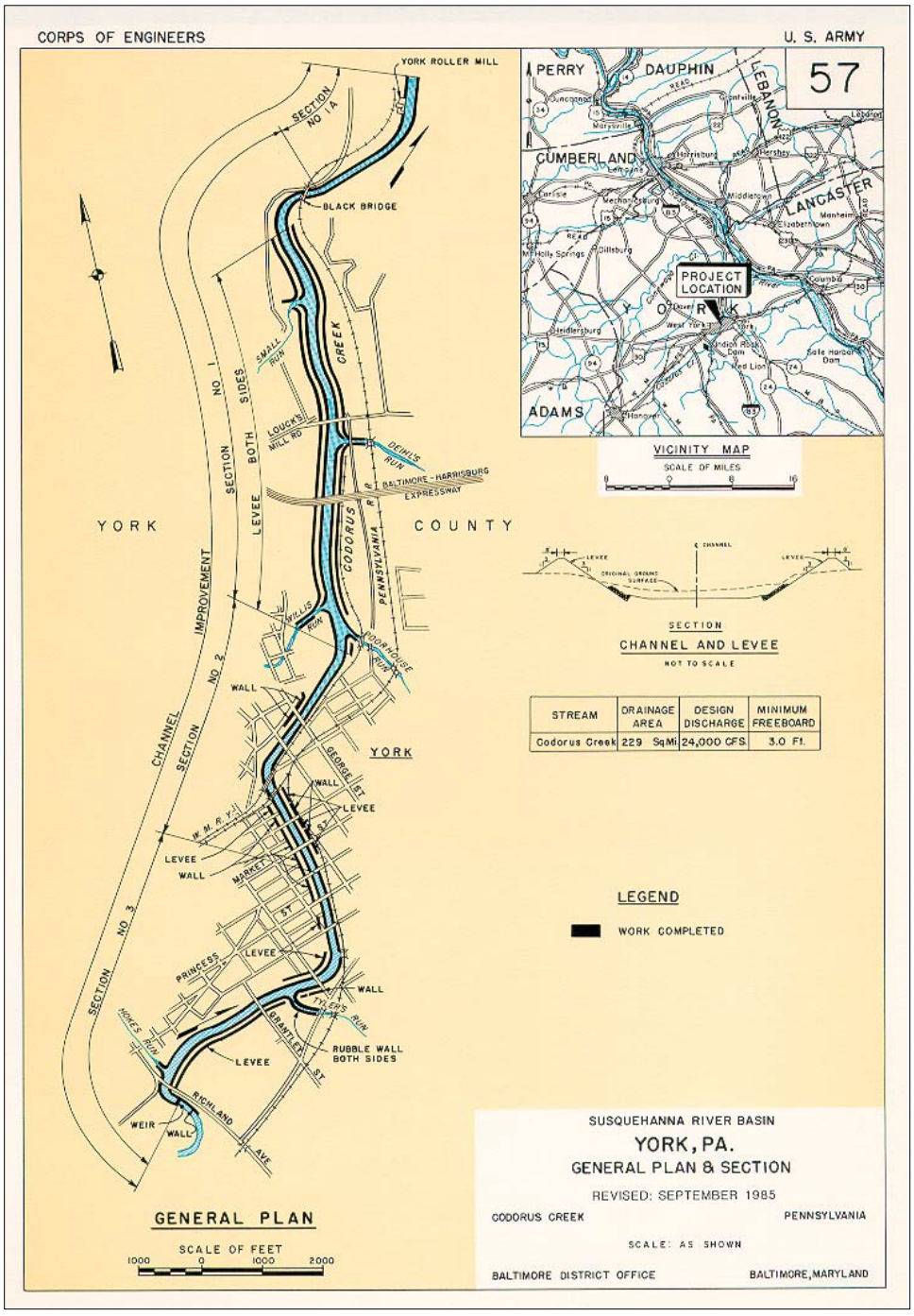
CODORUS CREEK FLOOD RISK MANAGEMENT PROJECT

PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

YORK, PENNSYLVANIA



April 2024

U.S. Army Corps of Engineers, Baltimore District

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

1.0 BACKGROUND

The Codorus Creek Flood Risk Management (FRM) Project provides flood damage reduction to the City of York, West Manchester Township, Spring Garden Township, Springettsbury Township, and North York Borough, all located in York County, Pennsylvania (PA). The FRM project was authorized by the Flood Control Act of 22 June 1936, as amended, and by the Flood Control Act of 28 June 1938. The FRM project was constructed in the late 1930s and became operational in 1947. The FRM project is operated and maintained by the U.S. Army Corps of Engineers, Baltimore District (USACE). When constructed, the FRM project consisted of approximately 23,000 feet of channel improvement, including channel widening and deepening, construction of approximately 7,600 feet of floodwalls and earthen banks, protection of channel bank slopes, and removal of a mill dam that increased channel capacity to 24,000 cubic feet per second. A map of the Codorus Creek FRM project is in Appendix A1. The focus of this environmental assessment (EA) is the Codorus Creek FRM project.

The *York, Pennsylvania Local Flood Protection Works (Codorus Creek) Operation and Maintenance (O&M) Manual* was prepared by USACE in 1951. The manual provides general information, rules, and procedures for efficient O&M of flood control works. Included in the manual are O&M guidelines for levees, floodwalls, drainage structures, open channels, and procedures for high water events (USACE, 1951). This programmatic EA addresses the impacts expected to be associated with the operation and maintenance of the Codorus Creek FRM project.

The *Codorus Creek Flood Risk Management Project Comprehensive Management Plan for Rehabilitation Actions, York County, Pennsylvania* was prepared by USACE in 2018 to document and prioritize rehabilitation work required to address deficiencies for the Codorus Creek FRM project. The plan is comprised of a 2, 5, and a 10-year outlook for proposed work tasks that would meet USACE objectives to rehabilitate the Codorus Creek FRM project within 10 years, assuming sufficient funding is allocated for completing the tasks. Table 1 below provides a summary of the work tasks identified in the comprehensive management plan, and the priority ranking, system risk, timeframe, and outlook plan year for each task (USACE, 2018).

Table 1. Summary of Work Tasks from the Codorus Creek Flood Risk Management Project Comprehensive Management Plan for Rehabilitation Actions (USACE, 2018).

Priority	Task	Work Task Description	Levee System*	System Risk Rating	Projected Fiscal Year Completion	Outlook Plan Year
1	A-1	Drainage Conduit Maintenance – Inspection/Cleaning	All	[1]	2019	2
2	A-II	Drainage Conduit Maintenance – Repair/Replace	All	[1]	2020	2
3	B	Floodwall Replacement near Penn Street Bridge	YRSE	High	2021	5
4	C	Riprap Installation near South Richland Avenue Bridge	YRSE	High	2020	2
5	D	Masonry Floodwall Repairs near Market Street	YRWD	High	2023	5
6	G	Masonry Repairs Throughout Project	YRSE, YRWD, YRWW	High to Medium		10
7	H	Remove Shoaling and Vegetation throughout Channel	Channel	[1]		10
8	I	Evaluate and Abandon Conduit at U/S end of YRWD	YRWD	High		10
9	J	Monitor and Repair YRED Floodwall near Bascule Dam	YRED	High		10
10	K	Rehab YRSE Levee between Grantley Street and Tyler's Run	YRSE	High		10
11	L	Restore Willis Run Levee Segment	YRWW	Medium		10
12	M	Remove Rubble Fill from YRWD Levee	YRWD	High		10
13	N	Repair Levee Embankments throughout Projects	All	[1]		10

Priority	Task	Work Task Description	Levee System*	System Risk Rating	Projected Fiscal Year Completion	Outlook Plan Year
14	O	Evaluate and Restore YRLM tie-in to N-S Railroad	YRLM	Medium		10
15	P	Evaluate and Remove/Modify South Richland Wier	Channel	[1]		10

*Levee System corresponds to inspection project acronyms: YRNE – York Northeast; YRLM – York East Loucks Mills; YRWW – York West Willis Run; YRED – York East Downtown; YRWD – York West Downtown; YRSE – York Southeast; YRSW – York Southwest

[1]Work task addressed an important driver of risk and uncertainty or system performance and may corresponds to multiple systems.

The *Final Environmental Assessment, Indian Rock Dam/Codorus Creek Flood Risk Management Rehabilitation Project* was finalized by USACE in 2019, which included priority work tasks 1 through 5 identified in Table 1 above (USACE, 2019).

The *Record of Environmental Consideration, Indian Rock Dam/Codorus Creek Flood Risk Management Project, Phase II Rehabilitation* was finalized by USACE in 2023 and included the following work tasks: rehabilitation of the flood channel system within the downstream terminus of Tyler Run (priorities 6, 7, and 8), floodwall repairs near the Market Street and Philadelphia Street Bridges (priority 6), rehabilitation of the levee system along the downstream terminus of Willis Run (priority 11), and removal of shoaled material within the Codorus Creek channel at the confluence of Poorhouse Run and Mill Creek (priority 7) (USACE, 2023).

Future work tasks including the addition of access points along the Codorus Creek FRM project for boating, and removal of the low head dam near South Richland Avenue have also been identified. If funding becomes available for future work, USACE would evaluate the potential effects of carrying out these tasks in accordance with the National Environmental Policy Act of 1969, as amended (NEPA).

The York County Economic Alliance has plans to improve public access along both sides of Codorus Creek, install recreational amenities, and enhance ecological habitat of the creek through stormwater mitigation, urban flood control, and native plantings as part of the Codorus Greenway Project. As of 2022, 50 percent of the design plans for the Codorus Greenway Project were complete (York County Economic Alliance, 2023). This is not a USACE-funded project.

2.0 SCOPE OF ENVIRONMENTAL ASSESSMENT

This EA has been prepared in accordance with NEPA, the 2022 Council on Environmental Quality's (CEQ) regulations published in 40 Code of Federal Regulations (CFR) Part 1500, and USACE Engineer Regulation 200-2-2, Procedures for Implementing NEPA. Compliance with other environmental laws, executive orders, and memorandum are described in Section 8.0.

This EA analyzes the effects of the proposed action described in Section 3.1 on environmental, cultural, and socioeconomic resources in the Codorus Creek FRM project. The area of review encompasses the approximate 4.8 miles of the Codorus Creek FRM project, to the outer boundaries of the existing USACE easement for the levee system.

3.0 ALTERNATIVES

3.1 Proposed Action

This EA covers the following future O&M work tasks for the Codorus Creek FRM project for a period of 10 years (from the date of the signed Finding of No Significant Impact (FONSI)). These tasks were identified from the Codorus Creek FRM project O&M manual and the comprehensive management plan and are necessary to maintain the authorized FRM system capacity, standards, and integrity. These tasks are reliant on USACE receiving federal funding to perform these actions.

A. Riprap removal/repair/replacement
    1. Remove riprap where no longer needed or in the case of subsidence into the channel.
    2. Augment existing riprap in the event scour protection has been compromised.
    3. Replace riprap where and when necessary to maintain system performance.
B. Drainage issues and pipe/outflow replacement/repairs
    1. Repairs to the gated outlets.
    2. Drainage conduit maintenance (inspection/cleaning and repair/replacement).
C. Floodwall maintenance/repair/replacement
    1. Pointing, grouting, sealing.
    2. Repair of mortar/rocks.
    3. Removal of vegetation having roots that would endanger floodwalls.
    4. Floodwall bulge repairs.
    5. Masonry repairs.
    6. Floodwall replacement in whole or in part.
D. Levee maintenance
    1. Repair levee embankments.
    2. Removal/replacement of rubble fill/riprap.
    3. Routine mowing of grass and cutting of weeds.
    4. Rodent extermination activities.
    5. Fill with compacted material any holes or washes found in the levee.
    6. Repair gaps where road crossings have worn down the levee crown or other locations where the levee is below grade.
    7. Maintenance of access roads to and on the levee.
E. Channel maintenance and shoal removal (sediment/gravel bars) including the removal of snags and debris in the channel. Sediment and gravel bars primarily occur in the Codorus Creek FRM project above and below Richland Avenue, between Grantley Road and Penn Street, above and below Poorhouse Run, and south of Route 30 (refer to the shoaling location map in Appendix A1). Typically, deposition removal actions are performed by USACE every 2 to 3 years, rotating between areas, so that stream depth restoration may occur between 5 to 10 years at various locations. Shoal removal within Codorus Creek is typically conducted via a long-arm excavator from the uplands. However, portions of the

sediment/gravel bars are located over 120 feet from the top of the streambank where a long-arm excavator cannot reach. Therefore, vehicles would be allowed to track on the sediment/gravel bars in order to restore channel capacity in these areas. All material would be transported to an authorized landfill or other approved, upland disposal site for final disposal.

Rights of Entry will be obtained, as needed, to conduct all actions. USACE will obtain a Clean Water Act Section 401 Water Quality Certification prior to construction of the proposed action and will comply with all conditions thereof. USACE contractors will be required to install and maintain erosion and sediment control best management practices during all work. Contractors will comply with all applicable regulations for reduction of air, noise and light pollution, avoidance of buried utilities, and maintenance of local traffic.

Failure to perform O&M actions would result in adverse effects to waters of the U.S. and loss of flood risk management and life safety benefits provided by a fully functioning project. These adverse impacts would result from the continued deterioration of the Codorus Creek FRM project, including continued shoaling and loss of flood channel capacity, and eventual erosion or collapse of flood channel walls and levees, loss of sediments and debris into the channel and downstream receiving waters, and other failures.

3.2 No-Action

Under the No-Action Alternative, USACE would continue to perform O&M actions for the Codorus Creek FRM project. However, without a programmatic approach, a separate NEPA document would be needed for each O&M action or group of actions as needed. The preparation of a NEPA document may be needed up to one to two times per year. The No-Action Alternative would be less efficient, more costly, and may result in potential project delays.

4.0 PROPOSED ACTION AREA

The Codorus Creek FRM project is located along 4.8 miles of Codorus Creek from the existing control weir upstream of the South Richland Avenue Bridge to the Black Bridge, a railroad bridge located northwest of the City of York. The Codorus Creek FRM project consists of eight independent levee segments: York Northeast, York Northwest, York East Loucks Mill, York West Willis Run, York East Downtown, York West Downtown, York Southeast, and York Southwest (Appendix A1). Multiple roads and rail lines cross the FRM project. The levee system passes through West Manchester Township, Spring Garden Township, Springettsbury Township, North York Borough, and York City, all located in York County, PA. Tributaries of Codorus Creek in the proposed action area include Hoke's Run, Tyler's Run, Poorhouse Run, Willis Run, Deihl's Run (Mill Creek), and Small Run (Appendix A1). Adjacent land uses include residential, mixed use, institutional, commercial, industrial, and open space. The Indian Rock Dam is located approximately 3 miles upstream from York.

The levee system, in general, has side slopes of one foot vertical to three foot horizontal on both the creek and the land sides, and a top width of approximately 8 feet. The average height of the levee from the channel bed to the top of the levee is 25 feet. Concrete floodwalls were erected in localities where restricted clearances prevented the construction of earthen levees. The total length

of levee embankment is 26,190 feet located along both banks of Codorus Creek and the total length of the constructed floodwalls is approximately 7,600 feet.

The maximum depth of the channel is 4.5 feet, with an average depth of 3 feet under normal circumstances. The channel was designed to protect against flood discharges 33 percent greater than the flood of record in August of 1933 to a design flow capacity of 24,000 cubic feet per second. During construction of the channel, a mill dam was removed to increase channel capacity. A control weir was also constructed by USACE at the upstream end of the channel to drop water levels within the channel to allow for water passage under the South Richland Avenue Bridge. In 1982, a bascule dam was constructed by the City of York to increase water levels for recreational boating in Codorus Creek through the city.

5.0 PURPOSE AND NEED

The purpose of regular operation and maintenance of the Codorus Creek FRM project is to ensure that the 77-year-old system does not deteriorate and is able to function as designed and authorized. Regular maintenance is needed to reduce the threat to life and property from riverine flooding. This EA is intended to provide long-term NEPA coverage for the O&M actions described under Section 3.1.

6.0 AFFECTED ENVIRONMENT

This section describes the existing conditions of the proposed action area for applicable environmental, cultural and socioeconomic resources that could be effected by the proposed action.

6.1 Soils and Prime Farmland

The substrate of Codorus Creek consists primarily of silt and sand, as well as gravel and sediment deposits/shoals throughout the FRM project. Soils identified in the proposed action area using the Natural Resources Conservation Service (NRCS) Web Soil Survey are shown in the soil map located in Appendix A2 and in Table 2 below. Most of the proposed action area (89 percent) is mapped as urban land and water. The remaining area (11 percent) consists of soils that are considered prime farmland (54 acres) or farmland of statewide importance (1 acre) (USDA NRCS, 2019). Although 11 percent of the soils in the proposed action area are identified as prime farmland or farmland of statewide importance, most of these lands have been developed for water management (levees, dikes, floodwalls) with road and rail line crossings at various locations. Fill material including gravel, silts, sands, brick, concrete debris, etc. overlays the proposed action area at various locations as a result of historic disturbance, demolition of structures, and discharges of trash and debris. Therefore, soils considered prime farmland or farmland of statewide importance in the proposed action area would not be suitable for agriculture.

Table 2. Soils in the Proposed Action Area (USDA NRCS, 2019)

USDA Natural Resources Conservation Service Map Unit Name	Acreage in Proposed Action Area	Prime/Unique Farmland
Urban Land	391	No
Water	60	No
Lindside Silt Loam	46	Prime Farmland
Clarksburg Silt Loam, 0 to 3 percent slopes	5	Prime Farmland
Chester Silt Loam, 3 to 8 percent slopes	3	Prime Farmland
Glenelg Channery Silt Loam, 15 to 25 percent slopes	2	No
Edgemont Channery Loam, 8 to 15 percent slopes	1	Farmland of Statewide Importance
Edgemont Channery Loam, 25 to 70 percent slopes, very stony	1	No

6.2 Hydrology

Approximately 4.8 miles of Codorus Creek are located within the FRM project. The creek is classified as a nontidal freshwater tributary with perennial flow. Multiple tributaries connect to Codorus Creek within the limits of the levee system including Hoke's Run, Tyler's Run, Poorhouse Run, Willis Run, Deihl's Run (Mill Creek), and Small Run, all of which are nontidal freshwater tributaries. Codorus Creek flows southwest to northeast, is a tributary to the Susquehanna River (confluence near Saginaw, PA), and is located within the Lower Susquehanna Watershed. The distance from the southern limits of the levee system to its confluence with the Susquehanna River is approximately 12.7 river miles. The drainage area of Codorus Creek is approximately 222 square miles. The daily discharge of Codorus Creek at York, PA averages 173 cubic feet per second (USGS, 2023).

Within the limits of the Codorus Creek FRM project, approximately 22,969 feet of the creek have been modified through channel improvement, including channel widening and deepening, construction of floodwalls and earthen banks, protection of channel bank slopes, and removal of a mill dam. The creek banks consist of maintained/mowed grassy banks, concrete and hand laid stone floodwalls with caps in some locations, 270 identified drainage conduits running through the levee system, and riprap of assorted sizes. There are multiple bridges crossing Codorus Creek within the FRM project, as well as two small bridge crossings at Tyler's Run (near its confluence with Codorus Creek).

The width of Codorus Creek within the levee system varies, from a base width of approximately 80 feet to approximately 200 feet. The average water depth is approximately three feet. A bascule dam is present within the creek near downtown York. The dam is owned, operated, and maintained by the City of York. The water depth behind the bascule dam, when in a raised position, is approximately six feet. The dam is currently not operating properly and is permanently in the raised position.

The proposed action area encroaches upon municipal storm sewer systems that discharge to Codorus Creek, including those of the City of York and the Townships of Manchester, West Manchester, Springettsbury, and Spring Garden (Watershed Resources Registry, 2022).

6.3 Water Quality

The mainstem of Codorus Creek from Oil Creek to the confluence with the Susquehanna River is designated for aquatic life use, specifically the maintenance and propagation of warm water fishes and migratory fishes (Pennsylvania Code, 2023). Codorus Creek within the vicinity of the proposed action area is impaired for multiple causes including unknown toxicity, flow variability, excessive algal growth, siltation, and other habitat alterations. The sources of these impairments are attributed to land uses within the watershed and include urban runoff, storm sewer discharges, and channelization of the creek (PADEP, 2023a).

6.4 Navigation

Codorus Creek was historically used for commercial navigation. In 1833, the Codorus Navigation Works completed construction of approximately 11 miles of canal within Codorus Creek that allowed canal boats measuring up to approximately 70 feet long to navigate between downtown York and the Susquehanna River (Smith, 2018). Codorus Creek is no longer navigable for motorized commercial or recreational vessels. Codorus Creek in the proposed action area is a shallow waterway that is only navigable by kayaks and canoes. There are two dams located within the Codorus Creek FRM project: the bascule dam owned and operated by the City of York, and the USACE owned and operated South Richland Avenue Dam, which further obstructs navigation. Although it is not navigable, Codorus Creek remains regulated under Section 10 of the Rivers and Harbors Act of 1899.

6.5 Floodplains

As identified on the Federal Emergency Management Agency (FEMA) flood maps, the proposed action area is located within Zone AE. Zone AE is defined as areas that have a 1 percent probability of flooding every year, which is also referred to as the 100-year floodplain (FEMA, 2021). The National Flood Insurance Program considers properties that are located within areas identified as Zone AE to be at high risk of flooding (FEMA, 2023). Most of the existing 100-year floodplain of Codorus Creek in the proposed action area is developed. Development in the floodplain has led to degradation and loss of natural floodplain functions as well as the habitat that the natural floodplain provides.

6.6 Terrestrial Resources

Wildlife species within and near the proposed action area include mice, rats, rabbits, raccoons, groundhogs, deer, etc. The northern segment of the levee system is surrounded by less developed lands; therefore, more diverse and abundant wildlife species may be present in this area of the FRM project.

6.7 Aquatic Resources

No wilderness trout streams, Class A streams, or streams supporting natural trout reproduction occur in the proposed action area (PNHP, 2023). Codorus Creek is not identified as a PA Chapter 93 special protection stream (i.e., high quality waters and exceptional value waters). Within the limits of the FRM project, Chapter 93 identifies Codorus Creek as a stream that supports warm

water fishes and migratory fishes (Pennsylvania Code, 2023). Limited populations of warm-water fish (e.g., yellow bullhead, bluegill, redbreast sunfish, largemouth and smallmouth bass, walleye) occur in the proposed action area (PFBC, 2018).

6.8 Wetlands

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) classifies the proposed action area as a riverine system with wetlands contained within a channel (USFWS, 2021). However, Codorus Creek within the proposed action area is a heavily modified flood control channel that is more appropriately identified as a perennial stream, with the characteristics of a bed, bank, and regular and reoccurring flow. The NWI does not identify any vegetated wetlands along the channel, or immediately upstream or downstream. The PA National Wetlands Inventory indicates that a freshwater pond is present outside of the proposed action area near the Norfolk Southern rail line at the northern portion of the proposed action area (Pennsylvania National Wetlands Inventory, n.d.). No work is proposed to occur near this location. Review of the NRCS soils survey indicated that the soils within the proposed action area are not hydric, and/or contain only minor amounts of hydric inclusions (less than 12 percent) (USDA NRCS, 2019).

6.9 Vegetation

The vegetative communities present within the proposed action area are typical of disturbed, urban communities, consisting of perennial grasses, weeds, and opportunistic shrub and tree species.

6.10 Threatened and Endangered Species

According to a letter generated by the USFWS Information for Planning and Consultation tool (IPaC) (Appendix A3), the following federally listed species have the potential to occur in the proposed action area: endangered northern long-eared bat (*Myotis septentrionalis*), endangered Indiana bat (*Myotis sodalis*), and the proposed endangered tri-colored bat (*Perimyotis subflavus*). An Endangered Species Act (ESA) candidate species, the monarch butterfly (*Danaus plexippus*) also has the potential to occur in the proposed action area. No threatened or endangered critical habitat, refuge lands, or fish hatcheries are located within the proposed action area (USFWS, 2023).

A. Northern Long-eared Bat. In the winter months, this species hibernates in caves and mines, called hibernacula. During the summer months and portions of the fall and spring, this species roosts behind large pieces of bark and within cavities and crevices of live and dead trees, typically in forests consisting of a dense growth of trees and underbrush covering a large tract. This species is also less commonly found in structures such as barns and sheds (USWFS, n.d.). Northern long-eared bats roost and forage in the interior of forests and require sufficient canopy closure. Roosting and foraging primarily occur within closed, intact forest stands (Stantec, 2013). Due to unsuitable roosting and foraging conditions for the northern-long-eared bat (lack of large stands of enclosed forests in or near the FRM project), the northern long-eared bat is not likely to occur within or near the proposed action area.
B. Indiana Bat. Indiana bats roost in trees in summer and are rarely found to roost in buildings. In winter, 97 percent of the total species population hibernates in certain large caves in Missouri, Kentucky, Indiana, and Illinois. PA is on the fringe of the species' range (USFWS, n.d.). As such, the Indiana bat is not likely to occur within or near the proposed action area.

C. Tricolored Bat. During the fall, winter and spring (September through early May), tricolored bats hibernate deep within caves. In summer, they inhabit open woods near water, rock or cliff crevices, buildings and caves (PA Game Commission, 2024). Tricolored bats primarily roost among live and dead leaf clusters of live or recently dead deciduous hardwood trees (USFWS, n.d.). The Codorus Creek FRM project is located within an urban setting with small stands of deciduous forest on the north and south ends of the system. It is unlikely that the tri-colored bat would occur within the proposed action area. However, bats could be present roosting in open woods and leaf litter adjacent to the north and south ends of the FRM project.

D. Monarch Butterfly. It is likely that the monarch butterfly would be present in the proposed action area as they migrate through the region in the fall. The monarch's specific host plant, milkweed, was not observed during site visits in the proposed action area.

6.11 Birds

While there are no ESA requirements for bald eagles (delisted on August 8, 2007), bald eagles continue to receive protection under the Bald and Golden Eagle Protection Act. A bald eagle nest was observed in 2018 on the east side of the Codorus Creek FRM project approximately 175 feet north of Arsenal Road in a small forested area between two operational railroad tracks. The proposed action area is located within a 330-buffer of the bald eagle nest (USFWS, 2022) (Figure 1).

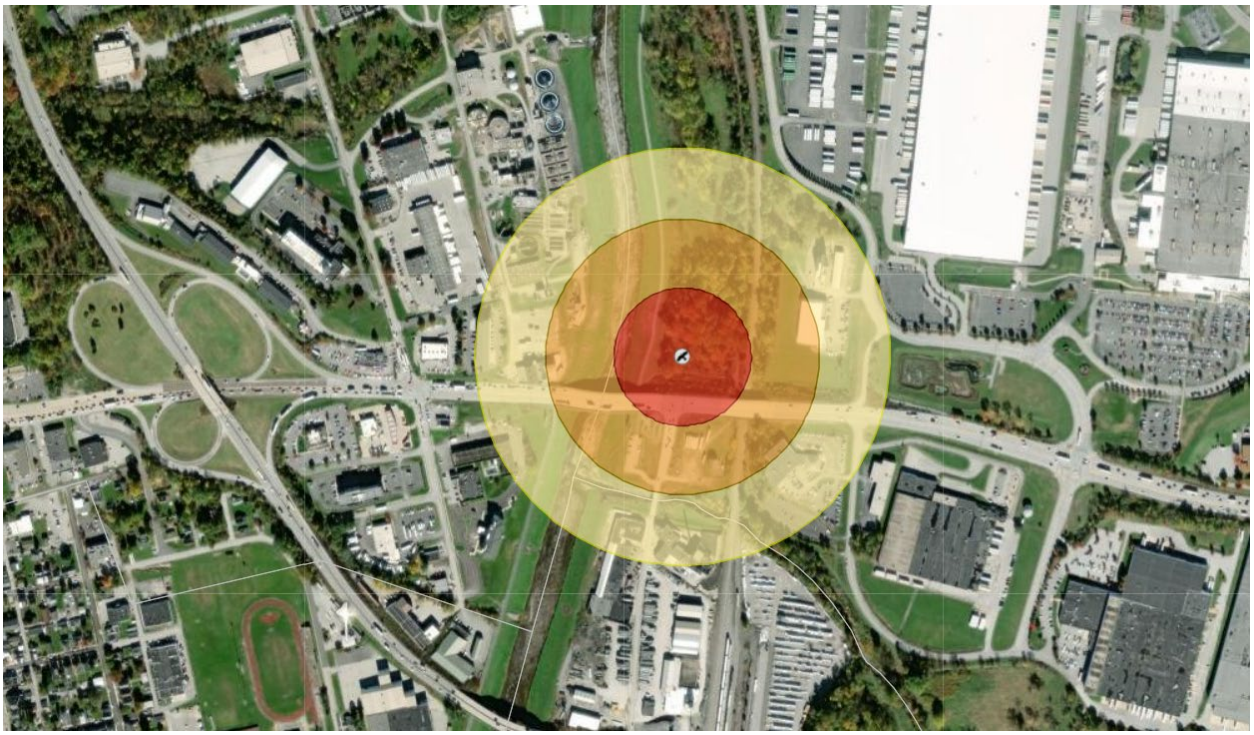

Figure 1. Bald eagle nest 330-foot, 660-foot, and 1000-foot buffers located in the vicinity of Arsenal Road and the Codorus Creek FRM project.

In addition to the bald eagle, the IPaC report identified eight migratory birds that are considered Birds of Conservation Concern (BCC) by USFWS (Appendix A3). The migratory bird species include the black-billed cuckoo (*Coccyzus erythropthalmus*), cerulean warbler (*Dendroica cerulea*), chimney swift (*Chaetura pelagica*), Kentucky warbler (*Oporornis formosus*), prairie warbler (*Dendroica discolor*), prothonotary warbler (*Protonotaria citrea*), red-headed woodpecker (*Melanerpes erythrocephalus*), and the wood thrush (*Hylocichla mustelina*). A BCC designation can be assigned for any of the following reasons: documented or apparent population declines; small or restricted populations; dependence on restricted or vulnerable habitats; or overabundant to the point of causing ecological and economic damage. Birds are given the BCC designation within certain Bird Conservation Regions. The proposed action area falls within the New England/Mid-Atlantic Coasts Bird Conservation Region.

Four state-listed bird species were identified by the PA Game Commission in the PA Natural Diversity Inventory (PNDI) report that have the potential to occur in the proposed action area (Appendix A4). These are the endangered great egret (*Ardea alba*); the great blue heron (*Ardea herodia*), a species of special concern; the endangered black-crowned night heron (*Nyctanassa violacea*), and the endangered yellow-crowned night heron (*Nyctanassa nycticorax*) (PADCNR, 2023). .

6.12 Air Quality

The Harrisburg-Lebanon-Carlisle-York, PA region is designated by the U.S. Environmental Protection Agency (USEPA) as a maintenance area for particulate matter (PM)-2.5 (2006 and 1997 standards) (level of inhalable particles is 2.5 micrometers or smaller). This region was historically in nonattainment for PM-2.5, but now attains the National Ambient Air Quality Standard (NAAQS) (USEPA, 2023a). PM-2.5 forms in the atmosphere as a result of complex reactions of other pollutants emitted from power plants, industries, and automobiles. Particulate matter is also emitted directly from sources such as construction sites, unpaved roads, and smokestacks (USEPA, 2023b). The EPA-approved PA State Implementation Plan (SIP) includes maintenance plans that detail how the state will assure the standard will continue to be met for the next ten years. This region is in attainment for the other five principal air quality pollutants (PADEP, 2023b; USEPA, 2023a).

The proposed action area is also located in the Ozone Transport Region (OTR). The Clean Air Act has specific requirements for a group of northeast states that make up the OTR. States in the OTR are required to submit a SIP and install certain levels of controls for the pollutants that form ozone, even if they meet the ozone standards (USEPA, 2022a).

Environmental justice tools were used to analyze the communities' exposure to PM-2.5 in the air. Communities within a one-mile radius of the proposed action area are below the 90^{th} percentile for PM-2.5 exposure (USEPA, 2023c; CEQ, 2022).

6.13 Greenhouse Gases

The largest direct emitters of greenhouse gases in York County, PA include the York County Energy Center; a powerplant that emitted 2,930,480 metric tons of carbon dioxide ($C0_2$) in 2022, and the Brunner Island Powerplant that emitted 2,743,741 metric tons of $C0_2$ in 2022 (USEPA, 2022b). Statewide net emissions decreased 25.9 percent from the 2005 baseline. While PA is on

track to achieve the 26 percent greenhouse gas emissions reduction goal by 2025, this achievement is likely fleeting and not durable, as the temporary impacts from the COVID-19 pandemic on the economy appear to be a main driver of the decrease (PADEP, 2023c).

6.14 Climate

During a typical year, the City of York's highest temperatures generally occur in July, with average of 87 degrees Fahrenheit (°F), and the lowest temperatures generally occur in January, with an average of 39°F (U.S. Climate Data, 2023). Average annual precipitation is 43 inches. The York County Hazard Mitigation Plan identifies 12 tropical depressions, tropical storms, or hurricanes that have resulted in major disaster or disaster emergency declarations in the county since 1954 (York County, 2018). Additionally, the county has historically been affected by winter storms that result in flooding and ice jam related flooding in vulnerable areas throughout the county.

6.15 Hazardous, Toxic, and Radioactive Waste

The USEPA EnviroMapper was used to identify potential hazardous materials and solid waste sources within and near the proposed action area. This website provides information regarding USEPA-regulated hazardous waste, toxic and air releases, and water discharges, as well as impaired surface waters. Facilities generating pollutants (such as gas stations and municipal public works departments), and contaminated sites (such as superfund and brownfields) are included. According to the website, there are no properties that are listed on the Toxic Release Inventory; generators, transporters, treaters, storers, or disposers of hazardous waste; or Brownfield sites located within or near the proposed action area (USEPA, n.d.). Additionally, review of the USEPA Superfund National Priorities List (NPL) indicates that there are no active NPL superfund sites mapped within the limits of, or in near proximity to, the levee system. There is one non-active site located approximately 2,000 feet south of Codorus Creek along Grantley Road. There are also several archived superfund sites located within York County. One of these lies along Market Street, approximately 1,250 feet east of Codorus Creek. The City of York has six brownfield sites located within approximately 1,000 feet of Codorus Creek from Philadelphia Street downstream to the city's eastern boundary (USEPA, 2023d).

The area adjacent to the floodwall near the Penn Street Bridge was previously the property of the early 20th century Schmidt-Ault Paper, with a history of cardboard manufacturing. The property and structures are currently under the ownership of York College. USACE performed a groundwater evaluation in 2011 and a soils evaluation in 2012. The soil samples tested below the PADEP Act 2 non-residential direct contact surface soil standard of 1000 milligrams per kilogram of lead (mg/kg), except for an isolated occurrence, with a lead concentration of 2800 mg/kg. The findings of the groundwater survey indicated that groundwater was encountered at a depth of 15.3 to 19.5 feet below ground surface, and the groundwater samples were below the PADEP Act 2 MSC for non-use aquifers; and the surface water samples were below the PADEP surface water quality standards of contamination (USACE, 2017).

The Climate and Economic Justice Screening Tool (CEJST) was used to analyze the communities' proximity to legacy pollution. Several communities within a one-mile radius of the proposed action area are above the 90th percentile for proximity to risk management facilities and hazardous waste facilities (count of facilities within 5 kilometers) (CEQ, 2022). Some of these communities are also identified as economically disadvantaged as discussed in Section 6.20 below.

6.16 Recreation

There are multiple parks within the City of York, some of which are within and adjacent to the Codorus Creek FRM project. Brantz Park lies on the north bank (left bank looking downstream) of Codorus Creek between Grantley Road and South Richland Avenue. Brantz Park is forested along Codorus Creek but is otherwise lawn with shade trees and includes a baseball field just upstream of South Richland Avenue. York County Parks, with support from the State of PA, owns and operates the 21 mile long "Heritage Rail Trail County Park", which extends from John Rudy County Park north of York City (in East Manchester Township) south to the PA/Maryland state line, at New Freedom, PA. The trail connects to Maryland's 20-mile-long Torrey C. Brown Trail. The waters of Codorus Creek are utilized for public water related recreation, such as fishing, kayaking, and canoeing. Although there are multiple parks adjacent to the Codorus Creek FRM project, there is a lack of green space in several communities, especially in the city center (CEQ, 2022).

6.17 Aesthetics

The Codorus Creek FRM project is a heavily engineered, 77-year-old system that includes a channelized creek with levees and floodwalls on either side. The FRM project is located in an urban setting. Bridges traverse over and railroad lines run adjacent to the FRM project. The FRM project is surrounded by residential, commercial, educational/institutional, and industrial development; community parks; trails; and open space. Small forest stands are present adjacent to the north and south ends of the FRM project.

6.18 Noise

The City of York is a busy urban setting with notable noise, as is common in similar settings. There are commercial and industrial businesses, residences, community parks, educational institution facilities, roadways, rail lines, bridges, and trails within and adjacent to the Codorus Creek FRM project. The major sources of noise in the proposed action area are anthropogenic, produced by vehicular and railway traffic that utilize the bridge crossings and adjacent roadways. This would also include emergency vehicles and noises produced at the local fire station. Other sources of noise would include those produced by the general public during daily activities, which would be minimal. Natural sounds produced by strong wind and precipitation, as well as from the water flow within the creek, can mask noises produced by anthropogenic sources when human activities are minimal.

6.19 Transportation and Traffic

There are multiple transportation corridors running through and adjacent to the proposed action area. Interstate 83 provides north/south regional surface transportation for vehicles and partially encircles the City of York along the city's southern, eastern, and northern sides. US Route 30 provides a regional east/west vehicle surface transportation route, passing through the northern part of the city. Business 83 (George Street) passes north/south through the City of York, crossing Codorus Creek in the northern part of the city. Other numbered roads passing through the City of York include Market Street (462) passing roughly east/west and Route 74 (Queen Street to Carlisle Avenue). There are multiple road bridges crossing Codorus Creek in the City of York, from upstream (south) to downstream (north) these are South Richland Avenue, Grantley Road, South Penn Street, West College Avenue, West Princess Street, West King Street, Market Street, West Philadelphia Street, Beaver Street, and North George Street (Business 83).

Norfolk Southern Railway tracks extend southward from Harrisburg to York City along the east side of Codorus Creek. Local line haul/switching and terminal railroad tracks extend from the City of York southwest to Hanover, PA, utilizing two bridges crossing Codorus Creek between Beaver Street and Philadelphia Street.

The CEJST was used to analyze the communities' proximity to traffic. Several communities within a one-mile radius of the proposed action area in East York are above the 90th percentile for traffic proximity and volume (count of vehicles at major roads within 500 meters) (CEQ, 2022).

6.20 Socioeconomics and Environmental Justice

The population estimate for the City of York in 2022 was approximately 44,845. The median household income in 2021 dollars was approximately $39,800 (U.S. Census Bureau, 2022). Approximately 29 percent of the population of the City of York, PA is in poverty (approximately 17 percent higher than the national level). Additional demographic information for the City of York, PA are presented in Table 3 below.

Table 3: Demographics for the City of York, PA (U.S. Census Bureau, 2020)

Category	Percentage/Number
Median Age	40.9
Underage 5	6.4
Underage 18	24.5
Age 65 and up	11.3
Males	49.4
Females	50.6
Black or African American	25.2
Hispanic or Latino	32.7
White	38.5
Age 25 and up with high school education (or equivalent)	80.0
Number of Households	17,508

The workforce of York County, PA (workforce statistics were not available for the City of York) is primarily composed of private company workers (70.7 percent). York County has been historically dominated by manufacturing industries that have seen significant declines in the preceding decades. Industries with notable concentrations of workers include manufacturing (15.5 percent), educational services and health care (22.2 percent), and retail trade (11.1 percent). The employment rate is 62.2 percent, which is higher than the state average (58.4 percent) (United States Census, 2022).

There are several colleges and universities within and near the City of York, including the York College of Pennsylvania and Pennsylvania State University York Campus. Industries located within and adjacent to the City of York include printing and packaging; refrigeration, cooling and heating; electronics and controls; snack and food manufacturers and distributers; construction and building supply products; industrial and military; chemical and pharmaceutical; medical supply manufacturers and distributors; transportation and trucking; information technology; architectural firms; restaurants, and others.

There are 14 economically disadvantaged communities in the City of York and West York, PA in the vicinity of the Codorus Creek FRM project. Approximately 39,000 residents live in these communities (approximately 87 percent of the City of York's population). The communities highlighted in Appendix A5 are identified as economically disadvantaged primarily due to the following indicators of burdens (as compared to the rest of the United States): lead paint, proximity to risk management facilities (facilities that handle substances with significant environmental and public health risks), lack of high school education, low income, poverty, historic underinvestment, energy cost, asthma, and low life expectancy (CEQ, 2022). Codorus Creek flows directly through many of these communities. All of these communities are located within two miles of the Codorus Creek FRM project. Four of the communities contain public housing (USEPA, 2023c).

6.21 Cultural Resources

The area of potential effect (APE) includes those areas where direct construction impacts are proposed, as well as areas within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties, including visual effects. Given this, the APE would include work in the proposed action area and a 500-foot buffer around the proposed action area, staging areas, and any other areas of potential ground disturbance. The viewsheds of any nearby historic properties would also be included in the APE. Detailed descriptions of cultural contexts, cultural resources identification efforts, and a list of previously identified cultural resources within 0.5 miles of the proposed action area are located in Section 3.8 of the *Final Environmental Assessment, Indian Rock Dam/Codorus Creek Flood Risk Management Rehabilitation Project* (USACE, 2019).

7.0 ENVIRONMENTAL CONSEQUENCES

Environmental, cultural, and socioeconomic direct, indirect, and cumulative effects of the proposed action are described in this section. Effects from the No-Action Alternative are not described for each resource topic. Effects from the proposed action and the No-Action Alternative are essentially the same because O&M actions on the Codorus Creek FRM project would continue to be performed under both alternatives. The only difference in the alternatives is the change in how the NEPA documentation is conducted. The proposed action includes a programmatic approach to NEPA, while the No-Action would be a "piece-meal" approach to NEPA.

7.1 Soils and Prime Farmland

The Farmland Protection Policy Act is intended to minimize the impact federal activities have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. Although 11 percent of the soils in the proposed action area are identified as prime farmland or farmland of statewide importance, most of these lands have been developed for water management (levees, dikes, floodwalls) with road and rail line crossings at various locations. Soils considered prime farmland or farmland of statewide importance in or surrounding the proposed action area would not be suitable for agriculture. Therefore, the no-action and proposed action alternatives would have no direct, indirect, or cumulative effects on prime farmland.

Minor and temporary direct and indirect effects to soils may occur from the proposed action. Construction activities would require disturbance to soils, to include excavation and discharge of fill. The effect would be minor given that the work would restore the levee system to its authorized flood management capacity. Additionally, the soils have been disturbed previously because of the

construction of the levee and adjacent infrastructure. Based on these factors, there would be minor and temporary, direct and indirect effects to soils from the proposed action. No cumulative effects to soils are expected.

7.2 Hydrology

Minor short-term impacts to hydrology are possible from some of the O&M tasks, but would provide long-term benefits to the channel, downstream receiving waters, and the operation of the FRM project. Proposed projects such as replacement of floodwalls, work associated with drainage conduits, and shoal removal may temporarily alter channel hydrology during construction activities. However, following the completion of these projects, the FRM project would be restored to its authorized function and would result in long-term, beneficial effects to the hydrology of the channel and downstream receiving waters. Based on these factors, there would be minor and temporary direct and indirect effects to hydrology from the proposed action and long-term, beneficial effects on human safety and protection of property. No cumulative effects to hydrology are expected.

7.3 Water Quality

The proposed action would have minor short-term impacts to water quality from some of the proposed work tasks. Proposed projects such as replacement of floodwalls, work associated with the drainage conduits, and shoal removal may temporarily impact water quality during construction activities due to increased turbidity and disturbance. Sediment and erosion controls would be used to minimize the amount of sediment that may be carried into waterways during construction. The proposed action would have minor and temporary direct and indirect effects to water quality. If required, a water quality certification would be obtained for any future project tasks. No cumulative effects to water quality are expected.

7.4 Navigation

During construction of some work tasks where in-water containment features may be necessary, some portions of the FRM project may not be accessible for recreational navigation activities. Navigation would be restored to similar to pre-construction conditions upon completion of construction and removal of temporary containment features. Removal of sediment/gravel bars would improve navigation in the FRM project. Based on these factors, the O&M work tasks would result in minor and temporary direct adverse effects to navigation during construction and would have beneficial long-term effects to navigation from sediment/gravel bar removal. No cumulative effects to navigation are expected.

7.5 Floodplains

Most of the existing regulatory floodplain (100-year floodplain) of Codorus Creek is developed. The existing levees and floodwalls have reduced the effective volume of available floodplain to riverine floodwaters during a storm event. Development in the floodplain has led to degradation and loss of natural floodplain functions as well as the habitat that the natural floodplain provides. There is no natural floodplain in the footprint of the Codorus Creek FRM project that would be directly or indirectly affected by the proposed action. No cumulative effects to the floodplain are expected.

7.6 Terrestrial Resources

Wildlife may temporarily avoid the proposed action area during construction and for a short period of time following construction. Noise from operation of equipment, dust generated by construction activities, and human presence would likely cause wildlife to temporarily avoid the area. Wildlife are expected to return to the proposed action area shortly following construction.

Burrowing animals have been known to create holes either through or under levees. According to the *York, Pennsylvania Local Flood Protection Works (Codorus Creek) Operation and Maintenance (O&M) Manual*, such holes are a source of danger during high water periods, and rodent colonies should be exterminated as soon as practicable, and their burrows filled (USACE, 1951). Therefore, O&M actions to maintain the integrity of the levees may result in the loss of some burrowing animals. According to a letter provided by the PA Game Commission dated 15 February 2024, no impact is anticipated to mammals from the proposed project (Appendix A4). No indirect or cumulative effects to terrestrial resources are expected.

7.7 Aquatic Resources

The proposed action would have short-term, minor adverse impacts to the limited population of warm-water fish that occur in the proposed action area. Noise from the operation of construction equipment, turbidity, and human presence would likely cause fish to temporarily avoid the area resulting in minor and temporary indirect effects to aquatic resources during construction. The build-up of sediment/gravel bars and the resulting narrowing of the creek may provide in-stream fish habitat for concealment, feeding, and breeding. Removal of the sediment/gravel bars would remove this habitat. Therefore, indirect effects to fish habitat may occur as a result of the proposed action. However, removal of the sediment/gravel bars is important to maintain a fully functioning FRM project. The sediment/gravel bars are artifacts of deferred maintenance and are not natural features. In addition, according to a letter provided by the PA Fish and Boat Commission dated 13 February 2024, no impact is anticipated to fish, reptiles, amphibians, and aquatic invertebrates from the proposed project (Appendix A4). No direct or cumulative effects to aquatic resources are expected.

7.8 Wetlands

There are no wetlands located within the Codorus Creek FRM project. Therefore, the proposed action would have no direct, indirect, or cumulative effects to wetlands. The implementation of the proposed action would minimize the amount of sediment and debris associated with a deteriorating FRM project from effecting downstream wetlands.

7.9 Vegetation

Vegetation in the Codorus Creek FRM project (primarily on the levees) includes perennial grasses, weeds, shrubs, and small trees. According to the above-referenced O&M manual, grass should be routinely mowed to maintain a minimum height of four inches and weeds should be cut before they go to seed (USACE, 1951). Mowing of the levees is a common O&M action that is regularly performed, and trees and shrubs are routinely cut and/or removed from levees and gravel/sediment bars. Thus, minor direct effects to woody vegetation from maintenance activities may occur. No indirect or cumulative effects to vegetation are expected.

7.10 Threatened and Endangered Species

Due to unsuitable habitat conditions for roosting and foraging, it is highly unlikely that the northern long-eared bat or the Indiana bat would be present within or near the proposed action area. In addition, a letter from the USFWS dated 25 October 2023, stated that based upon the IPaC submission and the responses provided by USASE to the USFWS northern long-eared bat range wide determination key, the project reached a "no effect" determination for the northern long-eared bat (Appendix A3). Therefore, the proposed action would have no effects to the northern long-eared bat or the Indiana bat.

Although uncommon, there is a potential for the tri-colored bat to be present in trees or leaf clusters near the proposed action area, primarily on the north and south ends of the FRM project that are located adjacent to small stands of open deciduous forest. Noise and human presence during construction could disturb roosting tri-colored bats on the north and south ends of the FMRP. Tri-colored bats are likely to avoid the area during construction and are expected to return to the area following construction. Therefore, the proposed action may affect, but is not likely to adversely affect the tri-colored bat at the north and south ends of the FRM project.

It is likely that the monarch butterfly would be present in the location of the proposed project as they migrate through the region in the fall. The monarch's specific host plant, milkweed, was not observed during site visits in the location of the proposed project. Implementation of the proposed action is expected to have no effect on the monarch butterfly.

7.11 Birds

A bald eagle nest was observed in 2018 on the east side of the Codorus Creek FRM project approximately 175 feet north of Arsenal Road in a small forested area between two operational railroad tracks. The proposed action area is located within a 330-buffer of the bald eagle nest (USFWS, 2022). The buffer area serves to minimize visual and auditory impacts associated with human activities near nest sites. The eagles nesting in this area are unlikely to be disturbed by the routine use of roads, railroads, and other activities that pre-date the eagles' nesting activity. Ongoing existing uses with the same intensity pose little risk to disturbing bald eagles. However, some intermittent uses in an area may disturb bald eagles such as the O&M tasks covered under the proposed action. Human activity should be adjusted to minimize potential effects on a nesting pair. Therefore, all work will follow the *USFWS National Bald Eagle Management Guidelines* (USWFS, 2007), and the required screening form will be submitted to USFWS prior to commencement of work within the 330 foot-buffer. As long as the USFWS guidelines are followed, the proposed action is not expected to have direct, indirect, or cumulative effects on bald eagles.

The PNDI report identified four bird species, state listed as endangered or special concern. According to a letter provided by the PA Game Commission dated 15 February 2024, no impact is anticipated to birds from the proposed project (Appendix A4). As such, the proposed action may disturb birds during construction but is not expected to have direct, indirect, or cumulative effect on state-listed threatened or endangered species.

7.12 Air Quality

Most of the O&M work would require the use of heavy machinery. This may result in emissions of vehicle fumes within the vicinity. However, given the federal emission standards for vehicles and engines, and related fuel sulfur standards, the level of emissions would be minor and short term during construction activities. Additionally, the proposed action would occur within an area that has been re-designated from a nonattainment area to a maintenance area for USEPA criteria pollutant levels. Addition of construction equipment fumes during construction would be short term and would not significantly alter the existing air quality. Upon completion of construction of each work task, air quality conditions would return to pre-construction conditions. Therefore, the proposed action would have a minor and short term adverse effect on air quality. No long term, cumulative effects are anticipated. USACE will coordinate with contractors to ensure that construction vehicles meet applicable federal air emission standards and mitigate dust and fumes where practicable.

7.13 Greenhouse Gases

The proposed action would not significantly contribute to greenhouse gas emissions.

7.14 Climate Change

The proposed action would have no effect on climate or climate change as a result of the proposed action.

7.15 Hazardous, Toxic, and Radioactive Waste

No Toxic Release Inventory sites, Brownfield sites, or active NPL superfund sites are located within or in the vicinity of the proposed action area. The proposed action would occur within the footprint of the existing FRM project where earth was previously disturbed to construct the project. Excavation is not expected to disturb or release hazardous, toxic, or radioactive substances at levels of concern. No direct, indirect, or cumulative effects from hazardous, toxic, or radioactive substances are expected.

7.16 Recreation

There are existing parks, water access areas, and trails located within and adjacent to the FRM project. The proposed action would result in localized, temporary disruptions at those sites where work was occurring but would otherwise have negligible indirect and cumulative effects on parklands or recreational values. Walking paths along the Codorus Creek FRM project may be blocked temporarily but would open back up following construction. The proposed action would likely provide a modest improvement to aesthetic values in those areas.

7.17 Aesthetics

Construction activities related to the proposed action would cause minor and temporary impacts to the aesthetics of the area. Construction equipment, signage, barriers, and other temporary infrastructure and staging would be visible in the area during construction. However, upon competition of the projects, the FRM project would be restored to its full function and appearance. The proposed action would have minor, temporary adverse effects on aesthetics during construction and would have a long-term beneficial impact on aesthetics by maintaining the FRM project. No cumulative effects to aesthetics are expected.

7.18 Noise

Construction equipment is likely to generate noise above ambient background noise during the daytime. According to the City of York, PA's local noise ordinance, operating any tools or equipment used in construction operations shall not occur between the hours of 9:00 p.m. and 7:00 a.m. Monday through Saturday and after 9 p.m. Saturdays and noon on Sundays or legal holidays, such that the sound creates a noise disturbance across a residential real property line (boundary), except for emergency work or work authorized by special permit issued by the City (City of York, Pennsylvania, 2020). Additionally, the Springettsbury Township, PA has a noise ordinance prohibiting construction, repair, alteration or demolition work on buildings, structures, streets, alleys or appurtenances thereto in the outdoors between the hours of 9:00 p.m. and 7:00 a.m. the following day, except that no such activity shall commence prior to 9:00 a.m. on Sundays and federal holidays (Springettsbury Township, 2024). The Spring Garden Township, PA has a noise ordinance prohibiting the use of any pile driver, shovel, hammer, derrick, hoist, roller or other mechanical equipment operated by fuel or electric power in building or construction operations from 11:00 p.m. to 6:00 a.m. of the following day, except for emergency work on public improvements, work of public service utilities and municipal services, unless such equipment has been manufactured or modified for sound control and meets the provisions further explained in the noise ordinance (Spring Garden Township, 2024). Construction is expected to occur during the daytime and would be in compliance with all local ordinances. If any ordinance cannot be followed, a permit may need to be obtained prior to construction. As discussed in Sections 7.6, 7.7, 7.10 and 7.11 above, construction noise may also temporarily disturb fish and wildlife. Wildlife is expected to avoid the area during construction. No direct, indirect, or cumulative effects are expected.

7.19 Transportation and Traffic

Construction of O&M actions related to the proposed action would add some additional vehicles to the area, but the impact would be minor and temporary given the high level of transportation traffic already existing in the area. The proposed action would have no direct, indirect, or cumulative effects on transportation and traffic.

7.20 Socioeconomics and Environmental Justice

Economically disadvantaged communities identified as low income typically have less resources to cope with crises or disasters. Vulnerable residents may be less able to afford preparedness actions such as making home improvements to increase resilience to disasters. Paying to fix damages from flooding places an extra burden on vulnerable residents that have low incomes.
Approximately 39,000 vulnerable residents in the City of York face many barriers to receiving aid to help them repair their homes and meeting their other needs:

- Vulnerable residents may have a harder time finding alternative housing if their residence is uninhabitable due to damage from a flood.
- Vulnerable residents may not have the means to drive farther away to find food and other essential needs if these businesses are shut down.
- Vulnerable residents may not have the means to find childcare if schools are shut down.

The proposed action would implement O&M projects that will maintain and protect the existing FRM project. By performing these projects, the FRM project can function at its authorized and

full capacity, which has beneficial impacts on the community by managing flood risk. Implementing the proposed action would have beneficial direct, indirect, and cumulative effects on socioeconomics and environmental justice.

7.21 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) requires consultation with the State Historic Preservation Office (SHPO) for proposed actions that may affect historic properties. The PA Historical and Museum Commission (PHMC) is designated as the SHPO for PA. Consultation with PHMC, the Advisory Council on Historic Preservation, and Native American tribes was undertaken to identify cultural resources that may be impacted by the proposed action. A consultation letter was submitted to PHMC on 08 December 2023. Consultation letters were also sent to affected American Indian tribes on 11 December 2023. Consultation was finalized on 15 December 2023, with PHMC concluding that no historic buildings, structures, districts, and/or objects would be affected by the proposed action and that no further consultation was required (Appendix A6). No direct, indirect, or cumulative effects to cultural resources are expected.

7.22 Summary of Effects

Table 4 provides a summary of the direct, indirect, and cumulative effects on each resource topic from the proposed action.

Table 4. Summary of Effects from the Proposed Action.

Resource	Direct Effects	Indirect Effects	Cumulative Effects
Prime Farmland	No effect	No effect	No effect
Soils	Minor and temporary during construction.	Minor and temporary during construction.	No effect
Hydrology	Minor and temporary during construction.	Minor and temporary during construction.	No effect
Water Quality	Minor and temporary during construction.	Minor and temporary during construction.	No effect
Navigation	Minor and temporary during construction.	No effect	No effect
Floodplains	No effect.	No effect	No effect
Terrestrial Resources	Some loss of burrowing animals.	No effect	No effect
Aquatic Resources	No effect	Loss of fish habitat from sediment/gravel bar removal.	No effect
Wetlands	No effect	No effect	No effect
Vegetation	Minor effects to woody vegetation from maintenance.	No effect	No effect

Resource	Direct Effects	Indirect Effects	Cumulative Effects
Threatened and Endangered Species	No effect	No effect	No effect
Birds	No effect	No effect	No effect
Air Quality	Minor and temporary	Minor and temporary	No effect
Greenhouse Gases	No effect	No effect	No effect
Climate Change	No effect	No effect	No effect
HTRW	No effect	No effect	No effect
Recreation	Minor and temporary	No effect	No effect
Aesthetics	Minor and temporary	Minor and temporary	No effect
Noise	No effect	No effect	No effect
Transportation and Traffic	No effect	No effect	No effect
Socioeconomics and Environmental Justice	Beneficial effect	Beneficial effect	Beneficial effect
Cultural Resources	No effect	No effect	No effect

8.0 Environmental Compliance

This EA has been prepared in accordance with NEPA, the CEQ NEPA implementing regulations dated May 20, 2022, Engineer Regulation 200-2-2: Procedures for Implementing NEPA, and other laws, executive orders, and memorandums listed in Table 5 below.

Table 5. Status of Compliance with Relevant Laws, Executive Orders, and Memorandums.

Law, Executive Order, Memorandum	Compliance Status	Reason for Compliance
Archeological Resources Protection Act	Full	No effects to archeological resources expected.
Bald and Golden Eagle Protection Act	Full	Proposed action is highly unlikely to affect bald eagles.
Clean Air Act	Full	Minor and temporary effects to air quality during construction. No mitigation for effects to air quality is required.
Section 404 Clean Water Act	Full	The proposed action is consistent with the terms and conditions of Nationwide Permit 31 - Maintenance of Existing Flood Control Facilities (NWP 31). Therefore, a Section

Law, Executive Order, Memorandum	Compliance Status	Reason for Compliance
		404(b)(1) analysis is not required. All general conditions of the NWP 31 will be followed.
Section 401 Clean Water Act	Full	A Section 401 Water Quality Certification (WQC) is granted under NWP 31. All Section 401 WQC Conditions under the *Regional Conditions to the 2021 Nationwide Permits in the Commonwealth of Pennsylvania* will be followed.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	Full	No CERCLA sites will be disturbed by the proposed action.
Section 7 of the Endangered Species Act	Full	The proposed action will have no effects to the northern long-eared bat, the Indiana bat, or the monarch butterfly. The proposed action may affect but is not likely to adversely affect the tricolored bat. No comments were received from USFWS in response to the USACE coordination letter.
Farmland Protection Policy Act	Full	The proposed action will have no effects on prime farmland or farmland of statewide importance.
Fish and Wildlife Coordination Act	Full	Fish and wildlife will be temporarily disturbed during construction. O&M tasks to maintain the integrity of the levees may result in the loss of some burrowing animals.
Flood Control Act	Full	The proposed action is critical for efficient maintenance and operation of the Codorus Creek FRM project in order to manage flood risk to property and the community of York, PA.
National Environmental Policy Act	Full	An EA has been prepared to analyze the effects of the proposed action on the human environment.
National Historic Preservation Act	Full	No effects to historic resources.
Noise Control Act	Full	Temporary noise increases in and surrounding the proposed action area during daylight hours due to the use

Law, Executive Order, Memorandum	Compliance Status	Reason for Compliance
		of construction equipment. The completed project would not impact noise levels.
Resource Conservation and Recovery Act (RCRA)	Full	No RCRA sites will be disturbed by the proposed action.
EO 11988 – Floodplain Management	Full	The proposed action is critical for efficient maintenance and operation of the Codorus Creek FRM project in order to manage flood risk to property and the community of York, PA. No natural floodplains would be affected by the proposed action.
EO 11990 – Protection of Wetlands	Full	No effects to wetlands from the proposed action.
EO 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	Full	The proposed action would benefit economically disadvantaged communities.
EO 13751 - Safeguarding the Nation from the Impacts of Invasive Species	Full	Invasive species may be managed during O&M actions.
EO 13990 - Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis	Full	The proposed action will not contribute to climate change.
EO 14008 - Tackling the Climate Crisis at Home and Abroad	Full	The proposed action will not contribute to climate change.
EO 14091 – Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government	Full	The proposed action would benefit economically disadvantaged communities.
EO 14096 – Revitalizing Our Nation's Commitment to Environmental Justice for All	Full	The proposed action would benefit economically disadvantaged communities.
EO 13175 – Consultation and Coordination with Indian Tribal Governments	Full	No effects to tribal resources from the proposed action.
EO 13186 – Responsibility of Federal Agencies to Protect Migratory Birds	Full	Minor and temporary effects during construction. No long-term adverse effects to migratory birds.
EO 11593 – Protection and Enhancement of Cultural Environment	Full	No effects to cultural resources from the proposed action.
Interim CEQ NEPA Guidance on Consideration of Greenhouse Gas	Full	No permanent increase in greenhouse gas emissions.

Law, Executive Order, Memorandum	Compliance Status	Reason for Compliance
Emissions and Climate Change issued January 9, 2023		
Assistant Secretary of the Army for Civil Works Memorandum for Commanding General, U.S. Army Corps of Engineers, Subject: Implementation of Environmental Justice and the Justice40 Initiative, 15 March 2022.	Full	The proposed action would benefit economically disadvantaged communities.

9.0 References

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