US Army Corps
of Engineers
Baltimore District

Appendix E
DRAFT FINDING OF NO SIGNIFICANT IMPACT AND ENVIRONMENTAL ASSESSMENT FOR THE TIOGA-HAMMOND AND COWANESQUE LAKES 2025 MASTER PLAN

TIOGA-HAMMOND LAKES
AND COWANESQUE LAKE
TIOGA COUNTY, PENNSYLVANIA

April 2025

This Environmental Assessment follows 40 Code of Federal Regulations (CFR) Parts 1500-1508, National Environmental Policy Act Implementing Regulations Revisions Phase 2 dated 2024

Prepared by: **U.S. Army Corps of Engineers, Baltimore District**
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Baltimore, Maryland 21201

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FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment for the Tioga-Hammond and Cowanesque Lakes 2025 Master Plan

Tioga County, Pennsylvania

In accordance with the National Environmental Policy Act of 1969, as amended (NEPA), and 33 Code of Federal Regulations (CFR), Part 230 (U.S. Army Corps of Engineers (USACE) Procedures for Implementing NEPA), the USACE, Baltimore District has assessed the potential environmental, cultural, and social effects of updating the Tioga-Hammond and Cowanesque Lakes Master Plan. The Tioga-Hammond Lakes project was authorized by the Flood Control Act of 1958 and constructed for the primary purpose of flood risk management. Secondary uses of the project lands and waters include recreation and environmental stewardship of natural and cultural resources. The Cowanesque Dam project was authorized by the Flood Control Act of 1958 and similarly constructed for the primary purpose of flood risk management. Secondary uses of the project lands and waters include water supply, recreation and environmental stewardship of natural and cultural resources. Implementation of the 2025 Tioga-Hammond and Cowanesque Lakes Master Plan (hereafter, "2025 Master Plan" or "Master Plan") and proposed land use changes must recognize and be compatible with the primary project purpose of flood risk management and the secondary purposes of recreation, water supply, and environmental stewardship of natural and cultural resources. The original Master Plan for the Tioga-Hammond Lakes was developed in 1974. The original Master Plan for Cowanesque Lake was developed in 1975. Those original Master Plan documents were updated in the 2002 Tioga-Hammond & Cowanesque Lakes Master Plan.

The 2025 Master Plan provides guidance for stewardship of natural resources and management for long-term public access to, and use of, the natural resources at the Tioga-Hammond Lakes and Cowanesque Lake, as well as changes to land classifications and uses of the USACE-managed lands. Land classifications are fundamental to project land management. Land classifications (Table 0-1; Table 0-2) provide for development and resource management consistent with authorized purposes and other federal laws. The Master Plan provides a comprehensive description of the Tioga-Hammond and Cowanesque Lakes projects (also, "the projects"), a discussion of factors influencing resource management and development, new resource management objectives, a synopsis of public involvement and input into the planning process, descriptions of existing development, and considerations of future development activities.

Under the No Action Alternative, USACE would take no action and continue the operation and management of the projects as outlined in the 2002 Master Plan. No new resource analysis or land classifications would occur.

The Proposed Action is to adopt the 2025 Master Plan to reflect changes in land management classifications, land and water uses, and USACE regulations and guidance that have occurred since the 2002 Master Plan. The Proposed Action includes coordinating with the public to encourage public understanding and participation. The 2025 Master Plan refines land and water use classifications to meet authorized project purposes and current resource objectives. This includes a mix of natural resource and recreation management objectives

that are compatible with regional goals established by stakeholders and USACE during the master planning process, that recognize outdoor recreation trends, and that are responsive to public comment. The Proposed Action is an administrative update and does not involve the construction of any physical projects. All future projects would be subject to further NEPA analysis once funding is available and detailed project planning and design occur. The 2025 Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years. The Proposed Action is needed as required by Engineer Regulation (ER) 1130-2-550, Recreation Operations and Maintenance Policies, and Engineer Pamphlet (EP) 1130-2-550, Recreation Operations and Maintenance Guidance and Procedures.

Table 0-1 and 0-2 identifies the land and water surface classification changes associated with the Proposed Action for the Tioga-Hammond and Cowanesque Lakes projects, respectively.

Table 0-1: Proposed Changes to Land and Water Use Classifications at Tioga-Hammond Lakes

Classification	2025 Master Plan (acres)	Description*
Project Operations	419.7	Lands are associated with the dam and spillway structures that are operated and maintained for fulfilling the flood risk management mission of the project.
High Density Recreation	194.0	Lands are currently developed for high density recreation and include boat launches, day-use areas, and campgrounds. The new criteria for this land classification includes areas developed specifically to support intensive recreation activities. This land classification has been developed to support concentrated visitation and use of the recreation facilities they host.
Multiple Resource Management Land		
Low Density Recreation	73.7	Management of this land classification calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics, while also supporting low-impact recreation opportunities such as bank fishing, hunting, hiking, wildlife viewing, and for access to the shoreline. Hunting is allowed in select areas that are a reasonable and safe distance from high density recreation areas, dam operations, and adjacent residential properties. The new land classification criteria include areas where vegetation and wildlife management may be a secondary use, but where recreation is considered the predominant use.
Wildlife Management	3593.0	Wildlife management areas are managed for generalized wildlife in consideration of the threatened and endangered species identified as potentially occurring at the Project sites. Many of these areas are also managed for vegetation to ensure quality of the habitat including removing invasive plant species to support biodiversity.
Vegetative Management	1389.9	This classification includes lands designated for stewardship of forest, prairie, and other native vegetative cover.
Water Surface (Tioga)		

Classification	2025 Master Plan (acres)	Description*
Restricted	1.12	Restricted water surface includes those areas where recreation boating is prohibited or restricted for project operations, safety, and security purposes.
Open Recreation Area	352.26	Open Recreation Area includes all water surface areas available for year-round or seasonal water-based recreation use. This change reflects new classification criteria and no actual change in water use. This area includes all water surface area other than "Restricted" or "Designated No-Wake."
Designated No-Wake	135.46	Designated No-Wake classifies all water use areas that do not allow motorized boats to produce wakes. No-Wake areas are set for public safety at facilities or if lake areas are unsafe to operate at a higher speed. This includes areas such as boat launches and shallow areas. Additionally, the Pennsylvania Fish and Boat Commission (PFBC) does not allow wakes within 100-feet of the shoreline.
Water Surface (Hammond)		
Restricted	3.52	Restricted water surface includes those areas where recreation boating is prohibited or restricted for project operations, safety, and security purposes.
Open Recreation Area	543.92	Open Recreation Area includes all water surface areas available for year-round or seasonal water-based recreation use. This change reflects new classification criteria and no actual change in water use. This area includes all water surface area other than "Restricted" or "Designated No-Wake."
Designated No-Wake	140.12	Designated No-Wake classifies all water use areas that do not allow motorized boats to produce wakes. No-Wake areas are set for public safety at facilities or if lake areas are unsafe to operate at a higher speed. This includes areas such as boat launches and shallow areas. Additionally, the PFBC does not allow wakes within 100-feet of the shoreline.
Total	6,846.7*	

**Mapping for the Master Plan update has been compiled using the best information available and is believed to be accurate. No land classifications were found within the 2002 Master Plan document and therefore are not included in this Master Plan.*

Table 0-2: Proposed Changes to Land and Water Use Classifications at Cowanesque Lake

Classification	2025 Master Plan (acres)	Description*
Project Operations	4.9	Lands are associated with the dam and spillway structures that are operated and maintained for fulfilling the flood risk management mission of the project.
Mitigation	263.3	Lands associated with mitigation projects within the project area.
High Density Recreation	224.6	Lands are currently developed for High Density recreation activities and include boat launches, day-use areas, and

Classification	2025 Master Plan (acres)	Description*
		campgrounds. The new criteria for this land classification includes areas developed specifically to support intensive recreation activities. This land classification has been developed to support concentrated visitation and use of the recreation facilities they host.
Multiple Resource Management Land		
Low Density Recreation	1.2	Management of this land classification calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics, while also supporting low-impact recreation opportunities such as bank fishing, hunting, hiking, wildlife viewing, and for access to the shoreline. Hunting is allowed in select areas that are a reasonable and safe distance from High Density Recreation areas, dam operations, and adjacent residential properties. The new land classification criteria include areas where vegetation and wildlife management may be a secondary use, but where recreation is considered the predominant use.
Wildlife Management	338.8	Wildlife management areas are managed for generalized wildlife in consideration of the threatened and endangered species identified as potentially occurring at the Project sites. Many of these areas are also managed for vegetation to ensure quality of the habitat including removing invasive plant species to support biodiversity.
Vegetative Management	234.5	Lands designated for stewardship of forest, prairie, and other native vegetative cover.
Water Surface Cowanesque		
Restricted	1.34	Restricted water surface includes those areas where recreation boating is prohibited or restricted for project operations, safety, and security purposes.
Open Recreation Area	791.8	Open Recreation Area includes all water surface areas available for year-round or seasonal water-based recreation use. This change reflects new classification criteria and no actual change in water use. This area includes all water surface area other than "Restricted" or "Designated No-Wake."
Designated No-Wake	282.46	Designated No-Wake classifies all water use areas that do not allow motorized boats to produce wakes. No-Wake areas are set for public safety at facilities or if lake areas are unsafe to operate at a higher speed. This includes areas such as boat launches and shallow areas. Additionally, the PFBC does not allow wakes within 100-feet of the shoreline.
Total	2,142.9*	

**Mapping for the Master Plan update has been compiled using the best information available and is believed to be accurate. No land classifications were found within the 2002 Master Plan document and therefore are not included in this Master Plan.*

USACE selected the Proposed Action because it meets regional goals associated with good stewardship of land and water resources, meets regional recreation goals, and allows for continued use and development of project lands without violating national policies or public laws.

USACE used the effects analysis from the Environmental Assessment (EA) and comments received from other agencies to determine whether the Proposed Action requires the preparation of an Environmental Impact Statement (EIS). This included assessment of environmental, social, and economic factors that are relevant to the recommended alternative. The Master Plan update is considered an administrative action and does not evaluate effects from project construction. Therefore, it was determined that no effects would occur to all relevant resources including water and biological resources, soils, air quality, noise, cultural resources, groundwater, utilities, recreation and land use, demographics, and traffic and transportation (Section 3 of the EA). Future projects at Tioga-Hammond and Cowanesque Lakes could result in minor effects and/or beneficial effects, which would be analyzed in future NEPA documentation associated with those individual actions.

Conclusion

All applicable laws, executive orders, regulations, and local government plans were considered in the evaluation of alternatives. Based on this report, the reviews by other federal, state and local agencies, Tribes, input of the public, and the review of my staff, it is my determination that the Proposed Action alternative would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an EIS is not required.

_____ _____

Date

Francis B. Pera
Colonel, U.S. Army
Commander and District Engineer

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
2025 Master Plan	2025 Tioga-Hammond and Cowanesque Lakes Master Plan
APHIS	Animal & Plant Health Inspection Service Wildlife Services
BMPs	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EA	Environmental Assessment
EO	Executive Order
EP	Engineering Pamphlet
ER	Engineer Regulation
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
IPaC	Information, Planning, and Consultation
MP	Master Plan
NEPA	National Environmental Policy Act
NFIP	The National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration's
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PA DCNR	Pennsylvania Department of Conservation and Natural Resources
PADEP	Pennsylvania Department of Environmental Protection
PCD	Project Construction Datum
PFBC	Pennsylvania Fish and Boat Commission
PGC	Pennsylvania Game Commission
PHMC	Pennsylvania Historical and Museum Commission
Projects	Tioga-Hammond and Cowanesque Lakes Projects
ROI	Region of Influence
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VERS	Visitor Estimation and Reporting System

INTRODUCTION

1.1 Project Background

The Tioga-Hammond and Cowanesque Lakes Projects were authorized by the Flood Control Act of July 3, 1958, in accordance with House Document 394, 84th Congress. Construction of the Tioga-Hammond and Cowanesque Lakes dams were initiated in 1971 and 1973, respectively. The Tioga-Hammond Lake project was completed in 1978 and the Cowanesque Lake project was completed in 1990. The Tioga-Hammond and Cowanesque Lakes Projects are owned and operated by the United States Army Corps of Engineers (USACE), Baltimore District. The primary purpose of the Tioga-Hammond and Cowanesque Lake projects are to provide flood risk management to communities downstream along Tioga River (Tioga-Hammond), Cowanesque River (Cowanesque), as well as the Chemung and Susquehanna Rivers, to the maximum extent possible.

The Master Plan for the projects is the strategic land use management document that guides the comprehensive management and development actions related to project recreational, natural, and cultural resources throughout the life of the project. Implementation of the Master Plan update and the proposed land and water use classifications must recognize and be compatible with the primary project mission of flood risk management.

The USACE produces and uses the Master Plan to guide the responsible stewardship of USACE-administered lands and resources for the benefit of present and future generations. The Master Plan presents an inventory and analysis of land resources, resource management objectives, land classifications, resource use plans for each land classification, current and projected park facility needs, an analysis of existing and anticipated resource use, and anticipated influences on overall project operation and management. Specific to the project, the Master Plan presents an evaluation of the assets, needs, and potential uses of the project reservoir and lands and provides direction for appropriate management, use, development, enhancement, protection, and conservation of the natural and man-made resources at the project. The Master Plan is guided by Engineer Regulation (ER) 1130-2-550 "Recreation Operations and Maintenance Policies," and Engineer Pamphlet (EP) 1130-2-550 "Recreation Operations and Maintenance Guidance and Procedures." Per guidance, USACE land and water use classifications provide for development and resource management consistent with authorized purposes and other federal Laws.

The USACE is proposing to adopt an updated Master Plan at Tioga-Hammond and Cowanesque Lakes, to reflect changes that have occurred to the project, in the region, in recreation trends, and in USACE policy since the 2002 Tioga-Hammond and Cowanesque Lakes Master Plan (hereafter "2002 Master Plan") was published. This Environmental Assessment (EA) considers the potential effects from the implementation of the 2025 Tioga-Hammond and Cowanesque Lakes Master Plan (hereafter "2025 Master Plan").

1.1.1 Project Location and Setting

The Tioga and Hammond Lakes are located within Tioga, Richmond, and Middlebury Townships in Tioga County, Pennsylvania (PA). The Tioga damsite is located on the Tioga River

approximately 1.7 miles upstream from the mouth of Crooked Creek and approximately 0.75 miles upstream from Tioga Borough. The Hammond damsite is located on Crooked Creek about 3.3 miles upstream from its mouth, opposite the Tioga damsite. The Tioga-Hammond Lakes project includes two reservoirs located near Tioga, PA, just upstream from the confluence of Crooked Creek with the Tioga River. The Tioga River empties into the Chemung River and into the Susquehanna River. A gated connecting channel joins the lakes in a saddle of the ridge separating the two lakes. A recreational lake is maintained behind each dam to provide a total of 1,176.4 acres for boating, fishing, swimming, picnicking, and camping. The Tioga Dam controls a 280-square-mile drainage basin, and the Hammond Dam controls a 122-square-mile drainage basin.

Cowanesque Lake is located in Lawrence and Nelson Townships in Tioga County, PA. The damsite is located on the Cowanesque River approximately 2 miles upstream of the confluence with the Tioga River at Lawrenceville, PA and about 12 miles south of Corning, New York (NY). A total of 3,367 acres of land were acquired for the Cowanesque Dam project. A recreational lake is maintained behind the Cowanesque Dam to provide a 1,075.6-acre lake for boating, fishing, swimming, picnicking, and camping. The Dam controls a 298-square-mile drainage basin.

Tioga and Hammond Lakes are situated in the northern part of the Allegheny Mountain section of the Appalachian Plateau physiographic province. This portion of the province is essentially a stream-eroded plateau composed of relatively flat upland areas interspersed with stream valleys that are often one thousand feet deep or more.

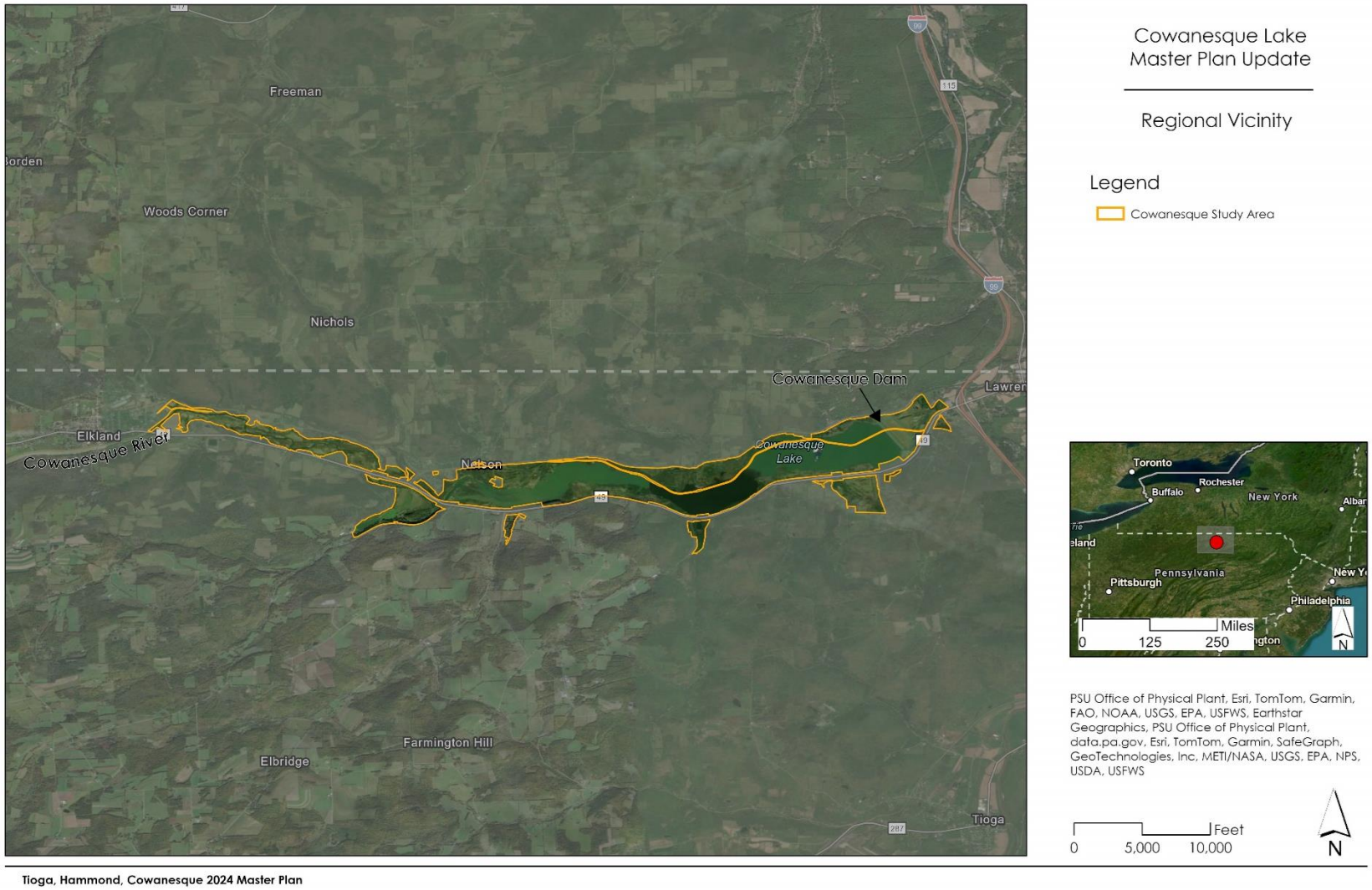
Cowanesque Lake is located in the northern PA section of the Appalachian Plateau Province. The plateau-like topography exists on shale and siltstone bedrock of the Denovian and Carboniferous Ages. This topography features low amplitude folds oriented in a northeast-southwest direction.

The average monthly high temperatures vary from 61.1°Farenheit (F) (16.2°Celsuis (C)) during the summer months to 41.4°F (5.2°C) in the winter (NOAA ACR, 2023). Mean annual precipitation in Williamsport (located approximately 70 miles south of Cowanesque Lake and 60 miles from Tioga-Hammond Lakes) is 43.52 inches, with the greatest monthly precipitation occurring from June through September (NOAA ACR, 2023). Most snowfall in the area occurs between December and February, with the area receiving on average 35.8 inches of snowfall a year.

Figure 1-1: Project Map *(Tioga-Hammond Lakes)*

Tioga, Hammond, Cowanesque 2024 Master Plan

Figure 1-2: Project Map *(Cowanesque Lake)*



Tioga, Hammond, Cowanesque 2024 Master Plan

1.1.2 Project History

The original Master Plan for the Tioga-Hammond Lakes was developed in 1974. The original Master Plan for Cowanesque Lake was developed in 1975. Those original Master Plan documents were updated in the 2002 Master Plan. The Tioga Dam embankment consists of rolled earth and rockfill and crosses the Tioga River. The embankment is 2,710 feet in length, has a top width of 25 feet, and has a maximum height of 140 feet above the streambed. At the conservation pool elevation of 1,081 feet Project Construction Datum (PCD), Tioga Lake has a water surface area of 526 acres.

The Hammond Dam embankment consists of rolled earth and rockfill and crosses Crooked Creek. The embankment is 6,450 feet in length, has a top width of 25 feet, and has a maximum height of 122 feet above the streambed. At the pool elevation of 1,186 feet PCD, Hammond Lake has a water surface area of 736 acres.

The Cowanesque Lake embankment consists of rolled earth and rockfill and crosses the Cowanesque River. The embankment is 3,100 feet in length with a maximum height of approximately 151 feet above the streambed. At the pool elevation of 1,080 feet PCD at Cowanesque Lake, the water surface area is 1,122 acres.

1.2 PURPOSE AND NEED FOR THE ACTION

The purpose of the Proposed Action is to update the Tioga-Hammond and Cowanesque Lakes Master Plan. The Proposed Action is needed as required by ER and EP 1130-2-550. The 2025 Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years and reflects changes that have occurred in outdoor recreation trends, land use, population trends, USACE management policy, and wildlife habitat at the Projects.

1.3 SCOPE OF THE EA

USACE prepared this EA pursuant to the National Environmental Policy Act of 1969, as amended (NEPA), the Council on Environmental Quality (CEQ) NEPA *Implementing Regulations Revisions Phase 2* in 40 Code of Federal Regulations (CFR) Parts 1500-1508, dated May 2024, U.S. Army Corps of Engineers Procedures for Implementing NEPA at 33 CFR Part 230, and ER 200-2-2, *Procedures for Implementing NEPA* for the civil works program. NEPA requires federal agencies to review potential environmental effects of federal actions, which includes the adoption of formal plans, such as master plans, approved by federal agencies upon which future agency actions will be based. This EA and Finding of No Significant Impact (FONSI) are separate documents that provide an analysis of potential environmental, cultural, and social effects associated with the actions in the Master Plan.

Alternatives considered within this EA focus on the proposed land and water use classifications as presented in the 2025 Master Plan and the types of future development projects that could occur within the land use classifications. This action is an administrative update and does not involve the construction of any physical projects. The EA does not consider implementation of specific projects identified within the 2025 Master Plan during the master planning process as those projects are conceptual in nature, nor does it consider specific future development opportunities for leased areas. USACE would conduct further

NEPA analysis on future projects once funding is available and detailed project planning and design occur.

1.4 COORDINATION AND PUBLIC REVIEW

USACE coordinated with agencies, organizations, and members of the public with a potential interest in the Proposed Action during the development of the 2025 Master Plan and in preparation of this EA. Appendix G of the Master Plan provides a record of public involvement and agency coordination related to this EA.

Agency coordination was conducted by USACE with the United States Fish and Wildlife Service (USFWS) through the Information for Planning and Consultation (IPaC) online system to ensure compliance with Section 7 of the Endangered Species Act (ESA), the Fish and Wildlife Coordination Act, and the Migratory Bird Treaty Act. Review was also performed by USACE staff using the PA Natural Diversity Inventory (PNDI) Conservation Explorer website to identify state and federally listed species potentially occurring in the project areas. Coordination was also carried out with the PA Department of Conservation and Natural Resources (PA DCNR). Consultation letters under Section 106 of the National Historic Preservation Act (NHPA) of 1966 were sent to the PA Historical and Museum Commission (PHMC) and tribal nations on March 5, 2024, and March 7, 2024, respectively. Coordination correspondence is included in Appendix G of the Master Plan.

The 2025 draft Master Plan, EA, and FONSI were made available for public review for a period of 30 days beginning on April 28, 2025, and ending on May 28, 2025. The draft documents were also distributed to stakeholders and agencies. Responses to public and agency comments are included in Appendix G of the Master Plan.

Information on the progress of the Master Plan and instructions on participating in the public comment process were published on the Project's web page: https://www.nab.usace.army.mil/missions/dams-recreation/master-plan-revisions/tioga-hammond-and-cowanesque-master-plan/

{This section will be updated as additional coordination and public review occur.}

2 PROPOSED ACTION AND ALTERNATIVES

2.1 DEVELOPMENT OF ALTERNATIVES

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

2.1.1 Master Planning Process

USACE guidance recommends establishing resource goals and objectives to develop, conserve, and manage the natural, cultural, and man-made resources at a project location. Goals describe the desired end state of overall management efforts, whereas objectives are concise statements describing measurable and attainable management activities that support the stated goals. Goals and objectives are guidelines for obtaining maximum public benefits while minimizing adverse effects on the environment and are developed in accordance with 1) authorized project purposes, 2) applicable laws and regulations, 3) resource capabilities and suitability, 4) regional needs, 5) other governmental plans and programs, and 6) expressed public desires.

The 2025 Master Plan establishes the following management goals for the Tioga-Hammond and Cowanesque Lakes Projects:

- **Goal A** – Provide the best management practices to respond to regional needs, resource capabilities and capacities, and expressed public interests consistent with authorized project purposes.
- **Goal B** - Protect and manage project natural and cultural resources through sustainable environmental stewardship programs.
- **Goal C** – Provide public outdoor recreation opportunities that support project purposes and public interests while sustaining project natural resources.
- **Goal D** – Recognize the unique qualities, characteristics, and potentials of the Project.
- **Goal E** – Provide consistency and compatibility with national objectives and other state and regional goals and programs.

2.1.2 Screening Criteria

For an alternative to be considered viable, it must be compatible with the primary project purpose of flood risk management. In addition, the alternative must meet management goal objectives and USACE-wide Environmental Operating Principles. Based on these criteria, this EA evaluates the No Action Alternative and the Proposed Action Alternative.

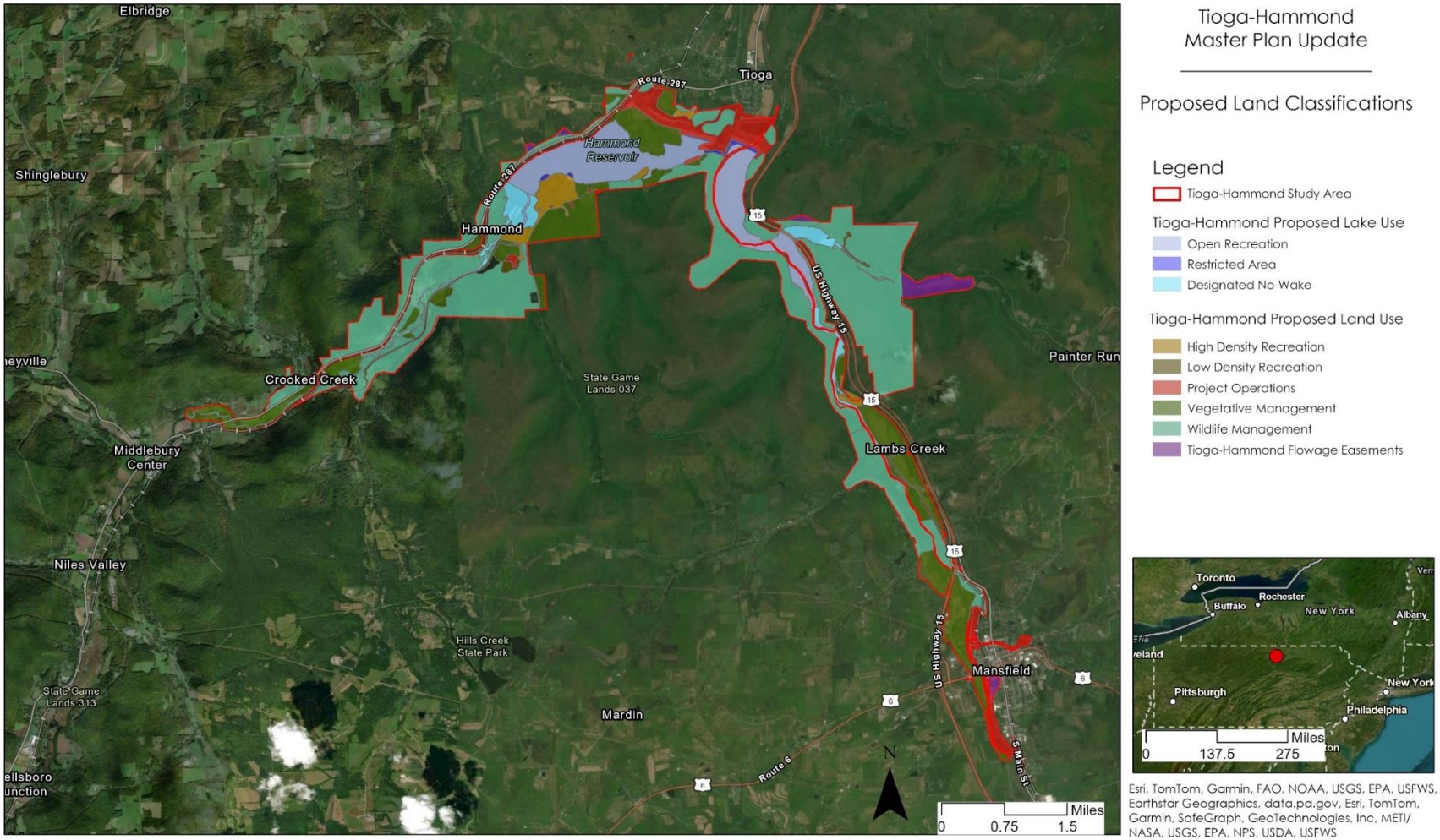
2.2 ALTERNATIVE 1: NO ACTION

The No Action Alternative serves as a basis for comparison to the anticipated effects of the other action alternatives. Under the No Action Alternative, the USACE would take no action and would not adopt the 2025 Master Plan and would continue to operate and manage the projects in accordance with the 2002 Master Plan. No land or water use classifications would be redesignated. The No Action Alternative would not meet the purpose and need for the action and would not comply with current USACE regulations and guidance.

2.3 ALTERNATIVE 2: PROPOSED ACTION (PREFERRED ALTERNATIVE)

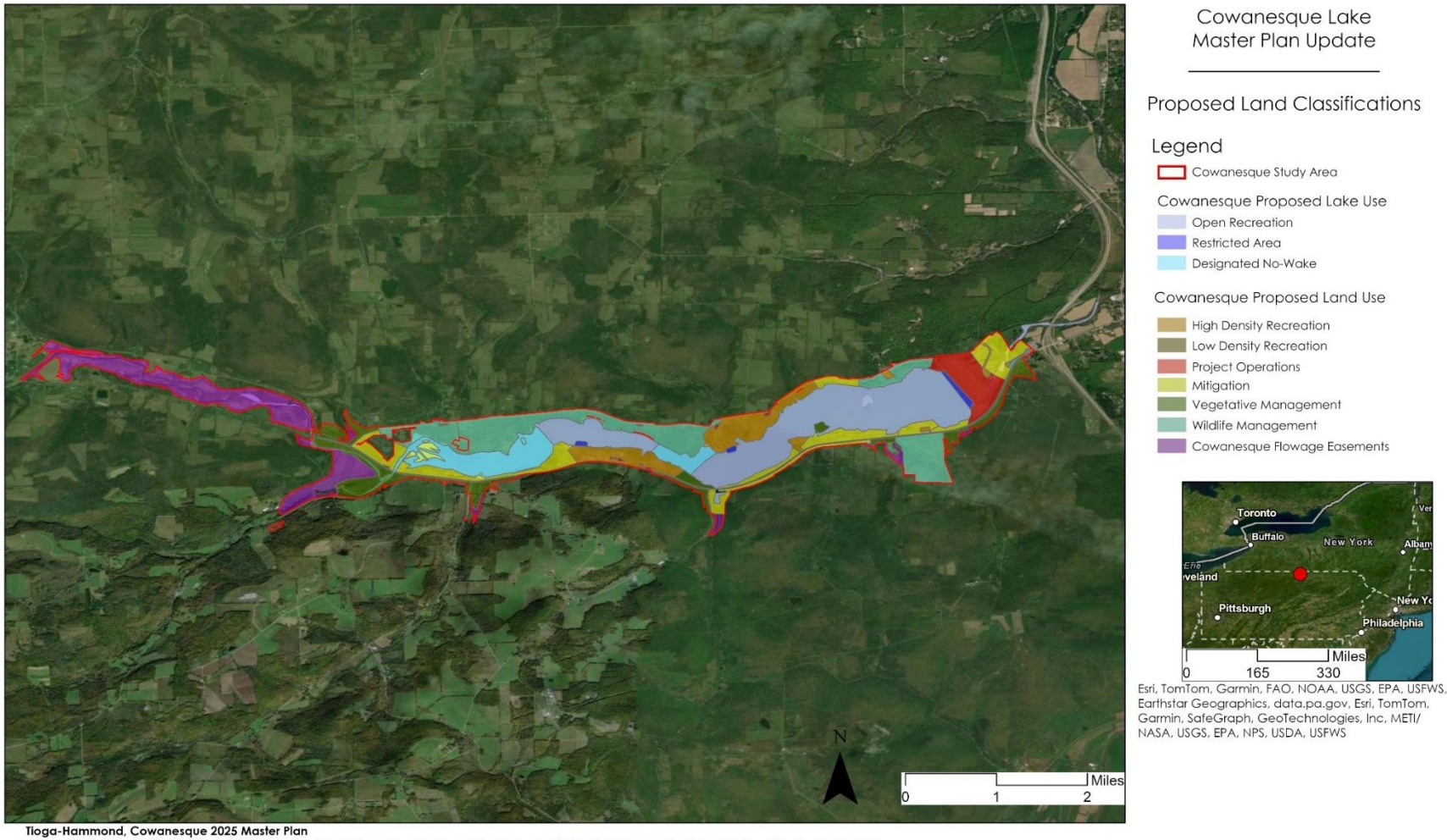
Under Alternative 2, the Proposed Action Alternative, the USACE would implement the 2025 Master Plan including the new land and water use classifications and resource objectives that reflect current and projected needs compatible with regional goals. Required changes associated with the Proposed Action include new classifications of land and water surface uses, as well as adoption of new resource management and recreation objectives. Figures 2-1 and 2-2 depict the new land use classifications proposed by the 2025 Master Plan. Tables 2-1 and 2-2 quantify the proposed land and water use classifications and provide a description of the classifications along with examples of areas or projects that adhere to each classification, as applicable. This alternative is an administrative update and does not involve the construction of any physical projects. All future projects would be subject to further NEPA analysis once funding is available and detailed project planning and design occur. The Proposed Action would update the 2002 Master Plan to be compliant with ER and EP 1130-2-55. Therefore, this alternative is the Preferred Alternative and will be carried forward as the Proposed Action.

Figure 2-1: Proposed Land and Water Use Classifications Map *(Tioga-Hammond Lakes)*



Tioga-Hammond, Cowanesque 2025 Master Plan
This map is for visualization (or illustrative) purposes; it is not based on actual property surveys; and should not be used for determination of legal property limits.

Figure 2-2: Proposed Land and Water Use Classifications Map *(Cowanesque Lake)*



Tioga-Hammond, Cowanesque 2025 Master Plan
This map is for visualization (or illustrative) purposes; it is not based on actual property surveys; and should not be used for determination of legal property limits.

Table 2-1: Proposed Land and Water Use Classifications at Tioga-Hammond Lakes

Classification	Classification Description	Tioga-Hammond Lakes Description	2025 Master Plan Area (acres)
Project Operations	All project lands required for the structure, operation, administration, or maintenance of the project that must be maintained to carry out the authorized purposes of flood risk management, water supply, and water quality.	All lands falling under this classification at Tioga-Hammond Lakes are managed by USACE. This area covers the operation of the Tioga and Hammond Dams, the connecting channel, and the surrounding area.	419.7
High Density Recreation	Lands currently developed for intensive recreation activities including boat launches, day use areas, multi-use trails, and recreation fields. Depending on available space, funding, and public demand, lands classified for High Density Recreation may support additional outdoor recreation development. These areas have been developed to support concentrated visitation and use of the recreation facilities they host.	At Tioga Lake, there is one primary area that falls under this classification: the Lambs Creek Recreation area. This facility is a day-use area located at the south end of Tioga Lake. The primary area under this classification at Hammond Lake is the Ives Run Recreation Area.	194.0
Multiple Resource Management Land (MRML)			
Low Density Recreation	Lands with minimal development or infrastructure that support passive public recreation use like fishing, hunting, wildlife viewing, hiking, or shoreline access. Future management of these lands calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics while also supporting low-impact recreation opportunities.	There are 73.7 acres of MRML – Low Density Recreation within the Tioga-Hammond project area. These areas include the Mill Cove Environmental Area (Tioga), the Lambs Creek Hike and Bike Trail area (Tioga), and the Lynn Keller, Railroad Grade, and Archery Trail areas (Hammond).	73.7

Classification	Classification Description	Tioga-Hammond Lakes Description	2025 Master Plan Area (acres)
Vegetative Management	Lands designated for stewardship of forest, prairie, and other native vegetative cover. There may be overlap with low density recreation areas and wildlife management areas, especially in some of the hiking trail areas.	Consists primarily of managed forest adjacent to the Tioga River and to the north and south of Hammond Lake.	1,389.9
Wildlife Management	Wildlife management areas overlap with multiple land classifications throughout the Project site. These areas are managed for generalized wildlife in consideration of the threatened and endangered species identified in Section 3.4. Many of these areas are also managed for vegetation to ensure quality of the habitat including removing invasive plant species to support biodiversity.	Wildlife management areas span almost the entire length of the project and comprise the largest classification at the project.	3,593.0
Water Surface			
Restricted	Restricted includes those water surface areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. These areas are marked with standard United States Coast Guard (USCG) regulatory buoys stating that boats are excluded from the area. In some instances, physical barriers may be in place on the water. Restricted areas at the project are marked by restricted signage on a cable and buoy at the intake and physical barriers and signage at the outlet structure.	Areas adjacent to the Tioga Lake and Hammond Lake dams and the connecting channel between the Tioga and Hammond reservoirs.	4.64 Tioga: 1.12 Hammond: 3.52
Designated No-Wake	No-Wake areas are intended to protect environmentally sensitive shorelines and improve boating safety near key recreation water access areas such as boat ramps.	Zones adjacent to beach and boat launch areas and smaller river channels. This also includes the Mill Cove Environmental Area at Tioga Lake and areas near Ives Run at Hammond Lake.	275.58 Tioga: 135.46 Hammond: 140.12

Classification	Classification Description	Tioga-Hammond Lakes Description	2025 Master Plan Area (acres)
Open Recreation	Includes all water surface areas available for year-round or seasonal water-based recreation use.	All water surface areas not designated as Restricted or No-Wake.	896.18 Tioga: 352.26 Hammond: 543.92
Total:			**6,846.7***

Table 2-2: Proposed Land and Water Use Classifications at Cowanesque Lake

Classification	Classification Description	Cowanesque Lake Description	2025 Master Plan Area (acres)
Project Operations	All project lands required for the structure, operation, administration, or maintenance of the project that must be maintained to carry out the authorized purposes of flood risk management, water supply, and water quality.	This area covers the operation of the Cowanesque Dam and the surrounding area.	4.9
Mitigation	Lands associated with mitigation projects within the project area.	The main mitigation areas include fields adjacent to the South Overlook on the south side of PA Route 49, west of the South Overlook on the eastern end of the lake and shoreline, and the area northwest of the lake in the vicinity of the Moccasin Trail, south of Bliss Road.	263.3
High Density Recreation	Lands classified for High Density Recreation are currently developed for intensive recreation activities. Depending on available space, funding, and public demand, lands classified for High Density Recreation may support additional outdoor recreation development. These areas include boat launches, day use areas, multi-use trails, and recreation fields.	Three primary areas include Lawrence Recreation Area, Tompkins Campground, and the South Shore Recreation Area.	224.6

Classification	Classification Description	Cowanesque Lake Description	2025 Master Plan Area (acres)
	These areas have been developed to support concentrated visitation and use of the recreation facilities they host.		
Multiple Resource Management Land			
Low Density Recreation	The Low Density Recreation sub-classification covers lands with minimal development or infrastructure that support passive public recreation use like fishing, hunting, wildlife viewing, or hiking. Future management of these lands calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics while also supporting low-impact recreation opportunities. The public may use these lands for bank fishing, hiking, wildlife viewing, and for access to the shoreline.	Two areas characterized as Low Density Recreation at Cowanesque Lake include the two Moccasin Trailhead parking lots on Bliss Road. The Moccasin hiking trail is not included under this classification; it is included under wildlife management.	1.2
Vegetative Management	Lands designated for stewardship of forest, prairie, and other native vegetative cover. There may be overlap with low density recreation areas and wildlife management areas, especially in some of the hiking trail areas.	Cowanesque Lake's principal vegetative management area is located on the west end of the project, with additional areas southeast of the lake.	234.5
Wildlife Management	Wildlife management areas overlap with multiple land classifications throughout the Project site. These areas are managed for generalized wildlife in consideration of the threatened and endangered species identified in Section 3.4. Many of these areas are also managed for vegetation to ensure quality of the habitat including removing invasive species of plants.	Northwest and southeast of the lake and northeast of the project area.	338.8
Water Surface			
Restricted	Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. These areas are marked with standard USCG regulatory buoys stating that boats are excluded from	The Restricted water surface at Cowanesque Lake includes the area adjacent to the dam and a small area around the	1.34

Classification	Classification Description	Cowanesque Lake Description	2025 Master Plan Area (acres)
	the area. In some instances, physical barriers may be in place on the water. Restricted areas at the project are marked by restricted signage on a cable and buoy at the intake and physical barriers and signage at the outlet structure.	stilling basin and drainage channel at the outlet structure.	
Designated No-Wake	No-Wake areas are intended to protect environmentally sensitive shorelines and improve boating safety near key recreation water access areas such as boat ramps.	The No-Wake water surface at Cowanesque Lake includes the western part of the lake and the area surrounding the boat launches.	282.46
Open Recreation	Open Recreation includes all water surface areas available for year-round or seasonal water-based recreation use.	At Cowanesque Lake, Open Recreation water surface covers all areas not designated as Restricted or No-Wake.	791.8
Total:			**2,142.9***

**Mapping for the Master Plan update has been compiled using the best information available and is believed to be accurate. No Land classifications were found within the 2002 Master Plan document and therefore are not included in this Master Plan.*

2.4 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

USACE initially considered other alternatives to the Proposed Action as part of the master planning charette process and the scoping process for this EA. However, none met the purpose and need for the Proposed Action or USACE regulations and guidance. As such, no other alternatives beyond the No Action and Preferred Alternative are being carried forward for analysis in this EA.

3 ENVIRONMENTAL SETTING AND CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the natural and physical resources within and surrounding the Project and the potential effects of the No Action Alternative and the Proposed Action (Preferred Alternative) on each resource. A description of baseline data sources and an approach for analyzing effects are discussed in Sections 3.1.1 and 3.1.2, respectively.

3.1.1 Description of Baseline Data and Data Sources

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

- Geographic Information System (GIS), including waters and wetlands inventory, floodplain mapping, and vegetation.
- Aerial photography (ESRI, Google Earth).
- Regional and local reports including Natural Resources Conservation Service (NRCS) Soil Surveys and previous studies conducted at the project.
- Agency databases including the USFWS IPaC and the National Wetlands Inventory (NWI), the United States Environmental Protection Agency (USEPA) Green Book National Area and County-Level Multi-Pollutant Information list and Envirofacts database, and the PA Natural Heritage Conservation Explorer.
- Information presented within the 2025 Master Plan.
- Agency coordination.
- Information collected from site visits.

3.1.2 Approach for Analyzing Effects

Effects can either be beneficial or adverse and either directly or indirectly relate to the action. Direct effects are caused by the action and occur at the same time and place (40 CFR § 1508.1(i)(1) (2024)). Indirect effects are caused by the action and are later in time or further removed in distance but are still reasonably foreseeable (40 CFR § 1508.1(i)(2) (2024)). The alternatives may create temporary (less than 1 year), short-term (up to 3 years), long term (3 to 10 years), or permanent effects.

Effects on each resource can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. This analysis classifies the intensity of effects as beneficial, negligible, minor, moderate, or significant. The intensity thresholds are defined as follows:

- Beneficial – Effects would improve or enhance the resource,
- None/Negligible – A resource would not be affected, or the effects would be at or below the level of detection, and changes would not be of any measurable or perceptible consequence,
- Minor – Effects on a resource would be detectable, although the effects would be localized, small, and of little consequence to the sustainability of the resource. Mitigation measures, if needed to offset adverse effects, would be simple and achievable,

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

As stated in Section 1.3, Scope of the EA, the analysis focuses on the proposed land use classifications as presented in the 2025 Master Plan, and not on the execution of any specific projects. USACE would conduct further NEPA analysis on projects once funding is available and detailed planning and design occur.

3.1.3 Level of Resource Area Analysis

All relevant resources were considered for analysis in this EA. Consistent with NEPA implementing regulations, this EA concentrates on issues and resources that are truly relevant to the alternatives being analyzed. For example, no body of water in the Tioga Watershed, in which Tioga-Hammond and Cowanesque Lakes are located, is designated as a federally wild or scenic river, so this resource is not included in the analysis.

3.1.4 Environmental Consequences – No Action Alternative

Under the No Action Alternative, USACE would not implement the 2025 Master Plan and an administrative action to establish new land and water use classifications within the proposed 2025 Master Plan would not occur. The operation and management of Tioga-Hammond and Cowanesque Lakes and USACE lands would continue as outlined in the 2002 Master Plan. Although this alternative does not result in a 2025 Master Plan that meets current regulations and guidance, there would be no significant effects to any of the resources areas on project lands.

3.1.5 Environmental Consequences – Proposed Action

Potential direct, indirect, and cumulative effects of the Proposed Action were analyzed relative to each environmental, cultural, and socioeconomic resource. The existing conditions of each resource area within the project alternatives' region of influence (ROI) were also analyzed. Due to the fact that the Master Plan update is an administrative action, and the project alternatives do not include construction of physical projects, it was determined that negligible or no effects would occur to all resource areas. All future projects would be subject to further NEPA analysis once funding is available and detailed project planning and design occur.

3.2 WATER RESOURCES

3.2.1 Surface Waters and Wetlands

The upper Tioga River Watershed is part of the Chemung Subbasin and drains an area approximately 1,391 square miles including PA (690 square miles) and NY (701 square miles). The Tioga River, which is the main tributary in this watershed, flows 58 miles from Armenia Township, Bradford County, PA, through Tioga County, PA, into NY, where it flows into the Chemung River.

Tioga Dam controls a drainage area of approximately 280 square miles within the Tioga River Watershed. Tributaries upstream of the Tioga dam include Lambs Creek, Phoenix Run, Cabin Run, and Mill Creek. Downstream of the dam, the primary tributaries to the Tioga River include Mitchell Creek, Bear Creek, Mutton Lane Creek, Smith Creek, and Harts Creek.

Hammond Dam controls a drainage area of approximately 122 square miles. Tributaries upstream of the Hammond Dam include Ives Run and Crooked Creek. Primary tributaries that flow into Crooked Creek in the vicinity of Hammond Lake include Stephenhouse Run, Hills Creek, and North Run.

Cowanesque Dam controls a drainage area of approximately 298 square miles. Tributaries to the Cowanesque Dam include Cummings Creek, Baldwin Creek, Cook Creek, Strait Creek, and Cowanesque River. Primary tributaries to Cowanesque River in the vicinity of Cowanesque Lake include Bill Hess Creek, Thornbottom Creek, and Camp Brook.

Table 3-1: Tioga-Hammond & Cowanesque Dams Details (USACE, 2022a)

Elevations (feet above mean sea level)	**Elevation**		
	Tioga	**Hammond**	**Cowanesque**
Top of dam	1170 feet	1169 feet	1151 feet
Reservoir, flood control (spillway crest)	1131 feet	1131 feet	1117 feet
Conservation pool	1081 feet	1086 feet	1080 feet
Dam	**Description**		
	Tioga	**Hammond**	**Cowanesque**
Type	Rolled earth and rockfill		
Length	2,710 feet	6,450 feet	3,100 feet
Maximum height above streambed	140 feet	122 feet	151 feet
Spillway	**Description**		
	Tioga	**Hammond**	**Cowanesque**
Type	Overflow concrete chute		Concrete Chute
Location	West abutment		Right abutment
Crest length	312 feet		400 feet
Height above streambed	1131 feet		151 feet
Type weir	Uncontrolled concrete		Uncontrolled crest
Outlet works	**Description**		
	Tioga	**Hammond**	**Cowanesque**
Type	Gated conduit	Overflow Weir/gate	Intake Structure
Location	West Abutment	Eastern end of Tioga Lake connecting channel	On east end

Outlet works	Tioga	Hammond	Cowanesque
Length (entrance to outlet portal)	525 feet	-	936.5 feet (conduit) 104.7 feet (gate to tunnel)
Tunnel	14 Foot 6 inches Diameter top and bottom semicircles	-	15-foot-diameter horseshoe tunnel
Reservoir	**Tioga**	**Hammond**	**Cowanesque**
Length at spillway crest	1,594 ac	1,755 ac	2,020 ac
Length at maximum pool	3,043 ac	2,791 ac	3,642 ac
Storage	**Tioga**	**Hammond**	**Cowanesque**
Maximum pool	143,383 acre-feet	136,936 acre-feet	161,817 acre-feet
Flood control pool	62,307 acre-feet	63,511 acre-feet	84,930 acre-feet
Total storage	154,913 acre-feet	153,576 acre-feet	187,900 acre-feet
Lands Acquired	**Tioga**	**Hammond**	**Cowanesque**
Acquired for project	6,594 acres		2,878 acres
Acquired for flowage easements	249 acres		489 acres

Most of the wetlands within the project areas are directly associated with the lakes, but numerous wetland systems are scattered along the river systems flowing into the three lakes. Excluding the lake and river systems, the USFWS NWI indicates 107.73 acres of wetlands associated with the Tioga-Hammond project area (Table 3-2) and approximately 87.6 acres of wetlands associated with the Cowanesque project area (Table 3-3) (USFWS NWI, 2024).

Table 3-2: Wetland areas within Tioga-Hammond Project Area (USFWS NWI, 2024)

Wetland Type	Acres
Freshwater Emergent Wetland	48.13
Freshwater Forested/Shrub Wetland	44.91
Freshwater Pond	14.69
Total	**107.73**

Table 3-3: Wetland areas within Cowanesque Project Area (USFWS NWI, 2024)

Wetland Type	Acres
Freshwater Emergent Wetland	58.82
Freshwater Forested/Shrub Wetland	21.00
Freshwater Pond	7.78
Total	87.6

3.2.2 Water Quality

Tioga and Hammond Lakes

The drainage basin of the Tioga River, as measured from the site of the dam, is approximately 280 square miles in area. Above Blossburg, PA (approximately 23 miles south of the lake area), the pH of the stream is near neutral; however, acid discharges from areas of past coal mining activities along Morris Run, Coal Run, and Bear Creek greatly affect the water quality of the Tioga River downstream. Acidity, while still quite high in the vicinity of the dam, is lower than these upstream conditions. Acidity in the Tioga River in the vicinity of the dam ranges from a low of about 2 milligrams/liter (mg/l) during high flows to a high of about 80 mg/l during low flows. The connecting channel between Tioga and Hammond Lakes mixes water from the two lakes to regulate acidity levels. The target pH for the lakes is 6.5.

Hammond Lake is stratified from mid-May through early October. Nutrients in Hammond Lake are abundant enough to produce algal blooms, and dissolved oxygen is gradually depleted as the water gets deeper below the surface layer. Crooked Creek, which is the primary source of inflow to Hammond Lake, is an alkaline stream with a pH that generally ranges between 7.6 and 7.8. Summer surface water temperatures are frequently well in excess of 68°F (20°C), and subsurface water temperatures can be 64.4°F (18°C) or higher.

Downstream of the Tioga and Hammond Reservoirs, the PA Department of Environmental Protection (PADEP) lists the Tioga River as "Impaired" for "Aquatic Life" due to siltation, while the Tioga and Hammond Reservoirs themselves support aquatic life (PADEP IWQR, 2024). Upstream of the reservoirs, the Tioga River is classified "Impaired" for "Aquatic Life" due to siltation and "Impaired" for "Fish Consumption" due to the presence of mercury from atmospheric deposition and metals from acid mine drainage. For additional information about sedimentation within the reservoir, see Section 2.1.4 of the 2025 Master Plan.

Cowanesque Lake

The Cowanesque Lake is thermally stratified, with the surface temperature zone (epilimnion) of 5 to 10 feet below the surface having a temperature range between 75 and 80°F (23.8 and 26.6°C) in the summer. Dissolved oxygen consumption in the lake resulting from biological and chemical demand is expected to exceed the assimilative capacity of the lake. Therefore, a lack of dissolved oxygen is expected to occur below the epilimnion in the

summer as decaying organic matter consumes available dissolved oxygen and there is very little mixing with the oxygen-rich surface.

The PADEP lists the Cowanesque Reservoir as "Supporting" for "Aquatic Life" while the upstream portion of the Cowanesque River is impaired for the same due to siltation (PADEP IWQR, 2024).

3.2.3 Floodplains

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

The National Flood Insurance Program (NFIP) requires local jurisdictions to issue permits for all development in the 100-year floodplain, as depicted on maps issued by FEMA. Development is broadly defined to include any man-made change to land including grading, filling, clearing, dredging, extraction, storage, subdivision of land, and construction and improvement of structures and buildings. For any development to take place, all necessary permits must be obtained, which may include federal and state permits, as well as a local permit. To be properly permitted, proposed development may not increase flooding or create a dangerous situation during flooding, especially on another person's property. If a structure is involved, it must be constructed to minimize damage during flooding. FEMA classifies the majority of the Tioga-Hammond and Cowanesque Lakes area as Zone A (1 percent annual chance of flooding) (FEMA, n.d.).

Water resources would not be affected by the newly established land and water use classifications at the Tioga-Hammond and Cowanesque Lakes Project, which consists of an administrative action. Future projects that arise from the master planning process or are independently pursued would require separate NEPA analyses of effects to water resources.

3.3 PRIME FARMLAND & SOILS

Because the entire northern portion of PA has been glaciated, soil types in the lake areas are numerous and varied. In the areas immediately surrounding Tioga and Hammond Lakes, the most prominent soil types are extremely stony Oquaga channery loam with 25-75 percent slopes (OTF), Chenango gravelly loam with 2-12 percent slopes (ChB), and Pope soils (Po). Prominent soil types in the area surrounding Cowanesque Lake include Volusia channery silt loam with 8-15 percent slopes (VoC) and Pope soils (Po), though the soil types are highly variable.

Approximately 21.4 percent of soils at Tioga-Hammond Lakes and 15.3 percent of soils at Cowanesque Lake are considered Prime Farmland, a soil designation that connotes low

erodibility and saturation. Pope soils (Po) and Chenango gravelly loam with 2-12 percent slopes (ChB) are the most prominent Prime Farmland soils occurring at the Projects.

Table 3-4. Soils at the Tioga-Hammond Lakes Project

Map Unit Symbol	Map Unit Name	Acres in Area of Interest (AOI)	Percent of AOI	Prime/Unique Farmland Status
Ab	Alluvial land	225.0	3.5%	Not prime farmland
BvB	Braceville gravelly loam, 3 to 8 percent slopes	35.1	0.5%	All areas are prime farmland
ChB	Chenango gravelly loam, 2 to 12 percent slopes	594.4	9.2%	All areas are prime farmland
ChC	Chenango gravelly loam, 12 to 20 percent slopes	122.6	1.9%	Farmland of statewide importance
ChD	Chenango gravelly loam, 20 to 30 percent slopes	76.5	1.2%	Not prime farmland
DAM	Dams and impoundment structures	109.4	1.7%	Not prime farmland
GP	Gravel pit	2.3	0.0%	Not prime farmland
LoB	Lordstown channery loam, 3 to 12 percent slopes	30.6	0.5%	Farmland of statewide importance
LoC	Lordstown channery loam, 12 to 20 percent slopes	2.5	0.0%	Farmland of statewide importance
LoD	Lordstown channery loam, 20 to 30 percent slopes	0.8	0.0%	Not prime farmland
LsD	Lordstown channery loam, 12 to 30 percent slopes, extremely stony	28.0	0.4%	Farmland of statewide importance
MaB	Mardin channery silt loam, 3 to 8 percent slopes	0.5	0.0%	Farmland of statewide importance
MaC	Mardin channery silt loam, 8 to 15 percent slopes	5.0	0.1%	Farmland of statewide importance
MaD	Mardin channery silt loam, 15 to 25 percent slopes	18.9	0.3%	Not prime farmland

Map Unit Symbol	Map Unit Name	Acres in Area of Interest (AOI)	Percent of AOI	Prime/Unique Farmland Status
MoB	Morris gravelly silt loam, 3 to 8 percent slopes	32.3	0.5%	Farmland of statewide importance
MoC	Morris gravelly silt loam, 8 to 15 percent slopes	93.3	1.4%	Farmland of statewide importance
MoD	Morris gravelly silt loam, 15 to 25 percent slopes	71.5	1.1%	Not prime farmland
MsD	Morris gravelly silt loam, 8 to 25 percent slopes, extremely stony	18.3	0.3%	Not prime farmland
OgB	Oquaga channery loam, 3 to 12 percent slopes	19.5	0.3%	Farmland of statewide importance
OgC	Oquaga channery loam, 12 to 20 percent slopes	148.9	2.3%	Farmland of statewide importance
OgD	Oquaga channery loam, 20 to 30 percent slopes	310.6	4.8%	Not prime farmland
OsD	Oquaga channery loam, 12 to 30 percent slopes, extremely stony	143.7	2.2%	Not prime farmland
OTF	Oquaga and Lordstown channery loams, 25 to 70 percent slopes, extremely stony	1,066.7	16.5%	Not prime farmland
Ow	Orrville silt loam	219.2	3.4%	Farmland of statewide importance
Ph	Philo silt loam	114.0	1.8%	All areas are prime farmland
Po	Pope soils	719.1	11.1%	All areas are prime farmland
Pp	Pope fine sandy loam, high bottom	92.9	1.4%	All areas are prime farmland
RxA	Rexford silt loam, 0 to 3 percent slopes	5.2	0.1%	Farmland of statewide importance
RxB	Rexford silt loam, 3 to 10 percent slopes	27.0	0.4%	Farmland of statewide importance
VoB	Volusia channery silt loam, 3 to 8 percent slopes	92.2	1.4%	Farmland of statewide importance
VoC	Volusia channery silt loam, 8 to 15 percent slopes	169.4	2.6%	Farmland of statewide importance
VoD	Volusia channery silt loam, 15 to 25 percent slopes	56.0	0.9%	Not Prime Farmland

Map Unit Symbol	Map Unit Name	Acres in Area of Interest (AOI)	Percent of AOI	Prime/Unique Farmland Status
VoD3	Volusia channery silt loam, 15 to 25 percent slopes, eroded	2.8	0.0%	Not Prime Farmland
VoE3	Volusia channery silt loam, 25 to 35 percent slopes, eroded	3.4	0.1%	Not Prime Farmland
VvB	Volusia channery silt loam, silty substratum, 3 to 8 percent slopes	102.7	1.6%	Farmland of statewide importance
VvC	Volusia channery silt loam, silty substratum, 8 to 15 percent slopes	20.1	0.3%	Farmland of statewide importance
VvD3	Volusia channery silt loam, silty substratum, 15 to 25 percent slopes, eroded	25.0	0.4%	Not Prime Farmland
W	Water	1,297.1	20.0%	Not Prime Farmland
Wa	Wayland silty clay loam	25.7	0.4%	Farmland of statewide importance
WeB	Wellsboro channery loam, 3 to 8 percent slopes	9.6	0.1%	All areas are prime farmland
WeD	Wellsboro channery loam, 15 to 25 percent slopes	12.5	0.2%	Not Prime Farmland
WyC	Wyoming gravelly sandy loam, 12 to 20 percent slopes	53.7	0.8%	Farmland of statewide importance
WyD	Wyoming gravelly sandy loam, 20 to 30 percent slopes	81.5	1.3%	Not Prime Farmland
WyF	Wyoming gravelly sandy loam, 30 to 50 percent slopes	131.6	2.0%	Not Prime Farmland
Wz	Wyoming gravelly loam, flooded	60.0	0.9%	Farmland of statewide importance
Totals for Area of Interest	**6,477.3**	**100.0%**	**-**	

Table 3-5. Soils at the Cowanesque Lake Project

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	Prime/Unique Farmland Status
Ab	Alluvial land	95.9	3.6%	Not Prime Farmland
BvB	Braceville gravelly loam, 3 to 8 percent slopes	23.0	0.9%	All areas are prime farmland
ChB	Chenango gravelly loam, 2 to 12 percent slopes	139.1	5.2%	All areas are prime farmland
ChC	Chenango gravelly loam, 12 to 20 percent slopes	21.5	0.8%	Farmland of statewide importance
ChD	Chenango gravelly loam, 20 to 30 percent slopes	6.4	0.2%	Not Prime Farmland
CkA	Chippewa silt loam, 0 to 3 percent slopes	8.9	0.3%	Not Prime Farmland
CkB	Chippewa silt loam, 3 to 8 percent slopes	0.1	0.0%	Not Prime Farmland
DAM	Dams and impoundment structures	76.1	2.9%	Not Prime Farmland
LoB	Lordstown channery loam, 3 to 12 percent slopes	16.0	0.6%	Farmland of statewide importance
LoC	Lordstown channery loam, 12 to 20 percent slopes	0.9	0.0%	Farmland of statewide importance
LoD	Lordstown channery loam, 20 to 30 percent slopes	19.8	0.7%	Not Prime Farmland
LsB	Lordstown channery loam, 3 to 12 percent slopes, extremely stony	13.0	0.5%	Not Prime Farmland
MaC	Mardin channery silt loam, 8 to 15 percent slopes	9.3	0.3%	Farmland of statewide importance
MaD	Mardin channery silt loam, 15 to 25 percent slopes	32.3	1.2%	Not Prime Farmland
OTF	Oquaga and Lordstown channery loams, 25 to 70 percent slopes, extremely stony	51.1	1.9%	Not Prime Farmland
Ow	Orrville silt loam	67.2	2.5%	Farmland of statewide importance
Ph	Philo silt loam	26.6	1.0%	All areas are prime farmland

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	Prime/Unique Farmland Status
Po	Pope soils	180.4	6.8%	All areas are prime farmland
Pp	Pope fine sandy loam, high bottom	36.9	1.4%	All areas are prime farmland
RxA	Rexford silt loam, 0 to 3 percent slopes	13.1	0.5%	Farmland of statewide importance
RxB	Rexford silt loam, 3 to 10 percent slopes	20.2	0.8%	Farmland of statewide importance
TW	Tannery waste	41.4	1.6%	Not Prime Farmland
VoA	Volusia channery silt loam, 0 to 3 percent slopes	15.9	0.6%	Farmland of statewide importance
VoB	Volusia channery silt loam, 3 to 8 percent slopes	155.8	5.9%	Farmland of statewide importance
VoC	Volusia channery silt loam, 8 to 15 percent slopes	218.4	8.2%	Farmland of statewide importance
VoD	Volusia channery silt loam, 15 to 25 percent slopes	80.4	3.0%	Not Prime Farmland
VoD3	Volusia channery silt loam, 15 to 25 percent slopes, eroded	8.8	0.3%	Not Prime Farmland
VoE3	Volusia channery silt loam, 25 to 35 percent slopes, eroded	8.8	0.3%	Not Prime Farmland
VvB	Volusia channery silt loam, silty substratum, 3 to 8 percent slopes	24.7	0.9%	Farmland of statewide importance
VvC	Volusia channery silt loam, silty substratum, 8 to 15 percent slopes	17.1	0.6%	Farmland of statewide importance
VvD3	Volusia channery silt loam, silty substratum, 15 to 25 percent slopes, eroded	10.0	0.4%	Not Prime Farmland
W	Water	1,102.5	41.5%	Not Prime Farmland
Wa	Wayland silty clay loam	17.2	0.6%	Farmland of statewide importance
WyC	Wyoming gravelly sandy loam, 12 to 20 percent slopes	6.8	0.3%	Not Prime Farmland
WyD	Wyoming gravelly sandy loam, 20 to 30 percent slopes	26.5	1.0%	Not Prime Farmland

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	Prime/Unique Farmland Status
WyF	Wyoming gravelly sandy loam, 30 to 50 percent slopes	31.2	1.2%	Not Prime Farmland
Wz	Wyoming gravelly loam, flooded	36.3	1.4%	Farmland of statewide importance
Totals for Area of Interest	**2,659.8**	**100.0%**	**-**	

Soils at the Tioga-Hammond and Cowanesque Lakes Project would not be affected by the newly established land and water use classifications, which consists of an administrative action. Future projects that arise from the master planning process or are independently pursued would require separate NEPA analyses of effects to soils resources.

3.4 BIOLOGICAL RESOURCES

3.4.1 Vegetation

According to the United States Forest Service (USFS), north central PA is characterized by more forest than any other cover type. The primary forest type is deciduous forests, with significant amounts of mixed and evergreen forests. Other major cover types include pasture/hay and cultivated crops. Nearly 50 percent of the forests in north central PA belong to the maple/beech/birch group. The primary species within this group include red maple (*Acer rubrum*), sugar maple (*A. saccharum*), and black cherry (*Prunus serotina*). Other forest groups present in north central PA are oak/hickory, white pine/red pine/hemlock, and aspen/birch groups.

Between 2009 and 2014, north central PA gained approximately 40,000 acres of forest, but lost approximately 70,000 acres, primarily due to development and conversion to agriculture, for a net decrease in forest acres of 0.6 percent. While most of PA's forests are privately owned, north central PA has more federal and state-owned forests than any other PA Region as well as a high degree of forest connectivity. This is primarily due to the presence of the Allegheny National Forest, which covers approximately 513,000 acres of land (USFS, 2017).

3.4.2 Wildlife and Fisheries

Wildlife resources within the vicinity of Tioga-Hammond and Cowanesque Lakes are diverse and plentiful. There are a mixture of habitats including forests, scrub/shrub areas, and open fields that support a variety of game and non-game species. Typical mammalian species that rely on the forest community include white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus)*, raccoon (*Procyon lotor*), gray squirrel (*Sciurus carolinensis*), and white-footed mouse (*Peromyscus leucopus*). Open field and shrub communities support additional small mammals including eastern cottontail (*Sylvilagus floridanus*), woodchuck (*Marmota monax*), meadow jumping mouse (*Zapus hudsonius*), and meadow vole (*Microtus pennsylvanicus*). Species such as beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), and mink (*Mustela vison*) may be found along the lakes and rivers. The main game species include squirrel, rabbit, groundhog, deer, bear, beaver, muskrat, fox, and bobcat.

Currently, the PA Game Commission (PGC) is cultivating food plots on USACE land to encourage game species. These plots are located near Mill Creek (Tioga Lake) and in the Bryant Hollow Wildlife Management Area (Hammond Lake). Within the Bryant Hollow Wildlife Management Area, areas are strip-mowed with a brush hog to provide additional open/edge habitats for various wildlife species and the PGC began prescribed burns at both reservoir sites in 2024.

Common avian species include a variety of waterfowl and wading birds such as Canada goose, wood duck, and mallard as well as common game species including wild turkey (*Meleagris gallopavo*), ruffed grouse (*Bonasa umbellus*), and woodcock (*Scolopax minor*). The area also provides habitat for numerous migratory bird species in addition to bald eagle, osprey, and great blue heron. There have been several bald eagle nests, osprey nests, and heron rookeries within the vicinity of all three lakes.

Amphibian and reptile populations also inhabit the lake areas and are essential to natural community dynamics. Some of the amphibians and reptiles that may be found within the area include various salamander, newt, frog, toad, turtle, and snake species.

Both Tioga and Hammond Lakes were leveled prior to flooding and all tree stumps and debris were cleared. As a result, the flat basin of the lakes offers little cover for resting and predator avoidance resulting in sub-optimal habitat for most fish populations. There is almost no submerged aquatic vegetation in either lake.

Hammond Lake is classified as a warm-water fisheries habitat by the PA Fish and Boat Commission (PFBC). In 2024, the PFBC stocked channel catfish, striped bass hybrid, tiger muskellunge, and walleye in Hammond Lake; the PFBC has stocked the lake with various fish species since the year 2000 (PFBC WW/CW, 2024). In addition, other fish species such as black crappie, yellow perch, common carp, smallmouth bass, and largemouth bass have been found in the lake (PFBC WCF, 2023).

The PFBC does not stock fish at Tioga Lake. However, fish stocked at Hammond Lake access Tioga Lake through the connecting channel. A variety of fish have been observed in Tioga Lake including common carp, yellow perch, black crappie, smallmouth bass, largemouth bass, pumpkinseed, and bluegill (PFBC WCF, n.d.). According to the 2022 Tioga-Hammond and Cowanesque Lakes Project Fiscal Year 2022 Annual Report, over 50 largemouth bass and 40 smallmouth bass were sampled in Tioga Lake during a night electrofishing survey in June 2022 (USACE, 2022a).

Unlike Tioga and Hammond Lakes, the bottom of Cowanesque Lake was not cleared and leveled prior to flooding, and as a result, there is a larger and more sustained fish population. Cowanesque Lake has a rich fish habitat including extensive areas of submerged aquatic vegetation, inundated timber and brush, as well as artificial fish habitat structures. The PFBC has conducted stocking programs for various fish species to supplement the naturally occurring fish population. Historically, stocked species included tiger muskellunge, muskellunge, walleye, striped bass, and channel catfish (PFBC WW/CW, 2023). Overall, Cowanesque Lake supports a moderately diverse and healthy fish community.

3.4.3 Threatened and Endangered Species

3.4.3.1 Federally Listed Species

As of 2025, per the USFWS IPaC tool, four federally listed species may occur within the project areas: the endangered northern long-eared bat (*Myotis septentironalis*), the endangered northeastern bulrush plant (*Scirpus ancistrochaetus)*, the proposed threatened monarch butterfly (*Danaus plexippus*), and the proposed threatened green floater (*Lasmigona subviridis*. The IPaC species list for each Project area can be found in Appendix F. This Master Plan update consists of an administrative action and there will be no effects to threatened and endangered species. Any future projects arising at the Tioga-Hammond and Cowanesque Lakes Project, however, would require a separate NEPA analysis to evaluate effects to listed species.

Northern long-eared bats are medium sized bats (about 3-4 inches in length) associated with mature, interior forest environments. Unlike most other bats, the northern long-eared forages along wooded hillsides and ridgelines – not above valley-bottom streams and along the edges of riparian forests. The species is listed as endangered throughout its range, primarily due to the effects of white-nose syndrome. Populations at northern long-eared bat hibernation sites have declined by 99 percent since the discovery of white-nose syndrome. Forest fragmentation and conversion are also major threats to the species due to its association with large blocks of mature forest (USFWS, n.d.).

In 2021, a Bat Acoustic Survey Report was completed at Tioga-Hammond and Cowanesque Lakes focusing on confirming presence of federal and state listed species (USACE, 2021). Automated acoustic analysis determined the likely presence of bat species expected to occur within the project area. Eight bat species were recorded at Tioga-Hammond Lakes and six at Cowanesque Lake. Specifically, the northern long-eared bat was recorded at both lakes while the tricolored bat was recorded at Tioga-Hammond Lakes. Suitable bat habitat is found throughout both project areas.

Northeastern bulrush is a leafy, perennial herb of the sedge family (Cyperaceae) approximately 80 to 120 centimeters in height. When flowering, it bears an inflorescence with distinctly arching rays and clusters of brown spikelets. Northeastern bulrush is found at the edge of natural ponds, wet depressions, or shallow sinkholes less than one acre in size. These wetlands primarily occur in low-lying areas within areas with hilly topography and have seasonally variable water levels ranging from inundation to desiccation (USFWS, n.d.). Suitable habitat to support the northeastern bulrush may be present within the Tioga-Hammond and Cowanesque Lakes wetland project areas, but no critical habitat has been designated for this species.

Monarch butterflies are one of the most recognizable species in North America. Each year monarch butterflies migrate from Canada to their overwintering sites located in the mountains of central Mexico or coastal California. The monarch butterfly is a proposed threatened species due to habitat loss at their overwintering sites. The habitat loss in Mexico is due to conversion of grasslands to agriculture and urban development, while in California it is caused by unsuitable management of the overwintering groves and drought. Throughout their habitat range, exposure to insecticides has also hindered the population (USFWS, n.d.). Monarch butterflies are typically present in PA from late April to early October.

The green floater is a small freshwater mussel with ovate trapezoidal shaped shells that can be found in small streams and large rivers in the eastern United States. Adults can grow up to 2.2 inches with yellowish brown to olive green with green rays shells. The green floater prefers streams with slow to medium flows and good water quality. They are typically found in sand or small gravel substrates where they establish a foothold and bury themselves as deep as 15 inches and feed on a wide variety of microscopic particulate matter, such as bacteria and algae. Green floaters are hermaphroditic and can self-fertilize, and spawn and reproduce during the later summer or early fall. In the winter, the adults keep the larvae or glochidia in their gills until they mature into juveniles and are released into the water column in spring. Green floaters typically live three to four years (USFWS, 2024). The green floater was identified as potentially occurring within the Tioga-Hammond Lakes area. Habitat suitable for the green floater may be present within the stream areas of the Tioga-Hammond Lakes project; however, the project location does not overlap with critical habitat proposed for the green floater.

3.4.3.2 Pennsylvania Threatened and Endangered Species

According to the PNDI screening tool, the state threatened Allegheny woodrat (*Neotoma magister*) is known to occur in the project area (Appendix F).

The Allegheny woodrat is listed as threatened in PA and is considered vulnerable nationally. They are related to packrats found in the Western United States and can be distinguished from common Norway rats (also "brown rat"; *Rattus norvegicus*) based on their furred tail, larger ears and eyes, heavier head, and longer whiskers. Their preferred habitat includes extensive expanses of abundant, closely spaced surface rock surrounded by unfragmented forest. While they may be found in deciduous, coniferous, or mixed forests, mast-producing trees are important as a food source. Rocky areas are important habitat for Allegheny woodrats as they nest deep within rock outcrops, use rock crevices and protected ledges for storing food, and establish latrines on flat rock surfaces protected by an overhang. Several factors are thought to have contributed to the population's decline including the decline of the mast-producing trees such as the American chestnut due to chestnut blight, and oak trees due to gypsy moth infestations and infection by the racoon roundworm parasite (*Baylissacaris procyonis*). Other factors include predation pressure from increasing great horned owl populations; competition with growing North American porcupine (*Erethizon dorsatum*) populations for habitat; and forest fragmentation. Populations in some of the Allegheny woodrat's range, including north central PA, are thought to be relatively healthy (Butchkowski, 2014). There are very limited rocky outcrops within the project areas that would make for suitable habitat for the Allegheny woodrat, however. There is not an active population at either project according to the PGC (PGC, 2014).

3.4.4 Invasive and Nuisance Species

Tioga Lake, Hammond Lake, Cowanesque Lake, and associated lands are experiencing several terrestrial invasive species, some of which are actively managed by USACE park ranger staff. A Field Management Plan was adopted in June 2022 at Cowanesque Lake to address invasive species and to increase local species abundance and diversity (USACE, 2022b). The Field Management Plan includes annual wildlife enhancement contracts that create multiple pollinator plots, mechanically mowed invasives to promote early successional habitat, and planted trees/shrubs for wildlife food and cover. Section 6.3 discusses the

Cowanesque Lake Field Management Plan in more detail. The invasive zebra mussel (*Dreissena polymorpha*) has been documented at Cowanesque Lake, and a $100,000 study partnership between USACE and the United States Geological Survey (USGS) has been formed to address the species' presence. Eurasian watermilfoil (*Myriophyllum spicatum*) has also been documented in all three lakes. Some of the invasive and nuisance species found within the larger project areas are described in the paragraphs below. The Tioga-Hammond and Cowanesque Lakes Projects developed a three-year burn plan in partnership with the PGC for habitat enhancement of 286 acres with invasive species management and control as a major element in 2023 (USACE, 2024). As part of the partnership, PGC has directly funded and carried out a $80,000 remote-controlled mower project to target noxious knotweed. The projects are also enacting Early Detection and Rapid Response (EDRR) efforts with hand pulling and herbicide applications.

3.4.4.1 Plants

The most abundant and managed invasive plant species that can be found in the project vicinity is Japanese knotweed *(Polygonum cuspidatum*). Multiflora rose, another invasive noxious species, was observed throughout the properties.

3.4.4.2 Insects

The PA Department of Agriculture is tracking 18 species throughout PA that are either potential threats, emerging threats, or established pests. The emerald ash borer (*Agrilus planipennis Fairmarie*), for example, was destructive for many years at the project area before the host species' (Fraxinus spp.) populations became too low to support emerald ash borer populations. Spotted lanternfly (L*ycorma delicatula*) is another invasive insect. The species was found in PA in 2014 and has since spread to 51 counties, all of which are under a state-imposed quarantine. Tioga County is not one of the counties that are affected yet; however, neighboring counties to the south are showing large numbers of the invasive pest and are under quarantine (USDA SL, 2023).

The spongy moth (*Lymantria dispar*) is an invasive pest of North American forests that can defoliate hundreds of tree and shrub species (USDA SM, 2023). According to the Tioga-Hammond and Cowanesque Lakes Project Fiscal Year 2022 Annual Report, the spongy moth damaged portions of the Ives Run Campground and Day-Use area near Tioga-Hammond Lakes and interfered with camping and general park recreation and maintenance; damage from the spongy moth also affected the Tomkins Campground in 2022 and 2023. This species is native to Europe, Asia, and North Africa, and it was introduced in Massachusetts in the 1800s and is now widespread. A primary way the spongy moth spreads is via egg masses when transported on firewood, outdoor equipment, and vehicles. Public awareness of the egg mass, which can contain 600 to 1,000 eggs, and its sponge-like appearance is important in controlling the pest. The insect spends most of its life cycle (10 months) in the egg stage. Spongy moths awake for a 7-week period, where it feeds on leaves and is responsible for killing millions of oak and other tree species.

3.4.4.3 Birds

Currently, the USACE does not manage any invasive or nuisance bird species at Tioga-Hammond and Cowanesque Lakes. However, both invasive and native nuisance bird species are present in the project area. The invasive European starling (*Sturnus vulgaris*) was introduced to Central Park, New York City in 1890 and is now a common resident of both

urban and rural areas in the United States. European starlings outcompete native cavity nesting species by evicting birds occupying a cavity and using it for their own nests (USDA APHIS, 2017).

Biological resources would not be affected by the newly established land and water use classifications at the Tioga-Hammond and Cowanesque Lakes Project, which consists of an administrative action. Future projects that arise from the master planning process or are independently pursued would require separate NEPA analyses of effects to biological resources.

3.5 LAND USE AND RECREATION

The Tioga-Hammond, and Cowanesque Lakes are located in Tioga County, PA, along the Tioga and Cowanesque Rivers, respectively. The primary function of the Tioga-Hammond and Cowanesque Lakes Projects is flood risk management for communities in the area, though the projects are also authorized to support recreation opportunities above the dams. Such opportunities are mostly nature-based and include hunting, fishing, and trail use.

According to USACE's Visitor Estimation and Reporting Systems (VERS), during the period between Fiscal Years (FY) 2016 and 2021, there were over 2,350,000 visitors to the Tioga-Hammond and Cowanesque Lakes properties, with visitation heaviest during earlier years. The lakes saw a steady decline in visitors across the period. Day users form the majority of visitors to Tioga-Hammond and Cowanesque Lakes, though over 69,000 visits to the lakes were overnight in FY 2019. The two most popular activities at Tioga-Hammond Lakes in FY 2019 were camping and sightseeing, while the two most popular activities at Cowanesque Lake in FY 2019 were sightseeing and picnicking.

Changes to patterns of visitation at the Tioga-Hammond and Cowanesque Lakes Projects may result from projects that arise from the 2025 Master Plan or that are independently pursued. Those effects, however, fall outside the scope of this EA and would require a separate NEPA analysis.

3.6 AIR QUALITY

The project area falls within the National Oceanic and Atmospheric Administration's (NOAA) Upper Susquehanna Climate Division and is characterized by a temperate climate with an average annual temperature of 45.5°F (7.5°C) (NCEI, n.d.). Tioga-Hammond and Cowanesque Lakes are located in Tioga County, which is in attainment with the National Ambient Air Quality Standards for all criteria pollutants in the USEPA's Green Book National Area and County-Level Multi-Pollutant Information list (USEPA, 2024b). Air quality would not be affected by the newly established land and water use classifications at the Tioga-Hammond and Cowanesque Lakes Project, which consists of an administrative action. Implementation of future master planning projects may generate temporary emissions from construction activities, including particulate matter and other criteria pollutants. Future development and increased recreation opportunities may also generate increased visitation and corresponding vehicle emissions. These effects are outside the scope of this EA. Effects to recreation from future construction would require a separate NEPA analysis

3.7 GEOLOGY AND TOPOGRAPHY

Tioga and Hammond Lakes are situated in the northern part of the Allegheny Mountain section of the Appalachian Plateau physiographic province. This portion of the province is essentially a stream-eroded plateau composed of relatively flat upland areas interspersed with stream valleys that are often one thousand feet deep or more. Cowanesque Lake is located in the Northern PA Section of the Appalachia Plateau Province. This area is primarily characterized by rounded hills with irregular summits. Since the Proposed Action is an administrative action and does not include construction, the Proposed Action would not affect geology or topography. Construction activities associated with implementation of future projects are outside the scope of this EA. Effects to geology and topography from future construction would require a separate NEPA analysis.

3.8 GROUNDWATER

Changes to land and water use classifications will not adversely affect the quality or availability of groundwater. Assessment of future project's water use would be performed during detailed project-specific planning.

3.9 NOISE

The project area is in a physical setting characterized as rural and very remote. In rural areas, most noise comes from transportation, human, and animal sources (Engineering Toolbox, n.d.). Changes to land and water use classifications under the Proposed Action would not change the existing noise environment. Assessment of any future project's effect on noise would be performed during detailed project-specific planning.

3.10 CULTURAL RESOURCES

Twenty cultural resources have been previously identified within the Tioga-Hammond Lakes project area (Table 3-14). These resources consist of nine archaeological sites, ten above-ground resources, and one historical marker; one has been listed in the National Register of Historic Places (NRHP) and thirteen have not been evaluated for NRHP eligibility. Twenty-six cultural resources have been previously identified within the Cowanesque Lake project area (table 3-15). These resources consist of twenty-three archaeological sites and three above-ground resources; two have been determined eligible for the NRHP and eighteen have been determined ineligible, while six have not been evaluated for eligibility.

Table 3-6. Recorded Cultural Resources at the Tioga-Hammond Lakes Project

Resource Name	Identification No.	Resource Type	NRHP Eligibility	Description
Lamb Creek (36TI0002)	1976RE01271	archaeology	undetermined	precontact open habitation site
Corning & Blossburg Railroad Historical Marker	1983HM00010	historical marker	undetermined	Historical marker detailing how the Corning & Blossburg Railroad connected the

Resource Name	Identification No.	Resource Type	NRHP Eligibility	Description
				Chemung Canal and Erie Railroad with local coal fields.
36TI0073	1983RE03461	archaeology	undetermined	precontact open habitation site
Mansfield Armory	1989RE00324	above-ground	Listed	1938 defense armory building
36TI0076	1990RE01219	archaeology	undetermined	precontact open habitation site
36TI0074	1990RE01524	archaeology	undetermined	precontact open habitation site
36TI0075	1990RE01597	archaeology	undetermined	precontact open habitation site
H. Peck House	1995RE42044	above-ground	undetermined	19th century domestic dwelling
Tioga Borough Historic District	1995RE48591	above-ground	eligible	N/A
Tioga-Hammond L-1 (36TI0121)	2002RE02936	archaeology	undetermined	precontact and historic site
Tioga-Hammond H-1 (36TI0119)	2002RE03011	archaeology	undetermined	precontact and historic site
Tioga-Hammond I-1 (36TI0120)	2002RE03267	archaeology	undetermined	historic domestic site
SR 287 Bridge	2004RE03202	above-ground	not eligible	1935 bridge
SR 15 Bridge	2004RE09376	above-ground	not eligible	1942 bridge
Hammond Barn	2008RE01078	above-ground	not eligible	1922 barn; demolished
Unnamed District	2010RE03426	above-ground	undetermined	NE, NW, and SW corners of Main St./SR 0015 and Wellsboro St./SR 0006
Mantor Farmstead (36TI0162)	2012RE00914	archaeology	eligible	historic farmstead
Ross Street Bridge	2018RE02509	above-ground	not eligible	demolished
Tioga Path	2019RE02999	above-ground	undetermined	18th century transportation route
LR 22 Bridge	2019RE05662	above-ground	undetermined	1935 bridge

Table 3-7. Recorded Cultural Resources at the Cowanesque Lake Project

Resource Name	Identification No.	Resource Type	NRHP Eligibility	Description
Antonio Site (36TI0030)	1970RE00123	archaeology	Not Eligible	precontact open habitation site
Beechers Island Presbyterian Church	1979RE00268	above-ground	Eligible	Greek Revival church construction in 1845
Merritt Site (36TI0032)	1980RE01027	archaeology	Undetermined	precontact open habitation site
Bockus Site (36TI0031)	1980RE01518	archaeology	Not Eligible	lithic reduction site
Tubbs Farm (36TI0026)	1984RE03199	archaeology	Undetermined	precontact open habitation site
Cowanesque Reservoir #2 (36TI0034)	1984RE03418	archaeology	Not Eligible	multi-component site featuring precontact open habitation and historic domestic sites
Cowanesque Reservoir #5 (36TI0036)	1984RE03440	archaeology	Undetermined	precontact open habitation site
Cowanesque Reservoir #1 (36TI0033)	1984RE03714	archaeology	Not Eligible	precontact open habitation site
Cowanesque Reservoir #6 (36TI0037)	1984RE03742	archaeology	Not Eligible	precontact open habitation site
Cowanesque Reservoir #3 (36TI0035)	1984RE03811	archaeology	Not Eligible	precontact open habitation site
Cowanesque Reservoir #10 (36TI0038)	1985RE01126	archaeology	Not Eligible	isolated find
Vendel #12 (36TI0047)	1987RE00996	archaeology	Not Eligible	precontact open habitation site
36TI0052	1987RE01010	archaeology	Not Eligible	historic domestic site
36TI0051	1987RE01013	archaeology	Not Eligible	historic domestic site
36TI0053	1987RE01021	archaeology	Undetermined	historic domestic site

Resource Name	Identification No.	Resource Type	NRHP Eligibility	Description
36TI0054	1987RE01035	archaeology	Not Eligible	historic domestic site
36TI0049	1987RE01169	archaeology	Not Eligible	historic domestic site
36TI0057	1987RE01188	archaeology	Not Eligible	historic domestic site
36TI0050	1987RE01230	archaeology	Not Eligible	historic domestic site
36TI0055	1987RE01239	archaeology	Not Eligible	historic domestic site
36TI0048	1987RE01246	archaeology	Not Eligible	historic domestic site
36TI0056	1987RE01253	archaeology	Not Eligible	historic domestic site
Losey (3) Site (36TI0028)	1990RE01396	archaeology	Eligible	village site
Cemetery	1999RE01663	above-ground	Not Eligible	cemetery constructed in 1880
Cowanesque Bridge Site (36TI0131)	2003RE03787	archaeology	Undetermined	precontact open habitation site
N/A	2010RE03166	above-ground	Undetermined	unknown historic wooden building

The potential for unidentified cultural resources within the Tioga-Hammond Lakes project area remains moderate to high in undisturbed, low to moderately sloped areas within the Tioga River and Crooked Creek floodplains and upland areas. The Tioga-Hammond Lakes' location suggests the possibility of a variety of unidentified precontact and historic sites such habitation sites, resource processing or procurement areas, and domestic sites, among others.

The potential for unidentified cultural resources within the Cowanesque Lake project area remains moderate to high in undisturbed, low to moderately sloped areas within the Cowanesque River floodplain and upland areas. Cowanesque Lake's location and previously identified resources suggests the possibility for a variety of unidentified precontact and historic sites such as habitation sites, resource processing areas, procurement areas, and domestic sites, among others.

Coordination letters under Section 106 of the NHPA regarding this Master Plan update were sent to the PA State Historic Preservation Office (PHMC) on March 5, 2024. PHMC responded on April 2, 2024, acknowledging their interest in the updated Master Plan. Coordination letters were also sent to the Delaware Nation, the Delaware Tribe of Indians, the Seneca-Cayuga Nation, and the Seneca Nation of Indians on March 7, 2024. The Seneca Nation of Indians responded stating there are numerous cultural resources in the areas of Tioga-Hammond and Cowanesque Lakes. USACE responded to the Seneca Tribe clarifying no physical actions or projects are proposed by these master plan updates, but any future actions such as ground

disturbance, new construction, etc. would undergo its own Section 106 review and consultation. USACE did not receive any further correspondence from the Seneca Nation or any other tribe. Coordination correspondence is included in Appendix F.

If specific project actions are proposed in the future, they will be subject to consultation and review under Section 106 of the NHPA.

3.11 UTILITIES

UGI Utilities, Inc. maintains a utility gas line at the Tioga-Hammond Lakes project, while two other lines cross project lands at the Cowanesque Lake Project. The Tioga-Hammond and Cowanesque Lakes project boundaries also include electric and telephone lines. Changes to land and water use classifications under the Proposed Action would not affect utilities. An assessment of utilities associated with any future projects would be performed during detailed project-specific planning.

3.12 HAZARDOUS MATERIALS AND WASTE

According to USEPA's Envirofacts database, no known contaminated sites occur at the project area. Additionally, no Superfund or brownfields sites were identified within two miles of the project area from which large quantities of hazardous materials would have escaped uncontrolled into the environment (USEPA, 2024a). Changes to land and water use classifications under the Proposed Action would not affect hazardous materials and wastes. An assessment of hazardous materials and wastes associated with any future projects would be performed during detailed project-specific planning.

3.13 DEMOGRAPHICS

According to the U.S. Census Bureau (USCB), the 2021 population for the three counties surrounding Tioga-Hammond and Cowanesque Lakes (Tioga County, PA; Steuben County, NY; Chemung County, NY) was 217,082, down from 229,801 in 2010 (USCB, 2021). The 2021 poverty rate in the region was 13.8 percent, slightly higher than the 12.1 percent poverty rate across PA and slightly lower than the 13.9 percent poverty rate across NY. The largest employment sector in the region is the educational services, health care, and social assistance industry. The Proposed Action would not result in any appreciable effects to the local or regional demographic environment. Potential effects to socioeconomics arising from any future projects would be studied during detailed project-specific planning.

3.14 TRAFFIC AND TRANSPORTATION

Changes to land and water use classifications would have no effect on traffic and transportation. Any temporary effects from increased truck traffic during construction of future projects would be assessed during detailed project-specific planning.

4 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

NEPA requires that federal agencies identify "any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented" (42 U.S. Code § 4332). An irreversible commitment of resources occurs when the primary or secondary effects of an action result in the loss of future options for a resource. Usually, this is when the action affects the use of a nonrenewable resource, or it affects a renewable resource that takes a long time to renew. The effects for this project from the classification of land would not be considered an irreversible commitment because much of the land could be converted back to prior use at a future date. An irretrievable commitment of resources is typically associated with the loss of productivity or use of a natural resource (e.g., loss of production or harvest). No irreversible or irretrievable effects on federally protected species or their habitat is anticipated from implementing the 2025 Master Plan.

5 SUMMARY

Table 6-1 presents a summary of the environmental consequences by alternative analyzed in this EA. As discussed in Chapter 4, selection of the Proposed Action Alternative would not be anticipated to cause adverse cumulative effects. Table 6-2 presents conservation measures recommended within Chapter 3.

Table 5-1. Summary of Potential Environmental Effects

Alternative	Effect Type*		
	Beneficial	*None/ Negligible*	*Negative*
Water Resources			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Soil Resources			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Biological Resources			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Land Use and Recreation			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Air Quality			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Geology and Topography			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Groundwater			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Noise			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Cultural Resources			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Utilities			
No Action Alternative	-	x	-
Proposed Action Alternative	--	x	-

Alternative	Effect Type*		
	Beneficial	*None/ Negligible*	*Negative*
Hazardous Materials and Wastes			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-
Demographics			
No Action Alternative		x	-
Proposed Action Alternative	-	x	-
Traffic and Transportation			
No Action Alternative	-	x	-
Proposed Action Alternative	-	x	-

*Effects on resource categories are based on applicable land classifications changes. Section 3 describes anticipated effects from changes to land classification under the Proposed Action alternative.

Table 5-2. Conservation Measures for Future Master Planning Projects

Measure	Resource Protected
Construction and operations of future master planning projects would use best management practices (BMPs) associated with prevention of erosion and control of stormwater runoff. This includes obtaining a National Pollutant Discharge Elimination System (NPDES) permit for projects involving earth disturbances exceeding one acre.	Water and Soil
USACE would consider the presence of the 100-year floodplain in design and siting future master planning projects within floodplain areas.	Water
USACE would consider the potential for erosion and occurrence of Prime Farmland soils in design and siting future master planning projects.	Soil
Construction and operations of future master planning projects would use BMPs to avoid and minimize adverse effects to sensitive species recommended by resource agencies during future environmental review of projects.	Biological
Effects to sensitive receptors (e.g., adjacent residences and campers) would be minimized as these activities would be restricted to the daytime and would be temporary in nature	Noise Environment
If any human remains or cultural items are found within or adjacent to the Tioga-Hammond and Cowanesque Lakes Projects that may be demonstrably related to one of the recognized tribal entities, then Public Law 101-601, the Native American Grave Protection and Repatriation Act, would be implemented and the affected group contacted.	Cultural Resources

Table 6-3 summarizes the compliance of the proposed alternative with environmental protection statutes and other environmental regulations. Based on the evaluation of project effects described in Section 3, there are no significant effects from the proposed action and a FONSI has been prepared.

Table 5-3. Compliance of the Proposed Action with Environmental Protection Statutes and Other Environmental Requirements

Federal Statutes	Level of Compliance
Anadromous Fish Conservation Act	N/A
Archeological and Historic Preservation Act	Full
Archeological Resources Protection Act	Full
Bald and Golden Eagle Protection Act	Full
Clean Air Act	Full
Clean Water Act	Full
Comprehensive Environmental Response, Compensation and Liability Act	N/A

Federal Statutes	Level of Compliance
Endangered Species Act	Full
Farmland Protection Policy Act	Full
Federal Water Project Recreation Act	N/A
Fish and Wildlife Coordination Act	Full
Flood Control Act	Full
Land and Water Conservation Fund Act	N/A
Migratory Bird Treaty Act	Full
National Environmental Policy Act	Pending
National Historic Preservation Act	Full
Noise Control Act	Full
Resource Conservation and Recovery Act	N/A
Rivers and Harbors Act	N/A
Safe Drinking Water Act	N/A
Solid Waste Disposal Act	N/A
Toxic Substances Control Act	N/A
Water Resources Planning Act	N/A
Watershed Protection and Flood Prevention Act	Full
Wetlands Conservation Act	N/A
Wild and Scenic Rivers Act	N/A
Executive Orders (EOs), Memoranda, etc.	
Protection and Enhancement of Environmental Quality (EO 11514)	Full
Protection and Enhancement of Cultural Environment (EO 11593)	Full
Floodplain Management (EO 11988)	Full
Protection of Wetlands (EO 11990)	Full
Protection of Children from Health Risks and Safety Risks (EO 13045)	Full
Consultation and Coordination with Indian Tribal Governments (EO 13175)	Full
Indian Sacred Sites (EO 13007)	N/A
Invasive Species (EO 13112)	Full
Migratory Birds (EO 13186)	Full
Facilitation of Cooperative Conservation (EO 13175)	N/A
Chesapeake Bay Protection and Restoration (EO 13508)	Full
Prime and Unique Farmlands (CEQ Memorandum, 11 Aug 80)	Full
Unleashing American Energy (EO 14154)	Full

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