

# Michael J. Kirwan Dam and Reservoir 2018 Master Plan

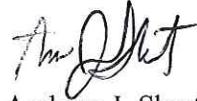
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Michael J. Kirwan Dam and Reservoir  
Master Plan

The attached Master Plan for Michael J. Kirwan Dam and Reservoir is in compliance with ER/EP 1130-2-550, Project Operations, Recreation Operations and Maintenance Policies. No further action is required.

Master Plan is approved.



Andrew J. Short  
Colonel, Corps of Engineers  
Commanding

## Executive Summary

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

The primary goals of this Michael J. Kirwan Dam and Reservoir Project (Project) Master Plan, revised in 2018, are to prescribe an overall land and water management plan, resource objectives, and associated design and management concepts, which: 1) use sound environmental principles to protect and enhance public lands; 2) cultivate volunteers, public-private partnerships, and apply for grants; 3) provide safe and memorable connections as part of multiple destination points; and 4) leverage emerging technology to tell the Corps' story and enhance visitor experiences.

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

Five Year	Ten Year	Conditions Based Actions**
"Friends of Michael J. Kirwan" group established	Public emergency call out systems are located at the Dam	Oil and Gas leveraging and mitigation
Boundary updates	Emergency Management Plan developed	Endangered species conservation methods
Volunteer dispatchers are placed at Information Center	Signature event developed	Invasive species control methods
Mitigation Plan has been established	Visitor Information Center updated to Type B, Project Visitor Center*	Real Estate actions
Initial description of biological and cultural resources are documented	Degraded facilities have been identified and divestment options have been considered*	Climate change impacts

\*Items that require external support (i.e. budgeting decisions through executive assistance).

\*\*Condition Based Actions will be evaluated as new requests or information become available.

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

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# 1. Project Authorization

The construction of Michael J. Kirwan Dam and Reservoir was authorized by the Flood Control Act of 1944 and the Rivers and Harbors Act of 1958, as amended by 1960. Authorizations subsequent to construction (Table 1-1, full list in Appendix A) provided for incidental benefits, including water quality improvement, fish and wildlife management, and recreational uses of the impoundments and Project lands.

**Table 1-1. Project Purposes and Authorities for Michael J. Kirwan Dam and Reservoir**

<b>Operating Purpose</b>	<b>Authority</b>	<b>Citation</b>
Flood Control	Flood Control Act of 1944	PL 78-534
Water Quality Control	Rivers and Harbors Act of 1958 as amended by 1960 Federal Water Pollution Control Act	PL 85-500 PL 86-645 PL 92-500
Fish and Wildlife	Fish and Wildlife Coordination Act of 1934 (as amended)	PL 85-624

## 1.1 Project Purpose

Michael J. Kirwan Dam and Reservoir is a comprehensive system of storage reservoirs for flood control and low-flow augmentation on the Ohio River and its tributaries, including the West Branch Mahoning, Mahoning, and Beaver Rivers. The purpose of the Project is to store flood waters originating in the West Branch Mahoning River Basin. This retained water is then released without creating or contributing to flood conditions that may exist downstream. Additional uses of the reservoir area include: recreation, forestry, water quality, and conservation of fish and wildlife resources. These additional uses shall not conflict with the primary function of flood control.

## 1.2 Watershed and Project Description

Michael J. Kirwan Dam and Reservoir is a multi-purpose project which provides a storage system for flood risk reduction on the Ohio River (see Appendix B, Plate 1 for Project Area map). Michael J. Kirwan Dam and Reservoir is situated in Ohio approximately 86-miles from Pittsburgh (see Appendix B, Plate 2 for the Transportation map). The Project’s land and waters extend over Portage County. Michael J. Kirwan Dam and Reservoir is also used as a source of public drinking water. The West Branch water treatment plant services about 1,400 persons as a transient non-community system and is operated by Ohio Department of Natural Resources (ODNR).

At full pool (spillway crest elevation 992.6-feet), the impoundment has a storage capacity of 78,900-acre-feet (Table 1-2, below). The permanent storage level is at elevation 950.5-feet, the minimum pool, for summer and winter. Storage levels are used to meet the water quality operating purposes and authorizations that provide water to downstream locations for pollution abatement and low flow augmentation. The resulting pool is also sufficient to maintain an adequate volume of water to sustain fish life. The summer conservation pool has been established at elevation 985.1-feet, with a reservoir

capacity of 56,850-acre-feet. The average winter conservation pool is approximately 980.6-feet, with a reservoir capacity of 45,600-acre-feet. At summer conservation pool level, the reservoir is approximately seven miles long with an average width of ¾-miles. The reservoir has a maximum width of approximately 1-½-miles (U.S. Army Corps of Engineers, Pittsburgh District, 1982).

**Table 1-2. Michael J. Kirwan Dam and Reservoir Information**

<b>Pool</b>	<b>Elevation (NAVD 88, ft.)</b>	<b>Storage (ac./ft.)</b>	<b>Channel Capacity (c.f.s.)</b>
Minimum	950.5	3,800	1,000
Winter Conservation Pool	980.6	45,600	
Summer Conservation Pool	985.1	56,850	
Full	992.6	78,900	

The Project consists of a total of 6,332.16-acres, including flowage easement. Near the dam, the Corps maintains 426.03-acres of public recreational facilities, including an information center with a picnic shelter and the Discovery Trail Nature Area. The latter includes a 0.3-mile hiking trail, a picnic area, a one-mile Fisherman’s Lot trail that provides access to the outflow and downstream area, and a wildlife viewing area.

The Corps leases 5,878.87-acres of Project lands and waters to the ODNR (Table 1-3, below). The lease encompasses the main body of the lake and its adjoining lands including West Branch State Park Campground, West Boat Launch, East Boat Launch, Knapp Road Boat Launch, Rock Spring Road Boat Launch, West Branch State Park Swim Beach, Picnic Area A and B, Horse Camp, West Branch State Park Marina, a number of hiking, snowmobile, and mountain bike trails, and many acres that are specifically designated for wildlife management and public hunting. Lands and waters are leased to ODNR through two separated lease agreements – one through the Division of Wildlife and the other through the Department of Parks and Watercraft. Appendix B, Plate 3 shows the Outgrants around Michael J. Kirwan Dam and Reservoir.

**Table 1-3. Outgrant Areas**

<b>Grantee</b>	<b>Type</b>	<b>Acres</b>
Ohio Department of Natural Resources (Division of Wildlife)	Wildlife	1,251.55
Ohio Department of Natural Resources (Parks and Watercraft)	Recreation/Water	4,627.32

**1.3 Listing of Prior Design Memorandums**

See Appendix C.

**1.4 Listing of Pertinent Project Information**

While the Master Plan is focused on management of land and water surface area related to Project purposes, the following information is provided to aid in understanding Project information regarding

water storage levels and Project construction (Table 1-4, below). Further details are available in the Michael J. Kirwan Water Control Manual.

**Table 1-4. Michael J. Kirwan Dam and Reservoir Information**

<b>Project Attribute</b>	<b>Description</b>
Avg. Ann. Rainfall	39 in. (2017)
Drainage Area above Dam	80.5 sq. miles
Construction Completed	1965
Operation Start	1966
Dam Type	Rolled Earthfill Embankment
Dam Length	9,900 ft.
Dam Height	83 ft.
Base Width	800 ft.
Outlet Works	3 (2' x 3' gates), 3 (5' x 8' barrel conduits)
Spillway	300 feet in length / 993 NGVD
<b>Highest Inflows Recorded</b>	14,900 c.f.s. (July 1976)
<b>Highest Outflows Recorded</b>	1,260 c.f.s. (February 1971)
<b>Highest Elevation (NAVD 88)</b>	991.68' (24 July 2003)

### **1.5 Purpose & Scope of the Master Plan**

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

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

In this Master Plan, we employ a Conservation/Recreation Mix Development Concept for Michael J. Kirwan Dam and Reservoir (Table 1-5, below). Under this concept, there are almost equal amounts of conservation and recreation land within the Project. Specifically, the amount of land area classified for recreational use at Michael J. Kirwan Dam and Reservoir is approximately 54 percent of the total land. Thus, this development concept also meets the need for sustainable management and conservation of natural resources within the Project, while providing for current and future quality outdoor recreational needs of the public and consistency with periodically updated Corps regulations. This Master Plan lays

out future recommendations for the management of both recreation and natural resources. Table 1-5 below describes the different applicable development concepts based on land classification percentages.

It is recommended to keep Michael J. Kirwan Dam and Reservoir at a Conservation/Recreation Mix Development Concept. During our scoping process, members of the public, stakeholders, and partners encouraged the continued use of Michael J. Kirwan Dam and Reservoir for the varied conservation and recreation experiences it currently serves. All data presented in the subsequent sections justifies this development scenario.

**Table 1-5. Development Concepts**

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

### **1.6 Management Goals**

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

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

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

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

1. Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse, and sustainable condition is necessary to support life.
2. Recognize the interdependence of life and the physical environment.

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

### **1.7 Resource Objectives**

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

The objectives stated in this Master Plan support the Plan's goals, Corps EOPs, and applicable national performance measures. They are consistent with authorized Project purposes, federal laws and directives, regional needs, resource capabilities, and they take public input into consideration. Regional and state planning documents, including the 2013 Ohio Statewide Comprehensive Outdoor Recreation Plan, 2015 Ohio State Wildlife Action Plan, Portage Park District 2016 Master Plan, and The Cleveland Area Mountain Bike Association (CAMBA) proposal for a multi-use trail extension at West Branch State Park were all considered in developing these objectives. Planning documents from adjacent municipalities were also reviewed.

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

**Goal 1:** Use sound environmental principles to protect and enhance public lands<sup>1</sup>

<b>Management and Development Activity</b>	<b>Five-year</b>	<b>Ten-year</b>	<b>Desired State</b>
Inventory natural and cultural resources	Initial description of biological and cultural resources are documented (E)	Operational Geospatial Data Base for Natural and Cultural Resources developed (E)	Completed and maintained biological/cultural resource inventory and associated management plans
	Operational Management Plan updated (S&E)	Information within the database registered with SHPO (E)	
Identify threats (i.e. erosion, terrestrial & aquatic invasive species)	Best Management Practices researched (S&E)	Ongoing execution of Mitigation Plan is occurring (E)	Conservation and enhancement of Project land
	Mitigation Plan established in order to avoid, minimize, and mitigate impacts to natural and cultural resources (E)		
Achieve and maintain desired natural and cultural resource conditions	Specific conservation organizations (federal and state agencies, academia, non-profits) engaged (S&E)	Working relationships with federal, state, academia, and NGOs have been utilized to achieve these conditions (S&E)	Increased stakeholder buy-in and protection of the resources in and surrounding the Project
	Project staff are trained on proper resource management and research techniques (S&E)		
	Available skill sets and equipment across Projects are leveraged (S&E)		
	New equipment that can be used at multiple lakes has been acquired (E)		
	Annual Work Plans implemented (E)		
	Annual working meetings with partners are being held (S&E)		

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<sup>1</sup> S – Sustain  
E – Establish

**Goal 2:** Cultivate volunteers, public-private partnerships, and grants<sup>1</sup>

<b>Management and Development Activity</b>	<b>Five-year</b>	<b>Ten-year</b>	<b>Desired State</b>
Partnering for a shared public land management ethic	Opportunities with community action groups, local recreational clubs, and other Corps resources (such as CAMBA, National Guard) are initiated (S&E)	Appropriate MOU/MOA(s) with land management partners are established (E)	Engaged with appropriate resource management partners (ODNR) to manage according to LRP’s vision; partners are helping to share the Corps vision for the Project
Establishing the right partnership, at the right place, at the right time	Educational programs (green-collar development) are developed and supported (S&E)	Seasonal natural resources survey crews are coming to the Project (E)	Partners, volunteers, and interns are augmenting Project staff responsibilities to further protect and enhance natural and cultural resources
	Volunteers are working at the Information Center (E)	Student Conservation Association (SCA) has established relationship with the Project (E)	
	Start a “Friends of Michael J. Kirwan Dam and Reservoir” Group (E)		
	Establish a partnership with Camp Ravenna. Explore what potential benefit opportunities there are between the two government organizations		

**Goal 3:** Provide safe, memorable connections as part of multiple destination points<sup>1</sup>

Management and Development Activity	Five-year	Ten-year	Desired State
Ranger safety	Operational personal hand held communications and monitoring devices have been refreshed and are on the same frequency as county EMS (E)	Enhanced security features, such as video surveillance systems, a panic button, bullet proof glass, and an emergency exit are installed at the Information Center and throughout the Project (E)	Rangers are working in a safe environment
	Improved communication with local Emergency Responders (E)		
	Volunteer dispatchers are placed at the Information Center (E)		
Visitor safety	Consistent visitor assistance experience (playground inspections, boat patrol manual) ensured (S&E)	Regular maintenance programs established (S&E)	Low chances of incidents and quick response times for emergency personnel
	Emergency management partners (Water Safety Council) actively engaged (S)	Public emergency call out systems are located at the dam (E)	
	Emergency groups practice emergency safety at the Project on a regular basis (S&E)	Project Site Areas (PSAs) with low use and degraded facilities have been identified and divestment options have been considered if appropriate (S&E)	
		Develop an Emergency Management Plan specifically in regards to spill response (E)	
Connect with other District lakes and locks	Joint ventures with other locks and lakes have been explored (E)	Project staff is knowledgeable on operational/general information at other projects and locks and dams, cooperation is improved (S&E)	Public is aware of the Corps recreational facilities at multiple projects
	Brochures and opportunities for other projects are made available at the Information Center (E)		
	Other recreational activities on the rivers are promoted (e.g. Lock Fest) (E)		
Serve as part of multiple destination points	Serving as leaders in local Tourist Promotion Bureaus, Chambers of Commerce, and Regional Planning Commissions (E)	Access points to regional trails have been provided and promoted (e.g. Mahoning River Water Trail, Buckeye Trail) (S&E)	User groups from regional area are coming to the Project
	Local and regional outdoor recreation organizations have been engaged (S&E)	The Project has been integrated into the Heritage Tourism Program (E)	
	Year-round recreational opportunities have been promoted (E)	Increased winter recreational opportunities (e.g. cross country skiing, snowshoeing) (E)	

Promoting all that Michael J. Kirwan Dam and Reservoir has to offer; bringing an increased number of visitors with varying interests and of varying ages	School groups, clubs, etc. have been reached out to and invited to the Project (E)	Signature event hosted annually; bringing visitors to the Project (E)	Visitors are aware and utilizing all of the available resources at the Project and are recreating year-round
	Signage regarding different activity areas have been displayed around the Project (e.g. Information Center, Discovery Trail, and Pollinator Plot) (S&E)		
	Project staff participated in multiple outreach events (e.g. public library, local safety days, and health fairs) (S&E)		

**Goal 4:** Leverage emerging technology to tell the Corps stories and enhance visitor experiences<sup>1</sup>

Management and Development Activity	Five-year	Ten-year	Desired State
Assess and embrace emerging technology in interpretive services capabilities	Utilization of wireless devices in the work place to contribute to data collection (E)	Project boundary inventory and monitoring conducted wirelessly (E)	Public interaction with the Project is occurring through technology; Project staff are utilizing technology to better monitor and communicate about the Project
	Boundaries and inventory data are in digital format (E)		
Enhance public outreach	Interpretive programming included in every OMP annual update (E)	Signage leading to the Project and within Project boundaries has been increased on highways and state roads, indicating the presence of Michael J. Kirwan Dam and Reservoir (S&E)	Visitation is increasing due to greater public awareness of events and opportunities at the Project
	Information Center is updated to reflect most current information (S&E)	The Visitor Information Center is updated to a Type B, Project Visitor Center (E)	
	Regional outdoor recreation activities are promoted on social media (S&E)		
	Sharing success stories with local news outlets in coordination with PAO (S&E)		
	Emerging social media technologies are being utilized for promotion and public outreach (E)		

## **2. Project Setting and Factors Influencing Management and Development**

### **2.1 Hydrology**

The largest tributaries of Michael J. Kirwan Dam and Reservoir above the dam are Silver Creek, Hinkley Creek, Bixon Creek, Barrell Run, and Harmon Brook. At maximum summer conservation pool, the three largest tributary embayments are Silver Creek Bay (1.2-miles long), Bixon Creek Bay (0.8-mile long), and Jay Lake Bay (1.2-miles long). There are also dozens of smaller embayments and inlets, as well as a number of small islands in the lake. The West Branch Mahoning River is one of three main tributaries to the Mahoning River, with the other two being Mosquito Creek and Eagle Creek. Mahoning River leads to the Beaver River and eventually feeds into the Ohio River. The Beaver River is formed in Lawrence County by the confluence of the Mahoning and Shenango Rivers at a point approximately three miles south west of New Castle (see Appendix B, Plate 4 for the HUC-8 Watershed Boundary map).

Michael J. Kirwan Dam and Reservoir is part of a comprehensive system of storage reservoirs for flood control of the Upper Ohio River Basin. The drainage area for Michael J. Kirwan Dam and Reservoir is 80.5 square-miles and covers parts of Portage County, Ohio. The dam is located on West Branch Mahoning River in Portage County.

Upstream of the dam, the West Branch Mahoning River and its tributaries display a dendritic drainage pattern. Stream valleys branch irregularly in many directions without systematic arrangement, and tributaries join the mainstream at various, but usually acute, angles. This type of drainage pattern is characteristic of random headward erosion in materials of uniform resistance, which do not have any structural control (see Appendix B, Plate 5 for the Watershed Boundary map).

### **2.2 Topography, Geology, and Soils**

The Michael J. Kirwan Dam and Reservoir and surrounding area is underlain by the Hiram Till ground moraine, deposited during the Defiance Stage (or advance) of the Wisconsin glacial period. This Hiram Till consists of an unstratified mixture of clay, silt, sand, and coarse materials that form relatively flat uplands sloping toward the original channel of the West Branch. End moraines, also consisting of the Hiram Till, are located in the northwest sector of the Project and are approximately one-mile south of the dam between Wayland and Thomas Roads (Winslow and White, 1966). Another end moraine, part of the Kent system, lies west and north of the Project area. Topographically, end morainal deposits are characterized by rolling, hummocky land which is generally higher than the surrounding ground morainal deposits. These end morainal deposits often contain boulders, undrained depressions, and are excellent sources of sand and gravel. Quaternary alluvial deposits directly underlie the original stream channel and consist of lenses of poorly sorted, poorly bedded silt and sand. Additionally, surficial material's are underlain by Pennsylvanian-age bedrock at depths ranging from 60 to 175-feet.

Within West Branch State Park, land elevations range between 986-foot National Geodetic Vertical Datum (NGVD) to approximately 1,150-foot NGVD on high elevations on the south side of the

reservoir. High elevations within the state park, north of the reservoir, are approximately 100-feet lower than on the south side. These higher points are probably controlled by structure (an erosion-resistant sandstone which was not worn as rapidly by the action of Quaternary glaciation). The greatest relief in the state park is located along Silver Creek, west of Alliance Road, where the plateau is almost 100-feet above the reservoir. Vertical relief between 20 and 40-feet is common along many of the stream valleys draining into the reservoir.

Materials surrounding the reservoir consist of the Remsen-Trumbull-Geeburg Association. These soils are formed on glacial tills, which are high in clay and create a slowly draining soil. This association tends to retain moisture and has slow permeability. Two other soil associations are found in the West-Branch State Park. These are the Mahoning-Ellsworth soils association, which is moderately well drained, and the Loudonville-Mitiwanga-Dekalb soil association, which forms on end moraines. The Loudonville-Mitiwanga-Dekalb Association is found on somewhat steeper slopes than the other soils and is well drained. These soils are relatively shallow which result in development limitations due to high seepage rates. The principal limitation which exists with the soils in the Project area is a high water table during much of the year due to poor or impeded drainage. These limitations range from moderate to severe (See Appendix B, Plate 6 for Soils map).

## **2.3 Resource Analysis**

### **2.3.1 Fish and Wildlife Resources**

Michael J. Kirwan Dam and Reservoir's forested habitat, scrub-shrub uplands, wetlands, streams, and river and lakes support a variety of wildlife species common to Ohio. A few of the more common species likely to be observed in the Project area, include: osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), turkey (*Meleagris gallopavo*), red-winged blackbirds (*Agelaius phoeniceus*), robins (*Turdus* spp.), song sparrows (*Melospiza melodia*), common mergansers (*Mergus merganser*), mallards (*Anas platyrhynchos*), red fox (*Vulpes fulvus*), white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), and opossum (*Didelphis virginiana*). In addition, Michael J. Kirwan Dam and Reservoir supports a variety of amphibians and reptiles, including multiple frog, turtle, salamander, and snake species.

Michael J. Kirwan Dam and Reservoir also provides habitat for a diverse array of fish species which may include smallmouth (*Micropterus dolomieu*) and largemouth (*Micropterus salmoides*) bass, muskellunge (*Esox masquinongy*), walleye (*Sander vitreus*), various catfish (*Ictalurus punctatus*, *Ameiurus catus*, etc.), carp (*Cyprinus* spp.), among others. The Project was listed as the best lake for muskellunge in Northeast Ohio.

### **2.3.2 Vegetative and Timber Resources**

A large proportion of the Project was cleared historically for pasturage, cultivation, and gas well development. Virtually all of the lands at the Project were cleared of forest cover following European settlement. Consequently, forest cover on the Project has been extensively altered, and is currently comprised of second and third growth stands, which dominate the Project land cover. The remaining

land is a combination of field and pasture, shrubland, wetlands/riparian, with minor areas of maintained lawn. The Project supports the overarching goal of forest sustainability detailed in the ODNR Forest Resource Management Plan. Forest sustainability requires the continued existence and use of forested lands to: 1) meet human physical, economic, and social needs; 2) preserve the health of forest ecosystems in perpetuity; and 3) preserve options for future generations, while meeting current needs. The ODNR Forest Management Plan for the Project contains further details, including resource inventories and harvesting procedures (See Appendix B, Plate 7 for Vegetative Resources map).

### 2.3.3 Threatened and Endangered Species

There are no confirmed federally threatened and endangered resident species at Michael J. Kirwan Dam and Reservoir property. However, many federally and state-listed species of concern occur in Portage County and may use the area transiently (See Table 2-1, below). Periodic surveys should be conducted through coordination with local conservation groups and colleges and universities to identify occurrences of these species.

**Table 2-1. Threatened and Endangered Species (ESA) Species (USFWS IPaC, 17 Mar 2018)**

Species	Scientific Name	Class	Status	Habitat
Northern Wild Monkshood	<i>Aconitum noveboracense</i>	Plant	Threatened	Shaded to partially shaded cliffs, algific talus slopes, or on cool, streamside sites
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Mammal	Threatened	Cavities or crevices in both live trees and snags (dead trees)
Indiana Bat	<i>Myotis sodalis</i>	Mammal	Endangered	Roost under the peeling bark of dead and dying trees
Mitchell's Satyr Butterfly	<i>Neonympha mitchellii</i>	Insect	Endangered	Restricted to rare wetlands called fens, which are low nutrient systems that receive carbonate-rich ground water from seeps and springs
Eastern Massasauga	<i>Sistrurus catenatus</i>	Reptile	Threatened	Wet areas, including wet prairies, marshes and low areas along rivers and lakes; adjacent uplands during part of the year. May hibernate in crayfish burrows but may also be found under logs and tree roots, or in small mammal burrows

#### **2.3.4 Invasive Species**

In accordance with Executive Order (EO) 13751 (FR: 08 Dec 2016; amending EO 13112), an invasive species is defined as an alien species whose introduction does, or is likely to cause, economic or environmental harm or harm to human health. Invasive species can be microbes, plants, or animals that are non-native to an ecosystem. In contrast, exotic species, as defined by EO 11987 (FR: 24 May 1977), include all plants and animals not naturally occurring, either presently or historically, in any ecosystem of the United States. Invasive species can take over and out compete native species by consuming their food, occupying their territory, and altering the ecosystem in ways that harm native species. Invasive species can be accidentally transported or they can be deliberately introduced because they are thought to be helpful in some way. Invasive species cost local, state, and federal agencies billions of dollars annually. The most common invasive terrestrial plant species occurring at Michael J. Kirwan Dam and Reservoir are: Japanese honeysuckle (*Lonicera japonica*), Japanese knotweed (*Polygonum cuspidatum*), autumn-olive (*Elaeagnus umbellata*), buckthorns (*Rhamnus frangula*, *R. cathartica*), purple loosestrife (*Lythrum salicaria*), common reed or phragmites (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), garlic mustard (*Alliaria petiolata*), multiflora rose (*Rosa multiflora*), giant hogweed (*Heracleum mantegazzianum*), and bush honeysuckles (*Lonicera maackii*, *L. tatarica*, *L. morrowii*). The most common invasive insects are: Asian Longhorned Beetle (ALB) (*Anoplophora glabripennis*), Emerald Ash Borer (EAB) (*Agilus planipennis*), Gypsy Moth (*Lymantria dispar*), Hemlock Woolly Adelgid (HWA) (*Adelges tsugae*), and the Walnut Twig Beetle (*Pityophthorus juglandis*). The most common aquatic invasive species are hydrilla (*Hydrilla verticillata*) and the Zebra Mussel (*Dreissena polymorpha*).

Climate change will likely benefit many of the aforementioned non-native species, potentially enhancing their ability to outcompete native organisms. Left unchecked, invasive species have the potential to undermine ecosystem structure and function, resulting in a degraded resource that fails to meet many of the key objectives of the Project.

#### **2.3.5 Ecological Setting**

The purpose of ecological land classification is to provide information for research, assessment, monitoring, and management of ecosystem components. The Natural Resource Management mission statement (ER 1130-2-550; Change 5, 30 Jan 2013) directly supports this paradigm. According to the U.S. Environmental Protection Agency's designation of ecoregions, Michael J. Kirwan Dam and Reservoir is located within the Erie Drift Plan Ecoregion. According to U.S. Forest Service's designation, the Project is located within the Unglaciated Allegheny Plateau section of the Eastern Broadleaf Ecoregion.

#### **2.3.6 Wetlands**

According to the National Wetland Inventory (NWI), Michael J. Kirwan Dam and Reservoir delineates approximately 270-acres of wetlands at the Project. There are 42-acres of freshwater emergent wetlands and 228-acres of freshwater forested/shrub wetlands. Wetlands serve important water quality and

wildlife habitat functions. Particular conservation interest should be given to these features (See Appendix B, Plate 8 for the Wetlands map).

### **2.3.7 Water Quality & Sedimentation**

#### **Water Quality**

The Pittsburgh District Water Quality Program has sampled water quality conditions at Michael J. Kirwan Dam and Reservoir since 1969. Data collected includes chemical, physical, and biological constituents at numerous sampling locations on tributaries, bays, the lake, and outflow. Routine water quality monitoring includes:

- Bi-weekly sample collection by Project staff from the outflow
- Yearly limnology surveys of the lake by water quality staff
- Once every ten years, monthly intensive limnology surveys from the months of March through October are performed to understand decadal/spatial changes in limnological dynamics

Water quality typically improves as water moves through Michael J. Kirwan Dam and Reservoir. Settling, dilution, and biological processes remove or store sediments, metals, contaminants, and nutrients. Many of the primary water quality concerns are within the West Branch of the Mahoning River watershed; therefore, Michael J. Kirwan Dam and Reservoir is associated with adjacent land use. Agricultural runoff is the main watershed-wide source of nutrients in the upper Mahoning River. The West Branch of the Mahoning River is listed on the Ohio 303(d) list for habitat alterations, organic enrichment/oxygen depletion, flow alterations, nutrients, Polychlorinated Biphenyls (PCBs), pathogens, sediment, and turbidity. Federal and state agencies are working with water-quality partners and landowners to focus watershed conservation efforts on priority or target areas in the watershed to meet water quality goals in the Mahoning River watershed.

Despite these water quality concerns, Michael J. Kirwan Dam and Reservoir has some of the best water quality in the Mahoning River basin resulting in an abundance of aquatic recreation and its designation by the Ohio Department of Natural Resources as the top lake in northeast Ohio for Muskellunge in 2018. The relatively undisturbed shoreline of the Project and the Ravenna Arsenal provides a buffer area resulting in cleaner waters. Michael J. Kirwan Dam and Reservoir can be classified as a shallow, mid-latitude, dimictic reservoir. Stratification in the summer can lead to hypoxic areas by the dam, resulting in reduced fish habitat in the deeper depths of the reservoir and increased dissolved metal concentrations at some times. However, since the outlet structure is equipped with gates at varied elevations (selective withdrawal), it is possible to release good quality waters that satisfy the congressionally authorized operating purposes of improving downstream water quality in the Mahoning River. When contrasted with other District reservoirs in the Mahoning River basin, Michael J. Kirwan Dam and Reservoir has comparatively good water quality and does not have some of the same problems that the other reservoirs have, such as eutrophic conditions. Moderated algal growth and clear waters in Michael J. Kirwan Dam and Reservoir can be attributed to the ecosystem services (nutrient uptake and sediment capture) that the reservoir's forested littoral buffer provides as well as the filtering capabilities of the abundant Zebra

Mussel (*Dreissena polymorpha*) populations near the dam. Water-quality monitoring will continue as a critical part of a holistic, environmentally sound water-quality management for the Project to continue to meet applicable federal and state environmental laws, criteria, and standards.

### **Sedimentation**

Based on studies conducted in 1985, the total volume of sedimentation at Michael J. Kirwan Dam and Reservoir does not impose a severe threat to either the utility or operation of the reservoir now or in the immediate future. The largest amount of sediment has been deposited in the lower third of the Project near the dam and extends two miles upstream. While not excessive at this time, sedimentation should be closely monitored for changes that may necessitate future studies (Ohio Environmental Protection Agency, 2011).

## **2.4 Cultural Resources**

The 2018 Michael J. Kirwan Dam and Reservoir Master Plan update takes into consideration all records on file with the Ohio State Historic Preservation Office. This includes donated collections and Corps commissioned Phase I archaeological surveys, which are associated with the Paleo-Indian, Archaic, Woodland, Hopewell, Mississippian, and Protohistoric eras, as well as ceramics and artifacts affiliated with the historic period.

### *Background*

The word “Mahoning” comes from the Native American word, "Ma-hon-ink" which means "at the lick", and relates to prehistoric salt collection which was practiced among a number of native groups. Examples of indirect evidence of salt usage include place names like Mahoning County, created in 1846 from the counties of Trumbull and Columbiana. Maps dated circa 1755 identified the location of natural salt springs located in what is now Weathersfield Township, Trumbull County near present day Niles, Ohio. Although the springs contained a low concentration of salt, it was an important staple for humans and animals.

Portage County takes its name from Native American “portage path”, where travelers portaged their canoes between the Cuyahoga and Tuscarawas Rivers. Sections of this trail are presently located within the bounds of neighboring Summit County. After the arrival of European explorers in the 17<sup>th</sup> century, the territory was incorporated into the French colony of New France (Canada), which was ceded to Great Britain in 1763 and renamed the Province of Quebec. In 1662, a Royal Charter from Charles II to the Colony of Connecticut established a “Western Reserve” that extended from Lake Erie down through the Portage County area. After the American Revolutionary War, Congress organized all Ohio lands into the Northwest Territory in 1787. From 1795 to 1809, the Connecticut Land Company surveyed and sold the lands to the first permanent white settlers. Portage County was created out of Trumbull County in 1807. Paris Township, location of Michael J. Kirwan Dam and Reservoir, was established in 1810.

Prior to European contact, northeastern Ohio had been home to the Erie, or *Erielhonan*. These are a people related to the Huron who were defeated and absorbed by the Seneca Iroquois during the Beaver Wars and disappeared completely by 1660.

### *Prehistoric*

Coordination with the Ohio State Historic Preservation Office indicates that hundreds of archaeological sites have been identified on Corps property. A determination of the eligibility of these sites for listing on the National Register of Historic Places has not been made for every site, and additional site excavation would be required before making a final determination.

In addition, three suspected or potential archaeological site locations within the Project area have not yet been verified, nor may the survey conducted in the early 1960s that located the above sites be considered adequate to satisfy the requirements of Executive Order 11593 to survey all federal lands. Detailed site identification has been excluded and should avoid being shared to prevent possible looting or disturbance. Specific locations and information are on file with the Pittsburgh District, U.S. Army Corps of Engineers as well as the Ohio State Historic Preservation Office.

Since there has not been a complete survey of the Project, additional surveys may be required as a result of future park development. The planning process for any development activities should include coordination with the District Office, State Preservation Officer, and any tribal historic preservation office if necessary.

### *Historic*

Historic Native American activities within the park are not completely known. There are several areas which are rumored of being associated with Native American ceremonial activity; however, field investigations have not supported any evidence of sacred spaces or burials.

One such rumored area is located on a high knoll known as Nesters' Hill, east of Porter Road (County Road 54) and north of Calvin Road (Township Road T-124). Although the existence of this burial ground has not been substantiated, this area should be considered to be a partially sensitive archaeological area for the purpose of future development until proven otherwise. Before development proposals are implemented in this area, a cultural resources survey is likely required and should be coordinated through the Pittsburgh District Office. This should also be required prior to permitting gas and oil well drilling in these areas. To date, there are two gas wells on or near Nesters' Hill with a well-service road cut over the top of the hill.

### *Historic Features*

A number of locations within the boundaries of the facility are worthy of historical note, including:

- The Old State Road, the route now followed by Summit Street and Haze Road, is believed to be the oldest road in the Western Reserve. Dating from 1803, the road ran east/west just north of the Project, running through Campbellsport on the western edge of the Project area.
- Campbellsport was founded with what was purportedly the oldest brick land-office building in Ohio, built circa 1810. When the filling of the reservoir threatened this building, it was moved to a site at the Portage County Historical Society, where it has since been preserved and restored. Campbellsport was a mustering point for militiamen during the War of 1812. One of Captain (later General) Campbell's militiamen wrote an account of his trip from Campbellsport to Cleveland which has also been preserved by the Portage County Historical Society. In 1840, Campbellsport became a canal port on the Pennsylvania and Erie Canal. The canal ran from Beaver Falls to Akron, adjacent to the West Branch Mahoning River, where it joined the Ohio Canal. The remains of the canal and tow path were covered by water when the reservoir was filled, although some traces of it may still be present near Campbellsport or northeast of the dam.
- The roadbed of the Pittsburgh Western Railroad paralleled the canal and was notorious for its curved tracks. Each curve had its own name and history of derailing's. The right-of-way is still shown on the U.S. Geological Survey (USGS) maps.
- The Elliott Family Cemetery on the southern shore of the reservoir, adjacent to Cable Line Road near the end of Porter Road, consists of the graves of nine members of a 19th century family. The 15-foot by 30-foot cemetery is included in Portage County's list of historic sites. The graves date from 1837-1892. Further information on the history of this particular family is available from the Portage County Historical Society and the Ohio State Historic Preservation Office.

### *Required Reconnaissance*

Development activities within the Project area would not be permitted to proceed until a determination has been made that these activities would not adversely affect historic properties. At sites which may be directly affected by the Project, field inspection, and Phase I reconnaissance would first be performed to identify possible archaeological sites, provide an estimation of the potential data yield and site significance, and form a basis for developing further detailed site survey plans if required. The results of this preliminary, low intensity survey may lead to a systematic and comprehensive program of sampling at suspected sites of archaeological significance. The program would be planned to provide a statistically valid sampling survey of the surface and subsurface in the potentially affected area. Data obtained as a result of this intensive survey would be classified and evaluated to support or deny a determination that the site is significant from a local, state, or national perspective. Finally, the Ohio State Historic Preservation Office and the Corps would determine the site's possible eligibility for the National Register of Historic Places and/or the Ohio Archaeological Inventory by applying the applicable nomination criteria.

No project-related construction that could affect an archaeological site determined to be significant and potentially eligible for listing in the national register would proceed until an appropriate and acceptable mitigation plan has been developed. Such a plan may include in-place preservation of artifacts through

site avoidance or salvage. If salvage is determined to be the optimum course of action, further detailed planning would be performed prior to initiation of any excavation work. Project construction would resume upon completion of the archaeological salvage operations.

### *Historic Sites of Local Significance*

The Frederick Wadsworth House, which was built around 1824 by Frederick Wadsworth, is significant both because of its builder and it exemplifies the late Adam style of neo-classical innovation. Frederick Wadsworth was a regimental staff clerk during the War of 1812 and kept the records at nearby Campbellsport where militiamen were mustered. He was heavily involved in the promotion of the Pennsylvania and Erie Canal and he was the sheriff of Portage County, Ohio in 1834. In the 1830s and 1840s he found several prominent businesses and he was elected mayor of Akron, Ohio in 1852-1853. The Frederick Wadsworth House is included on the National Register of Historic Places. The house stands on a hill at 4889 State Route 14, on which glacial furrows can still be seen.

Portage County has developed a list of historic places of local significance, including:

- The Baldwin House, Charlestown
- The Charlestown Cemetery, Charlestown
- The Charlestown Methodist Church, Charlestown

## **2.5 Demographics**

### **2.5.1 Market Area**

Michael J. Kirwan Dam and Reservoir receives visitors primarily from Portage County in which the Project is located, as well as some neighboring counties. Due to the Project's central location within Portage County and the availability of other recreation areas in nearby counties, the market area for this analysis is focused on Portage County, as well as Mahoning and Trumbull counties, which represent the two bordering counties closest to the Project.

### **2.5.2 Population**

All population data was obtained from the United States Census website, the Bureau of Labor Statistics website, and the Ohio Department Services Agency websites. Portage County, the county in which Michael J. Kirwan Dam and Reservoir is located, has an area of 487.38 square miles and a population density of 331.2 persons per square mile. Mahoning County has an area of 411.62 square miles and a population density of 580.2 people per square mile. Trumbull County has an area of 618.3 square miles with a population density of 340.1 people per square mile.

While the total population of Ohio has grown by about 1.6 percent since 2000, the populations in Portage, Mahoning, and Trumbull counties have shifted considerably more (Table 2-2, below), with Portage growing by 6.15 percent, Mahoning decreasing by 7.27 percent, and Trumbull decreasing by 6.58 percent. Population growth within the state over the past decade has been small, suggesting that the greater differences in county populations are a result of movement within the state. Population growth

in Portage County will likely result in increased demand for outdoor recreation within both the county and the region as a whole. Michael J. Kirwan Dam and Reservoir is one of many outdoor recreation locations available to the residents from this region. The role of the Project in meeting regional recreational demand is discussed in more detail in the following sections.

**Table 2-2. Current Population and Growth Since 1990**

State/County	1990	2000	2010	Population Growth 1990-2000 (%)	Population Growth 2000-2010 (%)
Ohio	10,847,115	11,353,140	11,536,504	4.67%	1.62%
Portage	142,585	152,061	161,419	6.65%	6.15%
Mahoning	264,806	257,555	238,823	-2.74%	-7.27%
Trumbull	227,813	225,116	210,312	-1.18%	-6.58%
Source: Census 2010					

The population of Portage County is projected to continue growing by approximately 4.5 percent by the year 2030. The population of Mahoning County is projected to decline by 17.6 percent by the year 2030. The population of Trumbull County is projected to decline by 14.1 percent by the year 2030 (Table 2-3).

**Table 2-3. Annual Population Growth Projections through 2030 for Ohio, Portage County, Mahoning County, and Trumbull County**

County	April 1, 2000 Census	July 1, 2010 Census	July 1, 2020 Projection	July 1, 2030 Projection	% Change 2000-2010	% Change 2000-2020	% Change 2000-2030
Ohio	11,353,140	11,536,504	11,574,870	11,615,100	1.62%	1.95%	2.31%
Portage	152,061	161,419	161,410	158,930	6.15%	6.15%	4.52%
Mahoning	257,555	238,823	224,680	212,240	-7.27%	-12.76%	-17.59%
Trumbull	225,116	210,312	200,840	193,360	-6.58%	-10.78%	-14.11%
Source: Ohio State Data Center							

The racial and ethnic makeup of Portage, Mahoning, and Trumbull counties is predominantly white at 91.3 percent, 80.7 percent, and 88.7 percent, respectively, while the state of Ohio is about 82.5 percent. The largest minority group is African American at 4.5 percent in Portage County, 15.9 percent in Mahoning County, and 8.6 percent in Trumbull County, with 12.8 percent of the population of Ohio belonging to this group. Reflecting national trends, the Hispanic population is growing faster than other racial and ethnic populations.

The median age is 38 years old in Portage County, 43 in Mahoning County, and 44 in Trumbull County. The proportions of males to females in Portage County, Mahoning County, and Trumbull County are nearly the same as Ohio, with 50.9 percent female population in Portage County, 51.2 percent female

population in Mahoning County, 51.2 percent female population in Trumbull county, and 51.0 percent female population in Ohio.

## **2.6 Economics**

### **2.6.1 Income and Poverty Status**

From 2012 to 2016, the median household income in Portage County was \$52,427, with 13.5 percent of the population recorded below the poverty line. During this same time period, the median household income in Mahoning County was \$41,872, with 18.7 percent of the population recorded below the poverty line. The median household income in Trumbull County was \$43,811, with 17.6 percent of the population recorded below the poverty line. Mahoning County and Trumbull County have very similar average median household incomes and both fall below the state of Ohio’s average of \$50,674, but Portage County has a slightly higher average median household income than the state average. Similarly, Mahoning and Trumbull counties have a higher percentage of the population recorded below the poverty line than the state average for Ohio of 14.6 percent, while Portage County has a slightly lower percentage of the population below the poverty line.

### **2.6.2 Area Industries**

Portage, Mahoning, and Trumbull counties have some similarities with regard to primary industries of employment. The “health care and social assistance” and “retail trade” industries are among the largest employers in all three counties with “health care and social assistance” being the top industry in Mahoning and Trumbull counties. The “manufacturing” and “accommodation and food services” industries are also large employers in Portage and Mahoning counties with “manufacturing” being the top employer in Portage County (Tables 2-4, 2-5, and 2-6, below). The following tables provide data on annual average employment and wage values for major industries in Portage, Mahoning, and Trumbull counties, as well as the annual average wage values for the state of Ohio.

**Table 2-4. Employment and Wages by Industry in Portage County (for Persons Over the Age of 16)**

<b>(2016 Average Annual Values)</b>				
<b>NAICS Industry Sector</b>	<b>Establishments</b>	<b>Employment</b>	<b>County Wage</b>	<b>OH Wage</b>
Total, All Industries	293,074	56,308	\$42,002	\$47,700
Agriculture, Forestry, Fishing and Hunting	1,571	156	\$29,169	\$32,505
Mining, Quarrying, and Oil & Gas	941	303	\$55,161	\$68,779
Utilities	575	*	*	\$92,990
Construction	22,785	1,927	\$54,629	\$57,029
Manufacturing	15,487	10,368	\$54,541	\$58,765
Wholesale Trade	23,784	3,171	\$62,668	\$66,872
Retail Trade	35,596	6,694	\$25,341	\$27,124
Transportation and Warehousing	8,256	*	*	\$47,402
Information	4,295	475	\$46,626	\$66,142
Finance and Insurance	17,370	646	\$52,633	\$73,253
Real Estate and Rental and Leasing	10,781	589	\$37,579	\$45,523
Professional and Technical Services	32,169	1,453	\$55,537	\$72,542
Management of Companies and Enterprises	2,094	991	\$67,460	\$105,738
Administrative and Waste Services	17,437	1,587	\$30,361	\$32,797
Educational Services	3,164	568	\$33,693	\$35,420
Health Care and Social Assistance	30,358	5,480	\$32,220	\$45,227
Arts, Entertainment, and Recreation	3,848	660	\$16,687	\$32,284
Accommodation and Food Services	23,895	5,439	\$14,533	\$15,937
Other Services (Except Public Administration)	23,512	1,512	\$27,036	\$30,910
Public Administration	6,868	1,838	**	**
*Suppressed for Confidentiality				
** Values available only as a part of national totals				

**Table 2-5. Employment and Wages by Industry in Mahoning County (for Persons Over the Age of 16)**

<b>(2016 Average Annual Values)</b>				
<b>NAICS Industry Sector</b>	<b>Establishments</b>	<b>Employment</b>	<b>County Wage</b>	<b>OH Wage</b>
Total, All Industries	5,886	101,526	\$37,074	\$47,700
Agriculture, Forestry, Fishing and Hunting	18	181	\$33,892	\$32,505
Mining, Quarrying, and Oil & Gas	26	170	\$80,972	\$68,779
Utilities	11	339	\$88,641	\$92,990
Construction	491	4,559	\$54,593	\$57,029
Manufacturing	334	8,764	\$47,681	\$58,765
Wholesale Trade	364	4,334	\$50,794	\$66,872
Retail Trade	832	12,234	\$25,843	\$27,124
Transportation and Warehousing	194	3,338	\$38,382	\$47,402
Information	68	1,065	\$50,874	\$66,142
Finance and Insurance	361	1,930	\$56,947	\$73,253
Real Estate and Rental and Leasing	187	925	\$33,052	\$45,523
Professional and Technical Services	470	2,774	\$51,782	\$72,542
Management of Companies and Enterprises	42	1,285	\$54,683	\$105,738
Administrative and Waste Services	342	7,875	\$30,515	\$32,797
Educational Services	54	816	\$24,839	\$35,420
Health Care and Social Assistance	788	18,719	\$37,580	\$45,227
Arts, Entertainment, and Recreation	81	1,553	\$16,586	\$32,284
Accommodation and Food Services	529	10,394	\$13,921	\$15,937
Other Services (Except Public Administration)	439	3,040	\$24,461	\$30,910
Public Administration	115	3,912	**	**
*Suppressed for Confidentiality				
** Values available only as a part of national totals				

**Table 2-6. Employment and Wages by Industry in Trumbull County (for Persons Over the Age of 16)**

<b>(2016 Average Annual Values)</b>				
<b>NAICS Industry Sector</b>	<b>Establishments</b>	<b>Employment</b>	<b>County Wage</b>	<b>OH Wage</b>
Total, All Industries	4,285	71,885	\$40,241	\$47,700
Agriculture, Forestry, Fishing and Hunting	13	99	\$29,121	\$32,505
Mining, Quarrying, and Oil & Gas	21	98	\$40,690	\$68,779
Utilities	*	*	*	\$92,990
Construction	359	2,447	\$46,711	\$57,029
Manufacturing	*	*	*	\$58,765
Wholesale Trade	*	*	*	\$66,872
Retail Trade	654	10,414	\$24,683	\$27,124
Transportation and Warehousing	155	2,733	\$45,678	\$47,402
Information	31	435	\$40,092	\$66,142
Finance and Insurance	244	1,362	\$46,809	\$73,253
Real Estate and Rental and Leasing	144	880	\$32,729	\$45,523
Professional and Technical Services	281	1,295	\$37,964	\$72,542
Management of Companies and Enterprises	26	685	\$81,011	\$105,738
Administrative and Waste Services	253	3,979	\$29,948	\$32,797
Educational Services	40	585	\$26,388	\$35,420
Health Care and Social Assistance	550	10,607	\$37,273	\$45,227
Arts, Entertainment, and Recreation	69	769	\$12,506	\$32,284
Accommodation and Food Services	*	*	*	\$15,937
Other Services (Except Public Administration)	*	*	*	\$30,910
Public Administration	115	2,696	**	**
*Suppressed for Confidentiality				
** Values available only as a part of national totals				

**2.6.3 Economic Impact of Recreation Related Spending**

The Corps provides water-based recreation opportunities throughout the country, which provide economic benefits to the local and regional communities in which Corps projects exist. To estimate the economic impact from the recreation-related spending at the Project, the Corps' Institute for Water Resources, in collaboration with the Louis Berger Group and Michigan State University, have developed a regional economic impact modeling tool called Regional ECONomic System (RECONS). This modeling tool automates calculations and generates estimates of jobs and other economic measures, such as income and sales associated with the Corps' American Recovery and Reinvestment Act (ARRA) and Civil Works program spending and secondary affects for Ports, Inland Water Way, Formerly Utilized Sites Remedial Action Program (FUSRAP), and Recreation. This is done by extracting multipliers and other economic measures from more than 1,500 regional economic models that were built specifically for Corps project locations. For 2016, RECONS shows an estimated 350,871 visits (person-trips) at Michael J. Kirwan Dam and Reservoir Lake, predicted to result in direct benefits to the

region of \$16,596,744.00 in sales, \$5,498,498.00 in labor income, \$8,711,216.00 in economic value added, and 170 jobs supported in the region.

## **2.7 Recreation Facilities, Activities and Needs**

### **2.7.1 Zones of Influence**

The primary zone of influence encompasses the Akron Metropolitan Statistical Area (MSA) as the basis in summarizing the population associated with Michael J. Kirwan Dam and Reservoir. The Akron MSA includes Summit and Portage counties and had a total population of 703,200 in 2010 (data from the U.S. Census website). The Akron MSA is also part of the larger Cleveland-Akron-Canton, Ohio, Combined Statistical Area. As of the 2010 census, it is the largest metropolitan area on Ohio, with a total population of 3,515,646. Michael J. Kirwan Dam and Reservoir is located near the unincorporated community of Wayland in Paris Township, Portage County. Portage County's population as of the 2010 census is 161,419, a 5.8% increase from the 2000 census.

### **2.7.2 Visitation Profile**

Michael J. Kirwan Dam and Reservoir is visited predominately by local residents; however, transient visitation is common at the campground as the Project is in close proximity to major interstates and between three large cities: Akron, Youngstown, and Cleveland. Peak recreation season is from May through September. Visitation is concentrated during the weekends in both peak and non-peak seasons. Popular recreational activities at Michael J. Kirwan Dam and Reservoir include angling, paddlecraft (e.g. canoes, kayaks), boating, camping, horseback riding, snowmobiling, and hiking.

### **2.7.3 Recreation Analysis**

#### *Description of Facilities*

Michael J. Kirwan Dam and Reservoir had a visitation of approximately 307,493 from 2014 to 2016. The Project is a popular local attraction with a campground that has been rated as one of the best in the state of Ohio for the past 11 years. West Branch State Park Campground, which is managed by the ODNR Division of Parks and Watercraft, has a total of 201 campsites with 29 full hook-up sites (water, electric, and septic), 155 electric-only sites, and 14 non-electric sites. There are also three group camp sites – two of which have electricity and one that is primitive. Out of 201 campsites, five are accessible for persons with disabilities.

Michael J. Kirwan Dam and Reservoir has five boat launches total, one located at the campground, three located at various areas around the Project, and one that is a dirt launch commonly used by visitors with kayaks and canoes. Visitor use and the increase in popularity of personal crafts such as kayaks, canoes, and paddleboards indicates that additional small-craft launches would be desirable at the Project. Other recreation facilities managed by ODNR Division of Parks and Watercraft include a marina with concessions, rental equipment, and a total of 257 dock slips; a swim beach with a picnic area; 12 miles of mountain bike trails, 20 miles of snowmobile trails, 14 miles of hiking trails, and an eight mile loop of the Buckeye Trail; a Horse Camp with 10 primitive sites and 20 miles of equestrian trails; four picnic areas with shelters; and one picnic area without a shelter. Recreation facilities managed by the Corps

include an Information Center and picnic shelter, as well as the Discovery Trail Nature Area, which includes a 0.3 mile hiking trail, a picnic area, a one mile Fisherman's Lot trail that provides access to the outflow and downstream area, and a wildlife viewing area.

### *Customer Satisfaction and Considerations*

Visitors are highly satisfied with existing recreation activities and are looking for expansion and upgrading of existing facilities and recreation opportunities. Visitor satisfaction is very high, with an average of 80% of visitors rating their satisfaction with the project as a "5 out of 5" on the 2014 to 2015 solicited survey. According to comment cards and verbal opinions expressed to Project staff, the areas that need most improvement are the roadways and restroom facilities at the Information Center. There is also interest in having Wi-Fi available at the campground areas. Other considerations include increasing accessibility for persons with disabilities across Project facilities. Visitor demand further indicates transitioning more of the electric sites into full hook-up sites would increase visitation and visitor satisfaction.

#### **2.7.4 Recreational Carrying Capacity**

Carrying capacity, which includes both environmental (how much use can the resource support without being compromised) and social (how much use can occur before the quality of visitor experience is diminished) dimensions, is currently balanced at Michael J. Kirwan Dam and Reservoir. Observations show few fatalities or boating accidents, and the West Branch State Park Campground is booked year round. Future recreational developments will require plans and studies to account for water quality and sedimentation changes, balancing recreational diversity, and accommodating new demands within a developed footprint in a manner that is environmentally and economically sustainable.

#### **2.8 Related Recreational, Historical and Cultural Areas**

Michael J. Kirwan Dam and Reservoir is located within the Northeast tourism region by Ohio Tourism and Recreation. The Project also lies with Portage County's parks and trails system that includes 1,400-acres and 14-miles of hiking and biking trails that connect to other regional trail systems. Regional attractions include Cuyahoga Valley National Park, the Ohio Erie and Canalway National Heritage Area, the Stan Hywet Hall and Gardens, and the Pro Football Hall of Fame.

#### **2.9 Real Estate and Acquisition Policy**

The total real estate at the Project encompass 6,332.16-acres, of which 3,671.5-acres are fee land title, 27.62-acres are easement, and 2,633.40-acres are open water. There are 197 total outgrants, with the majority of the land and water being outgranted to ODNR. There are 42 mineral tracts at Michael J. Kirwan Dam and Reservoir.

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

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

#### **3.1 Land Allocation**

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

##### ***Operations***

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

##### ***Recreation***

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

##### ***Fish and Wildlife***

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

##### ***Mitigation***

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

#### **3.2 Land Classification**

The guidance further defines land classifications to provide for development and resource management consistent with authorized purposes and other federal laws. The previous Master Plan dated 1982, used an obsolete classification scheme that has been rectified in this document to meet current standards. Currently, there are six categories of classification identified as:

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

The classification process refines the land allocations to fully utilize Project lands and considers public desires, legislative authority, regional and project specific resource requirements, and suitability. Land classification indicates the primary use for which Project lands are managed. The Project manages lands according to five of the above six classifications (sans Mitigation). The system for classification has been realigned to meet current standards (See Appendix B, Plate 9 for the Land Classification map).

### **3.2.1 Project Operations**

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

### **3.2.2 High Density Recreation**

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

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

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

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

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

### **3.2.3 Environmentally Sensitive Areas**

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

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

Areas designated as sensitive can change over time, and continuous monitoring through programs like Multiple Species Inventory and Monitoring (MSIM) provide valuable information to keep identified sensitive areas current. Through the use of Geographic Information System (GIS) databases maintained with separated layers, the dynamic nature of sensitivity can be managed in an up-to-date program. Some areas may be highly sensitive to change, while other areas may need prescribed management to remain viable. The goal of sensitive area management is to protect and preserve known areas that contribute to the diversity and health of the Project area (See Appendix B, Plate 10 for the Land Cover map.)

### **3.2.4 Multiple Resource Management Lands**

These lands can be divided into the following four sub-categories: Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. In the future, some of

these areas may be converted to High Density Recreation. Conversion to High Density Recreation may occur based on future recreation needs within the Project area. The Corps must continue to carefully evaluate land use requests in these areas to include road and utility easements, rights of way for pipelines, resource mining activities, and other potential ground and resource-disturbing activities and to ensure that these actions do not negatively impact the environment in a significant manner.

### ***Low Density Recreation***

These lands are designated for dispersed and/or low impact recreation use. Development of facilities on these lands is limited. Emphasis is on providing opportunities for non-motorized activities such as walking, fishing, hunting, or nature study. Site-specific, low-impact activities such as primitive camping and picnicking are allowed. Facilities may include boat ramps, boat docks, trails, parking areas and vehicle controls, vault toilets, picnic tables, and fire rings.

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

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

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

### ***Wildlife Management***

Proper management techniques will be applied wherever the opportunity exists to improve conditions for scenic value, timber stand improvement, wildfire prevention, pest control, and watershed protection. While all Project lands are managed for fish and wildlife habitat in conjunction with other land uses, Wildlife Management Area lands are designated specifically for wildlife management. They contain valuable wildlife habitat components that are managed, using guidance that includes the State Wildlife

Action Plan (SWAP) provided by the Ohio Department of Natural Resources, Division of Wildlife, to yield habitat suitable for designated game and non-game species. Licenses, permits, and easements for such man-made intrusions such as pumping plants, pipelines, cables, transmission lines, and non-Project roads are usually not allowed on these lands; however, exceptions to this policy are allowable, if properly mitigated.

### ***Vegetation Management***

Vegetation management, including agricultural activities that do not greatly alter the natural character of the environment, are permitted for a variety of purposes, including erosion control, retention and improvement of scenic qualities, and wildlife management. Management activities focus on the protection and enhancement of forest resources and vegetative cover. Forests are managed as a multipurpose resource for sustained yield when consistent with recreation and wildlife management objectives and approved land uses. Hunting and fishing are allowed pursuant to tribal or state fish and wildlife management regulations where these activities are not in conflict with the safety of visitors and Project personnel. Other activities are conducted under the guidance of the Project's forest management and wildlife management plans.

### ***Future or Inactive Recreation Areas***

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

#### **3.2.5 Water Surface**

There are four possible sub-classifications. See Appendix B, Plate 11 for the Water Zoning map.

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

#### **3.3 Easement Lands**

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

### 3.3.1 Operations Easement

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

### 3.3.2 Flowage Easement

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

### 3.3.3 Conservation Easement

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

## 4. Resource Plan

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

### 4.1 Classification and Justification

The land classifications are:

- **Project Operations.** Lands required for the dam, spillway and other areas that are used solely for operation of the Project (more fully described in Sec. 3.2.1 above).
- **High Density Recreation.** Lands developed for intensive recreational activities (more fully described in Sec. 3.2.2 above).
- **Environmentally Sensitive Areas.** Areas including scientific, ecological or cultural features such as those protected under the Endangered Species Act, National Historic Preservation Act, or other laws (more fully described in Sec. 3.2.3 above).
- **Multiple Resource Managed Lands.** Includes areas of low density recreation, wildlife management, vegetative management, and future/inactive recreation areas (more fully described in Sec. 3.2.4 above).
- **Water Surface.** Water surface areas restricted for project operations, no-wake zones, used for open recreation, or restricted for fish and wildlife sanctuary (more fully described in Sec. 3.2.5 above).

Further details for managing these lands will be included in the OMP, as revised. Management tasks described in the OMP will support the resource objectives, land classifications, and resource plan set forth in this Master Plan. While the following sections address specific plans for the land classifications listed above, the Corps will strive to meet the following universal project purposes at all project lands: 1) take proactive measures to enhance universal access to lands and facilities, 2) improve safety for visitors, and 3) identify and eliminate encroachments and trespassing. In addition, the Corps will seek to identify important “unofficial” recreation activities and sites, such as undeveloped shoreline fishing

areas, swimming areas outside of developed beaches, or other favorite areas used by recreationists. As development occurs in the future, the Corps will seek to protect these areas and may require mitigation for development actions that would negatively impact these sites. As these sites are identified, they will be included in future updates to the Master Plan and may also be included in the OMP.

#### **4.1.1 Project Operations**

This category includes lands required for the control tower, rolled-earth dam and outflow structures, administrative offices, maintenance compound, and other areas used to operate and maintain Michael J. Kirwan Dam and Reservoir. There are 141.2-acres classified as Project Operations. The management plan (stated as “resource objectives”) for these areas is to continue providing physical security necessary to ensure continued operations of the dam and related facilities.

#### **4.1.2 High Density Recreation**

Lands developed for intensive recreational activities for the public are considered as high density recreation including day-use areas, campgrounds, commercial concessions (marinas, restaurants, resorts, etc.), and quasi-public development. Future possibilities for development of these areas include expansion of trail systems utilizing emerging technologies such as Quick Reference (QR) codes and other electronic media outreach, upgrades to designated watercraft (boats, kayaks, canoes, paddleboards, etc.) and associated launching areas, conversion of low density campsites to sites with electric and water hook-ups for RVs, and expansion of additional park recreation features. There is a total of 252-acres classified as High Density Recreation (See Appendix B, Plate 12 for the Recreation map).

##### *West Branch State Park Campground*

West Branch State Park Campground is managed by the ODNR Division of Parks and Watercraft. The campground consists of 130.52-acres with 201 campsites, five of which are accessible for persons with disabilities. There are 29 full hook-up sites, 155 electric-only sites, and 14 non-electric sites. There are also three group sites; two of which have electricity and one of which is primitive. The campground has an open access boat ramp along with a swim beach. There are four shower houses/restrooms, one in each area of the campground, a camper dump station with potable water fill-up, and a vault-type restroom at the boat ramp. The campground is open year-round. During the months of November through March, electric sites 1-26, 128-132, 187-198, non-electric sites 133-145, the three group sites, and one of the shower houses are available for use. There is also a campground retail store that sells items such as clothing, camping supplies, fishing equipment, snacks and beverages, paddleboard rentals, and personal care items. The West Branch State Park Campground also contains an 18-hole disc golf course and 32-lot boat and trailer storage facility.

##### *West Branch State Park Marina*

The West Branch State Park Marina is managed by concessionaire. The area consists of 6.46-acres. The building is a single story with a one-bay attached garage. A deck with permanently attached picnic tables is adjacent to the concession building. There are two restroom buildings at the marina, each has

flush toilets with separate men and women facilities. Dock #9 and the restroom closest to it are wheelchair accessible. Boat rentals, gasoline, and supplies are available at the marina. There are a total of 312 slips at the marina: 261 are seasonal rental docks for the public and the remainder are courtesy docks for the marina concessionaire, Sheriff's boat, Division of Watercraft boat, and Corps patrol boat. Docks can accommodate 20', 24', and 28' watercraft. The marina is open from May through October.

#### *West Branch State Park Swim Beach*

A 700-foot swim beach is located at the junction of Cable Line Road and Alliance Road. The facility includes a 1,000-car parking lot, restrooms with changing booths, a small playground, outside showers, and a snack vending area. There are an estimate of 50 picnic tables and 15 grills available at the swim beach.

#### *East Boat Ramp*

The East Boat Ramp is located on the south side of the lake off of Gilbert Road. This 8.75-acre area has a five lane concrete boat ramp, as well as 30-car and 118-trailer parking spaces. This area is also accessible for shoreline fishing and canoe launching and provides carry-in access for canoes and kayaks. This area contains a picnic shelter, 50 picnic tables, 12 grills, and 90 parking spaces. Portable water and a flush restroom are also available. The boat launch is leased to the ODNR Division of Parks and Watercraft and was completed in 1966. Distance from the ramp to the dam is approximately 0.77 miles. The courtesy dock is removed in the fall and replaced in the spring. East Boat Ramp is closed from November to March.

#### *West Boat Ramp*

The West Boat Ramp is located on the south side of the lake off of Cable Line Road. This 11.03-acre area has a four-lane concrete boat ramp, as well as 37-car and 78-trailer parking spaces. This area is also accessible for shoreline fishing and canoe launching and provides carry-in access for canoes and kayaks. This area also contains a picnic shelter, 30 picnic tables, eight grills, and a vault restroom. The West Boat Ramp is leased to ODNR Division of Parks and Watercraft and was completed in 1966. Distance from the ramp to the dam is approximately 3.5-miles upstream. The courtesy dock is removed in the fall and replaced in the spring. West Boat Ramp is open year round.

#### *Horse Camp*

Horse Camp is a 10 non-electric site campground designated for equestrian riders. This area consists of 7.31-acres. There are 20-miles of equestrian trails located along Esworth Road that connect to this campground. Trails are on ODNR Division of Parks and Watercraft property but are maintained by the Northeast Ohio Horseman's Club and State Park personnel. There is a gravel parking lot located at the trail head that can accommodate up to 25 horse trailers. The equestrian camp/trails are closed from November to March.

### *Picnic Area A and B*

Picnic Area A and B was constructed in 1966 and is located along the access road to the marina. The area has a total of 84.37-acres. Picnic Area A consists of a picnic shelter, 40 picnic tables, seven grills, and a 72-car parking lot. Picnic Area B consists of a picnic shelter, 30 picnic tables, seven grills, and an 80-car parking lot. Both areas are accessible for shore fishing and contain potable water and a flush restroom facility. There is an 18-hole disc golf course between Picnic Area A and B.

### *Information Center*

The Information Center area is managed by the Corps of Engineers and consists of approximately 3.62-acres. This area contains an information center, picnic shelter, swing set, and a seasonal chemical toilet. This area is day-use only and open to the public year round. Interpretive programming and visitor information provided by Corps staff and volunteers are available from Memorial Day to Labor Day. Most common uses of this area by the public include participation in programs, inquiries, picnicking, and access to the dam for biking, jogging, fishing, and walking.

### ***Best Management Practices for High-Density Recreation Lands:***

- Provide access for and use by the elderly and people with disabilities
- No ground-disturbing activities in high density recreation areas, unless authorized by the Corps
- Interpret cultural resources to benefit visitors
- Protect the viewshed (geographical area that is visible from a location) in order to maintain current aesthetic values
- Prescribed fire should be considered as a management method for this land classification in appropriate locations

#### **4.1.3 Environmentally Sensitive Areas**

The following types of landscape may be classified as an environmentally sensitive area:

- Known or discovered cultural sites
- Large tract woodlands
- Mature woodlands
- Reforestations
- Wetlands identified in the National Wetlands Inventory
- Lands possessing unique wildlife value by diversity or conservative species
- Steep slopes, often with outcrops or talus slopes
- Areas of aesthetic quality or having aesthetic “scenic” views
- Corridors between habitats that protect connectivity (e.g. riverine woodlands)

### *Archaeological Sites*

Approximately 33-acres are classified as lands containing archaeological resources. These include old state roads, a cemetery, and the remains of a canal and brick-land office building. These sites will be

managed to protect these resources in accordance with the provisions of applicable laws, including the Archaeological Resources Protection Act, National Historic Preservation Act, and Native American Graves Protection and Repatriation Act. These areas will continue to be surveyed for the presence of archeological resources when development activities are proposed to ensure that utilities placement, mining, installation of recreation features, and other actions do not impact unknown resources. If additional resources are discovered, these parcels would be converted to this management category and additional protections would be afforded to ensure compliance with applicable laws.

### *Fresh Water Wetlands*

Approximately 42-acres of freshwater emergent wetlands and 228-acres of freshwater forested/shrub wetlands were retained as Environmentally Sensitive Areas.

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For the purposes of this classification wetlands must have one or more of the following three attributes: 1) at least periodically, the land supports predominantly hydrophytes; 2) the substrate is predominantly undrained hydric soil; and 3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year. Wetland areas are functioning properly when adequate vegetation and landforms are present to: 1) dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; 2) filter sediment, capture bedload, and aid floodplain development; 3) improve flood-water retention and ground-water recharge; 4) develop root masses that stabilize streambanks against cutting action; 5) develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and 6) support greater biodiversity.

### *Other*

Approximately 159.3 additional acres are classified as Environmentally Sensitive Areas. These areas include old growth forests, geological formations or outcrops, protected plant species, and diverse environmental areas.

### ***Best Management Practices for Environmentally Sensitive Areas:***

- Control noxious weeds and other pests in a manner that avoids damage to existing desirable vegetation and sensitive areas (wetlands and streams)
- Preserve and protect existing wetland and other sensitive or unique habitats that support threatened and endangered species along with other wildlife
- Proponents of surface disturbing activities shall identify important, sensitive, or unique habitats in the vicinity of the Project and design the proposed project to avoid, minimize, or mitigate impacts to these resources
- Riparian areas are maintained and improved for the protection and enhancement of fisheries

- As a standard practice, ephemeral and perennial drainages and wetland/riparian areas will be avoided as locations for oil and gas related facilities, including drilling locations, production facilities, roads, and pipelines. Whenever possible, facilities will be confined to existing alignments or locations, minimizing width requirements and maximizing multiple occupancy
- Surface disturbance will not be allowed within 200-meters of the source of a spring or seep, or within downstream riparian areas created by flows from the source or resulting from riparian area management
- Proponents of surface disturbing activities shall conduct surveys for federally and state-protected species and other species of concern within action areas and design the project to avoid, minimize, or mitigate impacts to these resources
- The Corps will prohibit the disturbance of any population of federally listed plant species
- No motorized use, unless previously authorized, will be allowed within Environmentally Sensitive Area boundaries; other trails (i.e., foot trails, mountain bike trails, cross country skiing trails, etc.) will be analyzed on a case by case basis. Trail design, construction, and maintenance will ensure all criteria in which the Environmentally Sensitive Area was established will remain protected
- Prescribed fire should be considered as a management method for this land classification

***Recommendations for the Elliott Family Cemetery by Ohio State Historic Preservation Office:***

- Remove overgrowth and brush within the enclosed cemetery wall and around the surrounding area; improve trail access to and around the cemetery
- Reset stone wall
- Attempt to relocate gravestones and bases in and around the existing cemetery
- Should any gravestones, bases, or other grave markers be found, a professional cemetery preservationist should be contacted to complete any repair work on the stones and reset the gravestones within the cemetery
- Interpretative signage is recommended at the cemetery and/or along the trail which leads to the cemetery
- The legend of the “witch” buried in the cemetery should no longer be perpetuated, as there is no historic evidence of this legend and reference to the Elliott Family Cemetery in this matter causes continued vandalism
- Installing interpretive displays at the Michael J. Kirwan Dam and Reservoir Information Center regarding the Elliott Family Cemetery and other historic resources within the property

**4.1.4 Multiple Resource Managed Lands**

This category includes areas where the predominant use is for game and wildlife management or dispersed recreation. However, there are other compatible uses which may occur on these lands without impacting the predominant use.

#### **4.1.4.1 Low Density Recreation**

Low density refers to lands with minimal development or infrastructure that support passive public recreational use (e.g. primitive camping, fishing, hunting, trails, wildlife viewing). There are 1,694.5-acres at Michael J. Kirwan Dam and Reservoir that fall under this category.

##### *Rock Spring Road Boat Launch*

The Rock Spring Road Boat Launch is a low density boat launch located on the north side of the lake off of Rock Spring Road. This 1.66-acre area has a dirt boat ramp and a 35-car and trailer parking lot. This area is accessible for shoreline fishing and provides carry-in access for paddlecraft launching. The boat launch is located on land leased to the ODNR Division of Parks and Watercraft and was completed in 1966. Distance from the boat ramp to the dam is 3.71-miles. Rock Spring Road Boat Launch is open year round for day-use. However, launching is only available when the pool level is above 978.56-feet. Rock Spring Road Boat Launch also has one picnic tables, one grill, and a vault restroom.

##### *Knapp Road Boat Launch*

The Knapp Road Boat launch is a low density boat launch located on the northern side of the west end of the lake off of Knapp Road. This area is approximately 0.77-acres, with 26 car and trailer parking spaces. This area is accessible for shoreline fishing and launching. The boat launch is located on ODNR Division of Parks and Watercraft leased land. The Knapp Road Boat Launch is located six miles upstream from the dam and is open year round for day-use. However, launching is only available when the pool level is above 980.56 feet.

##### *Fisherman's Trail Lot*

The Fisherman's Trail Lot was completed in 1975. It is located on Wayland Road on Corps property. The Fisherman's Trail Lot is adjacent to the West Branch of the Mahoning River downstream from the dam. The lot consists of 25 car parking spaces and provides access to what was formerly known as Jewel Run Trail. The trail is no longer maintained except for a one mile section along the river that provides anglers access to the dam outflow area.

##### *Hiking Trails*

Seven hiking trails that total 14-miles are located adjacent to the West Branch State Park Campground along Esworthy Road. These trails are located on ODNR Division of Parks and Watercraft leased land and are maintained by park staff and volunteers.

##### *The Buckeye Trail Loop*

The Buckeye Trail Loop is located on the west end of the Project and is eight miles long. The trail is located on ODNR Division of Parks and Watercraft leased property and is maintained by the Buckeye Trail Association. Trail expansion is in progress. Once completed, the trail will encompass the entire lake. This trail is part of a state-wide system of trails that traverses the perimeter of the Ohio.

### *Mountain Bike Trails*

There are 12-miles of mountain bike trails at Michael J. Kirwan Dam and Reservoir. The trailhead is located at a staging area near the West Boat Ramp on ODNR Division of Parks and Watercraft leased property. Trails are managed by CAMBA. Mountain bike trails are closed from November through May.

### *Snowmobile Trails*

There are 20-miles of snowmobile trails at Michael J. Kirwan Dam and Reservoir. The snowmobile trailhead is located at the West Boat Ramp area and coincides with the mountain bike trailhead. Snowmobile trails are located on ODNR Division of Parks and Watercraft leased lands and are maintained by West Branch State Park personnel and volunteers. Snowmobile trails are opened when conditions are favorable, as determined by the State Park Manager.

### *Discovery Trail Nature Area*

The Discovery Trail Nature Area is located west of the Resource Manager's Office on Corps property. This area consists of two acres and contains a 0.33-mile trail, wildlife viewing area, a pollinator garden, and a picnic area with five picnic tables and two grills. The area has a three-car gravel parking lot.

### ***Best Management Practices for Low-Density Recreation Lands:***

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

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

- There is no viable alternative to the activity or structure being placed on Corps lands
- There is a direct benefit to Michael J. Kirwan Dam and Reservoir and their respective authorized mission

#### **4.1.4.2 Wildlife Management Areas**

Wildlife lands are available for sightseeing, wildlife viewing, nature study, and hiking such as the Buckeye Loop Trail and snowmobile trails that run through these areas. There are 1,099-acres leased to ODNR Division of Wildlife for wildlife management. Taking of wildlife, including hunting, fishing, and trapping, may be allowed when compatible with the wildlife objectives for a given area and within

federal and state fish and wildlife management regulations as established with ER 1130-2-540, Environmental Stewardship Operations and Maintenance Polices, 4 Nov 2002.

Ohio Department of Natural Resources' Division of Wildlife currently administers the West Branch Reservoir Wildlife Area, which is located on Department of Parks and Watercraft land, west of Rock Spring Road on the south side of the reservoir. Wildlife management activities include upland small game and deer management through natural succession control, brush pile construction, and orchard improvement. The only wildlife stocking program by ODNR involves the annual release of multiple male pheasants on the south side of the Project area.

Waterfowl hunting is also permitted on the reservoir. Waterfowl management activities are limited, although Wood Duck nest boxes have been placed at various locations around the reservoir. The Project has also engaged in the implementation of pollinator habitat.

***Best Management Practices for Wildlife Management Areas:***

- Surface disturbance will not be allowed within 200-meters (or if there are any more stringent state species-specific buffers) of active raptor nests on natural habitat features, such as trees, large brush and cliff faces
- The Master Memorandum of Understanding between the Corps and the Animal and Plant Health Inspection Service, Wildlife Services (WS), will guide nuisance species damage control
- Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 45 db measured at 30-feet from the source of the noise
- Manage forest resources and other vegetation for balanced uses of recreation, wildlife, and fisheries
- Monitor forest conditions to document health and identify pests
- A habitat restoration plan shall be developed to avoid, minimize, or mitigate negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. The plan shall identify revegetation, soil stabilization, and erosion reduction measures that shall be implemented to ensure that all temporary use areas are restored. The plan shall require that restoration occur as soon as possible after completion of activities to reduce the amount of habitat converted at any one time and to shorten the length of recovery time to natural habitats
- Recovery plans for species federally-listed as threatened or endangered will be implemented under the authority of the Endangered Species Act, including the reintroduction or relocation of native special status species in areas on public land in coordination and cooperation with local governments
- Increased intensity of research and monitoring will be needed to evaluate changes in habitat condition, land use threats to the species, species use and distribution, reclamation efforts, propagation, and other projects that may help in enlarging the knowledge base of these species

- All land use management prescriptions will be maintained as currently established to ensure aesthetics, habitat quality, and overland water flow. All existing ground disturbing activities will not be impacted by this designation
- No motorized use, unless previously authorized, will be allowed within Wildlife Management Area boundaries; other trails (i.e., foot trails, mountain bike trails, cross country skiing trails, etc.) will be analyzed on a case by case basis
- Prescribed fire should be considered as a management method for this land classification

#### **4.1.4.3 Future Recreation Areas**

For Michael J. Kirwan Dam and Reservoir, there are a total of 22.5-acres that have been designated for future recreation. There are four islands throughout the lake such as Goose Island and Hickory Island that have the potential of being developed into boat-in campsites. This would give the public an opportunity to do more primitive-style camping. Another site is at the end of Cable Line Road. There are currently trails down to the shoreline that fishermen use. This area can be developed into a small, dirt boat launching area or a possible swim beach with picnic sites. Lastly, there is an area to the west of the outflow. This area was originally intended to be where the Information Center was located. While access to cross the dam road is not permissible, visitors would still be able to get to this site from Newton Falls Road. Here would be a great site for the public to enjoy wildlife viewing, a possible handicap accessible fishing pier, and the Information Center.

#### **4.1.4.4 Water Surface**

There are four Water Surface categories within the boundaries of Michael J. Kirwan Dam and Reservoir: Restricted, Open Recreation, Fish and Wildlife Sanctuary, and Designated No-Wake. These areas make up 2,633.40-acres that are within the reservoir's conservation pool.

#### **4.1.4.5 Restricted**

Restricted areas include those portions of the reservoir pool where public access is prohibited due to Project operations, security concerns, or to promote public safety. This includes the areas between the outlet structure and the upstream portion of the dam and the area immediately downstream of the dam. There are 5.33-acres at Michael J. Kirwan Dam and Reservoir that fall under this category.

#### **4.1.4.6 Designated No-Wake**

Designated no-wake zones are marked with buoys to protect environmentally sensitive shoreline areas, recreational areas (such as boat ramps and docks), and for public safety. Boats are required to slow down in these areas to prevent waves from impacting these areas. Ohio state boating regulations designate no-wake zones as 300-feet from any shoreline, dock, or ramp. There are 1,637.52-acres at Michael J. Kirwan Dam and Reservoir that fall under this category.

#### **4.1.4.7 Open Recreation**

Open recreation areas are waters that are available year-round or seasonally for water-based recreational use. There are 990.55-acres at Michael J. Kirwan Dam and Reservoir that fall under this category.

#### **4.1.4.8 Fish and Habitat Management**

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

#### ***Best Management Practices for Water Surface Areas:***

- Maintain, and if possible improve water quality and fisheries habitat structure to support a productive sport fishery and maintain healthy populations of native fish species
- Water quality monitoring at established stations should continue throughout the Project property and watershed, as the data gathered aids in conservation of the Projects aquatic resources

### **4.2 Easement Lands**

There are 27.62 total acres of easement lands at Michael J. Kirwan Dam and Reservoir.

#### **4.2.1 Operations Easement**

The Corps has 0.36-acres of operations easement lands at Michael J. Kirwan Dam and Reservoir. These areas consists of two utility and one roadway easement.

#### **4.2.2 Flowage Easement**

The Corps has 27.26-acres of flowage easement lands at Michael J. Kirwan Dam and Reservoir.

#### **4.2.3 Conservation Easement**

The Corps has no acres of conservation easement lands at Michael J. Kirwan Dam and Reservoir.

#### ***Best Management Practices for Easement Lands:***

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

## **5. Special Considerations Affecting Natural Resources**

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

### **1. Sharecropping**

Sharecropping is an agricultural practice in which the ODNR would authorize a local farmer to raise crops on lease lands for wildlife or habitat improvements (i.e. leaving a pre-determined portion of the crops “standing” for wildlife or habitat). In return for the services rendered, a portion of the crops would be retained by the farmer as reimbursement. This has previously been authorized in the ODNR Division of Wildlife Lease. Currently, there are 46.16-acres of sharecropping at Michael J. Kirwan Dam and

Reservoir. Any additional sharecropping would be in accordance with the Master Plan and outgrant leases.

## 2. Oil and Gas Development

Since the construction of the Project, there has been a decrease in the amount of oil and gas related activities being proposed and requested on Corps land. Currently, there are no proposals for oil and gas related activities. There are currently two wells on Corps lands leased to ODNR, and three located just outside of the Project boundary on ODNR owned lands.

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

## 3. Federally-Owned Minerals

Under the multiple-use principle, federal minerals beneath the surface of Corps lands may be made available for mineral exploration and extraction, consistent with Project activities. The primary statute governing oil and gas development on federally-managed lands is the General Leasing Act (30 U.S.C. 216 et. al.), the Mineral Leasing Act of 1920 (30 U.S.C. 181 et. seq.), as amended by the Federal Onshore Oil and Gas Leasing Reform Act of 1987. This statute authorizes the Secretary of the Interior, through the BLM, to issue leases to private individuals and corporations to extract federal oil and gas from public lands. While the Mineral Leasing Act authorizes the BLM to issue oil and gas leases, it does not require that leases be issued (Darin & Stills, 2002). The BLM must obtain the Army's approval and the Army, through the Engineering District, can place limitations in the lease regarding the extractions of these minerals (See AR 405-30; *see, e.g.*, 43 CFR § 3503.20). If a developer approaches the BLM for access to a certain parcel or mineral interest, the BLM notifies the Corps and requests title information for the parcel and any use stipulations the Corps might require. The Real Estate Office for the Corps provides the BLM with title information and any stipulations (AR 405-30). The BLM would, in turn, inform the party interested in leasing the federal minerals of all associated stipulations. If the developer is still interested, the BLM follows its procedures to make the minerals available. The Corps has the final say in whether minerals will be made available, and the Assistant Secretary of the Army (ASA) has final approval on any non-availability determination.

## 4. Owners of Private and State Minerals

Owners of private and state oil and gas rights have a property right to develop their interests, which generally includes reasonable use of the surface to the extent necessary to accomplish such development. However, this does not mean their operations are free from limitation or reasonable

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

#### 5. State or Privately Owned Minerals Accessed from State or Privately-Owned Land

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

#### 6. Indiana Bat and Northern Long-Eared Bat

Currently listed as federally endangered, the Indiana Bat (*Myotis sodalis*) is a small, gray to chestnut-brown colored bat that hibernates in caves and abandoned mines during winter months (starting mid-September into November) and roosts under peeling tree bark, under bridges, and sometimes in buildings, during warmer months (starting mid-April into May). The total body length of an adult Indiana bat averages between 2-3-inches, with a wingspan of 9.5-10.5-inches. Populations have been declining since the 1960’s, largely due to disturbance of winter cave hibernacula. The Northern Long-Eared Bat (*Myotis septentrionalis*), currently listed as federally threatened, is a medium-sized bat with a total body length of 3.0-3.7-inches, and a wingspan of 9-10-inches. Their fur color can be medium to dark brown on the back and pale-brown on the underside, primarily distinguishable by its long ears. The Northern Long-Eared Bat and Indiana Bat are similar with respect to their behavior, habitat use, and range, as well as the anthropogenic activities threatening existing populations.

While no known hibernacula for these bats exist on Michael J. Kirwan Dam and Reservoir property, there is considerable suitable summer roosting habitat present in and amongst the forested components of the Project. At present, there is no current management or survey plan in effect; however, the U.S. Fish and Wildlife Service (USFWS) has adopted regional, seasonal cutting/disturbance restrictions. Generally, tree-cutting activities should be carried out from mid-November through the end of March during which time bats are hibernating in non-forest habitats. If any tree-cutting is necessary from the beginning of April to mid-November, trees greater than or equal to five inches in diameter at breast height should not be cut or physically disturbed in order to avoid potentially killing or injuring roosting bats. Special considerations should be given to trees with the following characteristics indicative of suitable roosting habitat: 1) dead or dying trees and snags (with exfoliating bark); 2) live trees with exfoliating or defoliating bark in the trunk or branches (e.g., shagbark and shellbark hickory); and 3) trees or snags that have characteristics typical of roost sites for bats (i.e., have exfoliating or defoliating bark, or contain cracks, crevices, or holes).

Currently, no known occurrence of these bats has been reported or observed at Michael J. Kirwan Dam and Reservoir. Regardless, Project staff adhere to the aforementioned cutting/disturbance restrictions. Corps staff at the Project will continue to work with USFWS and partner with other state and federal resource agencies to assure that potential detrimental effects to managed resources are minimized on public lands entrusted to the Corps.

#### 7. Invasive Aquatic and Terrestrial Species

Some common invasive species currently found at Michael J. Kirwan Dam and Reservoir include, terrestrial plants such as autumn olive (*Elaeagnus umbellata*), multiflora rose (*Rosa multiflora*), and phragmites grass (*Phragmites australis*), invasive insects such as the emerald ash borer (*Agrilus planipennis*), and aquatic invasive species such as zebra mussels (*Dreissena polymorpha*). While no management plan is currently in effect for invasive species, terrestrial or aquatic, on Corps managed property, considerations are taken when performing tasks on the Project to prevent the spread or introduction of invasive species. Efforts to educate the public on preventing the spread and introduction of invasive species is made through signage (e.g. Don't Move Firewood! signs), ranger led interpretive programs, and information on displays and pamphlets at the Information Center. The Ohio Department of Natural Resources takes similar precautions on leased lands, as well as practicing forest and wildlife management on Division of Wildlife leased lands.

#### 8. Motorized Vehicles

Due to limited land use, motorized vehicles will not be operated on Corps property at this time. Some undesirable impacts of motorized vehicles include severely eroded soils, user-created unplanned roads, disrupted wetland ecosystems, general habitat destruction, and degraded water quality throughout forested lands. In the future, it would be prudent to identify lands that are acceptable for motorized use. Further studies will need to be conducted to determine where the potential for motorized vehicles could be managed appropriately. Actions the Project could take to minimize potential threats of future

motorized vehicle use are: authorizing electric-only vehicles, establishing speed limits, creating an application or permit only process for authorizing motorized vehicle traffic, and designating specific areas for motorized vehicle use.

## 9. Drones

Title 36, Parks, Forest and Public Property, Chapter 111, Part 327.4 states “The operation of “aircraft” on project lands at locations other than those designated by the District Commander is prohibited. This provision shall not be applicable to aircraft engaged in official business of Federal, state, or local governments or law enforcement agencies, aircraft used in emergency rescue in accordance with the direction of the District Commander or aircraft forced to land due to circumstances beyond the control of the operator.” The use of drones for recreational purposes will be considered on a case by case basis and it is possible in the future that the Project can designate a specific area for the operation of drones. Drones may be used for emergency response procedures.

## 10. Climate Change

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

## 6. Agency and Public Coordination

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

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

### **Preferred qualities, characteristics, and components of the Project:**

- Continuing to uphold the user recreational experience with maintained and updated recreational facilities so that West Branch State Park stays the #1 state park in Ohio

- Maintaining the current amount of highly developed recreational areas seen at the Project, but continuing to increase low density recreation and wildlife/vegetation management areas
- Ensuring that privacy and recreation experience is not compromised as requests for the use of new technologies increase
- Providing opportunities for new types of recreation and technology, within the rules and regulations as set forth by the Corps and while maintaining the preferred characteristics of the Project

**Potential Threats:**

- Invasive species
- Lake shore erosion
- Motorized vehicles
- Drones
- Oil & gas development
- Proximity to Highway 5 and the railroad

**Regional Needs/Opportunities:**

- Extending and connecting trails to create a multi-purpose trail system
- Partnering on educational programming and the building of educational sites
- Regulating use of electric vehicles for ADA compliance
- Conducting a cultural resource survey for the area
- Identifying landmarks to be part of the heritage tourism program
- Managing the forests to increase young, successional habitat
- Protecting the water quality of the watershed through monitoring and conservation efforts
- Increasing water safety and water craft programs
- Increasing access to the land, but mostly in unimproved areas
- Exploring the benefits of timber harvest and habitat creation for wildlife management
- Improving access to parts of the Project, such as considering placements of boat launches and fishing piers

See Appendix D for the compilation of the comments collected during the Scoping and Draft Release meetings. All comments made during these meetings, as well as those submitted online, were considered during the development of the current Master Plan. All formal comments submitted during the Draft Release meeting, along with Corps responses, can also be found in Appendix D.

**6.1 Scoping Meetings**

Scoping efforts began in late April 2017 with a meeting between Corps staff and Project partners, Ohio ODNR Parks and Watercraft and ODNR Division of Wildlife. A stakeholder meeting with state resource agency representatives [i.e., US Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS); ODNR; and the Ohio State Historic Preservation Office] and local governmental agency representatives [i.e., Portage Park District and Portage County Soil and Water

Conservation District (SWCD)] and interest groups (CAMBA and Northeast Ohio Trail Riders Association) was conducted on June 29, 2017. A public meeting was held that same evening. The objectives of these scoping meetings were to: 1) communicate the Corps' intent and need to revise the Master Plan; 2) establish the scope of the Master Plan update; and 3) learn about the needs, opportunities, and concerns of partners, stakeholders, and the public. See Appendix D for a summary of the meetings and the public notice.

For stakeholders and the public unable to attend the scheduled meetings, they could visit the Michael J. Kirwan Dam and Reservoir Project Office to participate in a scoping exercise for two weeks following the scheduled meeting in order to provide input into the direction of the suggested updates to the Michael J. Kirwan Dam and Reservoir Master Plan. The scoping exercise was also featured on the Project's Master Plan website, giving interested parties not located close to the Project site an opportunity to also engage in the scoping process.

Follow-up partner/stakeholder and public meetings will be held in June 2018, with the purpose of unveiling the proposed recommendations and land use classifications and eliciting feedback on the proposed updates to the Master Plan and accompanying the Environmental Assessment. Corps personnel will set up displays to depict the Project areas and the proposed changes resulting from the Master Plan revision.

## **6.2 Draft Release Meetings**

Pittsburgh District sent ODNR the draft Master Plan on May 28, 2018. This gave them the opportunity for comment, review, and to discuss the changes prior to public review. The Corps hosted a meeting for ODNR and stakeholder review for the updated Master Plan and Environmental Assessment on June 20, 2018. The purpose of the draft review meeting was to unveil the proposed recommendations and proposed land use classifications. These items were based off of internal Corps discussions and input received from ODNR, stakeholders, and the public during the public scoping phase of the Master Plan, and to elicit any remaining feedback on the proposed updates to the Master Plan and accompanying Environmental Assessment. Notice of the partner and stakeholder meeting was sent out as an email to stakeholders included on the Michael J. Kirwan Dam and Reservoir Master Plan mailing list on May 29, 2018, followed by an email marking the beginning of the public review comment period and announcement of the Notice of Availability on June 13, 2018. While the Corps did not hold a public meeting for this project, Pittsburgh District published a notice of the public review period via a press release, the Michael J. Kirwan Dam and Reservoir Master Plan website, and Facebook posts on the Michael J. Kirwan Dam and Reservoir Facebook page. Any interested parties could find pertaining documents to this update on the Michael J. Kirwan Dam and Reservoir Master Plan website. Comments collected during the meeting itself can be found in Appendix D.

## **6.3 Outreach Efforts**

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

- Website: A dedicated website was developed to describe the Master Plan process, changes in the Master Plan, and recommendations resulting from the Master Plan Revision, as well as provide an avenue for additional comments to be submitted. This website can be found at: <http://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Michael-J-Kirwan-Dam-Reservoir/Michael-J-Kirwan-Dam-and-Reservoir-Master-Plan/>
- Fact Sheet: A Master Plan Update fact sheet was developed to inform partners, stakeholders, and the public on the purpose and scope of the Master Plan update. This fact sheet was sent in all email correspondence, handed out at each of the meetings, and provided on the Project website.
- Agency, Partner, and Stakeholder Letters: Letters were sent directly to agencies, partners, and stakeholders inviting them to attend the scheduled meetings and to send any comments or concerns to the Corps.
- Indian Nation Coordination Letters: Letters were sent directly to Indian Nations in recognition of the Corps' Federal Tribal Trust responsibilities. The letters invited them to attend the scheduled meetings, to send any comments or concerns to the Corps, and/or indicate how they would prefer to engage with the Master Plan update process.
- Agency, Partner, and Stakeholder Email Invitations: Email invitations for both the partner and stakeholder meetings were sent out via email to all partners and stakeholders with available contact information. A Project fact sheet, timeline, and public scoping meeting flyer was attached.
- Public Meeting Press Releases: Sent to local media a week prior and the day before the public meetings were held.
- Public Meeting Facebook Posts: Facebook posts were made on the Michael J. Kirwan Dam and Reservoir Facebook page advertising the Public Meeting.
- Public Meeting Flyers: Flyers were posted around the community, at the meeting site, and shared with Project partners and stakeholders accompanied with the request to share widely with the public.

## 7. Summary of Recommendations

This Master Plan conceptually establishes and guides the orderly development, administration, maintenance, conservation, enhancement, and management of all natural, cultural, and recreational resources at the Project. This section summarizes the proposed changes that can be found within this Master Plan and provides specific recommendations to be considered that will help guide the direction of Michael J. Kirwan Dam and Reservoir management into the future.

Derived through correspondences, comments, scoping meetings (described in further detail, below in Section 7.1) by local citizens, stakeholders, and current and potential Project partners, along with Corps staff knowledge of Michael J. Kirwan Dam and Reservoir, the recommendations below address the

regional needs, threats, and opportunities identified throughout the planning process. Section 2 describes those identified topics and the Project conditions that inspired the recommendations.

These management recommendations are non-regulatory and available for use by any citizen, group, or agency. They have been analyzed in the Environmental Assessment associated with this Master Plan in order to identify potential impacts and any additional analysis and coordination that may be necessary.

### **7.1 Coordination and Partnerships**

The modest size of the staff at Michael J. Kirwan Dam and Reservoir creates a prime opportunity for partners and volunteers to augment and advance the operations and management at the Project. Therefore, an overarching recommendation for Michael J. Kirwan Dam and Reservoir is to create partnerships to leverage fiscal resources and continue to involve local communities and stakeholders in achieving the resource objectives set forth above, in Section 1.7. This recommendation includes: 1) collaborating with federal and state agencies to leverage resources for complimentary natural resource management; 2) working with recreation service providers to improve user experiences; 3) partnering with environmental groups to improve habitat; and 4) partnering with educational and community groups to encourage volunteer activities that are mutually beneficial.

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

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

- Northeast Ohio Trail Riders Association
- Scouts of America
- 4H
- Cleveland Area Mountain Bike Association (CAMBA)
- Portage Park District
- Portage County Soil and Water Conservation District (SWCD)
- Northeast Ohio Trail Riders Association
- ODNR Parks and Watercraft
- ODNR Division of Wildlife
- US Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS);
- Ohio State Historic Preservation Office
- Ohio Buckeye Trail Association
- West Branch State Park Marina
- Portage County

Opportunities ripe for partnership include: Trail extensions or creation of new trails, educational programming and education facilities, and a Heritage Tourism program.

## **7.2 Facility Modernization**

The Corps will continue to modernize current facilities at Michael J. Kirwan Dam and Reservoir. Modernization activities will occur within existing footprints of recreation areas and prioritize actions that improve visitor safety and experience where funding is available and in accordance with Engineer Manual 1110-1-400, Engineering and Design – Recreation Facility and Customer Service Standards, 1 Nov 2004.

Potential improvements are described in detail in Section 1.7 Resource Objectives of this Master Plan and were developed using information gathered during the public input process and expert knowledge of the Project staff. Examples of potential improvement projects are provided below.

Specific potential improvements for safety if resourcing and/or a successful partnership becomes available at Michael J. Kirwan Dam and Reservoir should include:

- Installment of an emergency call-out system
- Installment of informational and directional signs around the Project and trails, including demarcation of property lines
- Improvements to roads leading to, and surrounding, Michael J. Kirwan Dam and Reservoir
- Installment of American's with Disabilities Act (ADA) facilities, such as a compliant floating dock at West Branch State Park Campground

Specific potential improvements for improved visitor experience if resourcing and/or a successful partnership becomes available at Michael J. Kirwan Dam and Reservoir should include:

- Installment of an outdoor classroom at the Michael J. Kirwan Dam and Reservoir Information Center
- Improvement of interpretive displays and interactive technologies in the Michael J. Kirwan Information Center, Discovery Trail, and Pollinator Plot
- Identification of Project Site Areas (PSAs) with low use and degraded facilities; divest when appropriate
- Establishment of different ways for visitors to explore Michael J. Kirwan Dam and Reservoir, including: brochures, maps, and/or development of a phone app that enables visitors to access park maps, learn about the Project, and log information from their experience

## **7.3 Land Classification Changes**

The land use classification changes discussed in this document and evaluated in the attached Environmental Assessment represent the changes in land use, management strategies, and guidance concerning naming conventions that have occurred since the original Master Plan for this Project was developed in the early 1980s. Specifically, the previous four Land Classifications (Agricultural Lands,

Game Management, Natural Area, and Wild Area) are now consolidated under the Multiple Resource Management Land Classification (Low Density Recreation; Wildlife Management; Vegetative Management; and Future or Inactive Recreation Areas) in this revised Master Plan. As a result, more of the Project lands are classified as Multiple Resource Management.

Other updates to this Master Plan include renaming of lands previously identified as archeological and historical sites as to reflect the new land classification of Environmentally Sensitive Areas. The updated Master Plan also includes the addition of the water surface classifications, which did not exist in the original Master Plan (Tables 7-1 and 7-2, below). Updating and highlighting naming conventions and/or classifications as part of the Master Plan will ensure the conservation of valuable resources continues uninhibited.

**Table 7-1. Conversion of Land and Water Classifications**

<b>Original</b>	<b>Proposed</b>
Game Management Special Preservation Wild Area Wetland	Environmentally Sensitive Area
Recreation Intensive Use	High Density
Recreation Low Density	Low Density
Project Operations	Operations
N/A	Water Surface

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

**Table 7-2. Summary of Land Class Changes**

<b>Existing Land Use Class</b>	<b>Existing Land Use Acres</b>	<b>Proposed Land Use Class</b>	<b>Proposed Land Use Acres</b>
Game Management	959	Environmentally Sensitive Areas	462.3
Wild Area	1,064	Wildlife Management Areas	1,099
Natural Area	182		
Project Operations		Project Operations	141.2
Recreation	161.4	High Density Recreation	252
		Low Density Recreation	1,694.5
		Future Recreation	22.5

**This table reflects a change in acreage due to the modification of existing land classifications along with absent land classifications from previous Master Plans.**

While these land use classifications may be updated in the future, those described in this document, dated 2018, represent the most current and relevant uses of various Project lands. Additional details of the uses and management goals for individual Project site areas will be provided in a forthcoming OMP for the Project.

#### **7.4 Development Requests**

The proposal for expansion of the Ohio Buckeye Trail has been accepted and is currently being implemented by the Buckeye Trail Association according to Corps policy and regulations and in cooperation with ODNR Parks and Watercraft Division. The trail expansion will connect existing trails to create a trail that will encircle the lake entirely.

CAMBA has also proposed a multi-use trail extension at West Branch State Park for mountain bikers, hikers, and trail runners. Trail length is estimated at approximately 10-miles. The proposed trail extension would traverse the slopes of the south side of the lake from existing trails at the Porter Road Circle. This area would allow visitors the opportunity to access some of the more scenic areas of the park.

The parcel of land marked as future recreation, while currently anticipated to be classified as Low or High Density Recreation in the future to support a picnic area, will require approval for any change to the current use. The proposed change to the land classification and site use will be reviewed and will involve real estate agreements and, if applicable, fee payment to the Corps.

The parcel of land formerly leased to Kent State University as Compartment 26: Kent State University Instructional Wild Area will be reverted to an Environmentally Sensitive Area due to the expiration of the lease held between the Corps of Engineers and Kent State University. No interest was shown by the University to renew the lease or develop this area as indicated in the lease. Compartment 26 is located on ODNR Division of Wildlife leased land on the northwest side of the lake. The classification of an Environmentally Sensitive Area for this parcel was chosen because of the broad diversity of ecological conditions as described in the Michael J. Kirwan Dam and Reservoir Project OMP. The ecological types represented in compartment 26 include meadows, thickets, lakeshore floodplains, marshy depressions, altered woodlands, and seral forest stands, as well as a range of soil types. Future development may include species management such as construction of osprey nests and bat boxes.

#### **7.5 Wildlife Management and Environmentally Sensitive Areas**

The Corps land at Michael J. Kirwan Dam and Reservoir represents a significantly-sized riparian corridor consisting of valuable wildlife lands. These lands are vulnerable to change by human disturbance. Therefore, large portions of these lands are outgranted to other agencies with the primary purpose of wildlife management and recreation representing a secondary use. At Michael J. Kirwan Dam and Reservoir there are almost equal amounts of land designated for recreation and wildlife management purposes, with a large portion of land acreage remaining in an undeveloped natural state (i.e., heavily forested and rich in riverine habitat and wetlands). The Corps will continue to coordinate with resource agency partners to successfully manage these lands for the use and enjoyment of our visitors and the conservation of our valuable natural resources. In the future, the Corps should develop survey methods to identify sensitive habitats, possibly using Multiple Species Inventory Monitoring, and use the results to designate additional Environmentally Sensitive Areas, which would be converted from multiple resource managed lands. These lands should be protected from human disturbance and development activities to the extent possible in compliance with all applicable laws and regulations. If

development activities are proposed for these areas, the Corps will work with partners to minimize the disturbance or mitigate the impacts. The Corps will also consider proactive steps to enhance natural areas for sensitive species and to restore sensitive habitats through native vegetation plantings, removal of invasive species, and/or other efforts targeted at non-game species habitat. In addition, the Corps will continue to protect cultural resources in existing Environmentally Sensitive Areas and promote education related to these resources.

### **7.6 Threatened and Endangered Species**

Federally-listed Threatened and Endangered plant and animal species will be managed according to USFWS Recovery Plans. State listed species will be protected through partnerships and agreements with state agencies. Best Management Practices, which should be used to manage Threatened and Endangered Species at Michael J. Kirwan Dam and Reservoir, have been outlined in Section 5.

### **7.7 Summary**

The 1982 Michael J. Kirwan Dam and Reservoir Master Plan stated that extensive recreational development has been initiated by both the Corps and ODNR; therefore, additional recreational facility requirements beyond the year 1980 would be minimal. At this time, Michael J. Kirwan Dam and Reservoir has a Conservation/Recreation Mix Development Scenario. Through our analysis and accordance with ER 1105-2-100, we recommend that Michael J. Kirwan Dam and Reservoir stay at the current development scenario. The resulting resource objectives, resource plans, and specific recommendations found within this Master Plan reflect this goal.

## 8. Bibliography

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## APPENDIX A

### APPLICABLE PUBLIC LAWS & FEDERAL STATUTES

The following public laws (PL) are applicable to Michael J. Kirwan Dam and Reservoir.

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

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

**B.3 PL78-534, Flood Control Act of 1944:** Section 4 of the act as last amended in 1962 by Section 207 of PL87-874 authorizes the Corps to construct, maintain, and operate public parks and recreational facilities in reservoir areas and to grant leases and licenses for lands, including facilities, preferably to federal, state or local governmental agencies.

**B.4 PL85-500, Rivers and Harbors Act of 1958:** This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.

**B.5 PL85-624, Fish and Wildlife Coordination Act 1934:** This act, as amended, sets down the general policy that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resource development programs. Opportunities for improving fish and wildlife resources and adverse effects on these resources shall be examined along with other purposes which might be served by water resources development.

**B.6 PL86-645, Rivers and Harbors Act of 1960:** This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.

**B.7 PL86-717, Forest Conservation:** This act provides for the protection of forest cover for reservoir areas under this jurisdiction of the Secretary of the Army and the Chief of Engineers.

**B.8 PL88-578, Land and Water Conservation Fund Act of 1965:** This act established a fund from which Congress can make –appropriations for outdoor recreation. Section 2(2) makes entrance and user fees at reservoirs possible by deleting the words "without charge" from Section 4 of the 1944 Flood Control Act as amended.

Appendix A

**B.9 PL89-72, Federal Water Project Recreation Act of 1965:** This act requires that not less than one-half the separable costs of developing recreational facilities and all operation and maintenance costs at federal reservoir projects shall be borne by a non-federal public body. An OCE/OMB implementation policy made these provisions applicable to projects completed prior to 1965.

**B.10 PL89-90, Water Resources Planning Act (1965):** This act established the Water Resources Council and gives it the responsibility to encourage the development, conservation, and use of the Nation's water and related land resources on a coordinated and comprehensive basis.

**B.11 PL89-272, Solid Waste Disposal Act, as amended by PL 94-580, dated October 21, 1976:** This act authorized a research and development program with respect to solid-waste disposal. It proposes (1) to initiate and accelerate a national research and development program for new and improved methods of proper and economic solid-waste disposal, including studies directed toward the conservation of national resources by reducing the amount of waste and unsalvageable materials and by recovery and utilization of potential resources in solid waste; and (2) to provide technical and financial assistance to state and local governments and interstate agencies in the planning, development, and conduct of solid-waste disposal programs.

**B.12 PL89-665, National Historic Preservation Act of 1966:** This act provides for: (1) an expanded National Register of significant sites and objects; (2) matching grants to states undertaking historic and archeological resource inventories; and (3) a program of grants-in aid to the National Trust for Historic Preservation; and (4) the establishment of an Advisory Council on Historic Preservation. Section 106 requires that the President's Advisory Council on Historic Preservation have an opportunity to comment on any undertaking which adversely affects properties listed, nominated, or considered important enough to be included on the National Register of Historic Places.

**B.13 PL90-483, River and Harbor and Flood Control Act of 1968, Mitigation of Shore Damages:** Section 210 restricted collection of entrance fee at Corps lakes and reservoirs to users of highly developed facilities requiring continuous presence of personnel.

**B.14 PL91-190, National Environmental Policy Act of 1969 (NEPA):** NEPA declared it a national policy to encourage productive and enjoyable harmony between man and his environment, and for other purposes. Specifically, it declared a "continuing policy of the Federal Government...to use all practicable means and measures...to foster and promote the general welfare, to create conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." Section 102 authorized and directed that, to the fullest extent possible, the policies, regulations and public law of the United States shall be interpreted and administered in accordance with the policies of the Act.

**B.15 PL91-611, River and Harbor and Flood Control Act of 1970:** Section 234 provides that persons designated by the Chief of Engineers shall have authority to issue a citation for violations of regulations and rules of the Secretary of the Army, published in the Code of Federal Regulations.

**B.16 PL92-463, Federal Advisory Committee Act:** The Federal Advisory Committee Act became law in 1972 and is the legal foundation defining how federal advisory committees operate. The law has special emphasis on open meetings, chartering, public involvement, and reporting.

Appendix A

**B.17 PL92-500, Federal Water Pollution Control Act Amendments of 1972:** The Federal Water Pollution Control Act of 1948 (PL 845, 80th Congress), as amended in 1956, 1961, 1965 and 1970 (PL 91- 224), established the basic tenet of uniform State standards for water quality. PL92-500 strongly affirms the Federal interest in this area. “The objective of this act is to restore and maintain the chemical, physical and biological integrity of the Nation’s waters.”

**B.18 PL92-516, Federal Environmental Pesticide Control Act of 1972:** This act completely revises the Federal Insecticide, Fungicide and Rodenticide Act. It provides for complete regulation of pesticides to include regulation, restrictions on use, actions within a single State, and strengthened enforcement.

**B.19 PL93-81, Collection of Fees for Use of Certain Outdoor Recreation Facilities:** This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended to require each Federal agency to collect special recreation use fees for the use of sites, facilities, equipment, or services furnished at Federal expense.

**B.20 PL93-251, Water Resources Development Act of 1974:** Section 107 of this law establishes a broad Federal policy which makes it possible to participate with local governmental entities in the costs of sewage treatment plant installations.

**B.21 PL93-291, Archeological Conservation Act of 1974:** The Secretary of the Interior shall coordinate all federal survey and recovery activities authorized under this expansion of the 1960 act. The Federal Construction agency may transfer up to one percent of project funds to the Secretary with such transferred funds considered non-reimbursable project costs.

**B.22 PL93-303, Recreation Use Fees:** This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended, to establish less restricted criteria under which federal agencies may charge fees for the use of campgrounds developed and operated at federal areas under their control.

**B.23 PL93-523, Safe Drinking Water Act:** The act assures that water supply systems serving the public meet minimum national standards for protection of public health. The act (1) authorizes the Environmental Protection Agency to establish federal standards for protection from all harmful contaminants, which standards would be applicable to all public water systems, and (2) establishes a joint federal-state system for assuring compliance with these standards and for protecting underground sources of drinking water.

**B.24 PL94-422, Amendment of the Land and Water Conservation Fund Act of 1965:** Expands the role of the Advisory Council. Title 2 - Section 102a amends Section 106 of the Historical Preservation Act of 1966 to say that the Council can comment on activities which will have an adverse effect on sites either included in or eligible for inclusion in the National Register of Historic Places.

**B.25 PL98-63, Supplemental Appropriations Act of 1983:** The act authorized the Corps of Engineers Volunteer Program. The United States Army Chief of Engineers may accept the services of volunteers and provide for their incidental expenses to carry out any activity of the Army Corps of Engineers except policy making or law or regulatory enforcement.

Appendix A

**B.26 PL99-662, The Water Resources Development Act of 1986:** Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

**B.27 PL99-88, Supplemental Appropriations Act of 1985:** This act authorized the partnership of local and federal government and private interests to develop ecosystem improvements and recreational opportunities in the Des Moines River Corridor.

**B.28 PL101-640, Water Resource Development Act of 1990:** Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

**B.29 PL101-646, Coastal Wetlands Planning, Protection, & Restoration Act of 1990:** Provides authorization to carry out projects for the protection, restoration, or enhancement of aquatic and associated ecosystems, including projects for the protection, restoration, or creation of wetlands and coastal ecosystems.

**B.30 PL101-676, Water Resource Development Act of 1988:** Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

**B.31 PL102-580, Water Resource Development Act of 1992:** Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

**B.32 PL104-303, Water Resource Development Act of 1996:** Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

**B.33 PL106-53, Water Resource Development Act of 1999:** Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

**B.34 PL106-541, Water Resource Development Act of 2000:** Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

**B.35 PL109-58, Energy Policy Act of 2005:** Directed the Secretaries of Agriculture, Commerce, Defense, Energy and Interior to identify corridors for oil, gas, and hydrogen pipelines and electrical transmission and distribution facilities on federal lands and to schedule prompt action to identify, designate, and incorporate the corridors into the applicable land use plans.

**B.36 PL110-114, Water Resource Development Act of 2007:** Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

**B.37 PL113-121, The Water Resources Reform and Development Act of 2014:** This act authorizes the U.S. Army Corps of Engineers to carry out missions to develop, maintain, and support the nations vital ports and waterways infrastructure needs and support effective and targeted flood protection and restoration needs.

**B.38 30 U.S.C. 181, Mineral Leasing Act of 1920 as amended by the Federal Onshore Oil and Gas Leasing Reform Act of 1987:** Authorizes and governs leasing of public lands for developing deposits of coal, petroleum, natural gas, and other hydrocarbons, in addition to phosphates, sodium, sulfur, and potassium.

**B.39 30 U.S.C. 226, Lease of Oil and Gas Lands:** Authorizes the use of public lands for oil and gas exploration and development.

**B.40 16 U.S.C. 661-664, Fish and Wildlife Coordination Act of 1934 as amended by PL85-624:** Provides the basic authority of the U.S. Fish & Wildlife Service to become involved in the evaluation of impacts to fish and wildlife from proposed water resource development projects or when federal actions result in the control or modification of a natural stream or body of water.

**B.41 16 U.S.C. 668-668d, Bald and Golden Eagle Protection Act of 1940 as amended:** Prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles (*Haliaeetus leucocephalus*), including their nests or eggs.

**B.42 16 U.S. C. 1531-1544, Endangered Species Act of 1973:** Provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend.

**B.43 16 U.S.C. 703-712, Migratory Bird Treaty Act of 1918:** Makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations.

**B.44 AR 405-30, Mineral Exploration and Extraction of 1984:** Governs exploration and extraction of minerals on Department of Army property.

**B.45 43 CFR § 3503.20 Title 43 – Public Lands: Interior Code of Federal Regulations [CFR] Subpart 3160:** Gives the Bureau of Land Management authority to issue permits or leases on public lands.

**B.45 36 CFR Parks, Forests and Public Property, Chapter III:** Principle set of rules and regulations issued by federal agencies of the United States regarding parks, forests, and public property.

**APPENDIX B**  
**MAP PLATES**



# Michael J. Kirwan Dam and Reservoir

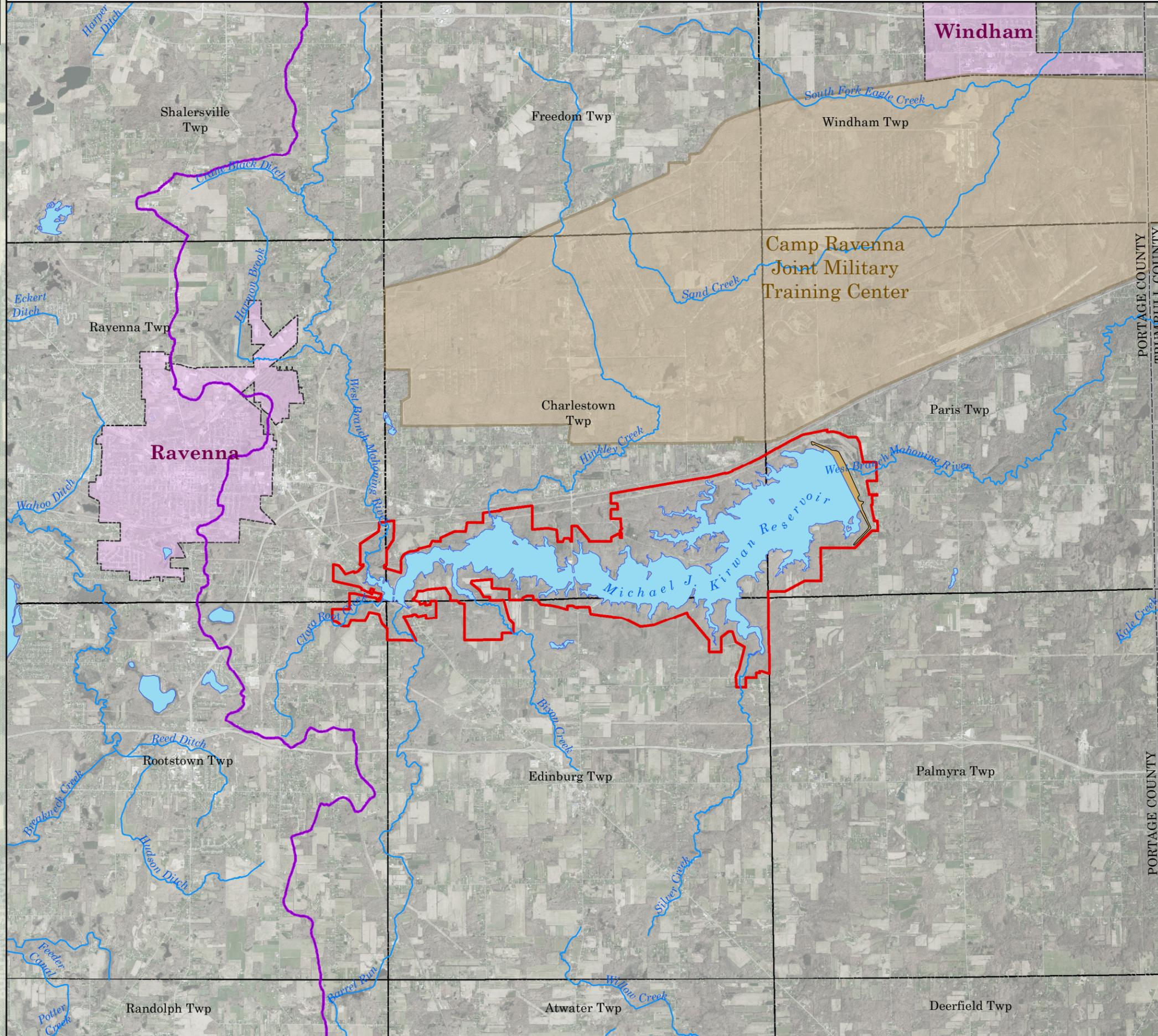
Portage County, Ohio

# Project Area, Plate 1

**US Army Corps of Engineers**  
Pittsburgh District



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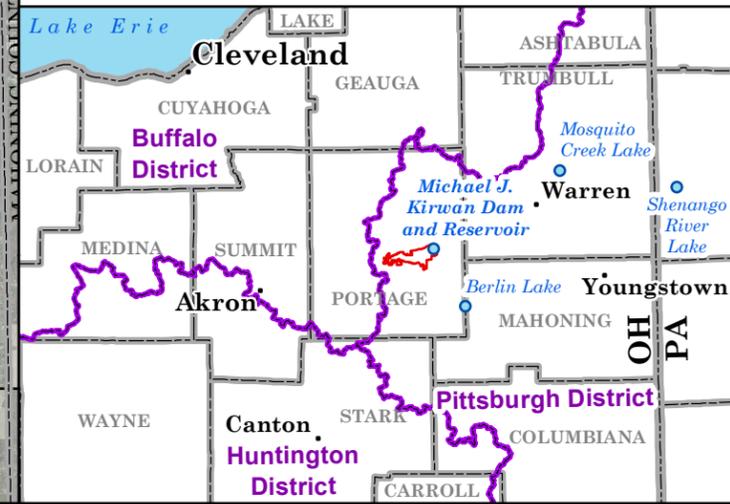
### Legend

- River/Stream
- Waterbody
- City/Village
- Township
- County
- Military Reservation
- U.S. Government Property Boundary
- USACE District Boundary

0 0.5 1 2 Mi

▲ NORTH

Data Sources:  
 Political Boundaries: Ohio Department of Transportation  
 Hydrography: USGS National Hydrography Dataset  
 Imagery: Portage County  
 Map Date: June 2017  
 USACE LRP Geospatial, 412-395-7553





# Michael J. Kirwan Dam and Reservoir

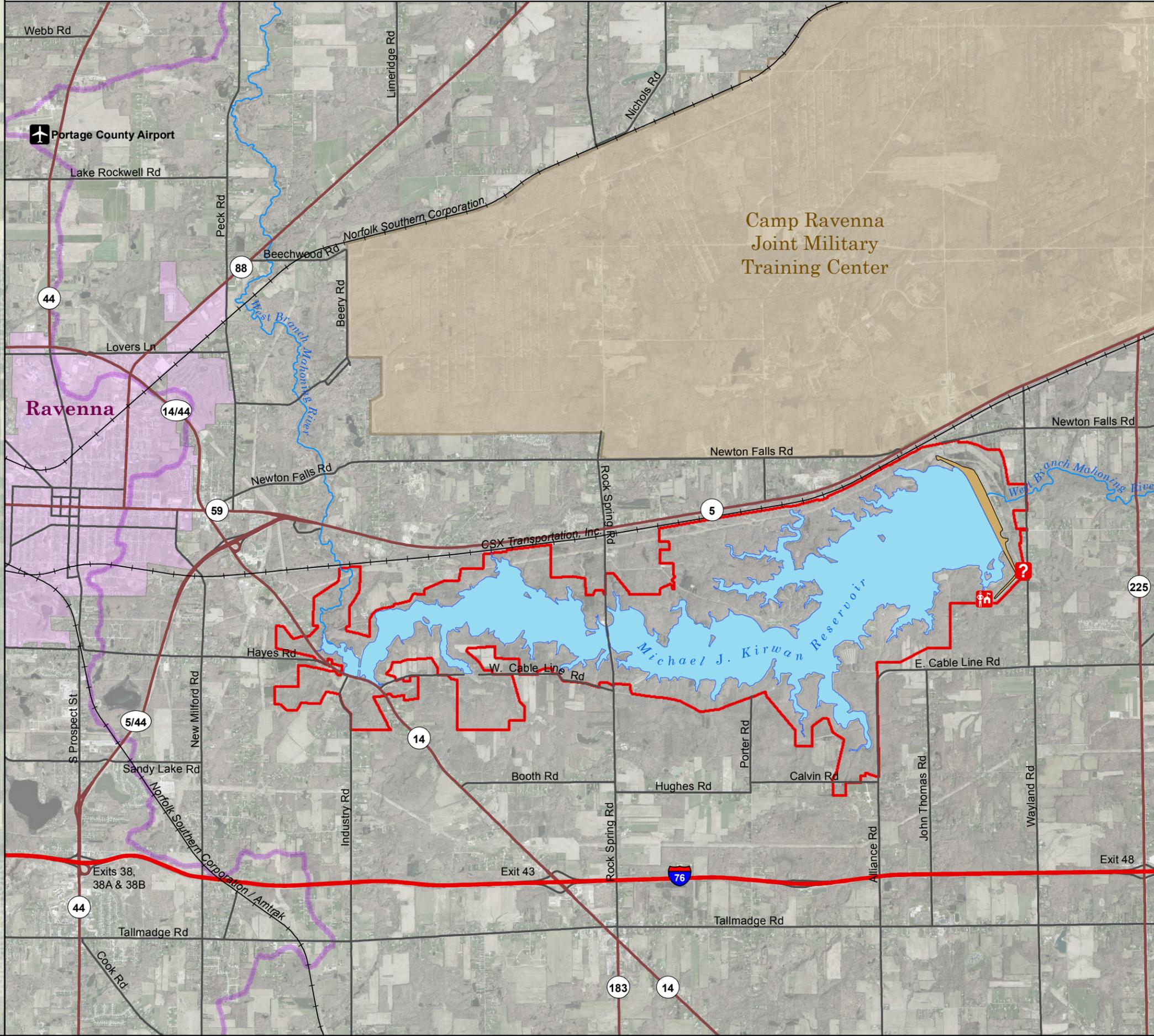
Portage County, Ohio

## Transportation Corridors, Plate 2

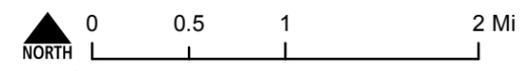
**US Army Corps of Engineers**  
**Pittsburgh District**



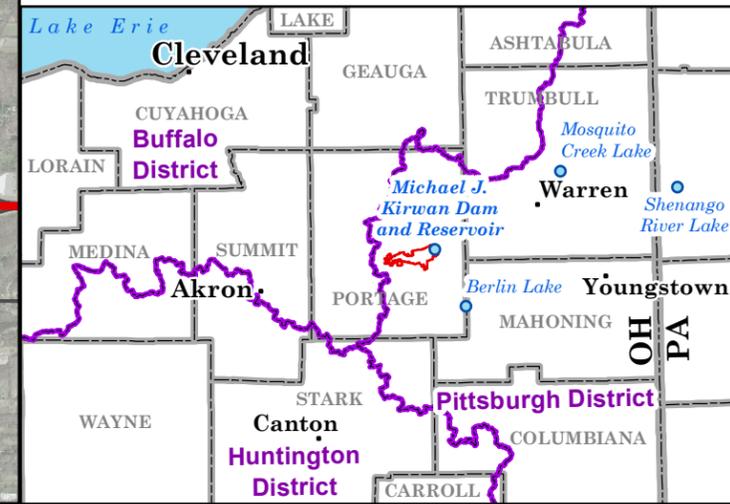
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- ### Legend
- Resource Manager's Office
  - Visitor Information Center
  - Airport
  - Railroad
  - Interstate Highway
  - State Highway
  - County Road, Ramp
  - Michael J. Kirwan Reservoir
  - City
  - Military Reservation
  - U.S. Government Property Boundary
  - USACE District Boundary



Data Sources:  
 Railroads: Ohio Department of Transportation  
 Roads and 2016 Imagery: Portage County, Ohio  
 Hydrography: USGS National Hydrography Dataset  
 Map Date: June 2017  
 USACE LRP Geospatial, 412-395-7553





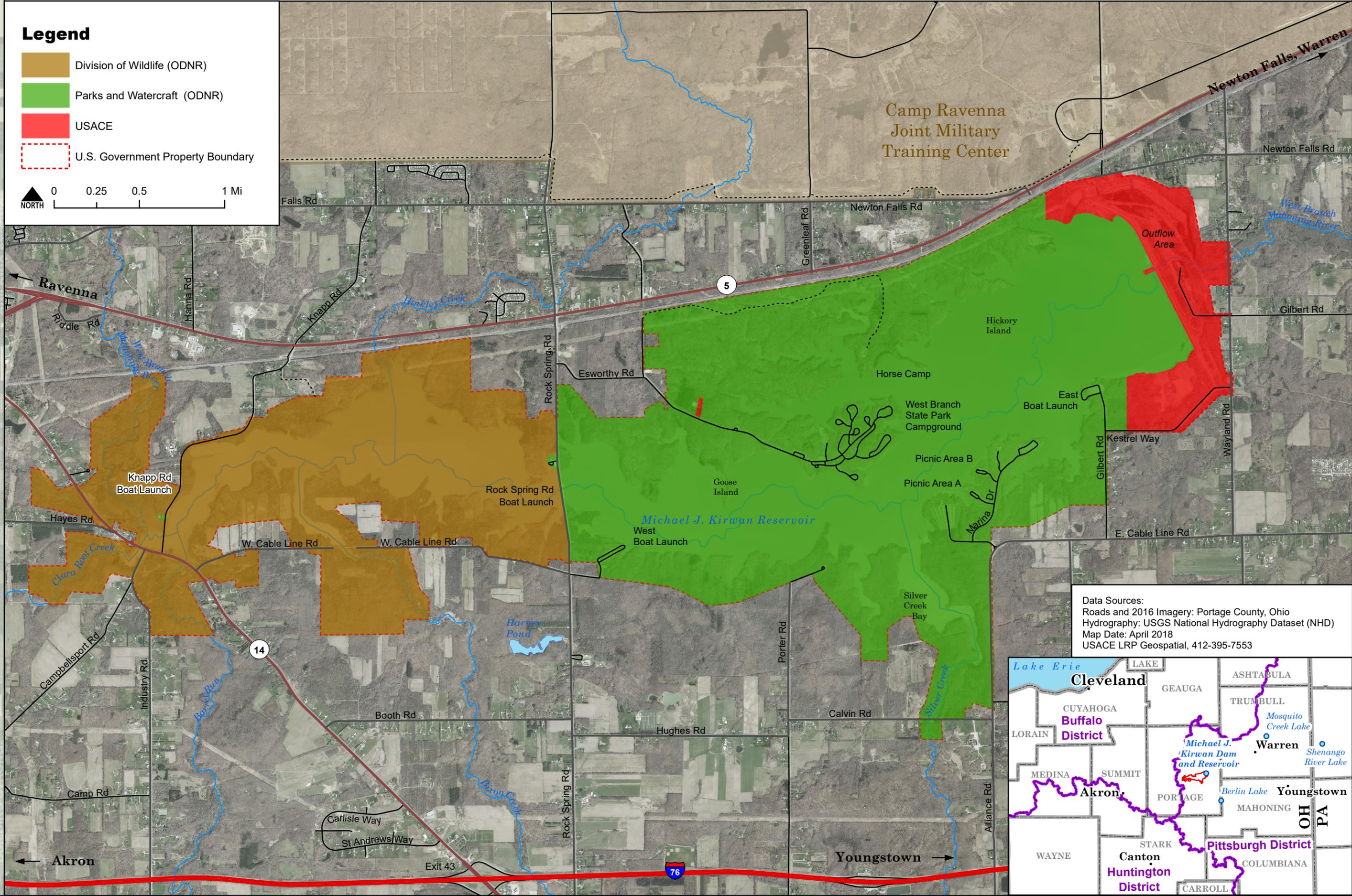
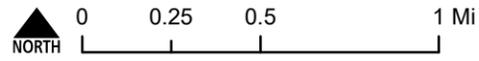
# Michael J. Kirwan Dam and Reservoir

Portage County, Ohio

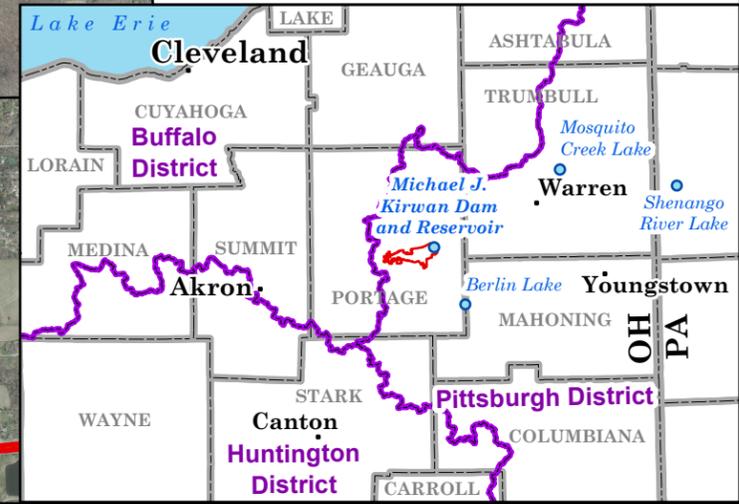
# Outgrants, Plate 3

## Legend

- Division of Wildlife (ODNR)
- Parks and Watercraft (ODNR)
- USACE
- U.S. Government Property Boundary



Data Sources:  
 Roads and 2016 Imagery: Portage County, Ohio  
 Hydrography: USGS National Hydrography Dataset (NHD)  
 Map Date: April 2018  
 USACE LRP Geospatial, 412-395-7553



**US Army Corps of Engineers**  
**Pittsburgh District**



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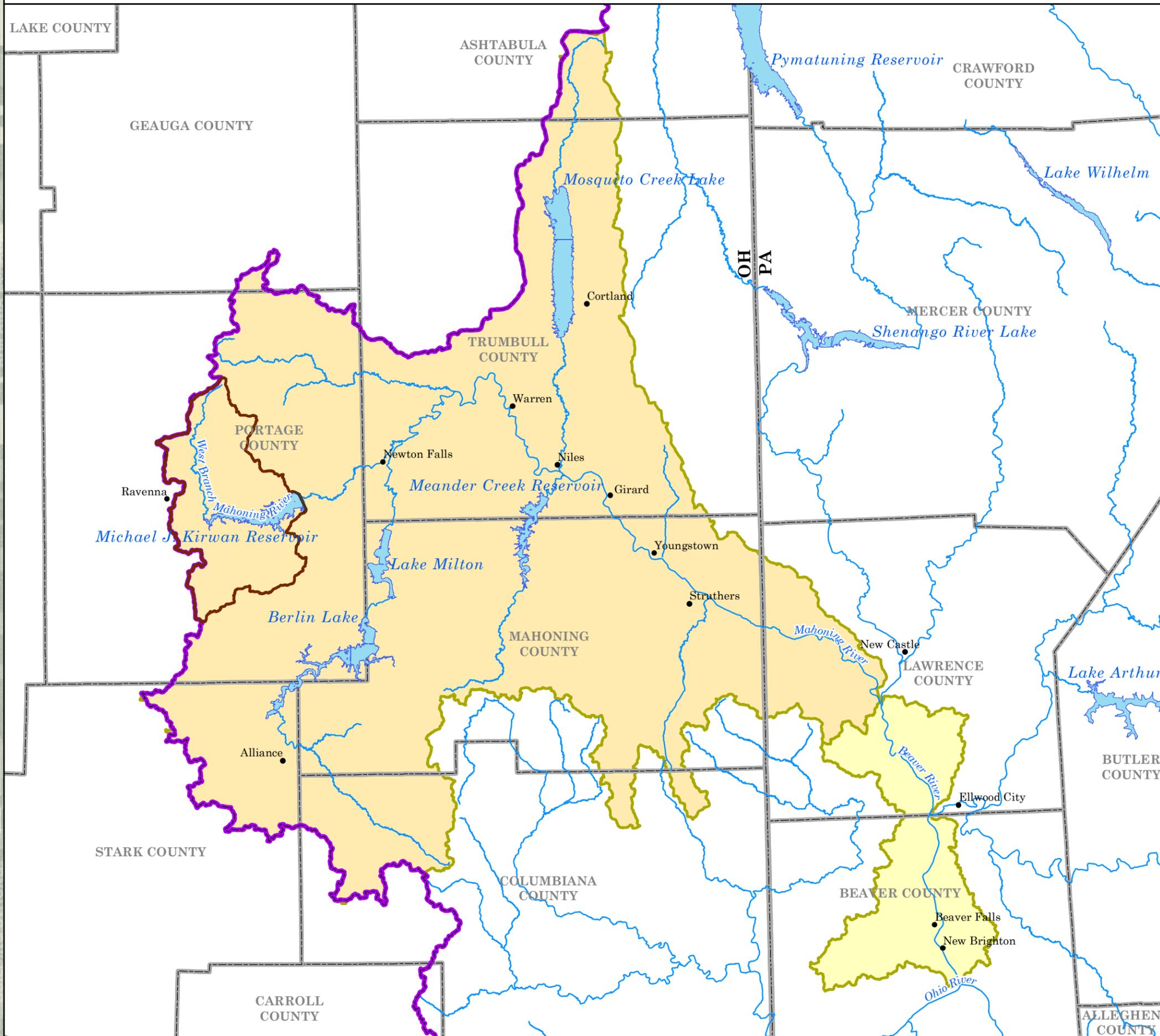


U.S. ARMY

# Michael J. Kirwan Dam and Reservoir Portage County, Ohio

# HUC-8 Watershed Boundaries to Ohio River, Plate 4

US Army Corps of Engineers  
Pittsburgh District  
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**Legend**

- M.J. Kirwan Reservoir Drainage Basin
- Pittsburgh District Boundary

**USGS Watershed Boundary Dataset**

**Name, HUC8**

- Beaver, 05030104
- Mahoning, 05030103

NORTH

0 2.5 5 10 Mi

Data Sources:  
Hydrography: USGS National Hydrography Dataset (NHD)  
Watershed Boundaries: USGS Watershed Boundary Dataset (WBD)  
Map Date: May 2018  
USACE LRP Geospatial, 412-395-7553

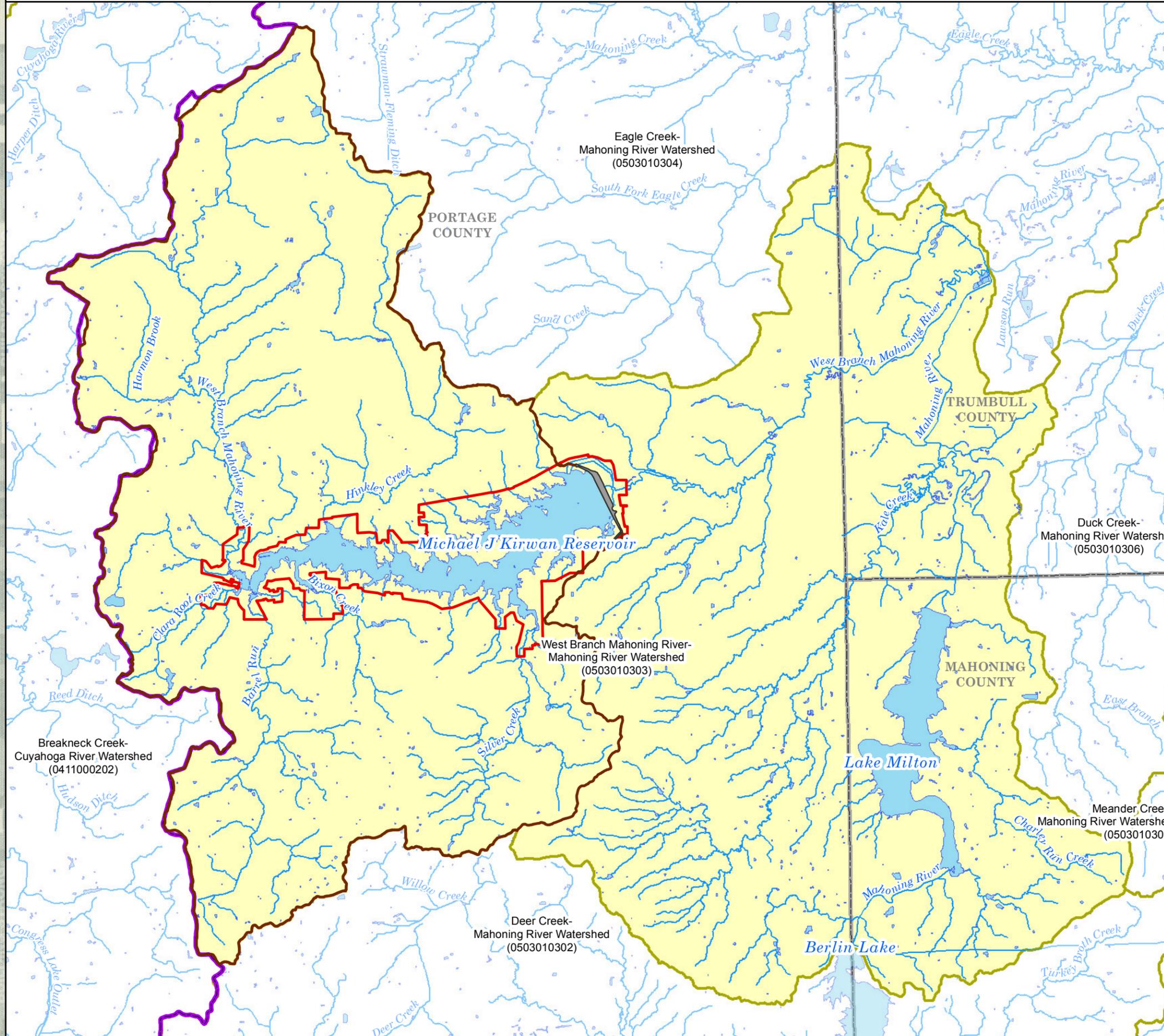




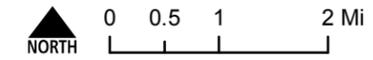
U.S. ARMY

# Michael J. Kirwan Dam and Reservoir Portage County, Ohio

# Watershed Boundaries, HUC-10, Plate 5



- M.J. Kirwan Reservoir Drainage Basin
- HUC-10 Watersheds**
- West Branch Mahoning River-Mahoning River Watershed
- Neighboring Watersheds
- Boundaries**
- U.S. Government Property Boundary
- Pittsburgh District Boundary
- County Boundary



Data Sources:  
 Hydrography: USGS National Hydrography Dataset (NHD)  
 Watershed Boundaries: USGS Watershed Boundary Dataset (WBD)  
 Map Date: June 2017  
 USACE LRP Geospatial, 412-395-7553



**US Army Corps of Engineers**  
**Pittsburgh District**  
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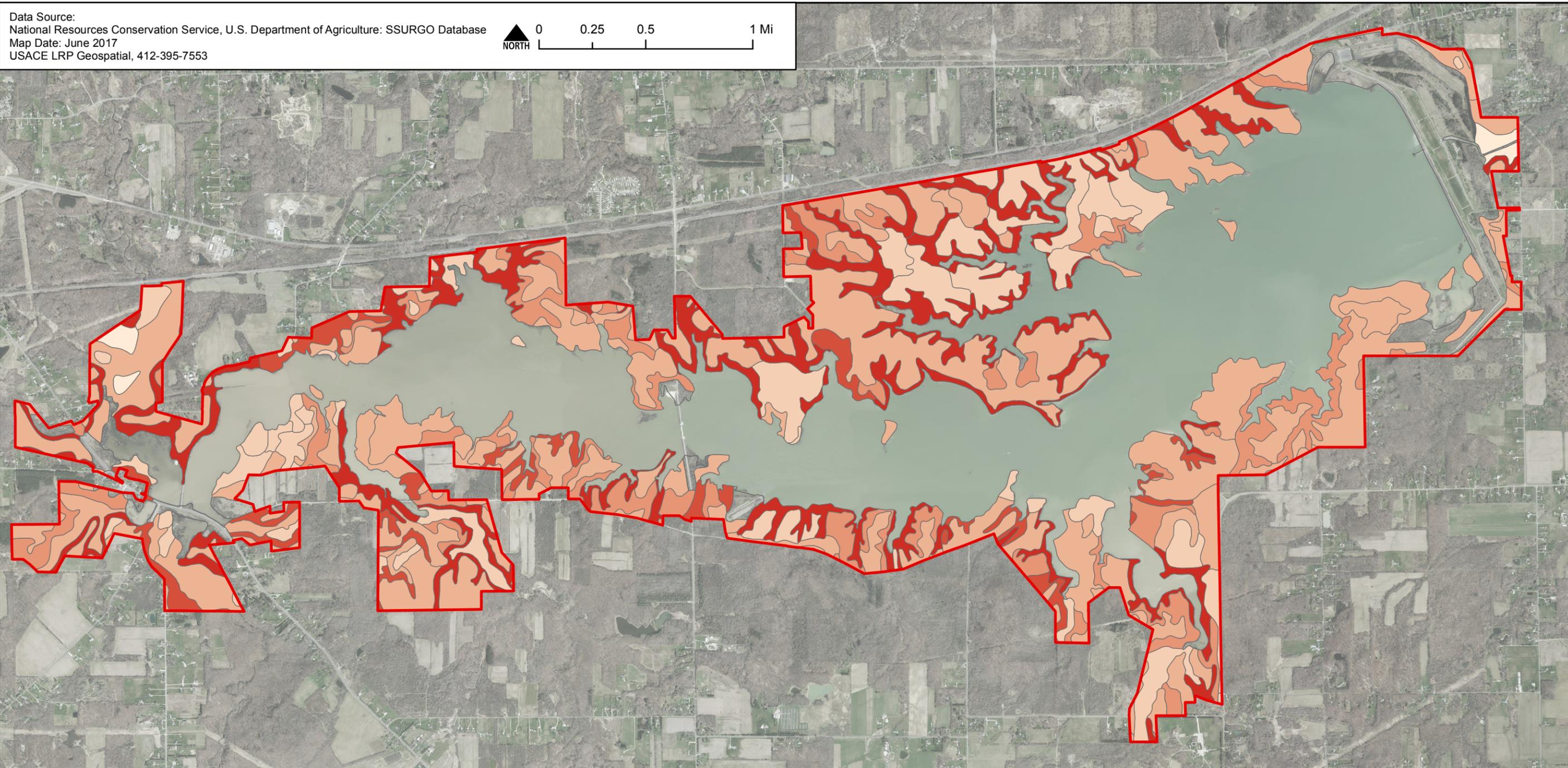
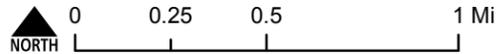
U.S. ARMY

# Michael J. Kirwan Dam and Reservoir

Portage County, Ohio

## Soils, Plate 6

Data Source:  
National Resources Conservation Service, U.S. Department of Agriculture: SSURGO Database  
Map Date: June 2017  
USACE LRP Geospatial, 412-395-7553



US Army Corps of Engineers  
Pittsburgh District



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### Legend

U.S. Government Property Boundary

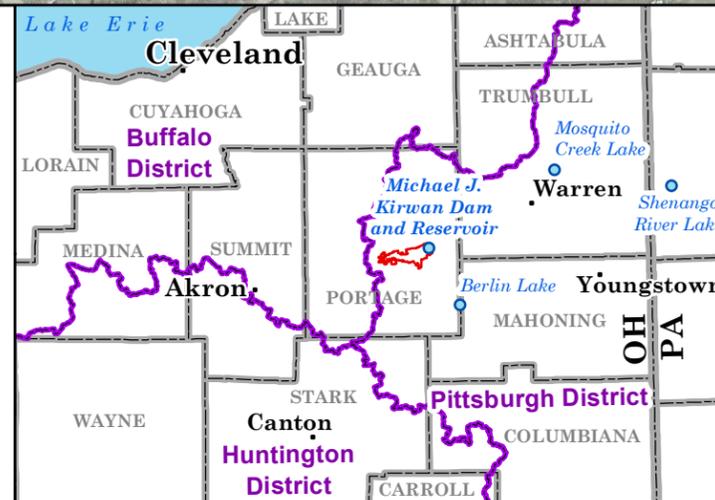
### Non-Irrigated Land Capability Class (Dominant Condition)

	N/A		Class 5
	Class 1		Class 6
	Class 2		Class 7
	Class 3		Class 8
	Class 4		

Land Capability Class	Acres Within Fee Boundary*
N/A	2989
Class 1	29
Class 2	512
Class 3	1569
Class 4	451
Class 5	0
Class 6	173
Class 7	576
Class 8	0
<b>Total</b>	<b>6299</b>

\*rounded to nearest acre

**Class 1** soils have few limitations that restrict their use.  
**Class 2** soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.  
**Class 3** soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.  
**Class 4** soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.  
**Class 5** soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.  
**Class 6** soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.  
**Class 7** soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.  
**Class 8** soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.



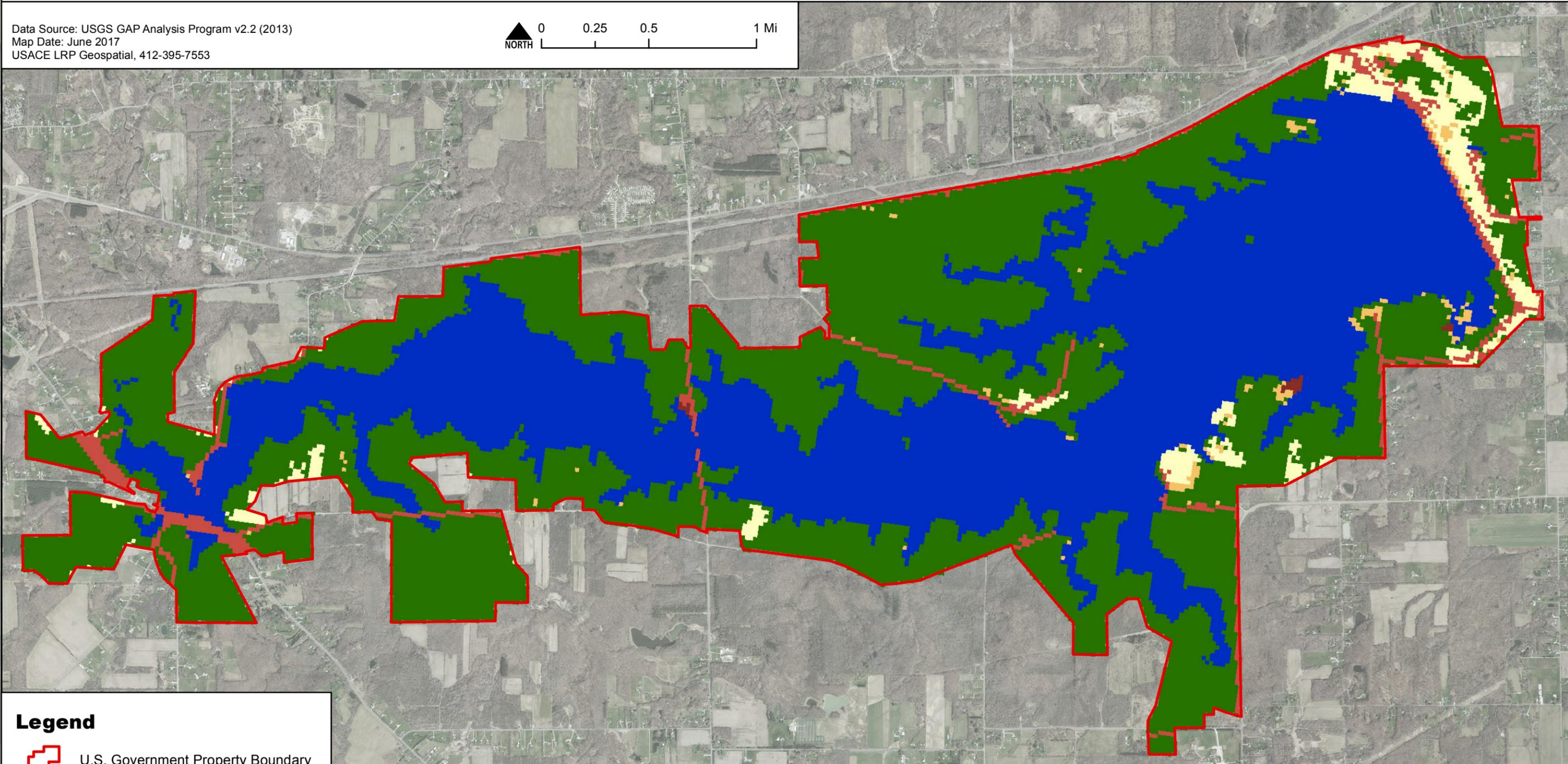
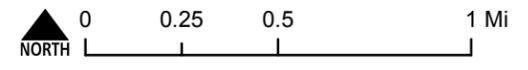


# Michael J. Kirwan Dam and Reservoir

Portage County, Ohio

# National Vegetation Classification, Plate 7

Data Source: USGS GAP Analysis Program v2.2 (2013)  
 Map Date: June 2017  
 USACE LRP Geospatial, 412-395-7553



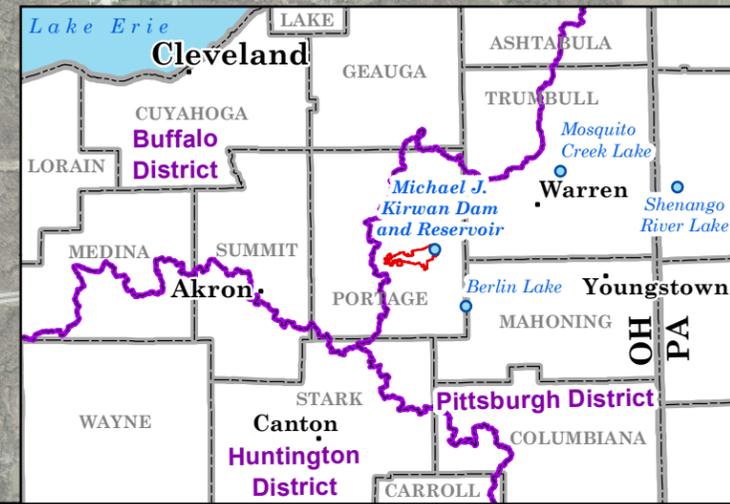
**US Army Corps of Engineers**  
**Pittsburgh District**  
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### Legend

- U.S. Government Property Boundary
- National Vegetation Classification**
- Agricultural Vegetation
- Developed & Other Human Use
- Forest & Woodland
- Introduced & Semi Natural Vegetation
- Open Water
- Recently Disturbed or Modified
- Shrubland & Grassland

National Vegetation Classification	Acres Within Fee Boundary*
Agricultural Vegetation	204.4
Developed & Other Human Use	201.9
Forest & Woodland	3046.8
Introduced & Semi Natural Vegetation	0.2
Open Water	2799.1
Recently Disturbed or Modified	6
Shrubland & Grassland	42.9
<b>Total</b>	<b>6301.3</b>

\*Source data is raster at 30-meter-resolution (approx. 0.222 acres). Data clipped to U.S. Government Property Boundary. Figures are approximate and rounded to the nearest 0.1 acre.





# Michael J. Kirwan Dam and Reservoir

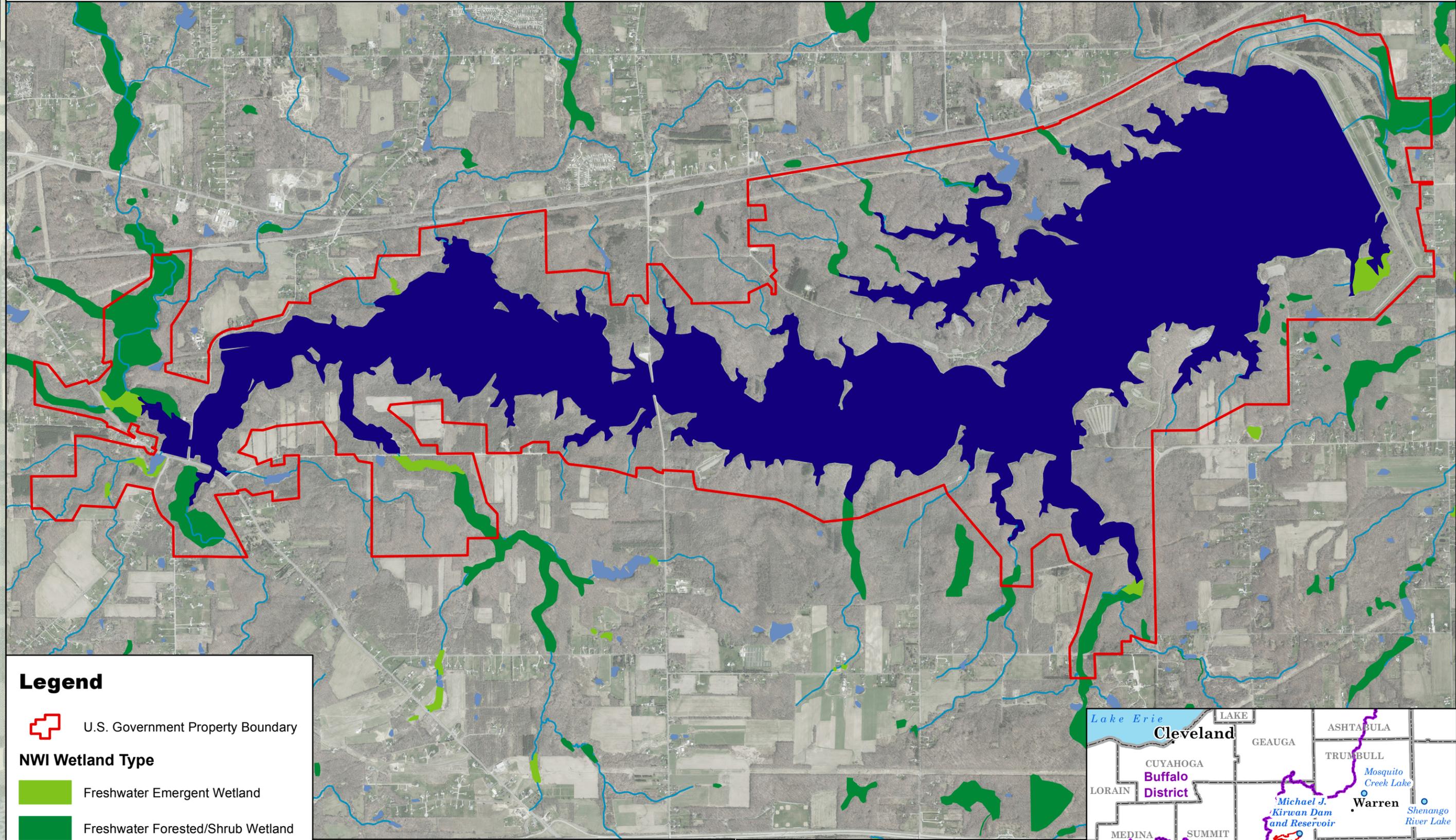
Portage County, Ohio

## Wetlands, Plate 8

US Army Corps of Engineers  
Pittsburgh District



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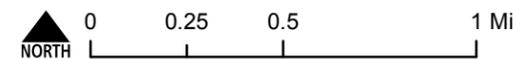


### Legend

-  U.S. Government Property Boundary
- NWI Wetland Type**
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Lake
-  Riverine

NWI Wetland Type	Acres Within Fee Boundary*
Freshwater Emergent Wetland	42
Freshwater Forested/Shrub Wetland	228
<b>Total</b>	<b>270</b>

\*rounded to nearest acre



Data Sources:  
U.S. Fish & Wildlife Service National Wetlands Inventory (NWI) 2016  
Map Date: June 2017  
USACE LRP Geospatial, 412-395-7553





# Michael J. Kirwan Dam and Reservoir Portage County, Ohio

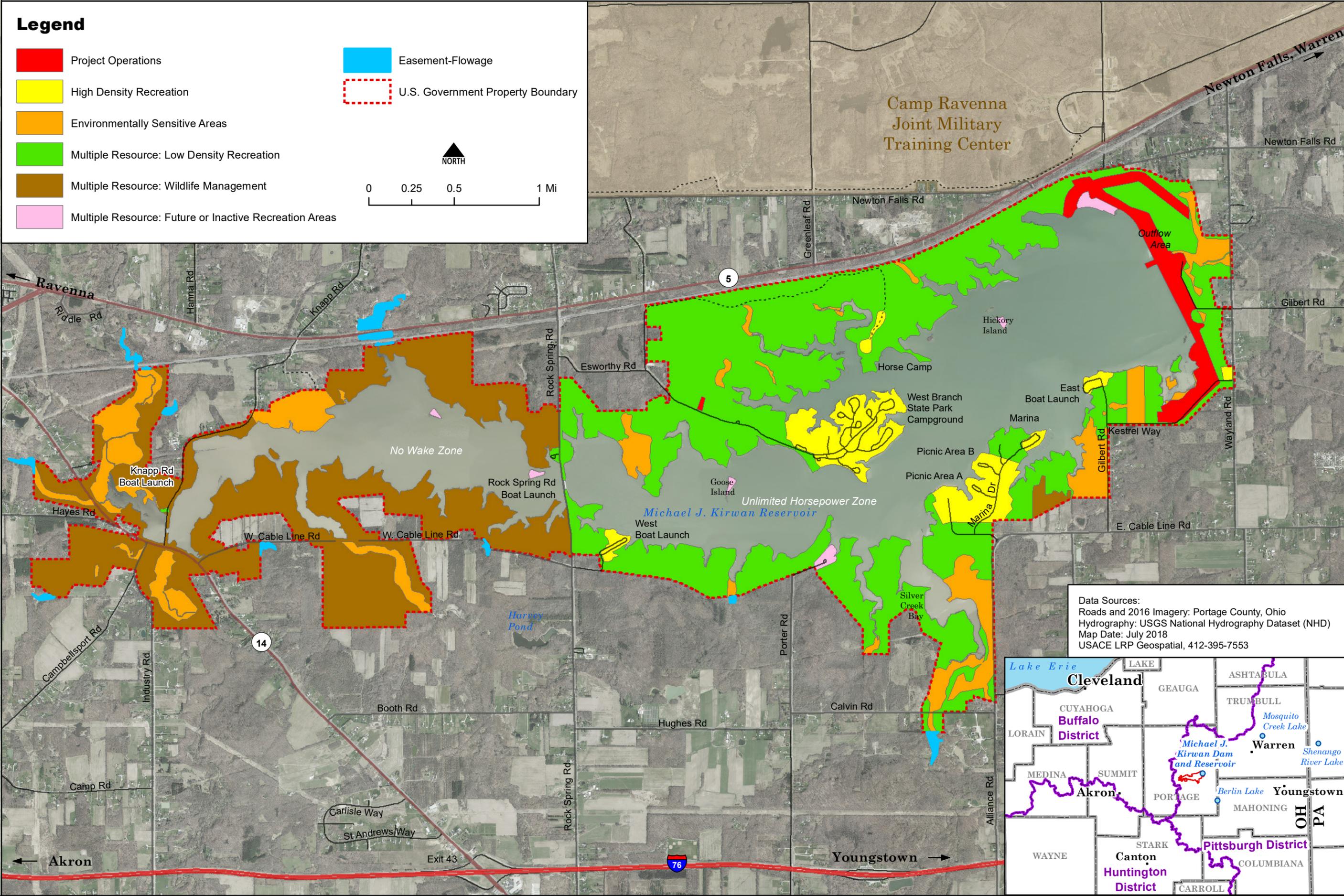
# Land Use Classification, Plate 9

**Legend**

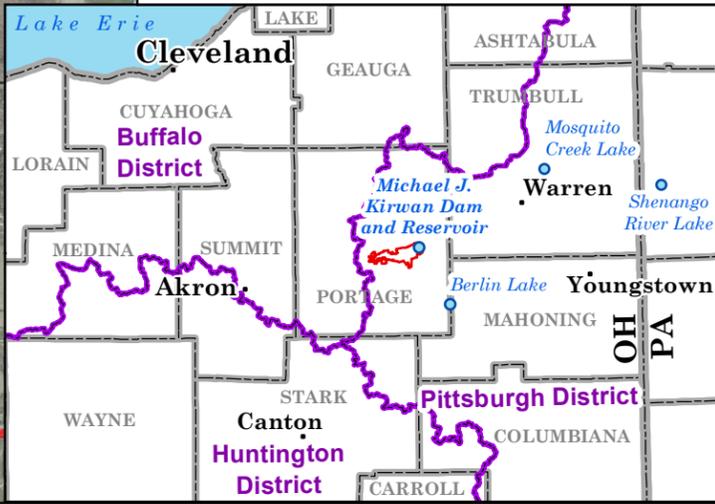
- Project Operations
- High Density Recreation
- Environmentally Sensitive Areas
- Multiple Resource: Low Density Recreation
- Multiple Resource: Wildlife Management
- Multiple Resource: Future or Inactive Recreation Areas
- Easement-Flowage
- U.S. Government Property Boundary

0 0.25 0.5 1 Mi

NORTH



Data Sources:  
 Roads and 2016 Imagery: Portage County, Ohio  
 Hydrography: USGS National Hydrography Dataset (NHD)  
 Map Date: July 2018  
 USACE LRP Geospatial, 412-395-7553



**US Army Corps of Engineers**  
**Pittsburgh District**  
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# Michael J. Kirwan Dam and Reservoir Portage County, Ohio

# Land Cover, HUC-12 Watersheds, Plate 10

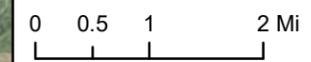
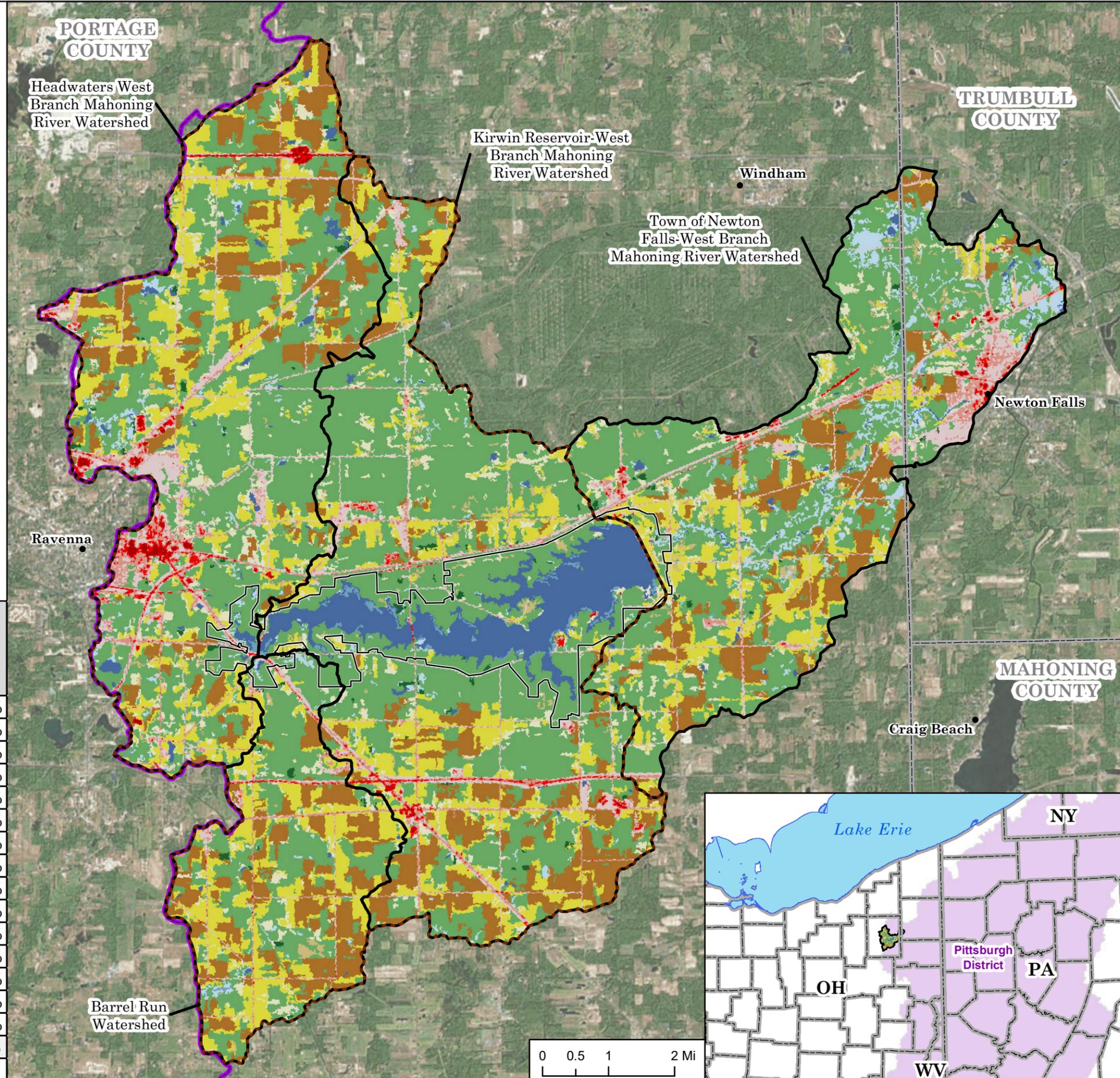
- Populated Place
  - ⬭ M.J. Kirwan Reservoir Drainage Basin
  - ⬭ HUC-12 Watersheds
  - USACE Boundaries**
  - ⬭ U.S. Government Property Boundary
  - ⬭ Pittsburgh District Boundary
- NLCD Classifications**
- Barren Land
  - Cultivated Crops
  - Deciduous Forest
  - Developed, High Intensity
  - Developed, Low Intensity
  - Developed, Medium Intensity
  - Developed, Open Space
  - Emergent Herbaceous Wetlands
  - Evergreen Forest
  - Hay/Pasture
  - Herbaceous
  - Mixed Forest
  - Open Water
  - Shrub/Scrub
  - Woody Wetlands

Data Sources:  
 USGS Watershed Boundary Dataset (WBD),  
 Multi-Resolution Land Characteristics (MRLC)  
 National Land Cover Database (NLCD) 2011  
 Map Date: June 2017  
 USACE LRP Geospatial, 412-395-7553



2011 National Land Cover Database: Headwaters West Branch Mahoning River, Kirwin Reservoir- West Branch Mahoning River, and Barrel Run watersheds		
	Acres*	%
Barren Land	4	0.01%
Cultivated Crops	10415	15.03%
Deciduous Forest	31088	44.87%
Developed, High Intensity	202	0.29%
Developed, Low Intensity	2443	3.53%
Developed, Medium Intensity	638	0.92%
Developed, Open Space	4081	5.89%
Emergent Herbaceous Wetlands	269	0.39%
Evergreen Forest	290	0.42%
Hay/Pasture	10908	15.74%
Herbaceous	3479	5.02%
Mixed Forest	14	0.02%
Open Water	3020	4.36%
Shrub/Scrub	849	1.23%
Woody Wetlands	1590	2.29%
<b>Total</b>	<b>69290</b>	<b>100.00%</b>

\*rounded to nearest acre



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# Michael J. Kirwan Dam and Reservoir Portage County, Ohio

## Recreation, Plate 12

### Legend

#### Structures

- Marina
- Restrooms
- State Park Campground Office
- Swimming Area Showerhouse
- USACE Resource Manager's Office
- USACE Visitor Information Center
- Campground (Limited Detail Shown)

#### Day Use

- Disc Golf
- Fishing Access
- Picnic Area
- Swimming Beach
- Wildlife Viewing

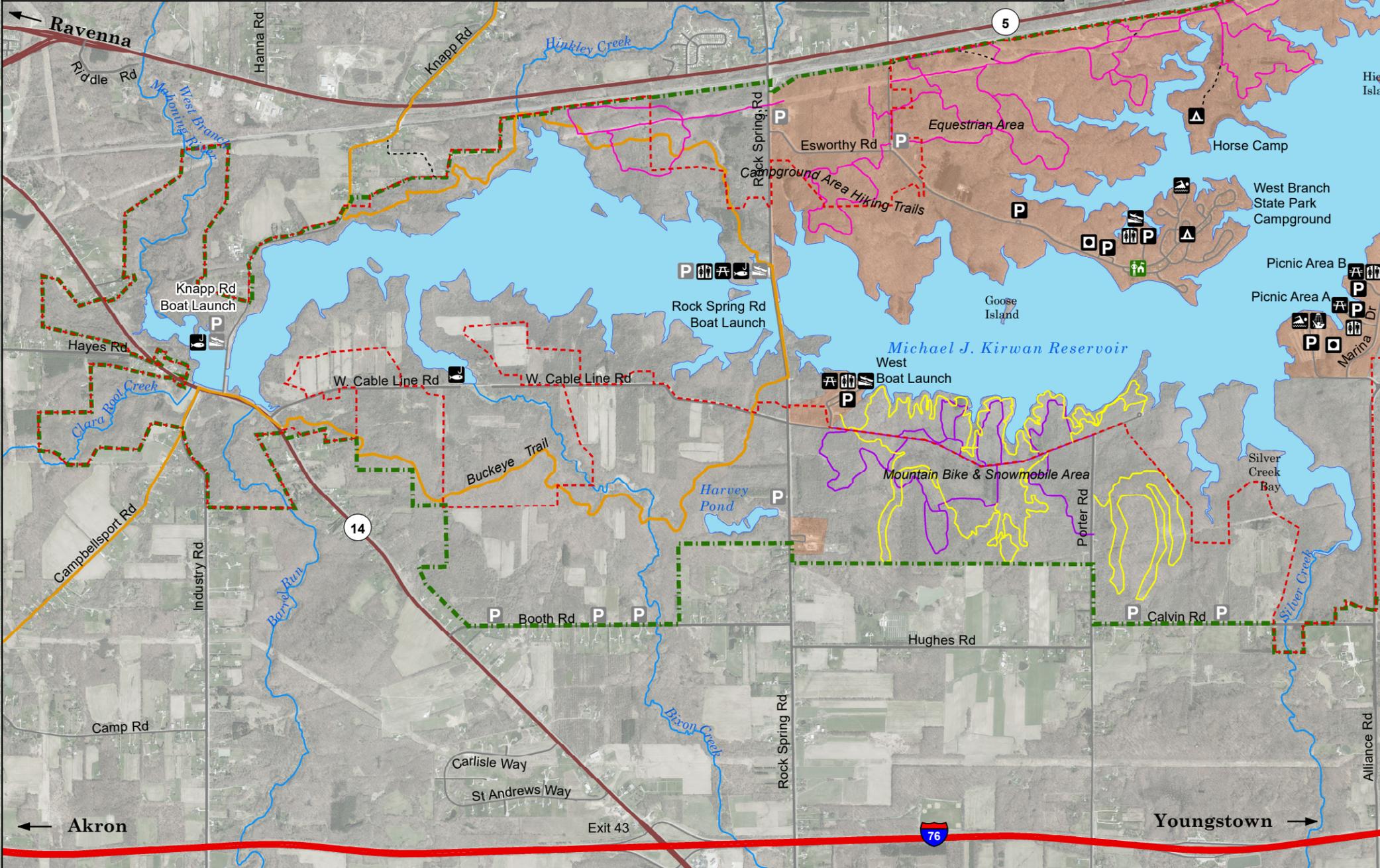
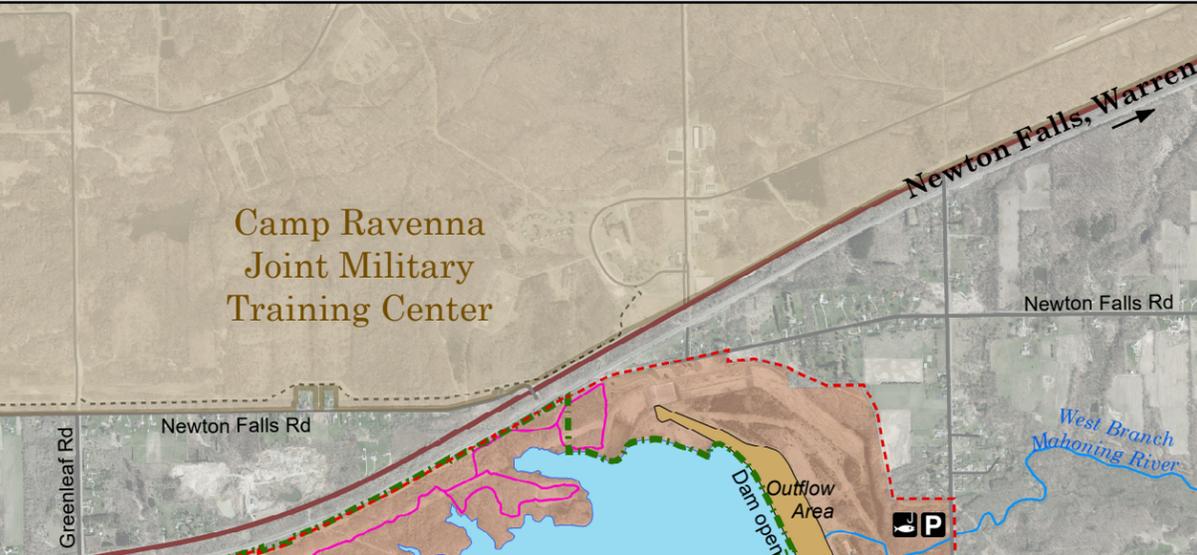
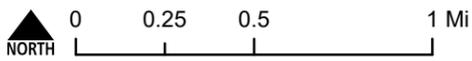
#### Boat Launches

- Paved, With Ramp
- Gravel, Without Ramp

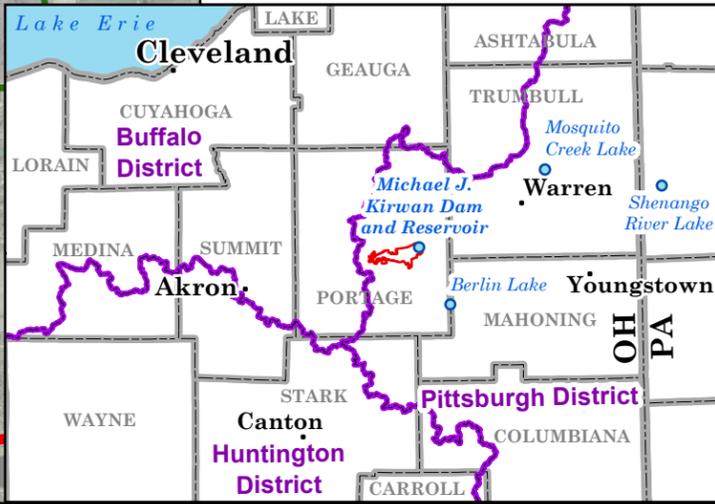
#### Parking and Roads

- Paved Lot
- Unpaved Lot
- Interstate Highway
- State Highway
- County Road
- Local Road, Paved
- Unpaved Road

- Buckeye Trail
- Equestrian Trail
- Mountain Bike Trail
- Snowmobile/Bike Trail
- No Hunting Zone
- West Branch State Park Boundary
- U.S. Government Property Boundary



Data Sources:  
 Roads and 2016 Imagery: Portage County, Ohio  
 Hydrography: USGS National Hydrography Dataset (NHD)  
 State Park Boundary: Ohio Department of Natural Resources  
 Buckeye Trail: Buckeye Trail Association  
 Bike / Snowmobile Trails: Cleveland Area Mountain Bike Assoc.  
 Equestrian Trails: Ohio Horseman's Association Portage Co.  
 Map Date: March 2018  
 USACE LRP Geospatial, 412-395-7553



**US Army Corps of Engineers**  
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## APPENDIX C

### Design Memorandums/Studies/Contracted Work

DM#	Design Memorandums/Studies/Contracted Work Related to Kirwan project
	<b>As-Builts (Drawing pdfs)</b>
1	40-Dam Masonry
2	General Plans
3	Recreation and Landscaping (Site Plan)
4	Gage Records, Hydrographs, and Discharges
5	Cofferdam Layout
6	Operating Houses
7	Spillway
8	Service Bridges
9	Electrical Systems
10	Miscellaneous
11	Power, Telephone, Radio Commo, Gas, Water, Sewer, etc.
12	Highways and Access Roads
13	Dwellings
14	Gage Houses
15	Instrumentation
16	Drawings Accompanying Correspondence
	<b>Background Documents</b>
1	General Photos (03 Nov 1983)
	<b>Dam Safety (Periodic Inspection Reports)</b>
1	Correspondence and Reports - General (1984-2006). Incl photos and memos.
2	M J Kirwan 1st PI Report (1968)
3	M J Kirwan 2nd PI Report (1970)
4	M J Kirwan 3rd PI Report (1975)
5	M J Kirwan 4th PI Report (1977)
6	M J Kirwan 5th PI Report (1981)
7	M J Kirwan 6th PI Report (1986)
8	M J Kirwan 6th PI Report (1986) Supplement
9	M J Kirwan 7th PI Report (1991)
10	M J Kirwan 8th PI Report (1996)
11	Kirwan 9th PI Report (2001)
12	Kirwan 10th PI Report (2006)
13	Kirwan 11th PI Report (2011)

Appendix C

DM#	Design Memorandums/Studies/Contracted Work Related to Kirwan project
	<b>Design</b>
1	General Index Sheets
2	Land Use-Planning
3	Clearing
4	Unnumbered Drawings
5	Land - Rights of Entry - RP 1965
6	Land - Annual Management Plan 1986
8	Land Utilization Inspection Report 1979
7	Land - General 1962. Incl 1985 restoration plan, re. campground, ONG drilling leases
8	Land Utilization Inspection Report 1979
9	Design Memo #1 - Hydrology
10	Design Memo #2 - General Design
11	Design Memo #2 - General Design Appendix I
12	Design Memo #3 - Real Estate, revised appraisals
13	Design Memo #3A - Real Estate, reservoir lands, 1961
14	Design Memo #3B - Real Estate, ONG Acquisition, 1960
15	Design Memo #4 - Sources of Concrete 1960
16	Design Memo #5 - Prelim MP 1961-63
17	Design Memo #6 - Outlet Design works 1961
18	Design Memo #7 - Reservoir Clearing 1965
19	Design Memo #8 - Nov 1982
20	MP Correspondence 1985
21	Consultant Correspondence 1961
22	Design Correspondence. 1966-70 USACE memos on waterstop lab tests
23	Misc Comps Trash Boom Conduit. 1966 drawings
24	Analysis of Design Portage Public Access Area 1967
25	A/E Analysis of Design Drainage. 1966 calc sheets, for camping/picnic area
	<b>Foundation &amp; Materials</b>
1	Aggregate Tests and Sources 1963. Re. concrete aggregates
2	Drilling Logs - Tracings 1956-1959
3	Drilling Specs 1956-1959
4	Drilling Logs - Prints-1963
5	Drilling Logs - Pre-Electro Osmosis 1965
6	Drilling Logs - Post-Electro Osmosis 1966
7	Drilling Logs - Inspectors (1980) Piezometer Installation
8	Field Book – 1. 1958 drill holes.
9	Field Book – 2. 1958 drill holes.

Appendix C

<b>DM#</b>	<b>Design Memorandums/Studies/Contracted Work Related to Kirwan project</b>
10	Field Book – 3. 1958 drill holes.
11	Field Book – 4. 1958 drill holes.
12	Field Book – 5. 1958 drill holes.
13	Field Book – 6. 1958 drill holes.
14	Field Book – 7. 1958 drill holes.
15	Inspector's Daily Diary, 1958-1959
16	Field Book - Daily Log #1, 1963-1965
17	Field Book - Daily Log #2, 1965-1967
18	Foundation Movement Data
19	Foundation Reports - Dam & Spillway
20	Piezometer readings for foundation 1965-1967
21	ORD Lab Report, Special Foundation Testing, 1965
22	Special Foundation & Embankment Treatment Final Report Oct 1970
23	Special Foundation & Embankment - (Final Report) Corres 1972
	<b>General Correspondence</b>
1	Gates Machinery & Equipment, Service Gate Stems, 1965 and 1982
	<b>Geotech</b>
1	Core Borings – Series 10 drawings
2	1966 daily conduit measurements
3	Instrumentation reports. 1980 piezometer instrumentation, drill logs, soil labs, as-built drawings, installation
4	Obtaining Instrumentation Data 1982
5	Instrumentation reports. Bridge Pier, Rocker measurements, 1967-1971
6	Instrument report piezometer installation, 1989
7	Movement (Remedial) letters and report, 1962-69. Incl piezometer and conduit data.
8	Settlement pin elevations. 1965-1966
9	Settlement elevations (monuments, gauges, structures), 1963-1968
10	Settlement gauges elevations, 1969-1972
11	Triangulation and elongation measurements of outlet works, 1967-1968
12	Weekly conduit measurements, discontinued 1969
13	Corres & Reports - General 1942-1981. Re. design and testing
14	Liquefaction Analysis Calculations 2008. For Kirwan Dam
15	Geotech Laboratory Test Results Holes U-1 thru U-4. Incl compression tests
16	Piezometers - Weekly Progress Reports - File 1-4. Bi-monthly Reports 27 through Report 37.
17	Piezometers - Weekly Progress Reports - File 2-4. Bi-monthly Reports 38 through Report 45.
18	Piezometers - Weekly Progress Reports - File 3-4. Bi-monthly Reports 46 through Report 53.
19	Piezometers - Weekly Progress Reports - File 4-4. Bi-monthly Report 54 and Report 55.

Appendix C

<b>DM#</b>	<b>Design Memorandums/Studies/Contracted Work Related to Kirwan project</b>
20	Piezometers - Weekly Progress Reports Apr65-Sep65. Re. foundation problems
21	Piezometers - Weekly Progress Reports Oct 1965. Correspondence re. 1965 reports data
22	USACE Seismic study 1993
23	Soil Investigation Report in Site 1 West Branch Picnic Area, 1965
24	Soil Samples, Piezometer Installation, 1980
25	Soil tests results, 1956-1959
26	Soil tests results, 1966
27	Soil borings results, 1966
28	Soils data and stability computations, 1963-1966
29	Slope Indicator Data, 1966
30	Summary of Compaction Tests, 1963-64
	<b>H&amp;H</b>
1	Hydrology – 1966. Govt and citizen correspondence 1966-82. Incl 1991 USGS letter
2	Model Tests – 1969. Hydraulics model tests, memos, and designs, 1962-69
3	Sedimentation Report – 1985. A 1987 memo with 1985 dam data.
4	Water Quality Report - Nov 1985. Data from 1976-83, incl bioassessment
5	Hydrology - Drought Contingency Plan – 1991. Incl 1992 Memos
6	MJ Kirwan Hydraulic Model Report Updated. 2013 Flood Inundation Modeling & Consequence Assessment Study
7	Cathodic Conversion to Piezometers, 1967
	<b>O&amp;M Manuals</b>
1	Dam Safety Flood Emergency Plan. 1990-93 memos re. changes
2	Operation & Maintenance Periodic Inspections Corres, 1968. From 1968 to 1977, 1981, 1986-87, 1990-98, 2000-01
3	Operation & Maintenance Manual, 1976
4	Remedial Requirements, 1961. Correction for downstream channel deficiency.
	<b>Misc.</b>
1	MJK Piezometer sizing, 1999
2	MJK Instrumentation report, 1999
3	Environmental Assessment, 1984. Incl SHPO and EPA letters, 1985-1991 corres by Planning.
4	Environmental Assessment, 1980. Incl memos, findings, inspection reports.
5	General Inspection report, 1990. Incl insp report, 1990 & 2000-01 tech memos.
6	General Construction Inspections, 1963-1970
7	General Outside Interests, 1989. Incl 1989 response memos to USACE.
8	Outside Interests. Incl 1955-63, 1983 USACE letters to Congress, OH, citizens, Air Force.
9	Permanent Marking and Signs. 1968 correspondence with Ohio Parks.
10	Planning Schedule, 1967

Appendix C

DM#	Design Memorandums/Studies/Contracted Work Related to Kirwan project
11	Contract for Embankment Slopes and Culvert Repairs. Incl 2009 emails and BCOES certif.
	<b>Location Data</b>
1	Project Location Vicinity
2	Preliminary Locations
	<b>Photos (Construction) (pdfs of photos)</b>
1	General Photos (03 Nov 1983)
2	Preconstruction (1963 photos)
3	Roads, Initial Exc, Cutoff Trench, Preconst Spillway (1963 photos)
4	Initial Construction Outlet Works, Spillway, Some Dam (1963 photos)
5	Construction of Spillway and Outlet Works, Quarry, Mahoning River (1963 photos)
6	Construction of Control Tower, Spillway, Embankment (1963 photos)
7	Construction of Tower, Spillway, Embankment, Relocated Roads (1964 photos)
8	General Progress Photos, Road Conditions, Debris in River (1962-63 photos)
9	Drilling Ops in Progress (1963 photos)
10	Electro Osmosis (1965 photos)
11	Soils Lab, Dwellings, and Clearings (1962-66 photos)
12	Construction of Public Use Facilities, Embankment Progress (1966 photos)
13	Construction of Public Use Facilities, Embankment Control Tower, Piezometers (1966 photos)
14	Public Use Facilities and Aerial Photos (1966 photos)
15	West Branch Dam Public Use Facilities (1967 photos)
16	General Project Photos, Public Use Construction (1967 photos)
17	Construction of Public Use Facilities (1967 photos)
18	Construction of Public Use Facilities (1968 photos)
19	Public Use Facilities, Stone in Overlook Area, Gauge Station, and Aerials (1968 photos)
20	Repair of Stone Protection (1972 photos)
	<b>Survey Data</b>
1	Topographic Surveys
	<b>Highway Relocation</b>
1	Frank Silver & Massacci - DA-67-0061 - Removal of Bridges. Project Contract Corres and Specs, 2/7/1967 Final Inspection
2	Highways, Roads & Relocations 1956. Re. Contract requests and road failures near Kirwan
3	Ohio Dept of Highways - DA-62-219
4	Ohio Dept of Highways 1962. Re. Houses in area of reservoir and ODOH assessment of ROWs
5	Portage County Commission - DA-63-79 - (Project A CH 52 -c- Contr-Hanna Trucking)
6	Field Book - Hwy Reloc Book 1 of 3, 1959
7	Field Book - Hwy Reloc Book 2 of 3, 1959
8	Field Book - Hwy Reloc Book 3 of 3, 1959

Appendix C

## **APPENDIX D**

### **Summary of Public Comments**

# PARTNER MEETING

## MJ KIRWAN DAM & RESERVOIR MASTER PLAN UPDATE

Thursday April 27, 2017

12:30 PM – 2:30 PM

MJ Kirwan Conference Room - 8657 Kestrel Way, Wayland Ohio 44285

### **When the meeting is over:**

Partners will leave with an understanding of:

- Scope and purpose of a Master Plan
- Pittsburgh District's Vision for the MJ Kirwan Dam & Reservoir Master Plan
- Partnering opportunities and areas of overlap with Pittsburgh District's Vision

US Army Corps of Engineers Pittsburgh District will leave with:

- Feedback from our partners on: 1. Regional needs; 2. Potential threats; 3. Best management practices; and 4. Preferred qualities, characteristics, and components of MJ Kirwan Dam & Reservoir that should be incorporated into the updated Master Plan

## AGENDA

### *INTRODUCTIONS*

#### Meeting Objectives

#### Overview of Master Plan Purpose & Process

- Project Timeline

#### Description of MJ Kirwan Dam & Reservoir Master Plan Update

- Driving Vision for Resource Objectives
  - Preliminary Alternatives

#### Discussion - Scoping of Master Plan & Partner Feedback

- Preferred qualities, characteristics, and components
  - Regional needs
  - Potential threats
- Best Management Practices
- Gaps and missing opportunities

#### Discussion – Land Use Classifications

#### Next Steps

- Upcoming Public Meeting
- Partnering opportunities

# MJK Master Plan Partner Meeting

## Attendees:

US Army Corps of Engineers  
Ohio DNR Division of Wildlife  
Ohio DNR Division of Parks and Watercraft

## Regional Needs/Interests

### Campground Upgrades

- Campers want to see full hook up campsites;
- Over next 10 years will be taking the electric sites to a full hook up (water, sewer, and electric) Approx 20 electric campsites now, while not currently interested in cabins, may want to include in the Master Plan for future flexibility.
- No new development planned, rather than restrooms in the Day-Use area. Replace like for like – ie. Keep flush
- Currently using surface lake water, planning on drilling wells (lot less EPA requirements for treating well water), assume on State Park property but not sure.
  - **Due-Out:** Follow up to find location
- Planning on bringing wi-fi into the campground. Currently no fiber optic lines currently at the campground.

### Trail Management/Extensions

- Want to expand mountain bike trails to the beach. Connect the swimmer beach to the mountain bike trails.
  - **Due-Out:** DNR can provide mountain bike trail map layers if we can't pull the trail maps down off the DNR website. ADD trails to the map.
- Annual management plan from DNR has not been seen by the USACE Resource Manager.
  - **Due-Out:** Krider/Nori - See if there is an annual management plan from DNR.
- What about bikers? Bike Lanes in the campground all the way to Rock Spring. (Would include road width expansion)
- Shelter House at Mountain Bike Area – with changing area. Would be interested in putting it in.
- Trail extension of Buckeye Trail to circle the reservoir. Perhaps put campsites along the trail for the hikers. DNR thinks also a neat idea. Boy Scouts have asked for something more primitive camping along this trail.
- Abandon part of Porter Road to vehicle traffic, turn into parking lot/trail for fishermen.

### House Demolition

- Currently vacant, no intention of putting someone else at that house. Request has been sent to the Corps to remove house, but DNR is open to doing something else with it. Problem: Mold in the basement. There is a push state-wide to demolish all the state residences.

- Security light for boat storage area is tied to that house. If the house is removed, would need to have to put a new panel just for that light. The DNR water system and well feeds that house. If we kept the house, we would have to make arrangements about how the water would be provided to the cost. Would have to look at operating costs.

### Other Activities/Issues

- 3 big special interest groups: Mountain Bike, Horse Group, Buckeye Trail Group + Campers.
- Regular issues with bridle trails because of stormwater runoff which makes trails really moist and hot zones for utilities. These are a very active group who volunteer.
- Adding dog park for the campers at the entrance to the campground. Looks like dog park is 100% on DNR parties.
- Requests about drones and who wants to have sea planes? YES. Any state owned lake in Ohio you'll be able to land on (lakes with unlimited horse power that is). Also allowing drones on park properties.
  - Beach is a good place to fly the drones. That parking lot could be identified.
  - USACE is having a blanket, no drones anywhere but will designate area if asked for. **Due-Out:** Look at district policy.
- Would like to add to DNR rule that USACE does not allow air boats. West side for air boats at night for idle speed. They are being used a lot in open waters at other DNR lakes, for example – Mosquito Lake.

### Land Classifications/Boundary/Lease

- Environmentally Sensitive Areas (off limits for development in the future)
  - Nothing that they know of. **Due-Out:** Follow up with later.
- Requirements for SHPO? DNR not currently aware of archaeological areas. Other than the old cemetery (Witch's Grave) down by the bike trail.
- When we do a multi-use area, DNR gets strung up on federal money about what they could manage. If you throw in multi-use area over the hunting lands, post boundaries, and spend money on, complicates things on their end getting reimbursed.
- Everything west of rock spring road is what is managed for wildlife area. The only other use is a snow mobile trail in that area. Suggestion: Could we say no development in that area beyond what's already there? (see map- green marker). Only game/wildlife management and vegetation management.
  - Deer & turkey food plots, pheasant releases. What is managed for. **Due-Out:** Send copy of map to get feedback on discrepancies for state/federal property. **Due-Out:** Talk about at a next meeting.
- Because of turnover, used to have wildlife management plan, but haven't produced a plan for the past few years. Will be working on this in the next few years.
- USACE has monuments we're missing too. Would like to see some makes that show the property line accurately.
  - **Due-Out:** Could we put monuments onto this map? Note: No monumentation along the railroad. Or shot down.
- Gas wells. Should the state be involved with these inspections if on outgranted lands? USACE relooking at this program. Could potentially be an issue if DNR was inspecting these wells on

Corps property leased to them, since they don't allow these. Would be an issue in the next lease if they were made to inspect these wells.

- Utility corridors – any interest? USACE recently received a request but the applicant decided to avoid corps property. That group couldn't use the original lease but anything outside of that leased area, would require a modification to the lease and require full team review/EA. But can make special conditions in any lease...mitigation options can be included.
- DNR would like to see what's here anyway before saying should consider more. But would prefer to rather not have it in the plan because creates a 'bullseye' and says...lets cross everything through the public lands.
- Most active south of the property for utility. Used to be getting one a day, and would turn down 90% of them. But on park property, hasn't turned down very many. If allow utility corridors, complicates federal funding for manhours.
- Nexus pipeline running through DNR properties.

### Threats

- ATV use not allowed on park property. Same with USACE, unless specific designation. Do allow ATV/Snow Mobile use on ice.
- Sediment/Dredging. @ Marina will one day have to be dredged. And back to the campground.
- Erosion along the campground. DNR will have to continue Erosion protection. The 300 No Wake from the shoreline is necessary for safety.
- Invasive Species: Not seeing issues around their area.
  - Glossy Buckthorn is all over the area (but has been here for years, not exploding).
- HAB – a few years ago, but have not seen it recently.
- Division of Forestry is identifying hazardous Ash trees, taking out several in camping. Focusing on the overnight areas. Very few left of the hazardous trees. DNR plans to continue as long as they have to.
- Beaver Activity. Quite a few have been taken out last year. But still a beaver who's been busy. May be undermining the road.
- No real runoff problems from effluent, etc. State has a waste water treatment plant near the Marina.
- Boundary issues – Arnie's steakhouse parking lot has paved over the boundary line. Another person with a propane tank. A lot of encroachment issues. ETRAP Committee is meant to do something.

### Other Opportunities

- ADA Fishing Pier. Interest of DNR, but not sure where to put it. Question – who would manage it in the long run? Initial Answer: Parks would.
- ADA Kayak Docks/Launch could be added. Gravel Lot off of Rock Spring road. Currently gravel, so would need to be finished differently. DNR open to wherever we could put it. Could also potentially go off of campground boat launch.
- Boat-in campsites & picnic sites. Asked for a lot on Facebook. Perhaps have an area where boaters can picnic/camp. Perhaps on the west end of the lake? Boater access only. This would help with safety feature (keep them away from beaches). Could potentially but docks on the campsite.

- Island for boaters to dock up to. Could we build that up? Sea walls, make it a picnic area, even with a shelter. Problem: Taking care of the trash, geese, etc. Even consider putting in a cove – dirt access road for employees. Or use snow mobile trails.
- Federal Lands Access Program. 250K national funding for access to State areas through federal land. DNR could apply for this grant (for Kestral Way; parking areas; [county roads in bad shape – county line & porter]). Does require a local match, could even be in-kind. DNR believes paved bike path or walking path would be a good idea. **Due-Out:** If get the criteria, highlight the areas that qualify for this program.
- Special activities that happen in the park. Does not need to be include in the MP, unless special event that wouldn't be permitted.
- What about fisherman access? Having better access from the dam, instead of climbing down the riprap. Anything we can do to enhance the fishery? USACE has been talking about putting out some manmade structures such as cribs, Christmas trees. DNR would support, often do these at Berlin. Would want to coordinate so not put where State wouldn't want it. Looking at the map, lots of bays, etc. At another location (check with Evan S.) with help of trout unlimited, turned it into trout spawning area, also ADA compliant and children's fishing area. DNR would be interested. **Due-Out:** Find best management practices, talk to ODOW fishing counterpart.
- New Review process for activities with alcohol. There is a form to be filled out to be reviewed. DNR policy is because campsite is a rented space, if you keep alcohol on campsite, it's technically legal. DNR has not rewritten their park rule to allow alcohol. For DNR - Possession is not the issue, its consumption on the boat. **Due-Out:** Make sure enforcing the similar way. More conversations are needed. Could add alcohol clause in lease.
- Wetland development for wildlife rather than water quality. Consider constructing – more inland (old field habitat) rather than closer to the water. **Due-Out:** Work to identify.

### Best Management Practices

- BMP, DNR would love to do some type of timber harvest. Seeing a lot of downed timber which could prove to be a hazard. USACE would have to work it into the lease.
- DNR does a firewood collection area – with Ash trees. This wouldn't have to go in the lease. This would just be DNR annual management plan (along with special events/activities).
- Handshake grants for next year. For example, with the wetland development.
- Water Safety event each year on the beach.

### Partnerships

- Boy Scouts
- Mountain Biking Group
- Horse Group
- Buckeye Trail Group
- Campers.
- #1 state park in Ohio.
- Marina
- Cabellas, Pro Bass Shop, Dicks, Gander Mountain

### Joint presentation for the public/stakeholder meetings/Next Steps:

- High school for location? South east or ravena

- DNR help advertise and review stakeholder list
- Tune scoping questions scoping: What would public like?
- send out notes from this meeting



DEPARTMENT OF THE ARMY  
PITTSBURGH DISTRICT, CORPS OF ENGINEERS  
WILLIAM S. MOORHEAD FEDERAL BUILDING  
1000 LIBERTY AVENUE  
PITTSBURGH, PA 15222-4186

REPLY TO  
ATTENTION OF

June 6, 2017

Environmental and Cultural Resources Section

Dear Interested Stakeholder:

The U.S. Army Corps of Engineers, Pittsburgh District is in the process of updating the Master Plan for Michael J Kirwan Dam and Reservoir. A Master Plan is a strategic land use management document that guides the comprehensive management and development of recreation, natural and cultural resources at Corps reservoirs. The original Master Plan was developed in 1982. Changes in Corps regulations and community needs necessitate a revision to this outdated Master Plan. Enclosed is a fact sheet which provides additional information on the Master Plan. We invite you to help us shape the future of recreation activities and environmental stewardship opportunities at the Reservoir and surrounding West Branch State Park.

Our first scoping meeting will be held:

Thursday, June 29, 1:00-3:00 p.m.  
Shearer Community Center  
9355 Newton Falls Road, Ravenna, Ohio 44266

If you plan to attend the meeting, please RSVP to [Ashley.Hickenboth@usace.army.mil](mailto:Ashley.Hickenboth@usace.army.mil) by June 27, 2017. Should you not be able to attend the stakeholder meeting, we will also be holding an open house style public meeting at the same venue from 4:30-7:00 PM.

Thank you in advance for your participation and interest in the updated Master Plan for Michael J Kirwan Dam and Reservoir. Your input is valuable to this effort. If you have any questions regarding the Master Plan or the stakeholder or public meeting, please feel free to contact Ashley Hickenboth at (412) 395-7312 or by e-mail at the above address.

Sincerely,

A handwritten signature in black ink that reads "Ryan A. Fisher".

Ryan Fisher  
Chief, Planning and Environmental  
Branch

Enclosure

# STAKEHOLDER SCOPING MEETING

## MICHAEL J. KIRWAN DAM & RESERVOIR (WEST BRANCH)

### MASTER PLAN UPDATE

Thursday, June 29th, 2017

1:00 PM – 3:00 PM

Shearer Community Center - 9355 Newton Falls Road, Ravenna, Ohio 44266

#### **When the meeting is over:**

Attendees will leave with an understanding of:

- What's considered in a Master Plan & Why they're being updated
- What USACE & OH DNR would like to hear about from the project stakeholders
- How to comment on your preferences

USACE Pittsburgh District will leave with:

- Feedback from our stakeholders on the – 1. Regional needs; 2. Potential threats; 3. Best management practices; 4. Potential opportunities/gaps; and 5. Preferred qualities, characteristics, and components of the Reservoir that should be incorporated into the Master Plan Update.
- Projects/interests USACE and OH DNR should be aware of as the Master Plan is updated

## NOTES

### USACE & Partners Project Plans

USACE - Future opportunities

- Visitor Center into Educational Center; Event Center
- Extension of Trails, Water Safety
- Seen that the closing of the dam has created a recreational resource

ODNR (Park) – future

- Trails (mountain bike, snow mobile, bridle)
- Water safety & water craft programs; just added paddle board program and adding canoe & kayak
- In the campground, looking at adding wifi & full hook-up campsites
- Additional playground equipment at the beach; more grills; family friendly activities
- Decommissioning hickory lake; hoping to add more bridle trails around that area
- Statewide Comprehensive Outdoor Study - #1 thing folks want to see is natural surface trails; so that is something they're interested

ODNR (Wildlife)

- More about providing access, but mostly unimproved.
- Number of ongoing projects as part of inland management system; evaluating types of fish populations
- Stock fish as well (walleye & muskie)

## What regional needs should the Master Plan take into consideration?

– In recent public survey, found biggest interest was trails. See regional needs/opportunity as multi-purpose trails. (Portage Park District)

- Trail Extension Opportunities:
  - Portage Hike & Bike Trail (to west side of county and extends/connects to Toe Path trail). Plan is to extend it east to Warren. Part of the 'Industrial heartland' trail (5 state trail system). Working to market this trail system.
  - Plans to extend to east side of county with proposal to go to south side of the arsenal.
  - Also have a connector from Rock Spring road to West Branch to connect into the hike and bike trails & horse trails
- When doing this work, they often partner with communities/cities and the park district steps in on rural areas.
  - Bridle trail volunteers could include: Volunteers from the Northeast Ohio Trail Riders Association, Boy Scouts, 4H.
  - Mountain Bike trail partners could include Conservancy, County, volunteer programs, CAMBA.

– Watershed conservation. Watershed protection in the upstream areas is important to water quality in the reservoir. (Portage Park District)

- Opportunity at Shaw Wood next to Jennings Woods.

– Mountain Bike Trails. (Portage Park District & CAMBA) Mountain biking growing significant in the Cleveland area. Since so much expansion, less critical desire but would be nice to have more mileage of trails. Bike park concept has also been taking off with a Skills sections, and something for all ages and abilities. Some of the trails when originally built weren't built well. Trying to get them into the areas where there's less maintenance.

- Potential Opportunities:
  - Skills Park could be a nice feature at West Branch.
  - Could coordinate to make sure not doubling efforts.
  - CAMBA – proposed extension of trails (initiated in 2010 but stalled because of cost of historical surveys needed for approvals; looking to restart effort now), see proposal submitted. Could also consider whether the Buckeye Trail Group would be interested in sharing the trail. Could also perhaps alter proposal for 1 trail in and out rather than 2 separate trails.
  - Mountain Bike Trails building and maintenance have been handled by volunteers through the club. In the near term, may not have a lot of resource available. But on the plan, could state that they have authority to do it as plans evolve.

– Educational programming & educational sites (Portage Park District & Portage SWCD)

- Potential Opportunities:
  - Partner on education (naturalist programming) educational sites (partnering on facilities) to eliminate duplication of facilities. Could team up with Counties to do this.

– Accessibility throughout recreational areas (Portage Park District)

- Potential Opportunities
  - If electric vehicles continue to be in demand for ADA compliance or for other reasons, maybe we should look at electric only or speed limits.
  - If we're going to continue seeing this demand, create an application process or permit to use the trails.

– Cultural Resource Survey (SHPO). Last cultural resource survey likely conducted in the 90s for specific sites. Also potentially Sec 110s.

- Potential Opportunities:
  - Consider conducting cultural resource survey. Hard to know what to preserve and protect if you don't know what you have.

– Heritage Tourism (SHPO). Identify a few different landmarks. Use Heritage Tourism out into the local community and out of the park system. Potential Opportunities:

- Ex: Frederick Wadsworth House (Nears Camelsport, maybe be private property); What about the Witch's Grave?? Dam could be considered historic, and is eligible.
- Signage for these locations.
- Could bring folks who visit the sites and figure out how to bring people there safely. **OHC could help us with that.**
- **Partner with local museums, etc.**
- Due-Outs:
  - SHPO will get back to us about areas that they find as sensitive.
  - Can also help us work with the language in the old Master Plan.

– Forest Management & Timber Management (ODNR – Wildlife & Parks). Young forest is most rapidly declining habitat in OH. Also problems with Rough Grouse.

- Potential Opportunities:
  - See if there are areas that could be cut to have young, successional habitat. More diversity. Would this be something we're willing to entertain?
  - The Master Plan is the effort to capture that (for early successional species) would be under 'habitat enhancement'.
  - **ODNR has a sister organization that could do that for us...?**

– Water quality sampling to know what pollutants to target for removal (SWCD). EPA Stormwater regulations are trending towards area specific requirements for what pollutants should be controlled for. Since the MJK Watershed is a large portion of Portage county, ongoing sampling could be valuable (inlet and outlet) could be a valuable resource. Answer: We have a water management unit at USACE the State of OH tests at the swimming beaches, which includes testing for cyanobacteria.

## What potential threats need to be addressed in the Master Plan?

– Invasive Species control on adjacent public/private lands & vegetative management. USDA works on private lands, but a lot of these lands but up against private lands. Concern: Big threat in NE OH is invasive species. (NRCS/USDA, Portage SWCD, ODNR - Wildlife)

- Potential Opportunities:
  - Address vegetative management in MP.
  - Outreach and education w/ adjacent landowners to identify invasive species that may not impact the park at this time. Try to control now with folks we're not working with
  - ODNR currently doing outreach with anglers & boaters to make them aware of those kinds of issues.
  -
- Due-Outs:
  - NRCS & Portage SWCD - if there are any nuances that we should know of, NRCS/USDA should make us aware of this on the ground perspective.

– Lake shore erosion control. Access to the lake is an issue that needs to be addressed. (Portage SWCD)

- Potential Opportunities:
  - Opportunities that would be available through planting that may help with that.

– Shore Erosion effects on Trails (CAMBA & Northeast Ohio Trail Riders Association)

- May have to move picket line that they're losing to shore erosion. Important to note that the No Wake Zone area isn't having shore erosion.
- Mountain bike trails disappear because shore goes away. Most especially on the East End.

– Fisheries management (ODNR – Wildlife). Erosion is a factor as well. Riparian areas are critical for reproduction of species.

- Potential Opportunities:

- Can we do anything to reduce this?

– ATV Use (USACE). Shenango River Lake may keep people off the rest of our properties. With ATVs, the soil content is so easily torn up by any users. Aging populations – need access back to hunting.

- Potential Opportunities:
  - Be proactive about how prepare for ATV, if we know that's going to be a push. Set aside an area, rather than having to scramble later.
  - State Parks is looking to purchase a piece of property since ATVs don't play well with any users. Would prefer not to bring into Master Plans at West Branch. Compromised with electric powered rather than gas powered ATV use, but has seen very little use on this.

– E mountain bikes (CAMBA). These new mountain bikes have motors and the biking industry is pushing them. Legislation has been proposed to add e mountain bikes to the code as a category, but mountain bike community is deciding whether to push back. For Corps property, these bikes would still fall under the category of motorized use. But the problem is, you can't even tell if they're on the bike.

- Potential Opportunities:
  - The Corps should revisit how we classify and specifically address these e-bikes.

– OPMD (Other Power Mobility Assisted Devices) as part of DOJ ruling for ADA. If have someone w/ a disability (unless have gone through trail assessment process) they can take an ATV or a pickup truck to that trail. They don't need to have their handicap placard or disclose the nature of their disability.

- Potential Opportunities
  - USACE consider going through trail assessment process for trails where it makes sense to prohibit use of OPMD
  - For ADA – consider how we can provide an equivalent experience

– Technology on the water.

- Potential Opportunities:
  - Keep track of, know what's coming out.
  - Is there a way we can take a blanket approach to addressing these in the Master Plans?

– Drones for resource management. Potential uses - Deers and invasive species surveys, Search & Rescue. Have had a few inquiries, but not many. Do not allow at this point on the Portage Park District Properties. Would be difficult to keep people's privacy. Drones doesn't cause the same kind of issues as ATVs. State parks allow for drones except for corps properties. Security is the biggest issues. From a cultural resource perspective, there could be sensitive archeological sites that you don't want the public to know where they are.

- Potential Opportunities:
  - Could create specific zones or seasons for drone use. Similar to providing skate parks in towns, rather than have kids skating all over, perhaps you give them a place to go.
  - If concerned about affecting wildlife, could allow during a 'drone season' to keep from disrupting.
  - A District found a way to allow them to circumvent the legislation. Up for review in 2018.
  - Define drone use.

– Oil & Gas Development

- Potential Opportunities:
  - Could create exclusion areas. An important area that could shouldn't be explored.
  - If we're mandated by congress to accommodate...perhaps we prepare. Avoid. Minimize and Mitigate.

– Highway 5. Have had oil spills, truck catching on fire, water contamination.

- Potential Opportunities:
  - DOT conversation to explore what they can do to protect the area and the park.

– Railroad. What if they're carrying something that could be posed as a hazard?

## What Best Management Practices should be considered (and to what end)?

– Resource Inventories. Current Status of Inventories: Invasive species surveys are being conducted in coordination with academia and OH DNR. If there's a project, required to collect survey data, which is all part of a NEPA process. Comes down to funding and partnerships & getting help to do the surveys.

- Potential Opportunities:
  - Recommend in the plan, do a scan every so many years.
  - EDDS Map – can enter as a citizen scientist.

## What opportunities and information are we missing, what gaps do we need to fill?

– Portage Park District – just adopted Master Plan in Dec 2016.

– Monopolize on any Ohio Erie Canal Resources that are left, since interest in these (SHPO). However it should be noted that most of those in the park is actually underwater. There are some areas that you can know where it was.

– Establish boundaries of these archeological sites, rather than just a dot on a map (SHPO).

– Renew lease for historical site (off Highway 14) (SHPO).

## What areas or resources need to be protected for their environmental, cultural, or archeological significance?

- Due-Out: Everyone will submit separately once they each do a review of the landscape.

## Next Steps & Summary of Due-Outs:

– In the '82 master plan, mentions a potential Shawnee trail burial ground, therefore Native American groups may want to be brought to the table about this.

- Due-Out: USACE to reach out to Native American Groups. SHPO suggested a conference call (instead of letter) about the project to the Native American groups (give project overview; mention specific sites that they might care about; and ASK how best to communicate with them).

–USACE to confirm whether 106 is incorporated with NEPA and whether includes programmatic agreement. Send confirmation of information to SHPO.

– SHPO will get back to USACE about areas that they find as sensitive.

- Can also help us work with the language in the old Master Plan.

– NRCS & Portage SWCD - if there are any nuances that we should know of, NRCS/USDA should make us aware of this on the ground perspective.

–Everyone separately will submit comments on areas or resources that need to be protected for their environmental, cultural, or archeological significance once they each do a review of the landscape.

# Portage Park District

## Scoping Discussion

1. What regional needs should the Master Plan take into consideration?

Watershed wide conservation  
Industrial Heartland Trail Plan  
trail connectors to Portage Parks and trails  
partner coordination with other parks on development of programming

2. What potential threats need to be addressed in the Master Plan?

Invasive species - tree diseases  
Sustainability with maintenance - trail erosion  
loss of funding - contingency planning / Friends groups?

3. What Best Management Practices should be considered (and to what end)?

check out American trails.org - they have good info on OPMD and DOT rule on motorized vehicles for accessibility.  
Sustainability - alternative energy/waste mgmt/procurement

4. What opportunities and information are we missing, what gaps do we need to fill?

What is policy on public foraging for wild edibles?  
What is level of impact that is acceptable? What kind of resource inventories have been done/updated?

5. What areas or resources need to be protected for their environmental, cultural, or archeological significance?

Biodiversity protection - ~~area~~ sensitive env. area  
Bogs?

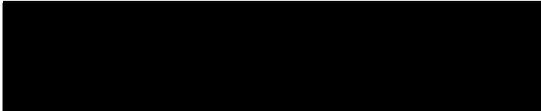
6. Other comments?

Portage Park District 2016 Master Plan - 10 years online  
www.portageparkdistrict.org

Portage County Regional Planning Commission and Portage Park District  
lead an initiative to promote coordination and collaboration among all park systems in Portage County - will develop website. call us

\* Invasive earthworms  
\* Climate change

Think about equipment sharing - ARCO?



## Scoping Discussion

1. What **regional needs** should the Master Plan take into consideration?

2. What **potential threats** need to be addressed in the Master Plan?

- Erosion of lake shore
- Impact of eMTB and future regulation
- Growth of nearby competing trail resources

3. What **Best Management Practices** should be considered (and to what end)?

- Trail closure policy when soil is sensitive
- Trail design for sustainability
- Good signage to make system accessible to new users

4. What **opportunities and information** are we missing, what **gaps** do we need to fill?

- Beginner trails, tie into beach area.
- Tie into regional trail systems  
Buckeye / Industrial Heartland Trail.

5. What **areas or resources need to be protected** for their environmental, cultural, or archeological significance?

6. Other comments?

## Scoping Discussion

1. What **regional needs** should the Master Plan take into consideration?

- Emerging rec. opportunities of electronic mountain bike / other motorized equipment
- Draw out other metropolitan areas (Cleveland, Akron, Columbus) to link (destinations) (webcam) WEB CAMS
- Accessibility issues for aging / disabled user groups

2. What **potential threats** need to be addressed in the Master Plan?

- Invasives from private lands into the public lands
- Riparian Buffer zones / Watershed mgmt. / Sampling improvements
- SHORELINE EROSION
- Cultural Resources confirmation of areas
- Forest Health Issues / Regeneration / Diversity mgmt.

3. What **Best Management Practices** should be considered (and to what end)?

4. What **opportunities and information** are we missing, what **gaps** do we need to fill?

5. What **areas or resources need to be protected** for their environmental, cultural, or archeological significance?

6. Other comments?

## Scoping Discussion

1. What **regional needs** should the Master Plan take into consideration?

Water quality sampling at inlets to the lake and at dam outfall?

2. What **potential threats** need to be addressed in the Master Plan?

3. What **Best Management Practices** should be considered (and to what end)?

have good housekeeping plans in place for facilities operation  
i.e. salt/herbicide/pesticide usage - vehicle maintenance (washing)  
materials storage (covered), etc.

4. What **opportunities and information** are we missing, what **gaps** do we need to fill?

5. What **areas or resources need to be protected** for their environmental, cultural, or archeological significance?

6. Other comments?

# MICHAEL J. KIRWAN DAM & RESERVOIR (WEST BRANCH) MASTER PLAN UPDATE

## ATTEND A PUBLIC SCOPING WORKSHOP

Please drop in at any time during the following scheduled time:

**Thursday, June 29 | 4:30 - 7 p.m.**

Shearer Community Center | 9355 Newton Falls Road, Ravenna, Ohio 44266

Or visit the **Michael J. Kirwan Visitor Information Center**  
5767 Wayland Rd, Ravenna, OH 44266

Visitor Center hours vary, Check the website below:

**If you cannot attend in-person, send us your feedback via our website:**

[http://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Michael-J-Kirwan-Dam-Reservoir/  
Michael-J-Kirwan-Dam-and-Reservoir-Master-Plan/](http://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Michael-J-Kirwan-Dam-Reservoir/Michael-J-Kirwan-Dam-and-Reservoir-Master-Plan/)

## We Want To Hear From You!

The Michael J. Kirwan Dam & Reservoir Master Plan which guides the management of government-owned and leased lands at the Reservoir (commonly known as West Branch) is being revised. This revision will guide natural resource management and recreation activities for the next 25 years.

This upcoming meeting is your opportunity to let the Corps know how you would like the Reservoir to be managed in the future.

To learn more or to tell us what you would like to see happen at M.J. Kirwan, visit our website.

### Comments should be submitted by Friday, July 14 by:

 Visiting our USACE Pittsburgh District Website,  
click on the Master Plan logo.

 Sending mail to  
Andrea Carson, Community Planner  
USACE, Pittsburgh District  
1000 Liberty Avenue, Pittsburgh, PA 15222

 E-mailing [celrp-pa@usace.army.mil](mailto:celrp-pa@usace.army.mil)





# NEWS RELEASE

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

**Pittsburgh District**  
Public Affairs Office  
1000 Liberty Avenue  
22<sup>nd</sup> Floor  
Pittsburgh, PA 15222-4186

FOR IMMEDIATE RELEASE

June 15, 2017

Release No. NR17-0xx

Contact: Jeff Hawk  
Phone 412-395-7500/01/02  
CELRP-PA@usace.army.mil

## Michael J. Kirwan Dam & Reservoir (commonly referred to as West Branch) Seeks Public Input on Master Plan Update

**Who:** U.S. Army Corps of Engineers, Pittsburgh District

**What:** The U.S. Army Corps of Engineers (USACE), Pittsburgh District, in partnership with the Ohio Department of Natural Resources is revisiting the Master Plan (MP) for Michael J. Kirwan Dam & Reservoir (commonly referred to as West Branch) and is seeking input on the public's preferences for the future management of the lands and waters of Michael J. Kirwan Dam & Reservoir. The MP update, which was last updated in 1976, may affect future use of natural resources and recreational activities at Michael J. Kirwan Dam & Reservoir for the next 25 years.

**Where:**  
Shearer Community Center  
9355 Newton Falls Road  
Ravenna, OH 44266

**When:** Thursday, June 29, 2017, 4:30 – 7 p.m., drop-in.

If members of the public are unable to attend this information session, they can visit the Pittsburgh District homepage [<http://www.lrp.usace.army.mil/>] and click on the master plans logo or visit the Michael J. Kirwan Dam & Reservoir Visitor Information Center to learn more about the project, share their perspective and sign up for the project mailing list.

**Why:** Public input is critical to the MP update. We invite the public to tell us what about Michael J. Kirwan Dam & Reservoir (West Branch) is most important to them and share what they'd like to do and see changed in the future at the Reservoir. An open-house-style meeting will be held to capture the public's preferences for the management of Michael J. Kirwan Dam & Reservoir, inform the public about the master plan update process and share the proposed MP content as it's been developed through discussions with Corps partners. This is everyone's opportunity to let the Corps know how they would like the Reservoir to be managed in the future.

Changes in Corps regulations and community needs necessitate a revision to this Master Plan. The revision will classify the government lands around the reservoir based on environmental and socioeconomic considerations, public input and an evaluation of past, present, and forecasted trends.

A Master Plan is the strategic land use management document that guides the comprehensive management and development of recreation, natural and cultural resources at Corps reservoirs now and into the future. The Master Plan does not address water management operations, associated prime facilities (dam, spillway etc.), or shoreline management as those operations are outlined in separate documents.

For additional information, please contact Andrea Carson, 412-395-7444, [andrea.l.carson@usace.army.mil](mailto:andrea.l.carson@usace.army.mil).

**From:** Carson, Andrea L CIV USARMY CELRP (US)  
**To:**



**Subject:** SAVE THE DATE: June 20 - Michael J. Kirwan Dam and Reservoir Master Plan Stakeholder Meeting  
**Date:** Tuesday, May 29, 2018 4:18:00 PM  
**Attachments:** [MJ Kirwan Master Plan Revision Fact Sheet.pdf](#)

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Good afternoon,

The U.S. Army Corps of Engineers, Pittsburgh District (Corps) is in the process of updating the Master Plan for Michael J. Kirwan Dam and Reservoir. As an attendee or invitee of our initial scoping meeting in June 2017, we would like to invite you to attend a follow-up stakeholder meeting to learn more about how your comments were incorporated into the updated Master Plan and accompanying Environmental Assessment and to provide feedback on the final recommendations within the Master Plan and comments on the draft Environmental Assessment. The stakeholder meeting will be open-house style, where you may stop in anytime between 1:00-3:30 PM on Wednesday, June 20, at Michael J. Kirwan Dam and Reservoir (8657 Kestrel Way, Wayland, OH 44285-0058).

A Master Plan is a strategic land use management document that guides the comprehensive management and development of recreation, natural and cultural resources at Corps reservoirs. The current Master Plan for Mahoning Creek Lake is dated 1982. Changes in Corps regulations and community needs necessitate a revision to this document. We've attached a fact sheet providing more information about the Master Plan update.

Starting June 11th, the Master Plan and Environmental Assessment will be located at the following website: <http://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Mahoning-Creek-Lake/Mahoning-Creek-Lake-Master-Plan-Copy/>. You will receive a Notice of Availability once the documents have been posted. Comments may be submitted via this website, email, or the address provided below until July 9th, 2018.

Thank you in advance for your participation and interest in the updated Master Plan for Michael J. Kirwan Dam and Reservoir; your input is valuable to this effort. If you have any questions regarding the Master Plan, Environmental Assessment, or the stakeholder meeting, please feel free to contact Andrea Carson at (412) 395-7444 or by e-mail at [Andrea.L.Carson@usace.army.mil](mailto:Andrea.L.Carson@usace.army.mil).

Looking forward to hearing your feedback on the Master Plan,  
Andrea

Andrea Carson  
Community Planner  
Public Involvement Specialist  
USACE, Pittsburgh District (LRP)  
Collaboration & Public Participation Center of Expertise (CPCX)

William S. Moorehead Federal Building

1000 Liberty Avenue, 22nd Floor  
Pittsburgh, PA 15222  
E: Andrea.L.Carson@usace.army.mil  
P: 412-395-7444

**From:** Carson, Andrea L CIV USARMY CELRP (US)  
**To:**



**Subject:** Michael J. Kirwan Dam and Reservoir Master Plan - Notice of Availability  
**Date:** Wednesday, June 13, 2018 3:53:00 PM  
**Attachments:** [MJK\\_NOA.pdf](#)

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Greetings everyone,

Please see the attached Notice of Availability. The U.S. Army Corps of Engineers, Pittsburgh District, is considering accepting updates to its 1982 Michael J. Kirwan Dam and Reservoir for land use on federal property located in Portage County, OH. In accordance with the National Environmental Policy Act, the Pittsburgh District, is making the drafts of the master plan, environmental assessment, and finding of no significant impact available for a 30-day public review and comment period that expires on July 13, 2018.

Project information and the draft documents may be accessed at <https://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Michael-J-Kirwan-Dam-Reservoir/Michael-J-Kirwan-Dam-and-Reservoir-Master-Plan/>.

If you are unable to attend the meeting on June 20th between 1:00-3:30 PM, please send comments to Ms. Heather Wood at [heather.l.wood@usace.army.mil](mailto:heather.l.wood@usace.army.mil) or mail them to her attention at the address in the attachment. Comments must be received or postmarked by July 13, 2018 in order to receive consideration. We'll be holding the June 20th meeting at the USACE Maintenance Complex - to find the building, at the Wayland Rd and Gilbert Rd intersection (past the turn in for the Visitor Information Center) - look for a brown Corps Maintenance Complex sign- we'll be sure to put a marker to ensure you're headed in the right direction.

Thank you for your consideration.

Andrea Carson  
Community Planner  
Public Involvement Specialist  
USACE, Pittsburgh District (LRP)  
Collaboration & Public Participation Center of Expertise (CPCX)

-----Original Message-----

**From:** Carson, Andrea L CIV USARMY CELRP (US)  
**Sent:** Tuesday, May 29, 2018 4:18 PM  
**To:** 'douglas.lyons@dnr.state.oh.us' <douglas.lyons@dnr.state.oh.us>; 'john.trevelline@dnr.state.oh.us' <john.trevelline@dnr.state.oh.us>; 'scott.stauffer@dnr.state.oh.us' <scott.stauffer@dnr.state.oh.us>; 'Scott.Angelo@dnr.state.oh.us' <Scott.Angelo@dnr.state.oh.us>; 'chris.aman@dnr.state.oh.us' <chris.aman@dnr.state.oh.us>; 'scott.peters@dnr.state.oh.us' <scott.peters@dnr.state.oh.us>; 'jeremy.byers@dnr.state.oh.us' <jeremy.byers@dnr.state.oh.us>; 'bryan.kay@dnr.state.oh.us'

<bryan.kay@dnr.state.oh.us>; 'davet17@aol.com' <davet17@aol.com>; 'reggie.brown@epa.ohio.gov'  
<reggie.brown@epa.ohio.gov>; 'william.e.meade.mil@mail.mil' <william.e.meade.mil@mail.mil>;  
'Mark.Griffiths@dot.state.oh.us' <Mark.Griffiths@dot.state.oh.us>; 'kara.macdowell@oh.usda.gov'  
<kara.macdowell@oh.usda.gov>; 'ddoak@portageco.com' <ddoak@portageco.com>; 'khorrocks@ohiohistory.org'  
<khorrocks@ohiohistory.org>; 'pchsohio@neo.rr.com' <pchsohio@neo.rr.com>; Ohio Fish and Wildlife Service  
<Ohio@fws.gov>; 'green.boonie@gmail.com' <green.boonie@gmail.com>; 'jim.olander@camba.us'  
<jim.olander@camba.us>; 'trails@camba.us' <trails@camba.us>; 'jim.olander@bendix.com'  
<jim.olander@bendix.com>; 'sgbard@vorys.com' <sgbard@vorys.com>; 'dk5290@embarqmail.com'  
<dk5290@embarqmail.com>; 'ba82077@yahoo.com' <ba82077@yahoo.com>; 'charlestownfd@yahoo.com'  
<charlestownfd@yahoo.com>; 'esamec801@gmail.com' <esamec801@gmail.com>; 'ParisChief@gmail.com'  
<ParisChief@gmail.com>; 'cityclerk@ci.newtonfalls.oh.us' <cityclerk@ci.newtonfalls.oh.us>;  
'john.hayes@edinburgtownship.com' <john.hayes@edinburgtownship.com>; 'firefighter1300mtp@gmail.com'  
<firefighter1300mtp@gmail.com>; 'frank.seman@ci.ravenna.oh.us' <frank.seman@ci.ravenna.oh.us>;  
'mfrederick@portageco.com' <mfrederick@portageco.com>; 'SChristianBennett@portageco.com'  
<SChristianBennett@portageco.com>; 'vkline@portageco.gov' <vkline@portageco.gov>; 'ohioema@dps.ohio.gov'  
<ohioema@dps.ohio.gov>; 'fmaguire@pecpa.org' <fmaguire@pecpa.org>; 'oec@theoec.org' <oec@theoec.org>;  
'andrea\_irland@nps.gov' <andrea\_irland@nps.gov>; 'rick.leonard@mail.house.gov'  
<rick.leonard@mail.house.gov>; 'onbohio@gmail.com' <onbohio@gmail.com>; 'sgbard@vorys.com'  
<sgbard@vorys.com>; 'khorrocks@ohiohistory.org' <khorrocks@ohiohistory.org>; 'scott.peters@dnr.state.oh.us'  
<scott.peters@dnr.state.oh.us>; 'Christopher.aman@dnr.state.oh.us' <Christopher.aman@dnr.state.oh.us>;  
'dk5290@embarqmail.com' <dk5290@embarqmail.com>; 'ccraycroft@portageparkdistrict.org'  
<ccraycroft@portageparkdistrict.org>; 'kara.macdowell@oh.usda.gov' <kara.macdowell@oh.usda.gov>;  
'elong@portageswcd.org' <elong@portageswcd.org>; 'jbierlair@portageswcd.org' <jbierlair@portageswcd.org>;  
'nicholas.barnes@camba.us' <nicholas.barnes@camba.us>; 'dwelling@ohiohistory.org'  
<dwelling@ohiohistory.org>; 'khorrocks@ohiohistory.org' <khorrocks@ohiohistory.org>;  
'DK5290@embarqmail.com' <DK5290@embarqmail.com>; 'scott.peters@dnr.state.oh.us'  
<scott.peters@dnr.state.oh.us>; 'bryan.kay@dnr.state.oh.us' <bryan.kay@dnr.state.oh.us>;  
'chris.aman@dnr.state.oh.us' <chris.aman@dnr.state.oh.us>  
Cc: Krider, Douglas A CIV CELRP CELRD (US) <Douglas.A.Krider@usace.army.mil>; Stone, Julie R CIV  
USARMY CELRP (US) <Julie.R.Stone@usace.army.mil>; Ritenour, Ashley M CIV USARMY CELRP (US)  
<Ashley.M.Ritenour@usace.army.mil>; Wood, Heather L CIV USARMY CELRP (US)  
<Heather.L.Wood@usace.army.mil>; Kish, Bruce L CIV USARMY CELRP (US) <Bruce.Kish@usace.army.mil>;  
Carney, Craig R CIV USARMY CELRP (US) <Craig.R.Carney@usace.army.mil>  
Subject: SAVE THE DATE: June 20 - Michael J. Kirwan Dam and Reservoir Master Plan Stakeholder Meeting

Good afternoon,

The U.S. Army Corps of Engineers, Pittsburgh District (Corps) is in the process of updating the Master Plan for Michael J. Kirwan Dam and Reservoir. As an attendee or invitee of our initial scoping meeting in June 2017, we would like to invite you to attend a follow-up stakeholder meeting to learn more about how your comments were incorporated into the updated Master Plan and accompanying Environmental Assessment and to provide feedback on the final recommendations within the Master Plan and comments on the draft Environmental Assessment. The stakeholder meeting will be open-house style, where you may stop in anytime between 1:00-3:30 PM on Wednesday, June 20, at Michael J. Kirwan Dam and Reservoir (8657 Kestrel Way, Wayland, OH 44285-0058).

A Master Plan is a strategic land use management document that guides the comprehensive management and development of recreation, natural and cultural resources at Corps reservoirs. The current Master Plan for Mahoning Creek Lake is dated 1982. Changes in Corps regulations and community needs necessitate a revision to this document. We've attached a fact sheet providing more information about the Master Plan update.

Starting June 11th, the Master Plan and Environmental Assessment will be located at the following website: <https://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Michael-J-Kirwan-Dam-Reservoir/Michael-J-Kirwan-Dam-and-Reservoir-Master-Plan/>. You will receive a Notice of Availability once the documents have been posted. Comments may be submitted via this website, email, or the address provided below until July 13th, 2018.

Thank you in advance for your participation and interest in the updated Master Plan for Michael J. Kirwan Dam and Reservoir; your input is valuable to this effort. If you have any questions regarding the Master Plan, Environmental

Assessment, or the stakeholder meeting, please feel free to contact Andrea Carson at (412) 395-7444 or by e-mail at Andrea.L.Carson@usace.army.mil.

Looking forward to hearing your feedback on the Master Plan,  
Andrea

Andrea Carson  
Community Planner  
Public Involvement Specialist  
USACE, Pittsburgh District (LRP)  
Collaboration & Public Participation Center of Expertise (CPCX)

William S. Moorhead Federal Building  
1000 Liberty Avenue, 22nd Floor  
Pittsburgh, PA 15222  
E: Andrea.L.Carson@usace.army.mil  
P: 412-395-7444



U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

**Pittsburgh District**  
Public Affairs Office  
1000 Liberty Avenue  
22<sup>nd</sup> Floor  
Pittsburgh, PA 15222-4186

**FOR IMMEDIATE RELEASE**  
June 13, 2018  
Release No. NR18-164  
Contact: Carol E. Vernon  
Phone 412-395-7500/01/02  
CELRP-PA@usace.army.mil

## **Michael J. Kirwan Dam and Reservoir Seeks Public Review, Feedback on Master Plan Update**

**Who:** U.S. Army Corps of Engineers Pittsburgh District

**What:**

The U.S. Army Corps of Engineers Pittsburgh District is revisiting the Michael J. Kirwan Dam and Reservoir Master Plan and is seeking feedback on the proposed changes to the management of the lake, resulting from public input last summer. The master plan, which the district updated late in 1982, will affect use of natural resources and recreational activities at Michael J. Kirwan Dam and Reservoir for the next 25 years. Pittsburgh District is inviting the public to comment on the revised 2018 Master Plan and associated Environmental Assessment via the Michael J. Kirwan Dam and Reservoir Master Plan website at <https://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Michael-J-Kirwan-Dam-Reservoir/Michael-J-Kirwan-Dam-and-Reservoir-Master-Plan/>. The review period will end July 13, 2018.

**Where:** Members of the public can visit the Pittsburgh District homepage (<http://www.lrp.usace.army.mil/>) and click on the master plan logo to learn more about the proposed changes, comment on the Environmental Assessment and Master Plan and share their perspective. Alternatively, they can go directly to <https://www.lrp.usace.army.mil/Missions/Recreation/Lakes/Michael-J-Kirwan-Dam-Reservoir/Michael-J-Kirwan-Dam-and-Reservoir-Master-Plan/>.

**When:** Between Wednesday June 13 and Friday July 13.

**Why:** Public input is critical to the master plan update. The website will serve to collect feedback on the proposed management plan for Michael J. Kirwan Dam and Reservoir, inform the public about the master plan update process, and share the proposed master plan content as it's been developed through discussions with Corps partners and public input. Please share your likes, dislikes, concerns or thoughts on the proposed path forward in the 2018 Michael J. Kirwan Dam and Reservoir Master Plan. The proposed revisions to the master plan will affect the management and usage of Michael J. Kirwan Dam and Reservoir for the next 25 years.

Changes in the Corps regulations and the community needs have necessitated a revision to the master plan. The revision will classify the government lands around the lake based on environmental and socioeconomic considerations, public input and an evaluation of past, present, and forecasted trends.

A master plan is the strategic land-use, management document that guides the comprehensive management and development of recreation, natural, and cultural resources at Corps reservoirs now and into the future. The plan does

not address water management operations, associated prime facilities, i.e. dam, spillway or shoreline management, as separate documents outline those operations.

For additional information, please contact Heather Wood, (412) 395-7203 or

[Heather.L.Wood@usace.army.mil](mailto:Heather.L.Wood@usace.army.mil).

-30-

# Master Plan Update Fact Sheet

## Michael J. Kirwan Dam and Reservoir

### Master Plan Revision

The US Army Corps of Engineers, Pittsburgh District, is revising the Michael J. Kirwan Dam and Reservoir Master Plan which guides the management of government owned and leased lands around the Reservoir. This will influence future use of natural resources and recreational activities to ensure the sustainability of the Reservoir.

This is your opportunity to let the Corps know how you would like the Reservoir to be managed in the future. The planning process will include an analysis of potential effects of any proposed changes to the Master Plan on the natural and social environment, including: fish and wildlife, cultural and historic resources, recreational opportunities, economics, land use and public health and safety.

### Objectives of Update

- Conserve the resources of the Lake within the current policies and guidelines of the Corps
- Accommodate current and projected recreational use patterns with maximum efficiency
- Identify and protect cultural and natural resources
- Attract maximum participation by the general public

### Why Update

The original Master Plan was developed 35 years ago and does not reflect current conditions at the Reservoir. Changes in Corps regulations and community needs necessitate a revision to this Master Plan.

The Master Plan revision will classify the government lands around the Reservoir based on environmental and socioeconomic considerations, public input and an evaluation of past, present, and forecasted recreation trends. This update seeks to balance recreational development and use with the goal of conservation of natural and cultural resources.



Share your perspective, sign up for our mailing list, and/or let us know how you'd prefer to be involved in the Michael J. Kirwan Dam and Reservoir Master Plan Update by emailing us at [celrp-pa@usace.army.mil](mailto:celrp-pa@usace.army.mil).



### About the Reservoir

Authorized by the River and Harbors Act of 1958, Michael J. Kirwan Dam and Reservoir is part of a coordinated system of reservoirs designed for flood protection and low-flow augmentation on the West Branch Mahoning River, Mahoning River, Beaver River, and upper Ohio River. Since its construction in 1966, the Dam has prevented over \$815 million in flood damages.

In addition to flood control and low-flow augmentation for water quality, the Reservoir and surrounding lands provide numerous opportunities for recreation and fish and wildlife preservation and enhancement. Most of the lands surrounding Michael J. Kirwan Dam and Reservoir are managed by the Ohio Department of Natural Resources as West Branch State Park.

### Master Plan 101

The Corps is responsible for the maintenance, restoration and stewardship of natural resources on the multipurpose reservoir projects it manages. To facilitate the management and use of these lands, a Master Plan is maintained for each reservoir.

A Master Plan is a strategic land use management document that guides the comprehensive management and development of recreation, natural and cultural resources at Corps reservoirs and provides a vision for how the Reservoir should look in the future.

The Pittsburgh District is revising the Michael J. Kirwan Dam and Reservoir Master Plan which was originally developed in 1982.





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PITTSBURGH DISTRICT, CORPS OF ENGINEERS  
WILLIAM S. MOORHEAD FEDERAL BUILDING  
1000 LIBERTY AVENUE  
PITTSBURGH, PA 15222-4186  
August 29, 2017

REPLY TO  
ATTENTION OF

Planning & Environmental Branch

Paul Barton  
Seneca-Cayuga Nation  
PO Box 452330  
Grove, OK 74345-3220

Dear Paul Barton:

The U.S. Army Corps of Engineers, Pittsburgh District, is in the process of updating the Master Plan for Michael J. Kirwan Dam and Reservoir, a project located in Portage County, Ohio. A Master Plan is a document that guides the comprehensive management and development of recreation, natural, and cultural resources at a Corps reservoir. The original Master Plan for Michael J. Kirwan Dam and Reservoir was developed in 1982. Changes in Corps regulations and community needs necessitate a revision of this outdated document.

As an Indian Nation with ties to Portage County, we would like to consult with you in order to discuss any of your interests or concerns regarding impacts to the project area and to update our site inventory. This information will enable us to make better informed decisions regarding proposed land uses and will increase our awareness of significant cultural resources that should be protected within the project area.

Should you be interested in discussing the project, we would like to propose a conference call with you, either one-on-one or in coordination with other tribal interests in the area, based on your preference. Please let us know if there is another way you would prefer to engage with us regarding this project. Ms. Andrea Carson, a Community Planner on my staff, is available at any time to discuss the project and schedule the proposed conference call ([andrea.l.carson@usace.army.mil](mailto:andrea.l.carson@usace.army.mil) or 412-395-7444).

Thank you in advance for your consideration.

Enclosed is a fact sheet and a map which provides additional information on the Master Plan and the Michael J. Kirwan Dam & Reservoir site.

Respectfully,

A handwritten signature in black ink that reads "Ryan A. Fisher".

Ryan A. Fisher  
Chief, Planning & Environmental Branch

Enclosures



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PITTSBURGH DISTRICT, CORPS OF ENGINEERS  
WILLIAM S. MOORHEAD FEDERAL BUILDING  
1000 LIBERTY AVENUE  
PITTSBURGH, PA 15222-4186  
August 29, 2017

REPLY TO  
ATTENTION OF

Planning & Environmental Branch

Dr. Brice Obermeyer  
Delaware Tribe of Indians  
1 Kellog Circle  
Emporia, KS 66801

Dear Dr. Brice Obermeyer:

The U.S. Army Corps of Engineers, Pittsburgh District, is in the process of updating the Master Plan for Michael J. Kirwan Dam and Reservoir, a project located in Portage County, Ohio. A Master Plan is a document that guides the comprehensive management and development of recreation, natural, and cultural resources at a Corps reservoir. The original Master Plan for Michael J. Kirwan Dam and Reservoir was developed in 1982. Changes in Corps regulations and community needs necessitate a revision of this outdated document.

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Thank you in advance for your consideration.

Enclosed is a fact sheet and a map which provides additional information on the Master Plan and the Michael J. Kirwan Dam & Reservoir site.

Respectfully,

A handwritten signature in black ink that reads "Ryan A. Fisher".

Ryan A. Fisher  
Chief, Planning & Environmental Branch

Enclosures



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PITTSBURGH DISTRICT, CORPS OF ENGINEERS  
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August 29, 2017

REPLY TO  
ATTENTION OF

Planning & Environmental Branch

Robin Dushane  
Eastern Shawnee Tribe of Oklahoma  
PO Box 350  
Seneca, MO 64865

Dear Robin Dushane:

The U.S. Army Corps of Engineers, Pittsburgh District, is in the process of updating the Master Plan for Michael J. Kirwan Dam and Reservoir, a project located in Portage County, Ohio. A Master Plan is a document that guides the comprehensive management and development of recreation, natural, and cultural resources at a Corps reservoir. The original Master Plan for Michael J. Kirwan Dam and Reservoir was developed in 1982. Changes in Corps regulations and community needs necessitate a revision of this outdated document.

As an Indian Nation with ties to Portage County, we would like to consult with you in order to discuss any of your interests or concerns regarding impacts to the project area and to update our site inventory. This information will enable us to make better informed decisions regarding proposed land uses and will increase our awareness of significant cultural resources that should be protected within the project area.

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Thank you in advance for your consideration.

Enclosed is a fact sheet and a map which provides additional information on the Master Plan and the Michael J. Kirwan Dam & Reservoir site.

Respectfully,

A handwritten signature in black ink that reads "Ryan A. Fisher".

Ryan A. Fisher  
Chief, Planning & Environmental Branch

Enclosures



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PITTSBURGH DISTRICT, CORPS OF ENGINEERS  
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1000 LIBERTY AVENUE  
PITTSBURGH, PA 15222-4186

August 29, 2017

REPLY TO  
ATTENTION OF

Planning & Environmental Branch

Diane Hunter  
Miami Tribe of Oklahoma  
PO Box 1326  
Miami, OK 74355

Dear Diane Hunter:

The U.S. Army Corps of Engineers, Pittsburgh District, is in the process of updating the Master Plan for Michael J. Kirwan Dam and Reservoir, a project located in Portage County, Ohio. A Master Plan is a document that guides the comprehensive management and development of recreation, natural, and cultural resources at a Corps reservoir. The original Master Plan for Michael J. Kirwan Dam and Reservoir was developed in 1982. Changes in Corps regulations and community needs necessitate a revision of this outdated document.

As an Indian Nation with ties to Portage County, we would like to consult with you in order to discuss any of your interests or concerns regarding impacts to the project area and to update our site inventory. This information will enable us to make better informed decisions regarding proposed land uses and will increase our awareness of significant cultural resources that should be protected within the project area.

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Thank you in advance for your consideration.

Enclosed is a fact sheet and a map which provides additional information on the Master Plan and the Michael J. Kirwan Dam & Reservoir site.

Respectfully,

A handwritten signature in black ink that reads "Ryan A. Fisher".

Ryan A. Fisher  
Chief, Planning & Environmental Branch

Enclosures



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PITTSBURGH DISTRICT, CORPS OF ENGINEERS  
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1000 LIBERTY AVENUE  
PITTSBURGH, PA 15222-4186  
August 29, 2017

REPLY TO  
ATTENTION OF

Planning & Environmental Branch

Nekole Alligood  
Delaware Nation, Oklahoma  
PO Box 825  
Anadarko, OK 73005

Dear Nekole Alligood:

The U.S. Army Corps of Engineers, Pittsburgh District, is in the process of updating the Master Plan for Michael J. Kirwan Dam and Reservoir, a project located in Portage County, Ohio. A Master Plan is a document that guides the comprehensive management and development of recreation, natural, and cultural resources at a Corps reservoir. The original Master Plan for Michael J. Kirwan Dam and Reservoir was developed in 1982. Changes in Corps regulations and community needs necessitate a revision of this outdated document.

As an Indian Nation with ties to Portage County, we would like to consult with you in order to discuss any of your interests or concerns regarding impacts to the project area and to update our site inventory. This information will enable us to make better informed decisions regarding proposed land uses and will increase our awareness of significant cultural resources that should be protected within the project area.

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Thank you in advance for your consideration.

Enclosed is a fact sheet and a map which provides additional information on the Master Plan and the Michael J. Kirwan Dam & Reservoir site.

Respectfully,

A handwritten signature in black ink that reads "Ryan A. Fisher".

Ryan A. Fisher  
Chief, Planning & Environmental Branch

Enclosures

# STAKEHOLDER & PUBLIC REVIEW MEETINGS

## MICHAEL J. KIRWAN DAM & RESERVOIR

### MASTER PLAN UPDATE

Wednesday, June 20th, 2018

Michael J. Kirwan Dam and Reservoir Maintenance Building, 8657 Kestrel Way, Wayland, OH 44285

## NOTES COLLECTED FROM STATIONS

### **Incorporated into the Michael J. Kirwan Dam and Reservoir Master Plan:**

- Clarification on what is authorized in Environmentally Sensitive Areas and Wildlife Management Areas – specifically in regards to further CAMBA proposals
- Further additions to Best Management Practices for Cultural Resource sites

## **APPENDIX E**

### **ENGINEER REGULATIONS, PAMPHLETS, AND MANUALS**

- E.1** ER 200-1-5, Environmental Quality – Policy for Implementation and Integrated Application of the U.S. Army Corps of Engineers Environmental Operating Principles and Doctrine, 30 Oct 2003
- E.2** ER 1105-2-100, Planning Guidance, 22 April 2000 (with Appendices D and G revised Jun 2004 and Appendix F revised Jan 2006)
- E.3** ER 1130-2-540, Environmental Stewardship Operations and Maintenance Policies, 4 Nov 2002
- E.4** ER 1130-2-550, Project Operations – Recreation Operations and Maintenance Guidance and Procedures, 15 Nov 1996 (with changes 1 Oct 1999, 1 Mar 2002, 15 Aug 2002, 30 Aug 2008, 30 Mar 2009, 30 Jan 2013, and 30 Sep 2013)
- E.5** EO 11593 – Protection and Enhancement of the Cultural Environment, 13 May 1971
- E.6** EO 11987 - Exotic Organisms (FR: 24 May 1977)
- E.7** EO 13751 - Safeguarding the Nation From the Impacts of Invasive Species (FR: 08 Dec 2016; amending EO 13112)
- E.8** Engineer Manual 1110-1-400, Engineering and Design – Recreation Facility and Customer Service Standards, 1 Nov 2004

**APPENDIX F**  
**ENVIRONMENTAL ASSESSMENT**

FINDING OF NO SIGNIFICANT IMPACT  
MICHAEL J. KIRWAN DAM AND RESERVOIR MASTER PLAN UPDATE  
OHIO RIVER WATERSHED

The US Army Corps of Engineers, Pittsburgh District (Corps) is proposing to adopt a new Master Plan as the strategic land use planning document to guide comprehensive management and development of all project recreational, natural and cultural resources at Michael J. Kirwan Dam and Reservoir in southwestern Pennsylvania. The original Master Plan (MP) was completed in 1961 and last updated in 1982. Changes in Corps regulations and community needs necessitate a revision to these Master Plans. The revised MP will replace the draft and provide a balanced, up to date management plan that follows current Federal laws and Corps regulations while sustaining natural resources and providing outdoor recreational experiences.

In compliance with the National Environmental Policy Act, the Corps prepared an Environmental Assessment (EA) that evaluated impacts to the physical environment, biological environment and community setting. The EA examines two alternatives: No Action and the preferred alternative of adopting a revised MP with a balanced conservation/recreation mix. The preferred alternative changes the land and water classifications, most notably the addition of sensitive area and water surface classifications. The revised plan also lays out future recommendations for management of both recreation and natural resources.

The No Action alternative does not meet the purpose of providing a strategic land use management plan that balances the development of recreation features with environmental stewardship practices and natural resource conservation and is in compliance with current regulations, policies and laws governing Master Plans. Under the No Action alternative, the current document would prevent a proactive approach to resource management.

I have reasonably determined that implementation of the revised Michael J. Kirwan Dam and Reservoir MP will not constitute a major Federal action significantly affecting the quality of the human environment, as defined in the Council on Environmental Quality's current regulations for implementing the National Environmental Policy Act. The preparation of an environmental impact statement is therefore unwarranted and the public interest will be best served by the implementation of the proposed action. This determination precedes the Corps of Engineer's final decision concerning this proposed action. The MP and EA will be circulated for a 30-day review period.

28 NOV 18

Date



Andrew J. Short  
Colonel, Corps of Engineers  
Commanding

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# 1 Purpose and Need

## 1.1 Introduction and Background

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

Authorized by the Flood Control Acts of 1958, Michael J. Kirwan Dam and Reservoir became operational in 1966 after a two-year construction period. It is one link in a system of 16 Flood Control Projects and provides protection for the Mahoning River Valley, Beaver, and the Upper Ohio River.

The original MP was completed in 1961 and last updated in 1982. Changes in Corps regulations and community needs necessitate a revision. The revised MP will replace the former version and provide a balanced, up to date management plan that follows current Federal laws and Corps regulations while sustaining Michael J. Kirwan Dam and Reservoir's natural resources and providing outdoor recreational experiences. The revised MP applies changes to the land and water classifications and lays out future recommendations for management of both recreation and natural resources.

### 1.1.1 Land Allocations and Classifications

As part of updating the MP, land use classifications will be updated to ensure consistency with the Project's authorized purpose. Land allocations identify the authorized purposes for which Corps' lands were acquired. There are four categories of allocation:

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

referred to as separable mitigation lands. Lands in this allocation can only be given a land classification of “Mitigation”.

Land classifications indicate the primary use for which Project lands are managed.

Classifications provide for development and resource management consistent with authorized purposes and other Federal laws. The previous MP uses an obsolete classification scheme that has been rectified in this document to meet current standards. The system for land classification has been realigned to meet current standards.

#### *Project Operations*

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

#### *High Density Recreation*

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

#### *Environmentally Sensitive Areas (ESAs)*

This classification consists of areas where scientific, ecological, cultural, or esthetic features have been identified. Development of public use on lands within this classification is normally prohibited to ensure that these sensitive areas are not adversely impacted. Agricultural uses are not permitted on lands with this classification.

#### *Multiple Resource Management Lands*

This classification includes lands managed for one or more of the following activities:

- Low Density Recreation. These lands are designated for dispersed and/or low-impact recreation use. Development of facilities on these lands is limited. Emphasis is on providing opportunities for non-motorized activities such as walking, fishing, hunting, or

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

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

### *Water Surface*

There are four possible sub-classifications:

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

## **1.2 Project Area**

The Project area is defined as the land held by the Corps in fee at Michael J. Kirwan Dam and Reservoir, located in the Ohio River watershed of southwestern Ohio. Michael J. Kirwan Dam and Reservoir is located on Mahoning Creek in Portage County. It encompasses approximately 6,326.13-acres that will be covered by the revised MP. There are 27.26 flowage acres. A project area map is located in Appendix B, Plate 1.

### **1.3 Purpose and Need**

A MP conceptually establishes and guides the orderly development, administration, maintenance, preservation, enhancement, and management of all natural, cultural, and recreational resources of Corps lands. The purpose is to provide a strategic land use management plan that balances the development of recreation features with environmental stewardship practices and natural resource conservation in compliance with current regulations, policies and laws governing MPs. The original 1961 draft MP focused on construction and development recommendations for recreation areas. A 1982 revision updated data on existing conditions, maintenance, and expansion of recreational facilities. The 1982 MP no longer serves its intended purpose because of substantial changes to the Project, regional demographics, and surrounding land usage. The Corps has also updated its policies directing the development and implementation of MPs (most notably in EP-1130-2-550 Change 5, dated 30 January 2013), which includes updating the categories of land classifications used to define project lands.

The need for the MP update was determined by an evaluation of the existing document that identified a number of deficiencies that no longer made it a viable document. There have been significant changes in regional natural resources management, including: the naming of special status species, competing interests for resources, natural resource extraction, invasive species, and development of state wildlife plans. Changes in area demographics and culture have also changed the types of recreation demanded. Philosophical changes in agency management have occurred, with the most notable change being the 2009 establishment of a Non-Recreational Outgrant Policy that altered permitted land use on all Corps properties. Significant data gaps were also identified. In order to meet these new directives and comply with Corps policy requiring regular updates to MPs, the District proposes to adopt the revised Michael J. Kirwan Dam and Reservoir MP with updated land classifications and a revised set of recommendations for future developments and improvements.

This Environmental Assessment (EA) addresses the proposed adoption and implementation of the revised Michael J. Kirwan Dam and Reservoir MP – Balanced Conservation/Recreation Development. It analyzes potential impacts of implementing the MP upon the natural, cultural, and human environment. The EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended; regulations of the Council on Environmental Quality (CEQ); and Corps regulations, including Engineer Regulation 200-2-2, Procedures for Implementing NEPA. The EA references the 2018 Michael J. Kirwan Dam and Reservoir MP.

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

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

#### **1.4 Prior NEPA Documentation**

*A Finding of No Significant Impact, Operation and Maintenance of the Michael J. Kirwan Dam Dan Reservoir, Portage County, Ohio* (1985), was prepared in conjunction with an Environmental Assessment addressing Project operations management.

## **2 Alternatives**

This EA examines two alternatives; a preferred alternative of adopting a revised MP with an emphasis on a balanced conservation/recreation mix (40%/60%) and a No-Action Alternative in which the current MP would continue to guide operations and management.

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

### **2.1 No Action**

Inclusion of the No-Action Alternative is prescribed by CEQ regulations and serves as the baseline against which Federal actions can be compared. Under this alternative, the District would not approve the adoption or implementation of a revised MP and would not meet current regulations or goals to regularly update a master planning document. The 1982 MP would

continue to provide the only source of comprehensive management guidance; however, information provided in the 1982 plan is out of date and no longer adequately addresses the needs of the District, other management partners, or users of Michael J. Kirwan Dam and Reservoir. Furthermore, the 1982 MP does not include the revised land classifications in accordance with current Corps regulations (See Chapter 3.2). Retaining the 1982 MP would prevent a proactive approach to managing Michael J. Kirwan Dam and Reservoir. Future major developments or resource management policies would require approval on a case-by-case basis without the benefit of evaluation in the context of an overall plan.

## 2.2 Revised MP – Balanced Conservation/Recreation Mix

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

The management recommendations were developed through review of public comments, interviews, workshops, and the completion of surveys. These management recommendations are non-regulatory. Development of new, modern facilities would potentially include partnering with stakeholders to share in the cost, operation and maintenance of any such asset.

**Table EA- 1. Existing and Proposed Land Classification Categories and Acreages\***

Existing Land Use Class	Proposed Land Use Class	Proposed Land Use Acres
Esthetic Management	Project Operations	144.62
Game Management	Environmentally Sensitive Areas	303
Natural Area	MRML Low Density Recreation	1,693.71
	MRML Wildlife Management	1,251.55
Wild Area	High Density Recreation	252.06
<b>TOTAL</b>		<b>3,644.94</b>

*\*Calculated from GIS overlays. Acreages presented are for planning purposes only and not intended for real estate or survey use.*

Further detail of the recommendations is available within the MP (Section 7). Below are the recommendations, grouped by similar impact types:

### *Terrestrial recreation development:*

- Continuously work to develop and connect regional multi-use trails – Provide trail opportunities of all types, with minimum adverse impacts and maximum benefits for natural, cultural, and community resources
- Buckeye Trail – Design, construct, and maintain a loop all the way around the project

- Design, construct, and maintain CAMBA proposed multi-use trails on south side of project
- Provide a connection between recreation facilities and cultural heritage sites such as the Frederick Wadsworth House
- Help maintain cultural traditions and improve or develop unique historic, artistic, and heritage sites

#### *Aquatic recreation development*

- Provide support for water trails
  - recreational corridors for canoes, kayaks, and small motorized watercraft, includes access points, boat launches, day use areas and sometimes overnight camping locations on the four islands in the lake
- Provide access to, and promote awareness of, opportunities for public participation and enjoyment of recreational fishery resources
- Support outreach programs designed to stimulate angler participation in the conservation and restoration of aquatic systems
- Develop and encourage partnerships with the private sector to advance aquatic resource conservation and enhance recreational fishing opportunities

#### *Habitat modifications*

- Improve habitat and water quality to support viable, healthy, and, where feasible, self-sustaining recreational fisheries
- Manage wildlife and wildlife habitats on public lands in a manner that expands and enhances hunting opportunities
- Prepare for increase in non-recreational requests (e.g. natural gas transmission lines)
  - Coordinate early to communicate Corps land use policies, identify ESAs and FWSs, develop mitigation plans
- Continuously monitor for invasive species
  - Focus on aquatic plants: Hydrilla is now present in the Ohio and Monongahela rivers, as well as most PA state parks
- Focus on conservation and preservation
  - Continuously work to identify Environmentally Sensitive Areas (ESAs) and Fish and Wildlife Sanctuaries (FWSs)
  - Protect open space and wildlife habitat
  - Identify opportunities for increasing regional greenways

#### *Maintenance and visitor safety improvements*

- Integrate emergency management
  - Improve communications

- Support rescue efforts and training
- Aid visitors and responders with improved signs (i.e. body of water, river mile, etc.)
- Consider response efforts in recreation resource development
- Signage improvements
- Maintenance of existing park and recreation facilities
  - Road repair and improvement
  - Identify partnering opportunities
  - Identify project areas with low use and degraded facilities; divest when appropriate

### *Outreach*

- Continuously improve, develop, and support educational programs to support green-collar workers
  - Provide venue for environmental education
  - Provide opportunities for renewable energy
- Continuously work to stay engaged and further coordination efforts with external partners, including the Ohio Department of Natural Resources, Portage County, Ohio Buckeye Trail Association, West Branch State Park Marina, and other civic, conservation, and recreational groups

### 3 Affected Environment

#### 3.1 Physical Environment

##### 3.1.1 Hydrology and Floodplains

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

##### 3.1.2 Water Quality

See MP section 2.3.7 Water Quality & Sedimentation for information.

##### 3.1.3 Air Quality

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

**Table EA- 2. National Ambient Air Quality Standards (NAAQS) and air quality status (either attained on non-attained) for Portage County as of Feb. 13, 2017.**

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

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

### **3.1.4 Climate**

The climate in the project area is temperate and humid, with an appreciable seasonal variation in temperature. It is geographically in a region of variable frontal activity, being subjected to alternate polar and tropical air-mass invasion. The prevailing wind direction is from the west or has a westerly component. Summer precipitation is usually associated with thunderstorms resulting from convective activity, and is generally confined to small areas, with short durations and high intensities. In the late fall, winter, and early spring months, precipitation is usually the result of the passage of low-pressure system over the basin. Occasional stagnation and stationary development produce prolonged precipitation. Snowmelt is frequently a contributing factor to winter and early spring flood runoff. There is a possibility of serious flooding during any season of the year. However, the frequency of flooding is highest during the late winter-early spring season.

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

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

### **3.1.5 Geology, Topography and Soils**

See MP section 2-2 for information.

### **3.1.6 Noise**

The area surrounding Michael J. Kirwan Dam and Reservoir is mainly rural, and there are no apparent intrusive noise sources from around the lakes. At the lakes themselves, noise sources include water passing through the outflow, watercraft motors, vehicular traffic, and human voices at areas of concentrated use (for example, day use areas and campgrounds). Noises along the creek vary as a function of proximity to human noise sources, as sections by more populated areas or transportation corridors can have substantial noise from those sources.

### **3.1.7 Hazardous Materials**

The EPA's Envirofacts website lists no specific sites within close proximity to Michael J. Kirwan Dam and Reservoir. As there are no specific plans to develop federal lands and adjacent properties are undeveloped, the potential for discovery of hazardous materials is remote. In the

event that any developments on Corps property are proposed, however, Federal law requires site-specific due diligence on a case-by-case basis before development can occur. Hazardous materials are regulated by the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act, Oil Pollution Act, Toxic Substances Control Act, and related guidelines established by the Corps and Ohio. Any change in the storage or use of hazardous materials must comply with these regulations.

### 3.2 Biological Environment

#### 3.2.1 Fish and Wildlife

See MP section 2.3.1 for information.

#### 3.2.2 Terrestrial Vegetation and Land Cover

Lands at Michael J. Kirwan Dam and Reservoir are predominately vegetated by deciduous forest. The following table lists the vegetation type and amount of acres at each project.

**Table EA- 3. Terrestrial Vegetation Types**

Predominant Vegetation Type	Acres
Herbaceous	3479
Deciduous Forest	31,088
Deciduous Shrub land	849
Evergreen Forest	290
Hay/Pasture	10,908
Mixed Deciduous-Evergreen Forest	14

Land Cover within the watershed consists of a variety of forested, agricultural, and developed areas. A land cover map is located in Appendix A, Plate 9.

#### 3.2.3 Threatened and Endangered Species

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

#### 3.2.4 Invasive Species

See MP section 2.3.4 for information.

#### 3.2.5 Wetlands

See MP section 2.3.6 for information.

### 3.3 Community Setting

#### 3.3.1 Cultural Resources

See MP section 2.4 for information.

### **3.3.2 Socio-Economic Profile**

See MP sections 2.5 and 2.6 for information.

### **3.3.3 Recreation**

See MP section 2.7 for information.

### **3.3.4 Transportation**

Located approximately 90 minutes away from Downtown Pittsburgh, Michael J. Kirwan Dam and Reservoir is bounded by several roads including Ravenna-Warren Road, Wayland Road, and Rock Spring Road. The Ohio Turnpike is 4 miles from the Project. Developed roads and parking lots exist on project lands. These roads and parking lots are confined to areas that support developed recreational sites. The undeveloped portions of the project have limited transportation infrastructure. The transportation corridor map is in Appendix A, Plate 11.

## **4 Environmental Consequences**

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

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

The following table presents a summary of potential impacts. Impacts are described in detail by environmental media category:

**Table EA- 4. Summary of Impact Analysis for Alternatives**

<b>Resource</b>	<b>No-Action Alternative</b>	<b>Balanced Conservation/Recreation</b>
<i>Physical Environment</i>		
Hydrology & Flood Plains	No Impact	No Impact
Water Quality	Potential long-term degradation from outdated planning	No Impact
Air Quality	No Impact	No Impact
Climate	No Impact	No Impact
Geology, Topography, & Soils	No Impact	No Impact
Noise	No Impact	No Impact
Hazardous Materials	No Impact	No Impact
<i>Biological Environment</i>		
Fish & Wildlife	Potential long-term degradation from outdated planning	Beneficial Impact
Terrestrial Vegetation & Land Cover	Potential long-term degradation from outdated planning	Beneficial Impact
Threatened & Endangered Species	No Impact	No Impact
Invasive Species	No Impact	Beneficial Impact
Wetlands	No Impact	No Impact
<i>Community Setting</i>		
Cultural Resources	No Impact	No Impact
Socioeconomic Profile	Potential long-term degradation from outdated planning	No Impact
Transportation	No Impact	No Impact
Recreation	Minimal Adverse Impact	Beneficial Impact

#### **4.1 Physical Environmental Impacts**

##### **4.1.1 Hydrology and Floodplains**

*No-Action, Balanced Conservation/Recreation.* Neither alternative would have a significant impact to hydrology or floodplains. In order to meet the missions of the Corps and the other management partners, many developed sites and facilities are located within the floodplain. Most of these structures have been designed to withstand and not interfere with the conveyance of floodwaters. This is important, as periodically it becomes necessary for these lands to be flooded to achieve the Corps' flood risk management purpose. All actions occurring within floodplains must be consistent with EO 11988, Floodplain Management, and related Corps policy. Any construction activities would not impede the flood storage capacity of the Project. This would include improvements to existing recreation facilities, addition of buildings/facilities to previously disturbed areas, addition or improvement to boat launches, and maintenance dredging and disposal of sediment.

#### **4.1.2 Water Quality**

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

**Balanced Conservation/Recreation.** No significant impact to water quality is anticipated. For the known proposed activities noted in Section 2 (terrestrial recreation development, aquatic recreation development, habitat modifications, maintenance and safety improvements, and outreach) overall water quality benefits are expected. Some construction activities, such as trail construction, may have temporary adverse impacts to water quality. However, these impacts would be minimal as construction would be done with an approved erosion and sedimentation plan, as needed. Clean Water Act permits would be completed, as needed, when project specific information is obtained. Removal of invasive species would only be undertaken using herbicides approved for aquatic use and in approved doses to ensure impacts to water quality are avoided. Habitat improvement projects and thoughtful management of non-recreational requests are expected to have direct benefits to water quality. Additionally, increased outreach and public education regarding water resource vulnerability can increase awareness and sensitivity, as well as community feelings of responsibility, ownership, and protection of the resource.

#### **4.1.3 Air Quality**

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

#### **4.1.4 Climate**

**No-Action, Balanced Conservation/Recreation.** None of the alternatives will significantly impact current or future expected climate conditions.

#### **4.1.5 Geology, Topography and Soils**

**No-Action, Balanced Conservation/Recreation.** No impacts will occur to geology, topography or soils from either alternative.

#### **4.1.6 Noise**

**No-Action, Balanced Conservation/Recreation.** Neither of the alternatives would have a significant impact on existing noise levels. Construction activities and habitat maintenance activities could have local, temporary impacts. Additionally, trail development could lead to increased human access and noise to new areas of the Project, particularly any heritage trail

development. By avoiding any known sensitive areas, such as nesting sites or culturally important quiet areas, and using adaptive management as needed to correct any unforeseen impacts, no significant impact to noise levels is expected.

#### **4.1.7 Hazardous Materials**

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

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

## **4.2 Biological Environmental Impacts**

### **4.2.1 Fish and Wildlife**

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

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

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

### **4.2.2 Terrestrial Vegetation and Land Cover**

*No-Action.* No significant impact to vegetation and land cover would occur. The Corps would continue to operate the Project but without the benefit of an updated MP as guidance for

management decisions. Without an updated MP, Project-wide consideration of individual actions may be lost, leading to an overall degradation of the land over time.

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

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

#### **4.2.3 Threatened and Endangered Species**

***No-Action, Balanced Conservation/Recreation.*** Neither of the alternatives would have any effect on threatened or endangered species. Best management practices, to include seasonal restrictions on vegetation removal, would insure that no impact would occur. Any recommended development actions that may impact protected species would require consultation with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act once site specific details are available.

#### **4.2.4 Invasive Species**

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

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

#### **4.2.5 Wetlands**

***No-Action, Balanced Conservation/Recreation.*** Neither alternative would impact wetlands. Wetlands are regulated under Section(s) 401 and 404 of the Clean Water Act. Section 401 Water Quality Certification ensures compliance with water quality standards. Section 404 regulates activities within Waters of the U.S., which includes Michael J. Kirwan Dam and Reservoir and their surrounding tributaries. Further direction is provided by EO11990: Protection of Wetlands and related Corps regulations. Recommendations included within the Preferred Alternative will need to comply with Clean Water Act regulations and permitting prior to initiation of construction. Any proposed development would avoid impacting wetlands. If wetland impacts could not be avoided, further analysis and coordination would be needed for that action.

### **4.3 Community Setting Impacts**

#### **4.3.1 Cultural Resources**

*No-Action.* The No-Action Alternative would have “No Effect” on historic or archeological resources.

*Balanced Conservation/Recreation.* Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations 36 CFR Part 800 require Federal agencies to take into account the effect of an undertaking on historic and archeological resources if that Project is under the direct or indirect jurisdiction of the agency or has been licensed or assisted by that agency. The recreation recommendations contained within the Low- and High-Density Development alternatives would include site specific coordination in accordance with the Section 106 process. The Preferred Alternative would also have a beneficial impact on cultural resources by allowing these locations to be managed accordingly. Development of heritage trails would occur in such a way as to protect sensitive resources and would use adaptive management as needed to correct any unforeseen impacts. No significant impact to cultural resources would be expected

#### **4.3.2 Socio- Economic Profile**

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

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

#### **4.3.3 Transportation**

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

#### **4.3.4 Recreation**

*No-Action.* Although maintenance of current recreational facilities would continue under the No-Action Alternative, continued use of the existing MP would not accurately reflect the current status of facilities or existing and future recreational needs, which would impact the recreation activities within the project area. The Corps would continue to operate the Project but without the benefit of an updated MP as guidance for management decisions. Without an updated MP, it

is possible that Project-wide consideration of individual actions may be lost, leading to an overall degradation of the land and water resources over time.

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

#### **4.4 Cumulative Impacts**

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

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impacts of activities in and around Michael J. Kirwan Dam and Reservoir. Past actions include the construction and operation of the reservoir and the construction of the surrounding recreation areas. Concurrent regional development included construction of residential, commercial, and industrial facilities throughout the region. All of these developments have had varying levels of adverse impacts on the physical and natural resources in the region. Many of these developments, however, have had beneficial impacts on the region's socioeconomic resources. In addition, many of the historic impacts have been offset throughout the years by the resource stewardship efforts of the District, the Ohio Division of Natural Resources.

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

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

Under the No-Action Alternative (baseline conditions), project operations would continue, somewhat inefficiently, using out-of-date guidance that is not agile and slow to respond to potential environmental changes. Consequently, threats such as invasive species could establish prior to detection and remediation, potentially harming local ecosystems in the process. Existing recreational activities would continue, but no new types would be generated. Modernized

emergency response systems would not be implemented, thus leaving safety degraded. No new visitors who would otherwise be a benefit for the local economy would be attracted.

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

## 4.5 Compliance with Environmental Statutes

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

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

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

## 5 Coordination and Public Involvement

Agency and public involvement was initiated in 2017, when the District published notices announcing Plan to revise the MP. This notice was followed by public comment periods, agency meetings, and additional public open houses. These public involvement activities and comments are described in detail in section 6, Agency and Public Coordination of the MP and Appendix A, Agency and Public Coordination.

The Michael J. Kirwan Dam and Reservoir MP, Environmental Assessment, and draft Finding of No Significant Impact will be circulated for a 30-day public review period.

## **6 Conclusion**

The Conservation/Low-Density Development Alternative meets currently foreseeable recreation and environmental stewardship needs and addresses environmental issues, with no significant environmental impacts anticipated. The recommended alternative also brings the MP into compliance with updated Corps regulations. An Environmental Impact Statement is not required and a Finding of No Significant Impact (FONSI) will be prepared.