wildlife management is encompassed in the vegetative management and wildlife management classifications proposed in the 2019 Master Plan.
Multiple Resource Management Land			
Low-Density Recreation	ND	2	**No Impact**. This land use classification focuses on lands with minimal development or infrastructure that support passive public recreation use, such as fishing, hunting, wildlife viewing, or hiking. This includes approximately 2 acres of land within the Project encompassing the five parking areas for hunting, fishing, and wildlife viewing activities as well as the Hanover Trolley Trail. There are no future plans for the existing low-density recreation lands.
Vegetative Management	ND	1,588	**Minor and Beneficial Impacts**. This land use includes ecosystem-based management designated for stewardship of forest, prairie, and other native vegetative cover. Future new primitive access trails would have minor impacts on biological resources, primarily due to the potential for direct disturbance during construction of new trails and indirect effects of vegetation crushing and erosion from trail use. Construction and operations of these projects would use BMPs associated with prevention of erosion. Improved trails would reduce erosion elsewhere at the Project by encouraging use of maintained designated access points. Construction and operations of these projects would use BMPs associated with prevention of impacts to sensitive species, including removal of vegetation outside of nesting seasons for bird species (April 28 – September 10). Additionally, areas proposed for disturbance would be surveyed for wetlands within 300-feet of

Table 3.4-2. Potential Biological Resource Impacts from Changes to Land Use Classifications

Classification	1959 Master Plan (acres)	2019 Master Plan (acres)	Potential for Impact
			the proposed construction footprint; wetlands areas identified would be assessed for suitable bog turtle habitat by a qualified surveyor prior to disturbance and activities coordinated with the USFWS. Beneficial impacts to biological resources would occur as the designated vegetation management land use classification would use an ecosystem-based approach with a focus on native vegetation cover.
Water Surface			
Restricted	ND	1	**No Impact.** Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. No impacts to biological resources would occur.
Open Recreation Area	ND	69	**No Impact.** Open Recreation areas include all water surface areas available for year-round or seasonal water-based recreational use. This change reflects new classification criteria and no actual change in water use, therefore, no impact would occur to biological resources.

BMP = best management practice; ND = Not Defined

3.5 LAND USE AND RECREATION

3.5.1 Affected Environment

Since completion of the dam in June 1950, project lands continue to be outleased for agriculture, grazing, and wildlife management purposes. Recreational outleases have also been supported as an additional authorized purpose. There are currently 43 outgrants, most of which are easements. However, a few outgrants consist of a license to the Pennsylvania Game Commission for wildlife management on most of the Project (approximately 1,539 acres) and a lease to the Fraternal Order of Police for a shooting range at the far end of the dam (approximately 38 acres) (USACE 2018).

Although the primary function of the lake is flood risk management, the Project is also authorized to support recreation opportunities above and below the dam. Recreation facilities with the Project are mostly nature-based, including picnicking, hunting, and wildlife viewing. As the Project operates as a dry reservoir, the Project does not offer swimming.

3.5.2 No Action – Environmental Consequences

Under the No Action Alternative, USACE would not implement the 2019 Master Plan and no new land use classifications or future development projects contained within the proposed 2019 Master Plan would occur. The operation and management of Indian Rock Dam and USACE lands would continue as outlined in the 1959 Master Plan and there would be no short-, mid-, and long-range planning of future projects for recreational improvements and development at Indian Rock Dam. Therefore, the No Action Alternative is anticipated to a have minor impact to land use and recreation. Although this alternative does not result in a Master Plan that meets current regulations and guidance regarding land use classifications, there would be no significant impacts to land use and recreation.

3.5.3 Proposed Action – Environmental Consequences

The reclassifications required for the Proposed Action would result in beneficial impacts to land use and recreation. Table 3.5-1 summarizes potential effects to land use and recreation based on the proposed changes to land use classifications.

Table 3.5-1. Potential Land Use and Recreation Impacts from Changes to Land Use Classifications

Classification	1959 Master Plan (acres)	2019 Master Plan (acres)	Potential for Impact
Project Operations	125	95	**No impact**. This land use classification is carried over from the 1959 Master Plan and would not impact land use or recreation.
Wildlife and Game Management	1,634	N/A	**No impact**. The 1959 Master Plan included this classification, however, the proposed 2019 Master Plan update divides lands within this classification into multiple resource management lands.
Multiple Resource Management Land			
Low-Density Recreation	ND	2	**Beneficial impact**. This land use classification focuses on areas suitable for supporting low-impact and passive recreational opportunities such as bank fishing, hiking, wildlife viewing, and for access to the banks of the Main Branch of Codorus Creek. Although no projects have been identified, it optimizes the siting of future low-density master planning projects to developed locations in proximity to existing parking areas and the Hanover Trolley Trail.
Vegetative Management	ND	1,588	**Beneficial Impact**. This land use includes an ecosystem-based management designated for stewardship of forest, prairie, and other native vegetative cover. This classification would assist USACE with their goal of protection and management of natural resources at Indian Rock Dam. Future new primitive access trails within this land classification would improve recreation opportunities by expanding the trail system and improving access for activities such as hiking, fishing, wildlife viewing and access to the Main Branch of Codorus Creek.
Water Surface			
Restricted	ND	1	**Beneficial Impact.** Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. This classification would aid to protect recreational users at the Project.
Open Recreation Area	ND	69	**No Impact.** Open Recreation areas include all water surface areas available for year-round or seasonal water-based recreation. This change reflects new classification criteria and no actual change in water use, therefore, no impact would occur.

CHAPTER 4 CUMULATIVE EFFECTS

As defined by CEQ, cumulative effects are those that "result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, without regard to the agency (federal or non-federal) or individual who undertakes such other actions" (40 CFR 1508.7). Cumulative effects analysis captures the effects that result from the Proposed Action in combination with the effects of other actions taken during the duration of the Proposed Action at the same time and place. Cumulative effects may be accrued over time and/or in conjunction with other pre-existing effects from other activities in the area (40 CFR 1508.25); therefore, pre-existing impacts and multiple smaller impacts should also be considered. Overall, assessing cumulative effects involves defining the scope of the other actions and their interrelationship with the Proposed Action to determine if they overlap in space and time.

The NEPA and CEQ regulations require the analysis of cumulative environmental effects of a Proposed Action on resources that may often manifest only at the cumulative level. Cumulative effects can result from individually minor, but collectively significant, actions taking place at the same time, over time. As noted above, cumulative effects are most likely to arise when a Proposed Action is related to other actions that could occur in the same location and at a similar time.

4.1 CURRENT AND REASONABLY FORESEEABLE PROJECTS WITHIN AND NEAR THE ROI

This section identifies reasonably foreseeable projects that may have cumulative, incremental impacts in conjunction with the Proposed Action. The main action identified within the ROI is the Codorus Creek levee system repair. The purpose of the project is to rehabilitate and repair the Codorus Creek flood risk management levee system and improve the overall reliability of the Indian Rock Dam/Codorus Creek flood risk management project. The proposed rehabilitation work tasks include replacement of approximately 600 linear feet of the levee wall, replacement and addition of riprap at the base of the new floodwall, levee bank stabilization along approximately 690 linear feet and drainage conduit maintenance along the length of the levee system. As part of this effort, the USACE completed a Final EA in February of 2019. The Final EA concluded many of the proposed impacts would be short-term and temporary in nature, and upon project completion, the project would provide for stabilized levee banks, thereby reducing erosion and deterioration of the existing system. Minor and short-term effects are expected to occur to soils, surface waters, recreational navigation, terrestrial resources, parks and recreation, aesthetics, and threatened and endangered species. Beneficial effects would occur to surface waters, aesthetics, health and safety, population and socioeconomics, and environmental justice. No effects would occur to Wild and Scenic rivers, floodplains, wetlands, hazardous materials and solid waste, and climate. Work on the project is anticipated to begin 4th quarter of 2019.

The Codorus Creel Levee System Repair EA also identified projects that would fall within the ROI for projects considered in this Master Plan Update EA. This included Rail Trail extension projects, converting former railroad tracks into recreational trails and future Codorus Creek access points.

4.2 ANALYSIS OF CUMULATIVE IMPACTS

Impacts on each resource were analyzed according to how other actions and projects within the region of influence might be affected by the No Action Alternative and Proposed Action. Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. For this analysis the intensity of impacts will be classified as negligible, minor, moderate, or significant (see Section 3.1.2).

As discussed above, the main projects identified near Indian Rock Dam are the proposed levee repair project and Codorus Creek access projects. Cumulative adverse impacts on resources would not be expected when

added to the impacts of activities associated with the Proposed Action or No Action Alternative. A summary of the anticipated cumulative impacts on each resource is presented below.

4.2.1 Water Resources

As discussed in Section 3.2, the No Action Alternative is not anticipated to have an adverse impact on water resources and the Proposed Action Alternative is anticipated to have negligible to minor adverse and beneficial water resource impacts. Adverse water resource impacts discussed in Section 3.2.3 resulting from changes to land use classification are not anticipated to cumulatively contribute to significant adverse water impacts in combination with the levee improvements or improved Codorus Creek access. Additionally, repairs to the levee system would help reduce existing sedimentation from erosion along Codorus Creek and within the floodplain. All projects would be required to adhere to federal, state, and local regulations, thereby ensuring that avoidance, minimization, and mitigation of unavoidable impacted aquatic resources would occur.

4.2.2 Soils

As discussed in Section 3.3, the No Action Alternative is not anticipated to have an adverse impact on soil resources and the Proposed Action Alternative is anticipated to have negligible to minor adverse and beneficial impacts. Adverse soil resource impacts discussed in Section 3.3.3 from changes to land use classification are not anticipated to cumulatively contribute to significant adverse soil resource impacts in combination with the levee improvements or improved Codorus Creek access. Additionally, repairs to the levee system would help reduce existing erosion along Codorus Creek and within the floodplain. Overall adverse impacts would be avoided through use of appropriate sediment and erosion BMPs during construction and from maintenance of areas experiencing erosion during operations.

4.2.3 Biological Resources

As discussed in Section 3.4, the No Action Alternative is not anticipated to have an adverse impact on biological resources and the Proposed Action Alternative is anticipated to have negligible to minor adverse and beneficial impacts. Adverse impacts to biological resources discussed in Section 3.4.3 resulting from changes to land use classification are not anticipated to cumulatively contribute to significant adverse biological resource impacts in combination with the levee improvements or improved Codorus Creek access. Additionally, the levee project would provide for unobstructed fish passage. These projects would also adhere to similar requirements discussed in Section 3.4.3, reducing the potential for adverse impacts to protected species.

4.2.4 Land Use and Recreation

As discussed in Section 3.5, the No Action Alternative is anticipated to have minor impacts to recreation and land use and the Proposed Action Alternative is anticipated to have beneficial impacts. Adverse impacts to land use resources discussed in Section 3.5.2 from the No Action Alternative are not anticipated adversely and cumulatively contribute to significant land use and recreation impacts in combination with the levee improvements or improved Codorus Creek access. Additionally, the levee project and Codorus Creek access projects would provide for improved recreational opportunities and access to the creek and further improve recreational experiences within the greater region.

CHAPTER 5 COMPLIANCE WITH ENVIRONMENTAL LAWS

This EA has been prepared to satisfy the requirements of all applicable environmental laws and regulations, and has been prepared in accordance with the CEQ's implementing regulations for NEPA, 40 CFR 1500 – 1508, and the USACE ER 200-2-2, Environmental Quality: Procedures for Implementing NEPA. The 2019 Master Plan is consistent with the USACE's Environmental Operating Principles.

The following is a list of applicable environmental laws and regulations considered and the status of compliance with each (also see Table 5-1 for a summary):

- Anadromous Fish Conservation Act of 1965, as amended – The 2019 Master Plan would not affect anadromous fish populations or interfere with measures to conserve, develop, and enhance anadromous fish resources.
- Archeological and Historic Preservation Act (AHPA) of 1974 – The 2019 Master Plan land classifications would not adversely affect cultural resources. USACE would evaluate future master planning projects contained within the 2019 Master Plan and compliance with the AHPA on an individual basis during the design process as projects become funded.
- Clean Air Act of 1977, as amended – The USEPA established nationwide air quality standards to protect public health and welfare. Existing operation and management of the Project is compliant with the Clean Air Act and would not change with the 2019 Master Plan.
- Clean Water Act of 1977, as amended – The Proposed Action complies with all state and federal Clean Water Act regulations and requirements. A state water quality certification pursuant to Section 401 of the Clean Water Act is not required for the 2019 Master Plan land use reclassifications. There would be no change in the existing management of the Project that would impact water quality. None of the proposed land use classifications would adversely impact water quality; erosion and sediment BMPs would be used to prevent sedimentation.
- Endangered Species Act of 1973, as amended – Current lists of threatened or endangered species were compiled for the EA. There would be no adverse impact on threatened or endangered species resulting from the 2019 Master Plan.
- Farmland Protection Policy Act (FPPA) of 1980 and 1995 – The FPPA's purpose is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. None of the future master planning projects would adversely affect prime farmland soils.
- Fish and Wildlife Coordination Act of 1958, as amended – Information provided by USFWS and state agencies on fish and wildlife resources has been utilized in the development of this assessment.
- Migratory Bird Treaty Act (MBTA) – The MBTA of 1918 extends federal protection to migratory bird species. The nonregulated "take" of migratory birds is prohibited under this act in a manner similar to the prohibition of "take" of threatened and endangered species under the ESA. The timing of resource management activities and construction of future master planning projects would be coordinated to avoid impacts on migratory and nesting birds.
- National Environmental Policy Act of 1969 – This EA analyzes the potential impacts of implementing the 2019 Master Plan, fulfilling the requirements of the Act. This included public and agency involvement and a 30-day review of the Draft EA.
- National Historic Preservation Act (NHPA) of 1966, as amended – Compliance with the NHPA of 1966, as amended, requires identification of all properties in the Project listed in, or eligible for

listing in, the NRHP. The 2019 Master Plan land classifications would not adversely affect cultural resources. USACE would evaluate future master planning projects contained within the 2019 Master Plan and compliance with the NHPA on an individual basis during the design process as projects become funded.

- Noise Control Act of 1972 – Changes to land use classifications in the 2019 Master Plan would not change the existing noise environment.
- Watershed Protection and Flood Prevention Act – The 2019 Master Plan would serve to further prevent erosion, floodwater, and sediment damages in the watersheds. Implementation would not increase overall erosion and sediment within waters and no impacts would occur to floodwaters controlled by the Project.
- EO 11514 (Protection and Enhancement of Environmental Quality) – EO 11514 requires federal agencies provide leadership in protecting and enhancing the quality of the Nation's environment to sustain and enrich human life. The 2019 Master Plan would improve natural resource management and recreational opportunities.
- EO 11593 (Protection and Enhancement of Cultural Environment) – EO 11593 requires federal agencies to administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations. There are no known historic structures or archaeological sites in the Project boundary. USACE would evaluate future master planning projects contained within the 2019 Master Plan and compliance with the AHPA and NHPA on an individual basis during the design process as projects become funded.
- EO 11990, Protection of Wetlands – EO 11990 requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in executing federal projects. The Proposed Action complies with EO 11990. None of the proposed land use classifications would adversely impact wetlands; erosion and sediment BMPs would be used to prevent sedimentation into wetland areas.
- EO 11988, Floodplain Management – This EO directs federal agencies to evaluate the potential impacts of proposed actions in floodplains. The operation and management of the existing project complies with EO 11988. Proposed land use classifications would comply with EO 11988.
- EO 12898, Environmental Justice – This EO directs federal agencies to achieve environmental justice to the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review. Agencies are required to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The 2019 Master Plan would not result in a disproportionate adverse impact on minority or low-income population groups.
- EO 13045, Protection of Children from Health Risks & Safety Risks – This EO directs federal agencies to evaluate environmental health or safety risks that may disproportionately affect children. The 2019 Master Plan would not result in environmental health or safety risks to children.
- EO 13112, Invasive Species – This EO directs federal agencies to evaluate the occurrence of invasive species, the prevention for the introduction of invasive species, and measures for their control to minimize the economic, ecological, and human health impacts. The 2019 Master Plan would not result in an introduction or increase of invasive species. Land use classification would serve for management of vegetation and high-use areas more prone to invasive species.
- EO 13186, Migratory Bird Habitat Protection – Sections 3a and 3e of EO 13186 direct federal agencies to evaluate the impacts of their actions on migratory birds, with emphasis on species of

concern, and inform the USFWS of potential negative impacts on migratory birds. The 2019 Master Plan would not result in adverse impacts on migratory bird habitat. USACE would evaluate future master planning projects contained within the 2019 Master Plan on an individual basis during the design process as projects become funded.

- EO 13508, Chesapeake Bay Protection and Restoration – This EO directs federal agencies to protect and restore the health, heritage, natural resources, and social and economic value of the Chesapeake Bay. The 2019 Master Plan would not adversely affect the resources within the Chesapeake Bay region.
- 2014 Chesapeake Bay Agreement – This Agreement directs federal agencies to implement best management practices to restore and maintain the health of the Chesapeake Bay.
- CEQ Memorandum dated August 11, 1980, Prime or Unique Farmlands – Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. None of the future master planning projects would adversely affect prime farmland soils.

Table 5-1. Executive Orders, Memoranda, and Chesapeake Bay Restoration Goals

Federal Statutes	Level of Compliance[a]
Anadromous Fish Conservation Act	Full
Archeological and Historic Preservation Act	Full
Clean Air Act	Full
Clean Water Act	Full
Coastal Barrier Resources Act	N/A
Coastal Zone Management Act	N/A
Comprehensive Environmental Response, Compensation and Liability Act	N/A
Endangered Species Act	Full
Estuary Protection Act	N/A
Farmland Protection Policy Act	Full
Federal Water Project Recreation Act	N/A
Fish and Wildlife Coordination Act	Full
Land and Water Conservation Fund Act	N/A
Magnuson-Stevens Act	N/A
Marine Mammal Protection Act	N/A
Marine Protection, Research and Sanctuaries Act	N/A
Migratory Bird Treaty Act	Full
National Environmental Policy Act	Full
National Historic Preservation Act	Full
Noise Control Act	Full
Resource Conservation and Recovery Act	N/A
Rivers and Harbors Act	N/A
Safe Drinking Water Act	N/A
Solid Waste Disposal Act	N/A

Table 5-1. Executive Orders, Memoranda, and Chesapeake Bay Restoration Goals

Federal Statutes	**Level of Compliance[a]**
Toxic Substances Control Act	N/A
Water Resources Planning Act	N/A
Watershed Protection and Flood Prevention Act	Full
Wetlands Conservation Act	N/A
Wild and Scenic Rivers Act	N/A
Executive Orders, Memoranda, etc.	
Protection and Enhancement of Environmental Quality (EO 11514)	Full
Protection and Enhancement of Cultural Environment (EO 11593)	Full
Floodplain Management (EO 11988)	Full
Protection of Wetlands (EO 11990)	Full
Environmental Justice in Minority and Low-Income Populations (EO 12898)	Full
Protection of Children from Health Risks & Safety Risks (EO 13045)	Full
Indian Sacred Sites (EO 13007)	N/A
Invasive Species (EO 13112)	Full
Migratory Bird (EO 13186)	Full
Facilitation of Cooperative Conservation (EO 13352)	N/A
Chesapeake Bay Protection and Restoration (EO 13508)	Full
Stewardship of the Oceans, Our Coasts and the Great Lakes (EO 13547)	N/A
Streamlining Service Delivery and Improving Customer Service (EO 13571)	N/A
Prime and Unique Farmlands (CEQ Memorandum, 11 Aug 80)	Full
Chesapeake Bay Restoration Goals	
Chesapeake Bay Agreement 2014	Full

[a] Level of Compliance:
Full Compliance (Full): Having met all requirements of the statute, EO, or other environmental requirements for the current stage of planning.
Not Applicable (N/A): No requirements for the statute, EO, or other environmental requirement for the current stage of planning.

CHAPTER 6 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

NEPA requires that federal agencies identify "any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented" (42 USC § 4332). An irreversible commitment of resources occurs when the primary or secondary impacts of an action result in the loss of future options for a resource. Usually, this is when the action affects the use of a nonrenewable resource or it affects a renewable resource that takes a long time to renew. The impacts for this project from the reclassification of land or future master planning projects centered on recreation enhancement and development would not be considered an irreversible commitment because much of the land could be converted back to prior use at a future date. An irretrievable commitment of resources is typically associated with the loss of productivity or use of a natural resource (e.g., loss of production or harvest). No irreversible or irretrievable impacts on federally protected species or their habitat is anticipated from implementing the 2019 Master Plan.

CHAPTER 7 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table 7-1 presents a summary of the environmental consequences by alternative analyzed in this EA. As discussed in Chapter 4, selection of the Proposed Action Alternative would not be anticipated to cause cumulative adverse impacts. Table 7-2 presents conservation measures recommended within Chapter 3.

Table 7-1. Summary of Potential Environmental Effects

Alternative	Intensity of Impact				
	Significant	Moderate	Minor	None/Negligible	Beneficial
Water Resources					
No Action Alternative				X	
Proposed Action Alternative			X	X	X
Soil Resources					
No Action Alternative				X	
Proposed Action Alternative			X	X	X
Biological Resources					
No Action Alternative				X	
Proposed Action Alternative			X	X	X
Land Use and Recreation					
No Action Alternative			X		
Proposed Action Alternative				X	X

Table 7-2. Conservation Measures for Future Master Planning Projects

Measure	Resource Protected
Construction and operations of future master planning projects would use BMPs associated with prevention of erosion and control of stormwater runoff.	Water and Soil Resources
Construction and operations of these projects would use BMPs associated with prevention of impacts to sensitive species, including removal of vegetation outside of nesting seasons for bird species (April 28 – September 10).	Biological Resources
Construction of future master planning projects near active bald eagle nests would maintain a buffer of at least 660 feet (200 meters) between project activities and the nest. If the activity is closer than 660 feet, all construction activities within 660 feet of the nest would occur outside the nesting season (generally from mid-December to June for states in the Chesapeake Bay).	Biological Resources
Areas proposed for disturbance would be surveyed for wetlands within 300 feet of the proposed construction footprint. Wetlands areas identified would be assessed for suitable bog turtle habitat by a qualified surveyor prior to disturbance and activities coordinated with the USFWS.	Biological Resources
USACE would evaluate future master planning projects contained within the 2019 Master Plan and compliance with the NHPA on an individual basis during the design process as projects become funded. Sites with the potential for archaeological resources (e.g., undisturbed locations) would be surveyed for cultural resources and the USACE would consult with the Pennsylvania State Historic Preservation Office for Section 106 concurrence.	Cultural Resources

BMP = best management practice; NHPA = National Historic Preservation Act; USACE = U.S. Army Corps of Engineers

CHAPTER 8 REFERENCES

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CHAPTER 9 LIST OF PREPARERS

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Appendix A
Public and Agency Correspondence

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A.1 Public Notice

US Army Corps of Engineers
Baltimore District

Planning Division

Public Notice

Indian Rock Dam Project Master Plan Revision and Environmental Assessment

All Interested Parties: The U.S. Army Corps of Engineers, Baltimore District (USACE-Baltimore) is in the process of updating the Master Plan for the Indian Rock Dam Project (IRD) located in York County, Pennsylvania. USACE is preparing an environmental assessment (EA) in accordance with the National Environmental Policy Act of 1969, as amended, to assess the impact of the Master Plan Revision to the human and natural environment.

The IRD was authorized by the Flood Control Act of 1936, and was constructed, and is managed, by USACE for the purposes of flood risk management and environmental stewardship. This Master Plan considers all USACE-managed and maintained portions of land at Indian Rock Dam. It does not consider specific future development opportunities for leased areas, including the Fraternal Order of Police Firing Range and land maintained by the Pennsylvania State Gaming Commission.

The draft EA is expected to be publicly released in spring 2019. The purpose of this notice is to inform the public of the initiation of the preparation of an EA for the IRD Project Master Plan. We request that federal and state agencies provide information concerning interests within your organization's area of responsibility or expertise, and the public provide information that may be pertinent to this assessment. Comments or information that may be pertinent to this assessment may be provided to the address listed below until January 30, 2019. A timely review of the enclosed map and a written response will be greatly appreciated and will assist us with preparation of the EA.

A public meeting will be held after the initial public comment period, ending January 30, 2019, to allow opportunity for the public to submit ideas, comments, and feedback on the Draft Master Plan and Draft EA. This public meeting will occur in May 2019. A Public Notice will be posted, for interested parties, on the project's website and social media, and sent out via individual mailings, in advance of the meeting, indicating the location and time of the event. All updates regarding the Master Plan Update and public meetings may be found on the following site: https://www.nab.usace.army.mil/IRD-Master-Plan-Revision/.

If you would like to request a public scoping meeting before the formulation of the Draft Master Plan and Draft EA to discuss the scope and intent of this project please do so by December 31, 2019 OR if you have any questions, please contact Major Terrence Harrington at (410) 962-1846 or at Terrence.G.Harrington@usace.army.mil. Additionally, questions can be mailed to U.S. Army Corps of Engineers, Planning Division, Subject: Indian Rock Dam Project, 2 Hopkins Plaza, Baltimore, MD 21201.

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch

US Army Corps of Engineers
Baltimore District

Planning Division

Notice of Availability

Indian Rock Dam Master Plan Revision and Environmental Assessment Notice of Availability

In accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, the U.S. Army Corps of Engineers, Baltimore District (USACE) has prepared a draft environmental assessment (EA) to assess the impact of the Master Plan Revision for the Indian Rock Dam (IRD) Project located in York County, Pennsylvania.

The Master Plan Revision includes updating land classifications to current USACE standards, and identifying resource objectives and future projects that reflect current and projected needs at IRD that are compatible with regional goals. In compliance with NEPA, USACE has prepared an EA and evaluated potential effects of the revised Master Plan on the natural, cultural, and human environment. The EA determined negligible impact would occur to the following resources: air quality, greenhouse gases and climate, noise, geology, cultural resources, groundwater, wild and scenic rivers, utilities, hazardous materials and waste, socioeconomics and environmental justice, and traffic and transportation. Minor adverse and beneficial impacts could occur to water resources, soils, and biological resources, and beneficial impacts could occur to land use and recreation. Based on the preliminary findings in the draft EA, USACE-Baltimore anticipates issuing a Finding of No Significant Impact (FONSI).

USACE requests comments regarding the Proposed Action within thirty (30) days of the date of this notice. USACE-Baltimore will consider all comments received within the 30-day comment period in the preparation of the Final EA. A copy of the draft EA is available at the Glatfelter Memorial Library (Spring Grove, Pennsylvania) and the Martin Library (York, Pennsylvania). Additionally, the Draft EA can be found on the USACE-Baltimore IRD website at: https://www.nab.usace.army.mil/IRD-Master-Plan-Revision/.

A public meeting will be held at the York- New Salem Community Fire Company 1, 65 E George St, York New Salem, PA 17371 on June 6th, 2019 from 6-8 p.m. for the purpose of providing the public information on the Master Plan Revision and an opportunity for the public to submit comments on the Draft EA.

Individuals wishing to provide comments or request additional information may contact Major Terrence Harrington at (410) 962-1846 or at terrence.g.harrington@usace.army.mil. Additionally, questions can be mailed to U.S. Army Corps of Engineers, Planning Division, Subject: Indian Rock Dam, 2 Hopkins Plaza, Baltimore, MD 21201.

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch

A.2 USFWS Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Ecological Services Field Office
110 Radnor Road Suite 101
State College, PA 16801-7987
Phone: (814) 234-4090 Fax: (814) 234-0748
http://www.fws.gov/northeast/pafo/

In Reply Refer To:
Consultation Code: 05E2PA00-2019-SLI-0322
Event Code: 05E2PA00-2019-E-01660
Project Name: Indian Rock Dam Master Plan Update

January 30, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Any activity proposed on National Wildlife Refuge lands must undergo a "Compatibility Determination' conducted by the Refuge. Please contact the individual Refuge to discuss any questions or concerns.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Pennsylvania Ecological Services Field Office
110 Radnor Road Suite 101
State College, PA 16801-7987
(814) 234-4090

Project Summary

Consultation Code: 05E2PA00-2019-SLI-0322

Event Code: 05E2PA00-2019-E-01660

Project Name: Indian Rock Dam Master Plan Update

Project Type: LAND - MANAGEMENT PLANS

Project Description: The U.S. Army Corps of Engineers (USACE) Baltimore District is proposing to update their Master Plan for East Sidney Lake and associated changes in land management in compliance with USACE regulations and guidance. The Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years, which reflects changes in outdoor recreation trends, regional land use, population, legislative requirements, USACE management policy, and wildlife habitat that have occurred since 1959 at Indian Rock Dam. Proposed classifications include: Project Operations to reflect lands associated with the dam and spillway structures that are operated and maintained for fulfilling the flood risk management mission of Indian Rock Dam; High-Density Recreation to reflect lands that are currently developed for intensive recreational activities; low-density recreation to support low-impact recreational opportunities such as bank fishing, hiking, and wildlife viewing; and vegetative management to include an ecosystem-based management approach and is designated for stewardship of forest, prairie, and other native vegetative cover. As part of this effort, USACE is preparing an Environmental Assessment (EA). Alternatives considered within the EA focus on the proposed land use classifications as presented in the Master Plan and the types of future development projects that could occur within the land use classifications. The EA does not consider implementation of specific projects identified within the Master Plan during the master planning process as these projects are conceptual in nature. The USACE would conduct further analysis on projects identified within the Master Plan and resources affected once funding is available and detailed project planning and design occur. USACE is requesting information on protected species at the project for consideration in the Master Plan and any conservation measures USFWS recommends for the protection of species at the project.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.9003086954999N76.81075674102779W

01/30/2019 Event Code: 05E2PA00-2019-E-01660 3

Counties: York, PA

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Bog Turtle *Clemmys muhlenbergii* Population: Wherever found, except GA, NC, SC, TN, VA No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6962	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MD 21201

Planning Division February 19, 2019

Sonja Jahrsdoerfer
Project Supervisor
U.S. Fish and Wildlife Service
Pennsylvania Ecological Services Field Office
110 Radnor Rd, Suite 101
State College, PA 16801

Dear Ms. Jahrsdoerfer:

The U.S. Army Corps of Engineers (USACE) Baltimore District is proposing to update the Master Plan for Indian Rock Dam and associated changes in land management in compliance with USACE regulations and guidance. Project lands (including the lake and surrounding property) occupy approximately 1,740.9 acres (see Figure 1). In conjunction with the Master Plan, USACE is preparing an environmental assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, to evaluate the potential effects of proposed Master Plan revisions.

The purpose of this letter is to initiate consultation with the U.S. Fish and Wildlife Service's Pennsylvania Field Office regarding information on any federally-listed species or critical habitat within the vicinity of the proposed project. USACE is requesting information on protected species at the project for consideration in the Master Plan and any conservation measures USFWS recommends for the protection of species at the project.

Initial search of USFWS records indicates the potential for three federally-protected species, the northern long-eared bat, Indiana bat, and the bog turtle. The following Information for Planning and Consultation (IPaC) report was generated for your reference under the "Indian Rock Dam Master Plan Update" project name:

- Consultation Code: 05E2PA00-2019-SLI-0322 Event Code: 05E2PA00-2019-E-01660

The Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years, which reflects changes in outdoor recreation trends, regional land use, population, legislative requirements, USACE management policy, and wildlife habitat that have occurred since the 1959 Master Plan at Indian Rock Dam. Proposed classifications include: Project Operations to reflect lands associated with the dam and spillway structures that are operated and maintained for fulfilling the flood risk management mission of Indian Rock

Dam; Low-Density Recreation to support low-impact recreational opportunities; Vegetative Management to include an ecosystem-based management approach designated for stewardship of forest, prairie, and other native vegetative cover along with passive recreation such as bank fishing, hiking, wildlife viewing, and for access to the shoreline; and Wildlife Management to include habitat restoration areas managed by the Pennsylvania Game Commission. Alternatives considered within the EA focus on the proposed land use classifications as presented in the Master Plan and the types of future development projects that could occur within the land use classifications. The EA does not consider implementation of specific projects identified within the Master Plan during the master planning process as these projects are conceptual in nature. The USACE would conduct further analysis on projects identified within the Master Plan and resources affected once funding is available and detailed project planning and design occur.

We respectfully ask that you provide any information or comments within 30 days to enable us to complete this phase of the project within the scheduled timeframe to Major Terrence Harrington at (410) 962-1846 or Terrence.G.Harrington@usace.army.mil. Additionally, questions can be mailed to U.S. Army Corps of Engineers, Planning Division, Subject: Indian Rock Dam Project, 2 Hopkins Plaza, Baltimore, MD 21201.

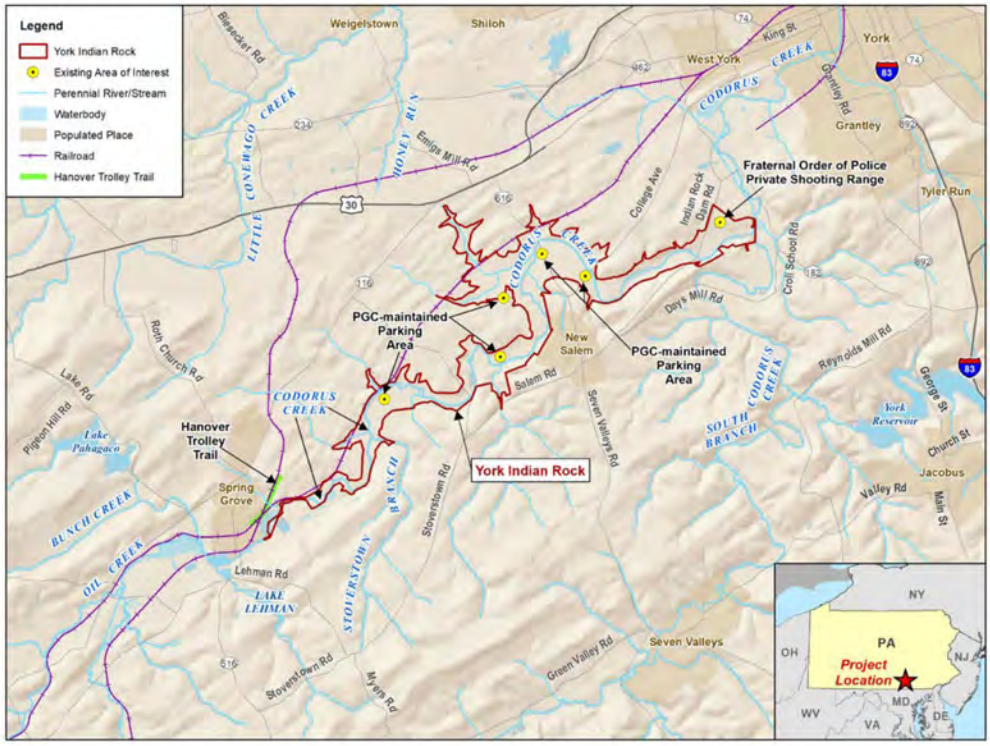
If you have any questions or require additional information, please do not hesitate to call or email. Thank you for your assistance in this matter.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch

Enclosure

Enclosue 1. Project location map.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

March 28, 2019

Major Terrence Harrington
Daniel M. Bierly
U.S Army Corps of Engineers
Baltimore District
2 Hopkins Plaza
Baltimore, MD 21201

RE: Indian Rock Dam Project 2
USFWS Project #2019-0322
PNDI Receipt #660028, 660035, 660042, 660046, 660050, 661055

Dear Major Harrington:

This responds to your letter of February 19, 2019, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed Indian Rock Master Plan updates. Indian Rock Dam is located in Jackson, North Codorus, and West Manchester Townships, York County, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

No federally listed or proposed endangered or threatened species under our jurisdiction are known to occur on the subject property. However, survey information for most species of special concern is incomplete, and a field investigation of any site may reveal previously unknown occurrences of species of special concern.

The subject property is within the known range of the bog turtle (*Clemmys muhlenbergii*), a species that is federally listed as threatened. The northern population of the bog turtle occurs in the States of Connecticut, New York, Pennsylvania, Maryland, New Jersey, Delaware and Massachusetts. Bog turtles inhabit shallow, spring-fed fens, sphagnum bogs, swamps, marshy meadows, and pastures characterized by soft, muddy bottoms; clear, cool, slow-flowing water, often forming a network of rivulets; high humidity; and an open canopy. Bog turtles usually occur in small, discrete populations occupying suitable wetland habitat dispersed along a watershed. The occupied "intermediate successional stage" wetland habitat is usually a mosaic of micro-habitats ranging from dry pockets, to areas that are saturated with water, to areas that are periodically flooded. Some wetlands occupied by bog turtles are located in agricultural areas and are subject to grazing by livestock.

To determine the potential effects of the proposed project on bog turtles and their habitat, begin by identifying all wetlands in, and within 300 feet of the project area. The project area includes all areas that will be permanently or temporarily affected by any and all project features, including buildings, roads, staging areas, utility lines, outfall and intake structures, wells, stormwater retention or detention basins, parking lots, driveways, lawns, laydown areas, staging areas, etc. The area of investigation should be expanded when project effects might extend more than 300 feet from the project footprint. For example, the hydrological effects of some projects (*e.g.*, large residential or commercial developments; golf courses; community water supply wells) might extend well beyond the project footprint due to the effects that impervious surfaces or groundwater pumping may have on the hydrology of nearby groundwater-dependent wetlands. Wetlands should be included on a map showing existing as well as proposed project features.

If someone qualified to identify and delineate wetlands has, through a field investigation, determined that no wetlands are located in or within 300 feet of the project area (or within the expanded investigation area, as described above), it is not likely that your project will adversely affect the bog turtle. If this is the case, no further consultation with the Fish and Wildlife Service is necessary, although we would appreciate receiving a courtesy copy of the wetland investigator's findings for our files.

If wetlands have been identified in or within 300 feet of the project area (or in an expanded investigation area, as described above), assess their potential suitability as bog turtle habitat, as described under "*Bog Turtle Habitat Survey*" (Phase 1 survey) of the *Guidelines for Bog Turtle Surveys*[1] (revised April 2006) (https://www.fws.gov/northeast/pafo/endangered species/surveys.html). Survey results should be submitted to the Service for review and concurrence. The survey guidelines, as well as a Phase 1 field form and report template, are available from the Service upon request.

Due to the skill required to correctly identify potential bog turtle habitat, we recommend that the Phase 1 survey be done by a qualified surveyor (https://www.fws.gov/northeast/pafo/endangeredspecies/surveys.html). If the Phase 1 survey is done by someone who is not on this list, it is likely that a site visit by a Fish and Wildlife Service biologist will be necessary to verify their findings. Current staffing shortages preclude our ability to conduct field visits to confirm determinations regarding habitat conditions. Use of a qualified surveyor will expedite our review of the survey results.

If potential bog turtle habitat is found in or near the project area, efforts should be made to avoid any direct or indirect impacts to those wetlands (see the following link: *Bog Turtle Conservation Zones* https://www.fws.gov/northeast/nyfo/es/btconszone.pdf). Avoidance of direct and indirect effects means no disturbance to or encroachment into the wetlands (*e.g.*, filling, ditching or draining) for any project-associated features or activities. Adverse effects may also be

[1] When suitable habitat for a listed species is present and effects to the species are reasonably foreseeable, the Service recommends species surveys to enable fact-specific analysis of effects and fact-specific development of conservation measures. Rather than conduct habitat and/or species surveys, a project proponent and action agency may choose to assume presence of the species. However, assuming presence usually makes the analysis of effects significantly more difficult (because the specific nature of the species' presence is not known) and can lead to the incorporation of conservation measures that might otherwise not be needed if surveys were to be conducted and the species were not to be found.

anticipated to occur when lot lines include portions of the wetland; when an adequate upland buffer is not retained around the wetland (see *Bog Turtle Conservation Zones*); or when roads, stormwater/sedimentation basins, impervious surfaces, or wells affect the hydrology of the wetland.

If potential habitat is found, submit (along with your Phase 1 survey results) a detailed project description and detailed project plans documenting how direct and indirect impacts to the wetlands will be avoided. If adverse effects to these wetlands cannot be avoided, a more detailed and thorough survey should be done, as described under "*Bog Turtle Survey*" (Phase 2 survey) of the *Guidelines*. The Phase 2 survey should be conducted by a qualified biologist with bog turtle field survey experience (https://www.fws.gov/northeast/pafo/endangered species/surveys.html). Please submit survey results to the Service for review and concurrence.

In cases where adverse effects to federally listed species cannot be avoided, further consultation with the Service would be necessary to avoid potential violations of section 9 (prohibiting "take" of listed species) and/or section 7 (requiring Federal agencies to consult) of the Endangered Species Act. Information about the section 7 and section 10 consultation processes (for Federal and non-Federal actions, respectively) can be obtained by contacting this office or accessing the Service's Endangered Species Home Page (http://endangered.fws.gov).

This response relates only to endangered and threatened species under our jurisdiction, based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

Please contact Jennifer Kagel of my staff at 814-234-4090 if you have any questions or require further assistance regarding this matter.

Sincerely,

For Sonja Jahrsdoerfer
Project Leader

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201

Planning Division

MAY 10 2019

Sonja Jahrsdoerfer
Project Supervisor
U.S. Fish and Wildlife Service
Pennsylvania Ecological Services Field Office
110 Radnor Rd. Suite 101
State College, PA 16801
Attn: Project Review Request

RE: Notice of Availability for the Indian Rock Dam Master Plan Environmental Assessment, York County, Pennsylvania

Dear Ms. Jahrsdoerfer:

The U.S. Army Corps of Engineers, Baltimore District (USACE-Baltimore) is in the process of updating the Master Plan for the Indian Rock Dam (IRD) Project located in York County, Pennsylvania. Along with the Master Plan Revision, USACE has prepared a Draft Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, to assess the impact of the Master Plan Revision to the human and natural environment.

The Master Plan Revision includes changes to land classifications to current USACE standards, and identifies resource objectives and future projects that reflect current and projected needs at IRD compatible with regional goals. Based on the preliminary findings in the Draft EA, USACE-Baltimore anticipates issuing a Finding of No Significant Impact (FONSI) following a thirty (30) day comment period in accordance with the Council on Environmental Quality Regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 15018.413) and USACE Policy and Procedures for Implementing NEPA (Engineer Regulation [ER] 200-2-2).

The USACE-Baltimore invites comments on the IRD Master Plan Draft EA. The document can be found on the USACE-Baltimore IRD website at: https://www.nab.usace.army.mil/IRD-Master-Plan-Revision/. A public meeting will also be held at the York- New Salem Community Fire Company 1, 65 E George St, York New Salem, PA 17371 on June 6, 2019 from 6-8 p.m. for the purpose of providing the public information on the Master Plan Revision and an opportunity for the public to submit comments on the Draft EA. We respectfully ask that you provide any comments on the Draft EA within 30 days from receipt of this letter. Any comments on the Draft EA should be sent to:

Major Terrence Harrington
Subject: Indian Rock Dam Project
U.S. Army Corps of Engineers, Planning Division
2 Hopkins Plaza
Baltimore, MD 21201
terrence.g.harrington@usace.army.mil

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch

A.3 Pennsylvania Department of Conservation and Natural Resources Coordination

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201

Planning Division

MAY 10 2019

Greg Podniesinski, Ph.D.
PA Department of Conservation and Natural Resources
Bureau of Forestry
400 Market Street
Harrisburg, PA 17105-8552
Attn: Project Review Request

RE: Notice of Availability for the Indian Rock Dam Master Plan Environmental Assessment, York County, Pennsylvania

Dear Dr. Podniesinski:

The U.S. Army Corps of Engineers, Baltimore District (USACE-Baltimore) is in the process of updating the Master Plan for the Indian Rock Dam (IRD) Project located in York County, Pennsylvania. Along with the Master Plan Revision, USACE has prepared a Draft Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, to assess the impact of the Master Plan Revision to the human and natural environment.

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Major Terrence Harrington
Subject: Indian Rock Dam Project
U.S. Army Corps of Engineers, Planning Division
2 Hopkins Plaza
Baltimore, MD 21201
terrence.g.harrington@usace.army.mil

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch

A.4 Pennsylvania Game Commission Coordination

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201

Planning Division

MAY 10 2019

Tracey Librandi-Mumma
PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue
Harrisburg, PA 17110-9797
Attn: Project Review Request

RE: Notice of Availability for the Indian Rock Dam Master Plan Environmental Assessment, York County, Pennsylvania

Dear Ms. Librandi-Mumma

The U.S. Army Corps of Engineers, Baltimore District (USACE-Baltimore) is in the process of updating the Master Plan for the Indian Rock Dam (IRD) Project located in York County, Pennsylvania. Along with the Master Plan Revision, USACE has prepared a Draft Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, to assess the impact of the Master Plan Revision to the human and natural environment.

The Master Plan Revision includes changes to land classifications to current USACE standards, and identifies resource objectives and future projects that reflect current and projected needs at IRD compatible with regional goals. Based on the preliminary findings in the Draft EA, USACE-Baltimore anticipates issuing a Finding of No Significant Impact (FONSI) following a thirty (30) day comment period in accordance with the Council on Environmental Quality Regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 15018.413) and USACE Policy and Procedures for Implementing NEPA (Engineer Regulation [ER] 200-2-2).

The USACE-Baltimore invites comments on the IRD Master Plan Draft EA. The document can be found on the USACE-Baltimore IRD website at: https://www.nab.usace.army.mil/IRD-Master-Plan-Revision/. A public meeting will also be held at the York- New Salem Community Fire Company 1, 65 E George St, York New Salem, PA 17371 on June 6, 2019 from 6-8 p.m. for the purpose of providing the public information on the Master Plan Revision and an opportunity for the public to submit comments on the Draft EA. We respectfully ask that you provide any comments on the Draft EA within 30 days from receipt of this letter. Any comments on the Draft EA should be sent to:

Major Terrence Harrington
Subject: Indian Rock Dam Project
U.S. Army Corps of Engineers, Planning Division
2 Hopkins Plaza
Baltimore, MD 21201
terrence.g.harrington@usace.army.mil

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA GAME COMMISSION
2001 Elmerton Avenue
Harrisburg, PA 17110-9797
Wildlife Habitat Management
(717) 787-6818

June 14, 2019

Major Terrence Harrington
U.S. Army Corps of Engineers
Planning Division
2 Hopkins Plaza
Baltimore, Maryland 21201
Terrence.g.harrington@usace.army.mil

Re: Indian Rock Dam Master Plan Revision Environmental Assessment (EA)
West Manchester, North Codorus, and Jackson Townships, York County, Pennsylvania

Dear Major Harrington,

Thank you for contacting the Pennsylvania Game Commission (PGC) regarding the availability of a Draft Environmental Assessment (EA) for the Indian Rock Dam Master Plan project. The PGC has reviewed the draft EA document and screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only. According to our detailed resource information, species or resources of concern are located within the vicinity of the project area. However, given that nature of this particular undertaking no impacts to these species or resources are anticipated.

Additionally, given that the proposed Master Plan is a long-term planning document and that updated information on listed or proposed species may become available at any time, the PGC recommends that a Pennsylvania Natural Diversity Inventory (PNDI) review be initiated for future projects as they are identified. This process will help determine if coordination with the PGC is required for a particular project in order to ensure that any potential impacts to species or resources of concern are avoided.

At this time, the PGC has no further comments on the draft EA document for Indian Rock Dam. We appreciate the opportunity to provide our comments and look forward to working with you in the future.

Sincerely,

Olivia A. Braun
Environmental Planner
Division of Environmental Planning & Habitat Protection
Bureau of Wildlife Habitat Management

U.S. Army Corps of Engineers June 14, 2019

Phone: 717-787-4250, Extension 3128
Fax: 717-787-6957
E-mail: Olbraun@pa.gov

A PNHP Partner

OAB/oab

cc: File

A.3 Pennsylvania Fish and Boat Commission Coordination

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201

Planning Division

MAY 10 2019

Chris Urban
PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr.
Bellefonte, PA 16823

RE: Notice of Availability for the Indian Rock Dam Master Plan Environmental Assessment, York County, Pennsylvania

Dear Mr. Urban:

The U.S. Army Corps of Engineers, Baltimore District (USACE-Baltimore) is in the process of updating the Master Plan for the Indian Rock Dam (IRD) Project located in York County, Pennsylvania. Along with the Master Plan Revision, USACE has prepared a Draft Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, to assess the impact of the Master Plan Revision to the human and natural environment.

The Master Plan Revision includes changes to land classifications to current USACE standards, and identifies resource objectives and future projects that reflect current and projected needs at IRD compatible with regional goals. Based on the preliminary findings in the Draft EA, USACE-Baltimore anticipates issuing a Finding of No Significant Impact (FONSI) following a thirty (30) day comment period in accordance with the Council on Environmental Quality Regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 15018.413) and USACE Policy and Procedures for Implementing NEPA (Engineer Regulation [ER] 200-2-2).

The USACE-Baltimore invites comments on the IRD Master Plan Draft EA. The document can be found on the USACE-Baltimore IRD website at: https://www.nab.usace.army.mil/IRD-Master-Plan-Revision/. A public meeting will also be held at the York- New Salem Community Fire Company 1, 65 E George St, York New Salem, PA 17371 on June 6, 2019 from 6-8 p.m. for the purpose of providing the public information on the Master Plan Revision and an opportunity for the public to submit comments on the Draft EA. We respectfully ask that you provide any comments on the Draft EA within 30 days from receipt of this letter. Any comments on the Draft EA should be sent to:

Major Terrence Harrington
Subject: Indian Rock Dam Project
U.S. Army Corps of Engineers, Planning Division
2 Hopkins Plaza
Baltimore, MD 21201
terrence.g.harrington@usace.army.mil

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch

A.4 Pennsylvania Natural Diversity Inventory Record Search

Pennsylvania Department of Conservation and Natural Resources Project Search ID: PNDI-686049
PNDI Receipt: project_receipt_indian_rock_dam_master_pl_686049_DRAFT_1.pdf

1. PROJECT INFORMATION

Project Name: **Indian Rock Dam Master Plan EA**
Date of Review: **6/11/2019 09:59:47 AM**
Project Category: **Habitat Conservation and Restoration, Other**
Project Area: **1,740.81 acres**
County(s): **York**
Township/Municipality(s): **JACKSON; NEW SALEM; NORTH CODORUS; SPRING GARDEN; SPRING GROVE; WEST MANCHESTER**
ZIP Code: **17362; 17403; 17404**
Quadrangle Name(s): **SEVEN VALLEYS; WEST YORK**
Watersheds HUC 8: **Lower Susquehanna**
Watersheds HUC 12: **Lower South Branch Codorus Creek; Stoverstown Branch-Codorus Creek; Willis Run-Codorus Creek**
Decimal Degrees: **39.915804, -76.778126**
Degrees Minutes Seconds: **39° 54' 56.8960" N, 76° 46' 41.2544" W**

This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

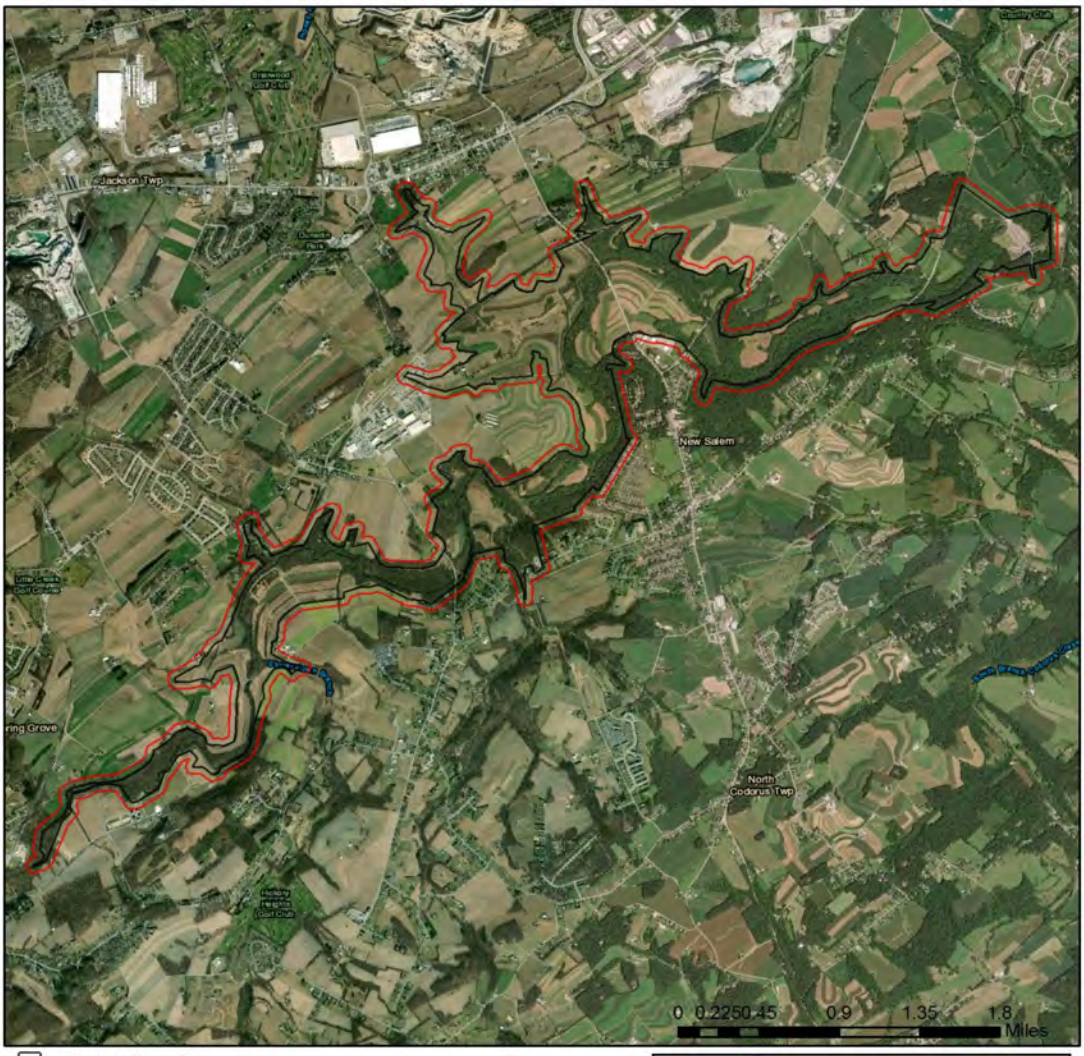
Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 must comply with the bog turtle habitat screening requirements of the PASPGP.

Page 1 of 6

Pennsylvania Department of Conservation and Natural Resources
PNDI Receipt: project_receipt_indian_rock_dam_master_pl_686049_DRAFT_1.pdf

Project Search ID: PNDI-686049

Indian Rock Dam Master Plan EA

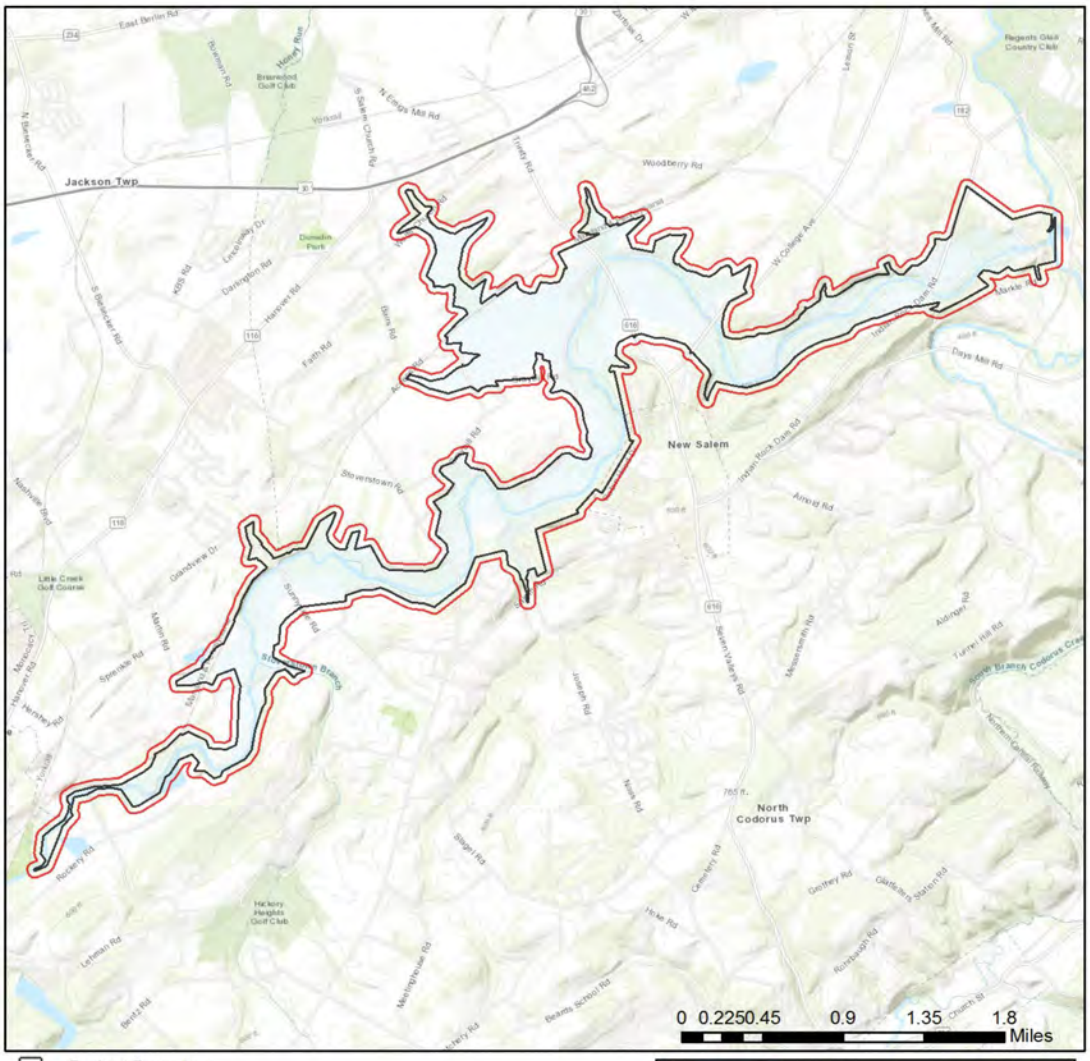


☐ Project Boundary
☐ Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Pennsylvania Department of Conservation and Natural Resources Project Search ID: PNDI-686049
PNDI Receipt: project_receipt_indian_rock_dam_master_pl_686049_DRAFT_1.pdf

Indian Rock Dam Master Plan EA



Project Boundary
Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS,

Page 3 of 6

Pennsylvania Department of Conservation and Natural Resources Project Search ID: PNDI-686049
PNDI Receipt: project_receipt_indian_rock_dam_master_pl_686049_DRAFT_1.pdf

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service
RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.
** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

Pennsylvania Department of Conservation and Natural Resources Project Search ID: PNDI-686049
PNDI Receipt: project_receipt_indian_rock_dam_master_pl_686049_DRAFT_1.pdf

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).
***Note:** U.S.Fish and Wildlife Service requires applicants to mail project materials to the USFWS PA field office (see AGENCY CONTACT INFORMATION). USFWS will not accept project materials submitted electronically (by upload or email).

Check-list of Minimum Materials to be submitted:
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
____**SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

Pennsylvania Department of Conservation and Natural Resources Project Search ID: PNDI-686049
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5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

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Final Submittal
January 2020