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 project recreational, natural, and cultural resources throughout the life of each water resource project, anticipating what could and should happen at a Corps project, while remaining flexible enough to address changing conditions.

The primary goals of the Michael J. Kirwan Dam and Reservoir (Project) Master Plan, revised in 2018, are: 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.

Significant changes made to this Master Plan include new land classifications, recommended best management practices for potential threats such as oil and gas development and invasive species, and resource objectives that will guide the management of Michael J. Kirwan Dam and Reservoir into the next 20 years. A spatial analysis of land-use was conducted which determined that 40 to 60 percent of project land fell under conservation/recreation. Therefore, we concluded that of the five development concepts, Michael J. Kirwan Dam and Reservoir falls under a Conservation/Recreation Mix Development Concept framework.
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</tr>
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<td>62</td>
</tr>
</tbody>
</table>

Appendix A: Applicable Public Laws and Federal Statutes
Appendix B: Map Plates
Appendix C: Design Memorandums/Studies/Contracted Work
Appendix D: Summary of Public Comments
Appendix E: Engineer Regulations, Pamphlets, and Manuals
Appendix F: Programmatic Environmental Assessment
1. Project Authorization

The construction of 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

<table>
<thead>
<tr>
<th>Operating Purpose</th>
<th>Authority</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood Control</td>
<td>Flood Control Act of 1944</td>
<td>PL 78-534</td>
</tr>
<tr>
<td>Fish and Wildlife</td>
<td>Fish and Wildlife Coordination Act of 1934 (as amended)</td>
<td>PL 85-624</td>
</tr>
</tbody>
</table>

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 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

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

The Project consists of a total of 6,326.13-acres, including flowage easement. Near the dam, the Corps maintains 420-acres of public recreational facilities, including a visitor 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 Ohio Department of Natural Resources (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

<table>
<thead>
<tr>
<th>Grantee</th>
<th>Type</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio Department of Natural Resources (Division of Wildlife)</td>
<td>Wildlife</td>
<td>1,251.55</td>
</tr>
<tr>
<td>Ohio Department of Natural Resources (Parks and Watercraft)</td>
<td>Recreation/Water</td>
<td>4,627.32</td>
</tr>
</tbody>
</table>

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

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

### 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>
<thead>
<tr>
<th>Development Concept</th>
<th>Conservation Percentage</th>
<th>Recreation Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation Intensive</td>
<td>0-10</td>
<td>90-100</td>
</tr>
<tr>
<td>Recreation Weighted</td>
<td>10-40</td>
<td>60-90</td>
</tr>
<tr>
<td>Conservation/Recreation Mix</td>
<td>40-60</td>
<td>40-60</td>
</tr>
<tr>
<td>Conservation Weighted</td>
<td>60-90</td>
<td>10-40</td>
</tr>
<tr>
<td>Conservation Intensive</td>
<td>90-100</td>
<td>0-10</td>
</tr>
</tbody>
</table>

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 train 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

<table>
<thead>
<tr>
<th>Management and Development Activity</th>
<th>Five-year</th>
<th>Ten-year</th>
<th>Desired State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory natural and cultural resources</td>
<td>Initial description of resources provided</td>
<td>Operational Geospatial Data Base for Natural and Cultural Resources developed</td>
<td>Completed and maintained biological/cultural resource inventory and associated management plans</td>
</tr>
<tr>
<td></td>
<td>Operational Management Plan updated</td>
<td>Information within the database registered with SHPO</td>
<td></td>
</tr>
<tr>
<td>Identify threats (i.e. erosion, terrestrial &amp; aquatic invasive species)</td>
<td>Best Management Practices researched</td>
<td>Ongoing execution of Mitigation Plan is occurring</td>
<td>Conservation and enhancement of Project land</td>
</tr>
<tr>
<td></td>
<td>Mitigation Plan established in order to avoid, minimize, and mitigate impacts to natural and cultural resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achieve and maintain desired natural and cultural resource conditions</td>
<td>Specific conservation organizations (federal and state agencies, academia, non-profits) engaged</td>
<td>Working relationships with federal, state, academia, and NGOs have been utilized to achieve these conditions</td>
<td>Increased stakeholder buy-in and protection of the resources in and surrounding the Project</td>
</tr>
<tr>
<td></td>
<td>Project staff are trained on proper resource management and research techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Available skill sets and equipment across Projects are leveraged</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New equipment that can be used at multiple lakes has been acquired</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual Work Plans implemented</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual working meetings with partners are being held</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Goal 2:** Cultivate volunteers, public-private partnerships, and grants

<table>
<thead>
<tr>
<th>Management and Development Activity</th>
<th>Five-year</th>
<th>Ten-year</th>
<th>Desired State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partnering for a shared public land management ethic</td>
<td>Opportunities with community action groups, local recreational clubs, and other Corps resources (such as CAMBA, National Guard) are initiated</td>
<td>Appropriate MOU/MOA(s) with land management partners are established</td>
<td>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</td>
</tr>
<tr>
<td>Establishing the right partnership, at the right place, at the right time</td>
<td>Educational programs (green-collar development) are developed and supported</td>
<td>Seasonal natural resources survey crews are coming to the Project</td>
<td>Partners, volunteers, and interns are augmenting Project staff responsibilities to further protect and enhance natural and cultural resources</td>
</tr>
<tr>
<td>Volunteers are working at the Visitor Center</td>
<td>Student Conservation Association (SCA) has established relationship with the Project</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

US Army Corps of Engineers  
Pittsburgh District  
Michael J. Kirwan Dam and Reservoir  
Master Plan
**Goal 3:** Provide safe, memorable connections as part of multiple destination points

<table>
<thead>
<tr>
<th>Management and Development Activity</th>
<th>Five-year</th>
<th>Ten-year</th>
<th>Desired State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rangers safety</td>
<td>Operational personal hand held communications (e.g., radio, walkie-talkie, government issued cell phones) have been acquired for rangers</td>
<td>Enhanced security features, such as video surveillance systems, a panic button, bullet proof glass, and an emergency exit are installed at the Visitors Center and throughout the Project</td>
<td>Rangers are working in a safe environment</td>
</tr>
<tr>
<td></td>
<td>Improved communication with local Emergency Responders</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volunteer dispatchers are placed at the Visitor Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visitor safety</td>
<td>Consistent visitor assistance experience (playground inspections, boat patrol manual) ensured</td>
<td>Regular maintenance programs established</td>
<td>Low chances of incidents and quick response times for emergency personnel</td>
</tr>
<tr>
<td></td>
<td>Emergency management partners (Water Safety Council) actively engaged</td>
<td>Public emergency call out systems are located at the dam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emergency groups practice emergency safety at the Project on a regular basis</td>
<td>PSAs with low use and degraded facilities have been identified</td>
<td></td>
</tr>
<tr>
<td>Connect with other District lakes and locks</td>
<td>Joint ventures with other locks and lakes have been explored</td>
<td>Project staff is knowledgeable on operational/general information at other projects and locks and dams, cooperation is improved</td>
<td>Public is aware of the Corps recreational facilities at multiple projects</td>
</tr>
<tr>
<td></td>
<td>Brochures and opportunities for other projects are made available at the Visitors Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other recreational activities on the rivers are promoted (e.g. Lock Fest)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serve as part of multiple destination points</td>
<td>Serving as leaders in local Tourist Promotion Bureaus, Chambers of Commerce, and Regional Planning Commissions</td>
<td>Access points to regional trails have been provided and promoted (e.g. Mahoning River Water Trail, Buckeye Trail)</td>
<td>User groups from regional area are coming to the Project</td>
</tr>
<tr>
<td></td>
<td>Local and regional outdoor recreation organizations have been engaged</td>
<td>The Project has been integrated into the Heritage Tourism Program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year-round recreational opportunities have been promoted</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 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

<table>
<thead>
<tr>
<th>Programming focused on activities other than fishing has been offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year-round recreational opportunities have been promoted</td>
</tr>
<tr>
<td>School groups, clubs, etc. have been reached out to and invited to the Project</td>
</tr>
<tr>
<td>Signage regarding different activity areas have been displayed around the Project (e.g. Visitor Center, Discovery Trail, and Pollinator Plot)</td>
</tr>
<tr>
<td>Project staff participated in multiple outreach events (e.g. public library, local safety days, and health fairs)</td>
</tr>
</tbody>
</table>

| Signature event hosted annually; bringing visitors to the Project |

| Visitors are aware and utilizing all of the available resources at the Project and are recreating year-round |

---

**US Army Corps of Engineers**  
**Pittsburgh District**  
**Michael J. Kirwan Dam and Reservoir Master Plan**
**Goal 4:** Leverage emerging technology to tell the Corps stories and enhance visitor experiences

<table>
<thead>
<tr>
<th>Management and Development Activity</th>
<th>Five-year</th>
<th>Ten-year</th>
<th>Desired State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess and embrace emerging technology in interpretive services capabilities</td>
<td>Utilization of wireless devices in the workplace</td>
<td>Project boundary inventory and monitoring conducted wirelessly</td>
<td>Public interaction with the Project is occurring through technology; Project staff are utilizing technology to better monitor and communicate about the Project</td>
</tr>
<tr>
<td></td>
<td>Boundaries and inventory data are in digital format</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhance public outreach</td>
<td>Interpretive programming included in every OMP Annual Update</td>
<td>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</td>
<td>Visitation is increasing due to greater public awareness of events and opportunities at the Project</td>
</tr>
<tr>
<td></td>
<td>Information and Visitor Centers are updated to reflect most current information</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regional outdoor recreation activities are promoted on social media</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sharing success stories with local news outlets in coordination with PAO</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emerging social media technologies are being utilized for promotion and public outreach</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 materials are underlain by Pennsylvanian-age bedrock at depths ranging from 60 to 175-feet.

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Scientific Name</th>
<th>Class</th>
<th>Status</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Wild Monkshood</td>
<td><em>Aconitum noveboracense</em></td>
<td>Plant</td>
<td>Threatened</td>
<td>Shaded to partially shaded cliffs, algific talus slopes, or on cool, streamside sites</td>
</tr>
<tr>
<td>Northern Long-eared Bat</td>
<td><em>Myotis septentrionalis</em></td>
<td>Mammal</td>
<td>Threatened</td>
<td>Cavities or crevices in both live trees and snags (dead trees)</td>
</tr>
<tr>
<td>Indiana Bat</td>
<td><em>Myotis sodalis</em></td>
<td>Mammal</td>
<td>Endangered</td>
<td>Roost under the peeling bark of dead and dying trees</td>
</tr>
<tr>
<td>Mitchell’s Satyr Butterfly</td>
<td><em>Neonympha mitchellii</em></td>
<td>Insect</td>
<td>Endangered</td>
<td>Restricted to rare wetlands called fens, which are low nutrient systems that receive carbonate-rich ground water from seeps and springs</td>
</tr>
<tr>
<td>Eastern Massasauga</td>
<td><em>Sistrurus catenatus</em></td>
<td>Reptile</td>
<td>Threatened</td>
<td>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</td>
</tr>
</tbody>
</table>
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) (Agrilus 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 17th 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 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 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 Club Cemetery, or “Lost Cemetery”, on the southern shore of the reservoir, adjacent to Cable Line Road near the end of Porter Road, consists of the graves of seven 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 1835-1870. Further information on the history of this particular family is available from the Portage County Historical Society and the Ohio 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 harm significant historic and/or archaeological resources. 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 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 State Registry of Archaeological Landmarks by applying the applicable nomination criteria.

No project-related construction that could affect an archaeological site determined to be significant and potentially eligible for nomination to the national or state 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 important both because of its builder and because 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**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>10,847,115</td>
<td>11,353,140</td>
<td>11,536,504</td>
<td>4.67%</td>
<td>1.62%</td>
</tr>
<tr>
<td>Portage</td>
<td>142,585</td>
<td>152,061</td>
<td>161,419</td>
<td>6.65%</td>
<td>6.15%</td>
</tr>
<tr>
<td>Mahoning</td>
<td>264,806</td>
<td>257,555</td>
<td>238,823</td>
<td>-2.74%</td>
<td>-7.27%</td>
</tr>
<tr>
<td>Trumbull</td>
<td>227,813</td>
<td>225,116</td>
<td>210,312</td>
<td>-1.18%</td>
<td>-6.58%</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>County</th>
<th>April 1, 2000 Census</th>
<th>July 1, 2010 Census</th>
<th>July 1, 2020 Projection</th>
<th>July 1, 2030 Projection</th>
<th>% Change 2000-2010</th>
<th>% Change 2000-2020</th>
<th>% Change 2000-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>11,353,140</td>
<td>11,536,504</td>
<td>11,574,870</td>
<td>11,615,100</td>
<td>4.52%</td>
<td>6.15%</td>
<td>6.58%</td>
</tr>
<tr>
<td>Portage</td>
<td>152,061</td>
<td>161,419</td>
<td>158,930</td>
<td>158,340</td>
<td>4.52%</td>
<td>6.15%</td>
<td>6.45%</td>
</tr>
<tr>
<td>Mahoning</td>
<td>257,555</td>
<td>238,823</td>
<td>224,680</td>
<td>212,240</td>
<td>-7.27%</td>
<td>-12.76%</td>
<td>-17.59%</td>
</tr>
<tr>
<td>Trumbull</td>
<td>227,813</td>
<td>225,116</td>
<td>200,840</td>
<td>193,360</td>
<td>-6.58%</td>
<td>-10.78%</td>
<td>-14.11%</td>
</tr>
</tbody>
</table>

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)

(2016 Average Annual Values)

<table>
<thead>
<tr>
<th>NAICS Industry Sector</th>
<th>Establishments</th>
<th>Employment</th>
<th>County Wage</th>
<th>OH Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, All Industries</td>
<td>293,074</td>
<td>56,308</td>
<td>$42,002</td>
<td>$47,700</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>1,571</td>
<td>156</td>
<td>$29,169</td>
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*Suppressed for Confidentiality
**Values available only as a part of national totals
<table>
<thead>
<tr>
<th>NAICS Industry Sector</th>
<th>Establishments</th>
<th>Employment</th>
<th>County Wage</th>
<th>OH Wage</th>
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</tr>
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*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)

<table>
<thead>
<tr>
<th>NAICS Industry Sector</th>
<th>Establishments</th>
<th>Employment</th>
<th>County Wage</th>
<th>OH Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, All Industries</td>
<td>4,285</td>
<td>71,885</td>
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<td>Manufacturing</td>
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<td>*</td>
<td>$58,765</td>
</tr>
<tr>
<td>Wholesale Trade</td>
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<td>*</td>
<td>*</td>
<td>$66,872</td>
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<td>Retail Trade</td>
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<td>Information</td>
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<td>Professional and Technical Services</td>
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<td>Management of Companies and Enterprises</td>
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<td>Health Care and Social Assistance</td>
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<td>Arts, Entertainment, and Recreation</td>
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<td>769</td>
<td>$12,506</td>
<td>$32,284</td>
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<tr>
<td>Accommodation and Food Services</td>
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<tr>
<td>Public Administration</td>
<td>115</td>
<td>2,696</td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

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** 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 a Visitor 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 Visitor Center. There is also interest in having Wi-Fi available at the Visitor Center and 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 6,326.13-acres, of which 3,665.11-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

US Army Corps of Engineers
Pittsburgh District
Michael J. Kirwan Dam and Reservoir
Master Plan
• 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 statues. 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 and is managed by the Pennsylvania Fish and Game Commission (PAGC) to promote healthy populations of game species. This includes multiple Game Management areas.

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

**Wildlife Management**

Proper management techniques will be applied wherever the opportunity exists to improve conditions for 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 144.62-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 252.06-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 Horsemans’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.

Visitor Center

The Visitor Center area is managed by the Corps of Engineers and consists of approximately 3.62-acres. This area contains a visitor 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

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.

**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.
- Hiking trails will be allowed in Environmentally Sensitive Areas; however, motorized or mountain bike trails will be prohibited.

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 1,693.71-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 table, 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 Tail 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

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 1,251.55-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 340 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.

• Hiking trails will be allowed in Wildlife Management Areas; however, motorized or mountain bike trails will be prohibited.

4.1.4.3 Future Recreation Areas

For Michael J. Kirwan Dam and Reservoir, there are a total of 22.53-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 Visitor 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 Visitor 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 consist 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 acres 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.

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 the Corps might require. 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 Visitor 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 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
Will be conducted in June 2018.

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);
- 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

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 Visitor Center
- Improvement of interpretive displays and interactive technologies in the Michael J. Kirwan Visitor 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

<table>
<thead>
<tr>
<th>Original</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game Management</td>
<td>Environmentally Sensitive Area</td>
</tr>
<tr>
<td>Special Preservation</td>
<td></td>
</tr>
<tr>
<td>Wild Area</td>
<td></td>
</tr>
<tr>
<td>Wetland</td>
<td></td>
</tr>
<tr>
<td>Recreation Intensive Use</td>
<td>High Density</td>
</tr>
<tr>
<td>Recreation Low Density</td>
<td>Low Density</td>
</tr>
<tr>
<td>Project Operations</td>
<td>Operations</td>
</tr>
<tr>
<td>N/A</td>
<td>Water Surface</td>
</tr>
</tbody>
</table>

Table 7-2. Summary of Land Class Changes

<table>
<thead>
<tr>
<th>Existing Land Use Class</th>
<th>Existing Land Use Acres</th>
<th>Proposed Land Use Class</th>
<th>Proposed Land Use Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game Management</td>
<td>959</td>
<td>Environmentally Sensitive Areas</td>
<td>303</td>
</tr>
<tr>
<td>Wild Area</td>
<td>1,064</td>
<td>Wildlife Management Areas</td>
<td>1,251.55</td>
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<tr>
<td>Natural Area</td>
<td>182</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Operations</td>
<td></td>
<td>Project Operations</td>
<td>144.62</td>
</tr>
<tr>
<td>Recreation</td>
<td>161.4</td>
<td>High Density Recreation</td>
<td>252.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low Density Recreation</td>
<td>1,693.71</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Future Recreation</td>
<td>22.53</td>
</tr>
</tbody>
</table>

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


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 plan 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.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.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.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.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.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 nation’s 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 **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 C

## Design Memorandums/Studies/Contracted Work

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Appendix C

US Army Corps of Engineers
Pittsburgh District
Michael J. Kirwan Dam and Reservoir
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**Location Data**

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**Photos (Construction) (pdfs of photos)**

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**Survey Data**

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**Highway Relocation**

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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.

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: What would public like?
- send out notes from this meeting
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 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,

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 trial.** 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:
  o Ex: Frederick Wadsworth House (Nears Camelsport, maybe be private property); What about the Witch’s Grave?? Dam could be considered historic, and is eligible.
  o Signage for these locations.
  o Could bring folks who visit the sites and figure out how to bring people there safely. OHC could help us with that.
  o Partner with local museums, etc.

* Due-Outs:
  o SHPO will get back to us about areas that they find as sensitive.
  o 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:
    o 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?
    o The Master Plan is the effort to capture that (for early successional species) would be under ‘habitat enhancement’.
    o 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:
    o Address vegetative management in MP.
    o 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
    o ODNR currently doing outreach with anglers & boaters to make them aware of those kinds of issues.
  • Due-Outs:
    o 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:
    o 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:
    o 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.
    o 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:
    o 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
    o USACE consider going through trail assessment process for trails where it makes sense to prohibit use of OPMD
    o For ADA – consider how we can provide an equivalent experience

– Technology on the water.
  • Potential Opportunities:
    o Keep track of, know what’s coming out.
    o 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:
    o 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.
    o If concerned about affecting wildlife, could allow during a ‘drone season’ to keep from disrupting.
    o A District found a way to allow them to circumvent the legislation. Up for review in 2018.
    o Define drone use.

– Oil & Gas Development
  • Potential Opportunities:
    o Could create exclusion areas. An important area that could shouldn’t be explored.
    o 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:
    o 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:
    o Recommend in the plan, do a scan every so many years.
    o EDDS Map – can enter as a citizen scientist.

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

– 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.
  
  o 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.
Scoping Discussion

1. **What regional needs** should the Master Plan take into consideration?
   - Watershed wide conservation
   - Industrial Heartland Trail Plan
   - Trail connections to Portage Parks and trails
   - Partner coordination with other parks

2. **What potential threats** need to be addressed in the Master Plan?
   - Invasive species - tree disease, trail erosion
   - Sustainability with maintenance, lack of funding
   - Controversy planning, Friends group

3. **What Best Management Practices** should be considered (and to what end)?
   - Check out American trails.org - they have good info on OPMD and NO rule on motorized vehicles for accessibility
   - Sustainability - alternative energy/hot water procurement

4. **What opportunities and information are we missing, what gaps do we need to fill?**
   - What is police on public foraging for wild edible?
   - What is level of impact that is acceptable?
   - What kind of resource inventory have been done/updated?

5. **What areas or resources need to be protected** for their environmental, cultural, or archaeological significance?
   - Biodiversity protection - sensitive env. areas

6. **Other comments?**
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 EMIB 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 w/ electronic mountain bike/other motorized equipment
   - Draw out other metropolitan areas (Cleveland, Akron, Columbus) to link (distantions) (webcams) WBCAMS
   - Accessibility issues for aging/disabled user groups

2. What **potential threats** need to be addressed in the Master Plan?
   - Invasive species in the public lands
   - Riparian buffer zones/watershed management
   - Sampling improvements
   - SHORELINE EROSION
   - Cultural Resource Confirmation of areas
   - Forest Health issues/Regeneration/Diversity

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
   archaeological significance?

6. Other comments?
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/

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
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.
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.

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.
DEPARTMENT OF THE ARMY
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 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,

[Signature]
Ryan A. Fisher
Chief, Planning & Environmental Branch

Enclosures
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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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Respectfully,

[Signature]

Ryan A. Fisher
Chief, Planning & Environmental Branch

Enclosures
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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.  

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Ryan A. Fisher  
Chief, Planning & Environmental Branch  

Enclosures
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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.

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Respectfully,

[Signature]
Ryan A. Fisher
Chief, Planning & Environmental Branch

Enclosures
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WILLIAM S. MOORHEAD FEDERAL BUILDING
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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.

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Respectfully,

Ryan A. Fisher
Chief, Planning & Environmental Branch

Enclosures
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.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