LOW-IMPACT HYDROPOWER POWER INSTITUTE CERTIFICATION APPLICATION

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. 1888)

Eagle Creek Renewable Energy, LLC
York Haven, Pennsylvania

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YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. 1888) (LIHI CERTIFICATE #0000126)

1.0 INTRODUCTION

This is an application to the Low Impact Hydro Power Institute (LIHI) for the recertification of the York Haven Hydroelectric Project (York Haven or Project), LIHI Certificate No. 126. The Project was initially certified by LIHI on August 7, 2015. for a 5-year term, expiring August 7, 2020 The Project is located on the Susquehanna River in York, Dauphin, and Lancaster counties, Pennsylvania (PA).

The Project was issued an original license from the Federal Energy Regulatory Commission (FERC) as Project No. 1888 on November 7, 1944 by an unpublished order. A new license was issued on August 14, 1980 and expired on September 1, 2014. On December 22, 2015, FERC issued a new License for the Project.

The Project lies at mile 55 of the Susquehanna River, 17 miles south of Harrisburg, PA. The Project is the most upstream of the 5 hydroelectric projects on the Susquehanna. Downstream from York Haven are project dams Safe Harbor (RM 33), Holtwood (RM 25), Muddy Run (RM 22), and Conowingo (RM 10).

1.1 Facility Description

The Project was constructed beginning in 1901 and finishing in 1904. In 1914, the final units were installed. The Project operates as a run-of-river facility. During low to moderate streamflow conditions, the Project is capable of maintaining run-of-river operation and a virtually constant impoundment water level. The Project contains a stone masonry headrace wall which acts to guide water to the powerhouse. The headrace wall extends 3,000 feet from the northernmost end of the powerhouse, running parallel along the west bank of the river.

The Main Dam is attached to the headrace and runs from the north end of the headrace wall, diagonally, across the main channel of the river approximately 4,970 feet to the west shore of Three Mile Island (TMI). The main dam is constructed of concrete-covered rock fill and rock fill/timber crib sections with a maximum height at the crest of 18-feet and an average height of 10-feet.

The East Channel Dam is a concrete gravity overflow dam, which extends approximately 928-feet in an easterly direction, from the east shore of TMI to the east bank of the river, with an

average height of 9-feet from foundation level. The East Channel Dam incorporates a vertical slot fishway constructed in 2000 to support the upstream passage of anadromous fish, primarily American shad. Two wheel gates, each with a hydraulic capacity of 1,000-cfs, are located just to the east of the fishway to provide the required 2,000-cfs East Channel attraction flow during fish passage operations. Fishway operations for upstream passage occur annually from mid-April to mid-June with the specific dates for each year determined jointly by dam operators, the U.S. Fish and Wildlife Service (USFWS), and the Pennsylvania Fish and Boat Commission (PFBC).

The brick and stone masonry powerhouse is approximately 472-feet long and 48-feet wide, located parallel to the west bank of the Susquehanna River. This structure contains the turbines, generators, and appurtenant power generating equipment. Steel trashracks with four-inch clear spacing are installed at the intakes for each of the 20 turbine-generator units. The forebay includes a trash sluice gate, 14-feet wide by 10.5-feet high, at its downstream end. The sluice gate is capable of releasing approximately 600- cfs.

LIHI certified the York Haven Project on August 7, 2015 for a 5-year term, expiring August 7, 2020. Through the 5-year term, the project was generally compliant, receiving only two Notices of Violation (NOV) from the Pennsylvania Department of Environmental Protection (PADEP) related to a required island demolition project and air quality regulations and payment to the York County Conservation District, and issues associated with the final design of the Nature Like Fishway, as documented in the Annual LIHI Compliance Statements submitted by YHPC.

Table 1. Facility Information

Item	***Information Requested***	***Response (include references to further details)***
Name of the Facility	Facility name (FERC project name)	York Haven Hydroelectric Project (FERC Project No. 1888)
Reason for applying for LIHI Certification	6. Other	To recertify York Haven's LIHI Certificate (Certificate #126)
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	NA
Location	River name (USGS proper name)	Susquehanna River
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	Lower Susquehanna-Swatara, 02050305 Lower Susquehanna, 02050306

Item	*Information Requested*	*Response (include references to further details)*
	Nearest town(s), county(ies), and state(s) to dam	City of York in Dauphin, Lancaster, and York counties, PA
	River mile of dam above mouth	York Haven dam is located at approximately River Mile (RM) 55, the most upstream hydroelectric project on the Susquehanna River
	Geographic latitude of dam	40°07′03″N
	Geographic longitude of dam	76°42′55″W
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also):	Jody Smet, Vice President Regulatory Affairs, York Haven Power Company, LLC
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the effective date of the change.**	Tom O'Conner, York Haven Power Company, LLC
	FERC licensee company name (if different from owner)	York Haven Power Company, LLC
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	FERC Project No. 1888 • Issued 12/22/2015, effective 12/1/2015 • Expires 11/30/2055
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	Major Project License, authorized 19.62 MW
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	A Water Quality Certificate (WQC) was issued by the Pennsylvania Department of Environmental Protection (PADEP) on August 19, 2014 (see Appendix A)

Item	*Information Requested*	*Response (include references to further details)*
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories[1]	2015 FERC Order Issuing License https://elibrary.ferc.gov/eLibrary/docinfo?document_id=14411476 2015 Final Multi-Project Environmental Impact Statement (FEIS) https://elibrary.ferc.gov/eLibrary/docinfo?document_id=14311355
Powerhouse	Date of initial operation (past or future for pre-operational applications) Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	No change in installed capacity
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	Average annual generation (MWh) by year: 2015 - 132,271 2016 - 126,572 2017 - 136,318 2018 – 123,520 2019 - 128,241 Average annual generation (MWh) for period 2015-2019: 129,384, which is less than average annual generation reported on 2015 Application for LIHI Certification for the period 2001-2011.
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	Run-of-river, Project operations consistent with FERC license issued 12/22/2015, inclusive of Clean Water Act (CWA) Section 401 Certification

[1] For example, the FERC license or exemption, recent FERC Orders, Water Quality Certificates, Endangered Species Act documents, Special Use Permits from the U.S. Forest Service, 3rd-party agreements about water or land management, grants of right-of-way, U.S. Army Corps of Engineers permits, and other regulatory documents. If extensive, the list of hyperlinks can be provided separately in the application.

Item	*Information Requested*	*Response (include references to further details)*
	Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit	• 6 vertical shaft propellers • 1 vertical shaft Francis • 13 dual Francis units • (Note: units 1-4 were originally adjustable blade Kaplans that have been locked or welded in place)
	Trashrack clear spacing (inches) for each trashrack	Four (4) inch clear spacing
	Approach water velocity (ft/s) at each intake if known	Unknown
	Dates and types of major equipment upgrades **For recertifications: Indicate only those since last certification**	In 2020, unit 15 underwent a gearbox upgrade and Units 11 and 15 received higher output turbines.
	Dates, purpose, and type of any recent operational changes **For recertifications: Indicate only those since last certification**	Beginning December 12, 2015, YHPC began operating the Project in accordance with the new FERC license. YHPC's Tennessee (TN) Operations Control Center remotely monitors the York Haven station during unmanned hours. There are no major changes to operations other than the TN Operations Control Center remotely monitoring the York Haven station and having the ability to cut back, start and stop Units 1-6 and to trip the other 14 units.
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	Recreational lots on islands no longer present, see Section 3.5 and Appendix B.
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	The Main Dam was constructed in 1904 and the East Channel Dam was constructed in 1917.
	Dam or diversion structure length, height including separately the height of any flashboards, inflatable dams, etc. and describe seasonal operation of flashboards and the like	The Main Dam is 5,000 feet in length, the Diversionary Dam 3,000 feet in length, and the East Channel Dam 925 feet. Flow needed to run all units is 16,585 cfs.
	Spillway maximum hydraulic capacity	75 cfs

Item	*Information Requested*	*Response (include references to further details)*
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	Penstocks are not utilized at this facility, intake is a part of the building and flush
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power generation
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	NA
	Source water	NA
	Receiving water and location of discharge	NA
Impound-ment and Watershed	Authorized maximum and minimum impoundment water surface elevations **For recertifications: Indicate if these values have changed since last certification**	No Change.
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	No change.
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	No change.
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	No change.

Item	*Information Requested*	*Response (include references to further details)*
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	Project is operated in accordance with the FERC License, 401 WQC issued by PADEP on August 19, 2014 (see Appendix A), the U.S. Department of Interior (USDOI) Section 18 Fishway Prescription (see Appendix C), and the Susquehanna River Basin Commission (SRBC) Authorization dated March 13, 2020 (Appendix E) in accordance with the Susquehanna River Basin Compact (Compact).
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	No upstream dams
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	There are four FERC-licensed hydroelectric facilities downstream of the York Haven Project on the Susquehanna River - Safe Harbor (FERC P-01025) at RM 32, Holtwood (FERC P-01881) at RM 24, Muddy Run (FERC P-02355) at RM 22, and Conowingo at RM 10. All have upstream fish passage.
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	NA
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control. Indicate locations and acres of flowage rights versus fee-owned property.	The Project impoundment (Lake Frederic) has a surface area of 2,218 acres and a 1,700 acre storage capacity. No change.

Item	*Information Requested*	*Response (include references to further details)*
Hydrologic Setting	Average annual flow at the dam, and period of record used	The Project uses the USGS Gage 01570500 Susquehanna River at Harrisburg, PA, 17 miles upstream from the Project, to estimate the inflows to the Project. According to records from Gage 01570500, the mean annual flow for the Project between 1931 and 2010 is 35,469 cfs.
	Average monthly flows and period of record used	No change. Average monthly flows at the Project between 1931 to 2010 ranged from 11,625 cfs in August to 74,407 cfs in April.
	Location and name of closest stream gaging stations above and below the facility	Downstream: USGS Gage 01576000 Susquehanna River at Marietta, PA Upstream: USGS Gage 01570500 Susquehanna River at Harrisburg, PA
	Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.	No change
	Other facility specific hydrologic information	NA
Designated Zones of Effect	Numbers and names of each zone of effect	3 zones of effect: Zone 1 Impoundment, Zone 2 Bypassed Reach, and Zone 3 Downstream
	River mile of upstream and downstream limits of each zone of effect	Zone 1 Impoundment: approx. RM 59-55 Zone 2 Bypassed Reach: approx. RM 56.5-55 Zone 3 Downstream: approx. RM 55-42
	Delimiting structures or features	The Main Dam and East Channel Dam delimits Zones 1 and 2, the York Haven Powerhouse delimits Zones 2 and 3, and the upper end of the Safe Harbor impoundment delimits the downstream end of Zone 3

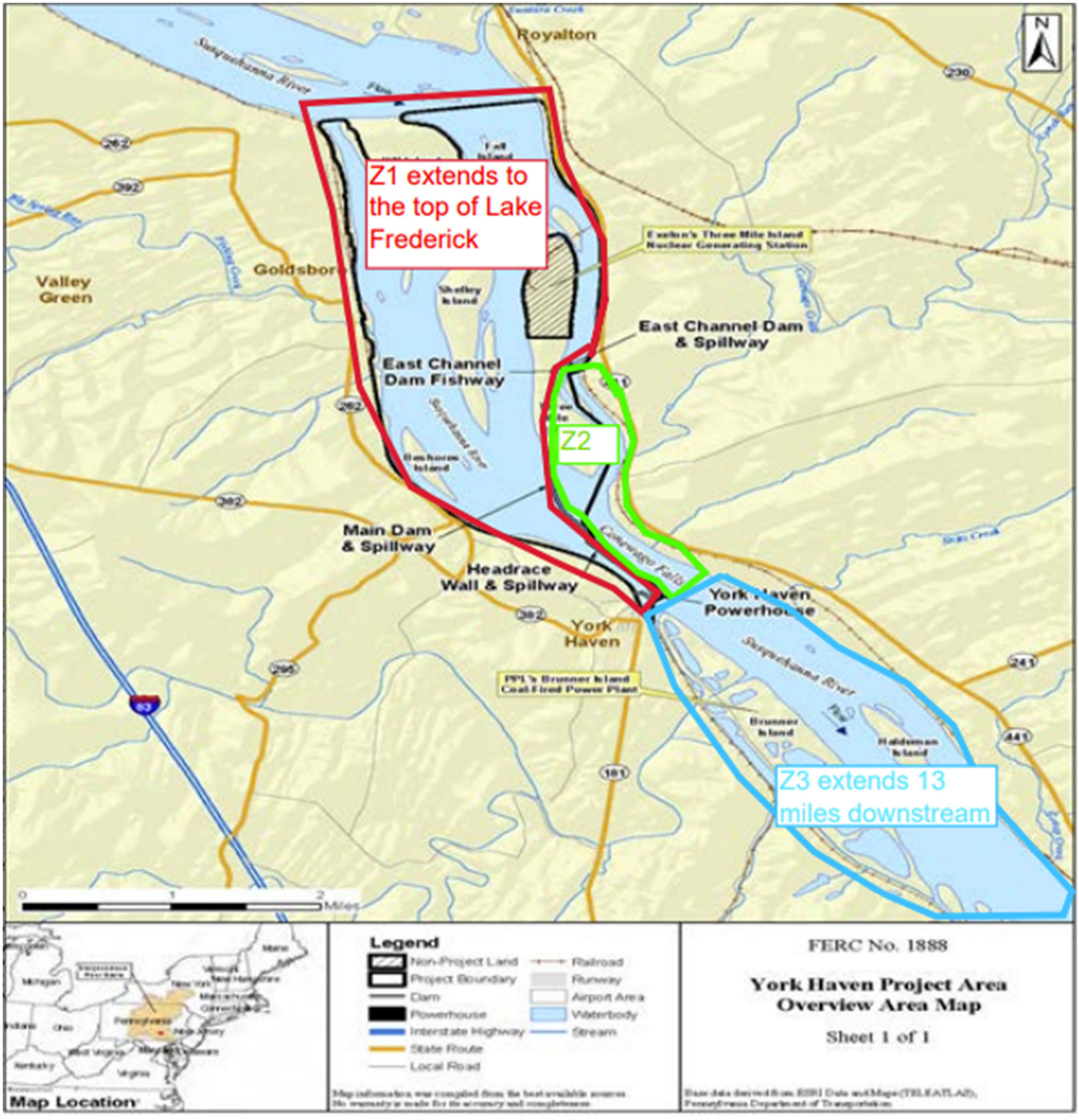
Item	*Information Requested*	*Response (include references to further details)*
Pre-Operational Facilities Only		
Expected operational date	Date generation is expected to begin	NA
Dam, diversion structure or conduit modification	Description of modifications made to a pre-existing conduit, dam or diversion structure needed to accommodate facility generation. This includes installation of flashboards or raising the flashboard height. Date the modification is expected to be completed	NA
Change in water flow regime	Description of any change in impoundment levels, water flows or operations required for new generation	NA

1.2 Zones of Effect

Three zones of effect (ZoEs) will be evaluated for each Criterion for this Recertification Application: 1) Impoundment, (2) Bypass, and (3) Downstream. These ZoEs are described below and illustrated in Figure 1:

- Zone 1 Impoundment ZoE - the impoundment zone of effect extends from the beginning of Lake Frederick to East Channel Dam on the east side or the river, the Main Dam in the center of the river, and the Headrace Wall and Spillway on the west side of the river.
- Zone 2 Bypass ZoE - the bypass zone of effect encompasses the bypassed reach from the East Channel Dam, down to the confluence with the powerhouse tailrace.
- Zone 3 Downstream ZoE - the downstream zone of effect extends from the tailrace confluence about 13 miles to the beginning of the Safe Harbor Project impoundment, Lake Clarke.

Figure 1: Map of Zones of Effect



2.0 STANDARDS MATRICES

The standards applicable to each criterion for each ZoE are summarized in Tables 2 through 4. Supporting information is provided in Section 3.0.

Table 1. Standards Matrix for York Haven Zone 1 Impoundment Zone of Effect

Criterion		Alternative Standards				
		1	**2**	**3**	**4**	**Plus**
A.	Ecological Flow Regimes	**x**				
B.	Water Quality		**x**			
C.	Upstream Fish Passage	**x**				
D.	Downstream Fish Passage		**x**			
E.	Watershed and Shoreline Protection		**x**			
F.	Threatened and Endangered Species Protection		**x**			
G.	Cultural and Historic Resource Protection		**x**			
H.	Recreational Resources		**x**			

Table 3. Standards Matrix for York Haven Zone 2 Bypassed Reach Zone of Effect

Criterion		Alternative Standards				
		1	**2**	**3**	**4**	**Plus**
A.	Ecological Flow Regimes		**x**			
B.	Water Quality		**x**			
C.	Upstream Fish Passage		**x**			
D.	Downstream Fish Passage		**x**			
E.	Watershed and Shoreline Protection		**x**			
F.	Threatened and Endangered Species Protection		**x**			
G.	Cultural and Historic Resource Protection		**x**			
H.	Recreational Resources		**x**			

Table 4. Standards Matrix for York Haven Zone 3 Downstream Zone of Effect

Criterion		Alternative Standards				
		1	**2**	**3**	**4**	**Plus**
A.	Ecological Flow Regimes		**x**			
B.	Water Quality		**x**			
C.	Upstream Fish Passage		**x**			
D.	Downstream Fish Passage	**x**				
E.	Watershed and Shoreline Protection		**x**			
F.	Threatened and Endangered Species Protection		**x**			

Criterion		Alternative Standards				
G.	Cultural and Historic Resource Protection		**x**			
H.	Recreational Resources		**x**			

3.0 SUPPORTING INFORMATION

3.1 Ecological Flows Standards

3.1.1 Zone 1 Impoundment Zone of Effect

Table 5. Zone 1 Impoundment Zone of Effect- Information Required to Support Ecological Flows Standards

Criterion	*Standard*	*Instructions*
A	1	Not Applicable / De Minimis Effect: • Confirm the location of the powerhouse relative to dam/diversion structures and demonstrate that there are no bypassed reaches at the facility. • For run-of-river facilities, provide details on operations and describe how flows, water levels, and operations are monitored to ensure such an operational mode is maintained. In a conduit facility, identify the source waters, location of discharge points, and receiving waters for the conduit system within which the hydropower facility is located. This standard cannot be used for conduits that discharge to a natural waterbody. • For impoundment zones only, explain water management (e.g., fluctuations, ramping, refill rates) and how fish and wildlife habitat within the zone is evaluated and managed. ***NOTE:*** this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

The Impoundment ZoE does not have a bypassed reach. The Project is operated as a run-of-river facility with minimum flow requirements (both prior to and after the construction of the nature-like fishway [NLF]) and fish passage requirements in accordance with the FERC License, the 401 WQC issued by PADEP on August 19, 2014 (Appendix A), the USDOI Section 18 Fishway Prescription (Appendix C), and the SRBC Authorization dated March 13, 2020 (Appendix E). On December 22, 2015, FERC issued a new License for the York Haven Project with minimum flow requirements, consistent with the terms of a comprehensive licensing Settlement Agreement (January 30, 2014), which were described in the 2015 Project application for LIHI Certification.

There have been no flow-related compliance issues or deviations in the past 5 years.

3.1.2 Zone 2 Bypass and Zone 3 Downstream Zones of Effect

Table 6. Zone 2 Bypass and Zone 3 Downstream Zones of Effect - Information Required to Support Ecological Flows Standards

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations). • Explain how flows are monitored for compliance.

The Project is operated as a run-of-river facility with minimum flow requirements (both prior to and after the construction of the NLF) and fish passage requirements in accordance with the FERC License, the 401 WQC issued by PADEP on August 19, 2014 (Appendix A), the USDOI Section 18 Fishway Prescription (Appendix C), and the SRBC Authorization dated March 13, 2020 (Appendix E). On December 22, 2015, FERC issued a new License for the York Haven Project with minimum flow requirements consistent with the terms of a comprehensive licensing Settlement Agreement (January 30, 2014), which were described in the 2015 Project application for LIHI Certification.

Further details on the minimum flow and fish passage requirements can be found in sections 3.3 and 3.4.

There have been no flow-related compliance issues or deviations in the past 5 years.

3.2 Water Quality Standards

3.2.1 All Zones of Effect

Table 7. All Zones of Effect - Information Required to Support Water Quality Standards

Criterion	*Standard*	*Instructions*
B	2	Agency Recommendation: • Provide a copy of the most recent Water Quality Certificate and any subsequent amendments, including the date(s) of issuance. If more than 10 years old, provide documentation that the certification terms and conditions remain valid and in effect for the facility (e.g., a letter from the agency). • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to water quality and any agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

The Project is operated as a run-of-river facility in accordance with the FERC License, the 401 WQC issued by PADEP on August 19, 2014 (Appendix A), the USDOI Section 18 Fishway Prescription (Appendix C), and the SRBC Authorization dated March 13, 2020 (Appendix E).

The WQC acknowledges potential impacts to the migration and movement of aquatic species and specifies a framework for YHPC to follow to mitigate these impacts, specifically, the construction of a NLF. Further details on these requirements can be found in sections 3.3 and 3.4.

The mainstem of the Susquehanna River in York, Lancaster, and Dauphin counties is classified as a warm water fishery (WWF) and migratory fishery (MF) (25 Pa. Code §93.9o) and is subject to specific water quality criteria that are applicable statewide for WWF and MF streams. For Pennsylvania water quality criteria, the maximum water temperature is 40°F in the winter and 87°F in the summer. The minimum dissolved oxygen standard is 5.0 milligrams per liter (mg/L). The required pH range is between 6.0 to 9.0 units. The Final Multi-Project Environmental Impact Statement (FEIS) issued by FERC in March 2015 analyzed the Project's environmental impacts, including impacts to water quality (Appendix D). As described in detail in the FEIS and the 2015 Project application for LIHI Certification, the Project waters generally met state water quality standards.

During the most recent water quality assessment period, PADEP assessed major portions of the Susquehanna River and Juniata River in the 2018 Integrated Report under the Clean Water Act (CWA) and listed the stretch of the Susquehanna River from the confluence with Juniata River (upstream of Harrisburg, PA) to near Columbia, PA, including the stretch located within the Project boundary, as impaired for pH due to an unknown source. Detailed information can be found in the Susquehanna and Juniata Rivers Assessment Report at https://www.depgis.state.pa.us/2018_integrated_report/pdfs/2018SusquehannaRiverReport.pdf

and an interactive map viewer of impaired reaches is located at https://www.depgis.state.pa.us/integrated_report_viewer/index.html.

3.3 Upstream Fish Passage Standards

3.3.1 Zone 1 Impoundment Zone of Effect

Table 8. Zone 1 Impoundment Zone of Effect - Information Required to Support Upstream Fish Passage Standards

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

There is an active program for restoring anadromous fish populations of American shad, river herring (blueback herring and alewife), hickory shad, as well as the catadromous American eel to the Susquehanna River. Upstream passage of diadromous species from the Project impoundment (Lake Frederic) is not impeded by the York Haven Project works or its operation.

3.3.2 Zone 2 Bypass and Zone 3 Downstream Zones of Effect

Table 9. Zone 2 Bypass and Zone 3 Downstream Zones of Effect - Information Required to Support Upstream Fish Passage Standards

Criterion	*Standard*	*Instructions*
C	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

Criterion	*Standard*	*Instructions*
		• Provide evidence that required passage facilities are being operated and maintained as mandated (e.g. meets season, coordination with agencies)

The goal of the fisheries restoration program is to restore self-sustaining runs of migratory fish including American shad, river herring and American eel to the Susquehanna River Basin throughout their historic ranges in Maryland, Pennsylvania, and New York. Specific to the York Haven Project, the goal is to pass a run of 2 million American shad and 5 million river herring to spawning areas upstream of the Project dam. Goals for American eel and other migratory species have not yet been established.

Upstream passage for anadromous fish is currently provided at the York Haven Project via an existing east channel upstream fish passage facility located at the western end of the East Channel Dam, which has been operational since April 2000. The fishway includes two sections: a weir cut and a vertical-slot fish ladder. The weir cut section provides supplemental attraction flows to the fishway. The 250-foot-long fish ladder has an entrance diffuser, serpentine baffles that form eight pools, and an exit flume. A counting station is located in the exit channel just upstream of the last fish ladder pool.

On December 22, 2015, FERC issued a new License for the York Haven Project. The License includes requirements for upstream fish passage improvements at the Project, consistent with the terms of a comprehensive licensing Settlement Agreement (January 30, 2014), which were described in the 2015 Project application for LIHI Certification. The FERC License also includes specific requirements for upstream fish passage included in the WQC issued by PADEP on August 19, 2014 (Appendix A), the USDOI Section 18 Fishway Prescription (Appendix C), and the SRBC Authorization dated March 13, 2020 (Appendix E). Under the terms of the Settlement Agreement, FERC License, WQC, and Section 18 Fishway Prescription, YHPC is undertaking the following measures with respect to upstream passage for anadromous species:

1. Construct, operate, and maintain a new NLF)in the vicinity of the apex of the main dam and Three Mile Island in compliance with design criteria specified in the WQC. The installation will likely require modifications to the north end of the existing main channel dam;
2. Develop an erosion and sediment control plan for construction of the NLF;
3. Continue to operate and maintain the existing east channel fishway as the primary means for upstream fish passage until the NLF is completed;
4. Provide an average daily minimum flow in the east channel below the east channel dam of 267 cfs year round to protect aquatic resources in the east channel and provide a minimum passage flow for fish ascending the east channel and using the east channel fishway.
5. Provide at least 5 percent of river flow through the NLF and supplemental attraction flows when flows entering the project during the American shad upstream passage season are between 5,000 and 150,000 cfs. This equates to a minimum flow through the NLF of between 1,000 and 7,500 cfs depending on inflow.

6. Outside of the American shad upstream passage season, provide a minimum flow of 200 cfs through the NLF when the river elevation is at the crest of the main dam.
7. To the extent controllable by YHPC, when flows exceed the hydraulic capacity of all available generating units, manage flows to maximize flow over the main dam and the NLF to provide attraction flow to the vicinity of the NLF to maximize fishway effectiveness.
8. Operate the NLF in a "shake-down" mode during the first American shad upstream passage season, followed by 2 to 3 years of telemetry studies in successive years (with caveats) to monitor the effectiveness of the facility, with specific requirements for agency consultations in preparing the NLF monitoring plan;
9. Conduct American shad upstream passage effectiveness studies using radio telemetry beginning the second year of NLF operation. If the target efficiency (described below) is met in two consecutive years, the studies may be terminated. If the target efficiency is not met in two consecutive years, YHPC will make corrective measures followed by an addition two years of telemetry studies.
10. Develop fish passage operating procedures (FPOP) for operation and maintenance of facilities used for passage of migratory and resident fish, with specific operational and maintenance procedures for each fishway at the Project; and
11. File an annual operating report by December 31 of each year;

The FERC License, WQC, and Settlement Agreement includes an "Upstream Shad Passage Target" that at least 75 percent of the shad counted at the downstream Safe Harbor Project be passed above York Haven dam (using all passage routes), and a "Project Area Passage Success Criteria" that 85 percent of the shad that reach the York Haven Project successfully pass upstream of the Project (using all passage routes). The target efficiency will be evaluated based on radio telemetry studies of adult American shad. The target efficiency will be considered met and the telemetry studies may be terminated if the 75 percent efficiency is met for two consecutive years, or if 85 percent of the shad that enter the Project area pass the NLF and the east channel fishway. If the target efficiency is not met in two successive seasons, additional studies and corrective measures will be undertaken. If, after two more years of telemetry studies, target efficiencies are still not achieved, York Haven Power will propose a plan to mitigate for the low efficiency.

American shad passage counts on the Susquehanna River show that shad passage at the York Haven East Channel Fishway has been relatively low (2 to 22 percent). Radio telemetry studies conducted by YHPC found that many shad that did reach the Project area did not reach the east channel fishway. Rather, of the shad that reached the Project tailwater area, most (78 percent) ended up in the apex area of the main dam. Only 4 percent successfully passed above York Haven dam through the east channel fishway. These data suggested that the apex area of the main dam (where it ties into Three Mile Island) would be a better location for a fishway than the existing east channel fishway. Several fishway designs were considered but, based on consultation with the fisheries agencies, an NLF fishway was determined to be the preferred alternative, and was ultimately included in the Settlement Agreement, 401 WQC and FERC License. The NLF will be located in the apex of the dam, where it joins Three Mile Island.

The planned NLF will have a normal minimum flow through the fishway, as well as supplemental attraction water to attract shad to the fishway location. At the same time, the minimum flow from the east channel will be reduced so as to reduce attraction of shad to the east channel and increase attraction toward the NLF which is expected to become the primary route for upstream passage at the Project. The east channel fishway will continue to operate year-round for resident fish passage, but it is expected to become a secondary route for shad and other anadromous species. The NLF is being designed so that a full range of anadromous, catadromous, and resident species will be able to use the facility for upstream passage. The NLF is also expected to provide downstream passage, as discussed in greater detail in Section 3.4.

Design work on the York Haven NLF is nearing completion. YHPC has already prepared and filed with FERC 30% and 60% design drawings for the NLF, that were developed in consultation with the fisheries agencies. Because of certain questions regarding the fishway design, its effects on dam safety and stability, and the cost of construction, the agencies are currently reviewing a couple of proposed alternative NLF designs put forward by YHPC, that would reduce or eliminate the need to cut into the existing dam, thereby reducing potential dam safety/stability issues. YHPC expects comments from the fisheries agencies on the alternative NLF designs very soon. Regardless of the alternative NLF design selected by the resource agencies, the NLF is expected to be constructed and fully operational by April 2024.

Upstream passage for American eel has not been a major issue at the York Haven Project because American eel have not occurred in appreciable numbers in the Project area since construction of the lower river dams blocked upstream migration. American eel have occasionally been experimentally stocked in the upper river (above York Haven) through the years, and recent studies and restoration efforts to date have been focused at Conowingo. However, no additional upstream fish passage measures are proposed for eels, because YHPC and the fishery agencies believe that the NLF, combined with the low-head nature of the York Haven dam will provide adequate upstream passage for eels.

3.4 Downstream Fish Passage and Protection Standards

3.4.1 Zone 1 Impoundment and Zone 2 Bypass Zone of Effect

Table 10. Zone 1 Impoundment and Zone 2 Zone of Effect - Information Required to Support Downstream Fish and Protection Standards

Criterion	*Standard*	*Instructions*
D	2	<u>Agency Recommendation:</u> • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is

Criterion	*Standard*	*Instructions*
		required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented. • Provide evidence that required passage facilities are being operated and maintained as mandated (e.g. meets season, coordination with agencies)

The goal of the fisheries restoration program is to restore self-sustaining runs of migratory fish including American shad, river herring and American eel to the Susquehanna River Basin throughout their historic ranges in Maryland, Pennsylvania, and New York.

Downstream passage for diadromous and resident fish at the York Haven Project is currently provided through the forebay sluice gate, and via spillage at the main dam spillway and the east channel dam spillway and gates. Once construction of the NLF is completed, it too will provide downstream passage for many species.

On December 12, 2015, FERC issued a new License for the York Haven Project. The License includes requirements for downstream fish passage improvements at the Project, consistent with the terms of a comprehensive licensing Settlement Agreement (January 30, 2014), which were described in the 2015 Project application for LIHI Certification. The FERC License also includes specific requirements for downstream fish passage included in the WQC issued by PADEP on August 19, 2014 (Appendix A). Under the terms of the Settlement Agreement, FERC License and WQC, YHPC is undertaking the following measures with respect to downstream passage for anadromous species:

1. Continue the current downstream juvenile American shad passage operational protocol, which schedules the operation of units 1-6 (Kaplan and propeller units) to be first online and last offline during the juvenile shad downstream migration period (which typically is from October 1 through November 30;
2. Pass about 370 cfs through the forebay sluice gate for 1 or 2 hours in the morning during weekdays if river flows exceed the sum of the turbine hydraulic capacity, flows through the NLF (once constructed), flows through the east channel, and flows (if any) over the main dam from May 1 through June 30 to facilitate downstream passage of post-spawning adult American shad;
3. Pass about 370 cfs through the forebay sluice gate between the hours of 5 p.m. and 11 p.m. during the entire juvenile American shad passage period to facilitate downstream passage of juvenile American shad; and
4. Conduct a juvenile American shad headrace turbine avoidance study; and if juvenile American shad headrace turbine avoidance goals are not achieved, implement measures that would enhance the effectiveness and conduct a supplemental juvenile American shad headrace turbine avoidance study within 2 years of implementing the measures.

The Settlement Agreement establishes a target survival rate for outmigrating juvenile shad at the Project of 95 percent. Prior studies have estimated survival rates of ranging from 60-98 percent, depending on the turbine type and specific Project unit; with the Kaplan units (1-6) generally having a higher survival rate than the Francis units (7-20). Studies have also demonstrated that the percentage of fish passing the Project that are entrained through the powerhouse and subject to potential turbine entrainment mortality is likely to be roughly proportional to the percentage of the river flow that passes through the powerhouse. The hydraulic capacity of the Project is exceeded about 60 percent of the time, and on average the proportion of the flow that passes through the powerhouse varies from about 23 percent in April to nearly 100 percent from July through September. However, fall rainstorms that increase Susquehanna River flows (and may trigger downstream migrations of juvenile shad and American eel) may also result in spillage at the Project, providing for safe downstream passage. Each of the measures proposed by YHPC that would increase the amount of flow that passes the Project via routes other than the turbines (including spillways, sluice gates and the nature-like fishway, once constructed) are likely to reduce the number of fish that are entrained through the turbines and subject to potential injury or mortality.

YHPC's plan to improve downstream passage via the forebay sluice will ensure that fish passed via the sluice gate are subject to minimal, if any, injury or mortality. The fishery agencies have agreed that any fish passing through the forebay sluice would be considered to have a 100 percent survival rate. Similarly, any fish passing the Project via spillage at the Main Dam or East Channel Dam are also considered to have a survival rate of 100 percent. Improvements to the downstream bypass sluice combined with YHPC's continued implementation of the downstream juvenile American shad passage protocol (operation of units 1-6 as first on, last off, and provision of 370 cfs through the forebay sluice gate during the juvenile shad downstream migration period) will also help minimize entrainment and significantly reduce mortality.

YHPC will also be conducting a juvenile American shad headrace turbine avoidance study during the Fall of 2022. The study will provide more detailed information on routes of passage for fish entering the Project forebay area, and will help better quantify Project entrainment mortality. As outlined in the Settlement Agreement, the fishery agencies and YHPC agree that if 60 percent of fish pass through the forebay sluice gate, the overall Project downstream survival rate of 95 percent will have been achieved. If the survival goal is not achieved, YHPC will work with the fishery agencies to identify implement additional measures that may be needed to meet headrace turbine avoidance goals would further improve the survival rate of juvenile American shad passing the project.

Installation of the NLF is also expected to provide juvenile shad with safe downstream passage. As with the sluice and spillage, the resource agencies agree that any fish passing downstream via the NLF (once constructed) will be considered to have a survival rate of 100 percent.

American Eel

The status of American eel in the Susquehanna River upstream of the York Haven Project is relatively unknown. USFWS has been trapping and trucking eels from the Conowingo tailrace since 2008 to up-river locations. However, since upstream eel passage at dams below York Haven will take several years to be implemented, it will still be a number of years before upstream migrating eels arrive in the York Haven Project area through volitional migrations.

The FERC License, WQC, Settlement Agreement include provisions for the eventual downstream passage of American eel at the Project. These measures include studying the migratory pathways at the Project and survival through the turbines, as well as implementing protective measures if needed. Under the terms of the FERC License, WQC, and Settlement Agreement, to address downstream passage for American eel, YHPC is cooperating with the fishery agencies and other lower Susquehanna River hydropower project owners on a downstream eel study to investigate the behavior and passage routes for migrating silver eels in the lower river and in the vicinity of the projects (including York Haven). This is planned to be a 2-year study to occur in 2021-2023 and planning for this study is currently underway. YHPC is also cooperating with the fishery agencies on planning an eel survival study for passage through the York Haven Project turbines.

In the Fall of 2019 and Fall of 2020, eel kill events occurred at the Project and were reported to LIHI. As follow-up to the Fall 2019 eel kill event, PFBC recognized that the number of mature, silver phase American eels which are demonstrating fall migration behaviors are adequate to initiate the two eel studies described above - the Lower Susquehanna River Downstream Eel Study and Site-Specific Route of Passage Study. PFBC noted that the timing of the Fall 2019 eel kill event, while alarming, was not unanticipated. In February 2019, PFBC indicated it was supportive of initiating the planning process as early as possible and targeting the Fall of 2021 for the first year of the concurrent eel studies. The Fall 2019 eel kill event triggered initiating the two eel studies and YHPC is fully cooperating and engaging with the fishery agencies to improve conditions for American eels. These two eel studies will be conducted over two or more years to evaluate migration behaviors of mature eels, their route of passage through the Project, and evaluate passage survival. If the results of these two study efforts indicate that eel survival objectives are not met, YHPC will conduct a downstream eel improvements study, to identify measures that could be implemented at the Project to enhance downstream eel passage. This would be followed by implementation and testing of those measures, and additional consultation with the fishery agencies.

3.4.2 Zone 3 Downstream Zone of Effect

Table 11. Zone 3 Downstream Zone of Effect - Information Required to Support Downstream Fish and Protection Standards

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective and timely downstream migration. • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the species populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of fish species requiring passage in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

Downstream passage of diadromous species from the Project tailwater area is not impeded by the York Haven Project works or its operation . As discussed above, minimum flows have been established for the Project in the current FERC license, WQC, and Settlement Agreement that assure that downstream migrating fish leaving the tailwater area are afforded appropriate migratory habitat and zone-of-passage conditions.

3.5 Shoreline and Watershed Protection Standards

3.5.1 All Zones of Effect

Table 12. All ZoEs - Information Required to Support Shoreline and Watershed Protection Standards

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans). • Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

The Project is located in a developed area of Lancaster, Dauphin and York Counties, Pennsylvania. Land use and land cover in the immediate vicinity of the Project includes a small number of residences and the TMI Power Station facilities. Lancaster County is a mix of small towns, agriculture, and an urbanized and industrialized core around the City of Lancaster. Dauphin County contains a mixture of urban and suburban development surrounded by farmland and forests. The lower portion of Dauphin County, where the Project is located, is quite urbanized.

In accordance with Article 406 of the FERC License, YHPC submitted a Shoreline Management Plan (SMP) on December 21, 2016 (Appendix G) to manage the shoreline within the Project Boundary consistent with the protection of scenic, recreational, and environmental resources and License Article 408 (the Standard Land Use Article, which specifies which types of activities are and are not allowed on Project lands and waters). By Order dated May 3, 2017, FERC approved the SMP and YHPC began implementing the SMP. The SMP includes four land management strategies: lands with Project facilities, lands with Project recreation facilities, general classification areas, and non-Project lands. The SMP designates all lands owned by YHPC as general classification areas; YHPC has the authority to grant permission for certain types of use and occupancies of these lands. The SMP will be fully updated every 10 years, beginning in 2027.

The SMP specifies that the Project will terminate all recreational lot licenses as suggested by the Federal Emergency Management Agency (FEMA) at the end of the 2017 recreational season and, with Londonderry Township, develop a plan to demolish all materials on the lots. YHPC entered into a Compliance Agreement with Londonderry Township regarding the recreational lots on the islands. On September 22, 2017 and July 20, 2018, YHPC notified lot owners about the termination of the lot license program and its demolition plans and requested the removal of personal property from the lots. YHPC submitted a proposed work plan to PADEP by letter dated June 6, 2019, and PADEP authorized the work on June 11, 2019. Subsequent to granting authorization, PADEP required YHPC to inspect structures to be demolished for asbestos. The inspections were completed in August 2019, and notifications were submitted to PADEP on

August 19, 2019 and September 10, 2019. Demolition began September 2019 and by August 24, 2020, all structures on the 300 recreational lots on Shelley and Beshore Islands were demolished and the lots restored. There are no remaining structures on the YHPC-owned portion of Shelley Island and no remaining structures on Beshore Island.

On October 8, 2020, YHPC filed an SMP Interim Report (see Appendix B) reporting that island demolition and restoration had been completed in accordance with the Compliance Agreement with Londonderry Township. With the restoration of Shelley and Beshore Islands complete, YHPC proposed in its SMP Interim Report to amend the FERC-approved SMP to delete sections that are no longer applicable, while the remainder of the SMP will remain unchanged.

3.6 Threatened and Endangered Species Standards

Table 13. Information Required to Support Threatened and Endangered Species Standards

Criterion	*Standard*	*Instructions*
F	2	Finding of No Negative Effects: • Identify all federal and state listed species that are or may be in the immediate facility area based on current data from the appropriate state and federal natural resource management agencies. Provide documentation that there is no demonstrable negative effect of the facility on any listed species in the area from an appropriate natural resource management agency or provide documentation that habitat for the species does not exist within the ZoE or is not impacted by facility operations

During the FERC relicensing of the York Haven Project, three federally listed species were identified with the potential to occur in the vicinity of the Project: the threatened bog turtle (Glyptemys [Clemmys] muhlenbergii), the endangered Indiana bat (Myotis sodalis), and the threatened northern long-eared bat (Myotis septentrionalis). Additionally, although shortnose and Atlantic sturgeon are known to occur in the Susquehanna River downstream of the Conowingo Project (RM 10), FERC determined in the FEIS that the York Haven Project would have no effect on shortnose and Atlantic sturgeon because these species have not been collected at or passed through the Conowingo fish lifts since they began operation in 1972. The National Marine Fisheries Service concurred with FERC's determination.

In the Settlement Agreement, YHPC agreed to conduct bog turtle habitat assessments and surveys prior to construction of the NLF, including consultation with resource agencies during permitting to develop mitigation plans, as necessary. Based on this, FERC concluded in the FEIS that relicensing the Project would not be likely to adversely affect the bog turtle.

In the FEIS, FERC determined that although Indiana bat habitat may occur in the Project area, relicensing the Project would not be likely to adversely affect the Indiana bat because proposed Project activities, including those associated with construction of the NLF, would result

in minimal tree clearing. As documented in the FEIS, FWS concurred with staff's determination for the Indiana bat and for the bog turtle. Article 401 of the FERC License requires that the results of the bog turtle habitat assessment, among other reports, be filed with the plans and specifications for the NLF.

FERC determined in the FEIS that although habitat for the northern long-eared bat may occur in the Project area, relicensing the Project would not be likely to jeopardize the continued existence of the northern long-eared bat due to the minimal tree clearing required for the NLF construction. As documented in the FERC License, FWS concurred with staff's determination for the northern long-eared bat, providing that all tree clearing occur during hibernation months for this species, which is November 15 through March 31 in PA. Article 404 of the FERC License requires YHPC to restrict any tree clearing to the November 15 through March 31 period to minimize impacts to the northern long-eared bat.

The bald eagle is protected under the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. Bald eagles are known to forage, roost, and nest along the Susquehanna River, and within the Project area. FERC determined in the FEIS that there are no current or proposed Project-related activities that would affect bald eagles, including changes to minimum flows or new recreational facilities. Additionally, as part of the Settlement Agreement, YHPC agreed to conduct a bald eagle survey prior to construction of the NLF, and to consult with the resource agencies during permitting and development of mitigation plans, as necessary. As discussed in the FERC License, the FWS has documented that a bald eagle nest is present less than 0.5 mile from the Project and about 0.25 mile from the proposed limits of disturbance for construction of the NLF, and recommended that YHPC refer to FWS' National Bald Eagle Management Guidelines (May 2007) and if it appears that disturbance may occur due to construction or maintenance activity to modify the activity consistent with the guidelines and conservation measures. Article 401 of the FERC License requires that the results of the bald eagle survey, among other reports, be filed with the plans and specifications for the NLF. Article 403 of the FERC License requires the USFWS recommended bald eagle measures.

In accordance with the FERC License, YHPC conducted surveys for the bog turtle for the NLF and filed the report with FERC on February 1, 2014. The survey included all the wetlands within the southern portion of TMI, west and south of the TMI access road and two staging areas and a spoil retrieval area. The survey found that all of the investigated wetlands lack suitable hydrology, substrate, and vegetation and therefore bog turtles are not expected to occur within or adjacent to the NLF area or on TMI.

In accordance with the FERC License, YHPC conducted a bald eagle survey in 2018 for the area within 0.5 miles of the NLF. Prior to the survey, 3 nests were known to exist in the survey area. The survey located two of the original three nests and identified two additional undocumented nests. All four nests found during the survey were active with bald eagles incubating eggs. The bald eagle survey report is Privileged and is available upon request.

During the permit review and approval process and consultation with the PADCNR for the NLF, YHPC conducted a botanical survey for five PA rare, threatened, and endangered (RTE)

plants potentially present in the NLF Area, including: aster-like boltonia (Boltonia asteroides, short's sedge (Carex shortiana), flat-stemmed spike-rush (Eleocharis compressa), ellisia (Ellisia nyctelea), and sida (Sida hermaphrodita). None of the five RTE species were observed within the RTE botanical investigation area including the NLF area. Two of the five RTE target species, aster-like boltonia (B. asteroides) and flat-stemmed spike-rush (E. compressa), were identified and recorded in the general vicinity of the NLF but outside the limits of disturbance for the NLF (more than 250 feet beyond the proposed NLF limits of disturbance). No adverse impacts to these two RTE populations are anticipated, due to their topographic isolation from the NLF and their habitat being maintained by regular flooding disturbances. No potential Erythronium sp. habitat was identified within the RTE botanical survey area. The ecological Riverside Ice Scour Community was identified and delineated adjacent to the NLF. The survey report determined that this Community will not be directly impacted by the construction of the NLF.

3.7 Cultural and Historic Resources Standards

3.7.1 All Zones of Effect

Table 14. All ZoEs - Information Required to Support Cultural and Historic Resources Standards.

Criterion	*Standard*	*Instructions*
G	2	Approved Plan: • Provide documentation of all approved state, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility. • Document that the facility is in compliance with all such plans.

In accordance with Article 407 of the FERC License, YHPC implemented the Programmatic Agreement and developed a Historic Properties Management Plan (HPMP) for the Project. YHPC filed an original HPMP on December 28, 2012 and an updated version on June 22, 2016. FERC approved the HPMP by Order dated August 18, 2016. The HPMP incorporates all requirements of Article 407 and the Programmatic Assessment. The HPMP includes a description of YHPC's policies for the implementation of the Section 106 process, inadvertent discoveries, treatment of human remains/funerary objects, new construction, maintenance, and emergency situations. The HPMP addresses the ongoing efforts to maintain the historical structures through protection/stabilization and includes a listing of categorical exclusion for construction activities that do not contribute to the historic nature of the facility. The HPMP includes a provision for reviewing the HPMP every 5 years with consulting parties to determine if the HPMP needs updating. This periodic review of the HPMP will help ensure that historic and cultural resources are protected during the License term.

In accordance with the HPMP, YHPC filed a Baseline Archeologic Site Monitoring Report on May 7, 2018, which was approved by FERC on July 31, 2018. The baseline survey monitored 22 archaeological sites within the Project area of potential effect (APE).The baseline report found that erosional disturbance caused minor impacts at 14 sites, moderate impacts at 7 sites, and moderate

to severe impacts at one site (Site 36DA151) and recommended additional monitoring of sites with minor impacts be evaluated again in 5 years, sites with moderate impacts be evaluated again in 2 years, and monitoring of Site 36DA151 in one year.

On April 30, 2019, YHPC submitted a report of the monitoring conducted at Site 36DA151 to FERC, the State Historic Preservation Office (SHPO), the Delaware Nation, and the National Park Service in accordance with the HPMP and Baseline Report. In this filing, YHPC committed to continue working with Elizabethtown College throughout 2019 to implement the management recommendations in the report. YHPC confirmed that all other sites will be monitored again on a 2-year (2019) or 5-year frequency (2022) according to the recommendations in the Baseline Report.

On May 8, 2020 YHPC submitted to FERC an Archaeological Site Monitoring Report for monitoring conducted at Sites 36DA0093, 36DA99, 36DA100, 36DA101, 36DA139, 36DA150, and 36DA152 in 2019 in accordance with the HPMP and Baseline Report. This report identified the following specific results and recommendations for each monitored site:

- Site 36DA100 is at risk of adverse effects from the construction of the nature-like fishway and the 2020 Report recommends that this site is monitored in May 2021. YHPC has developed the Memorandum of Agreement (MOA) to mitigate this adverse effect.
- Sites 36DA99 and 36DA101 have a moderate probability for impacts. The 2020 Report recommends monitoring these sites again in five years (in 2026).
- Sites 36DA139, 36DA150, and 36DA152 have experienced significant damage due to erosion and human activities. Unless demolished, the 2020 Report recommends these sites be monitored again in 5 years (in 2026).
- Site 36DA0093 shows no evidence of being a discrete prehistoric site and the 2020 Report recommends no further monitoring of this site.

YHPC will continue to implement the HPMP and conduct monitoring of archaeological sites in accordance with the Baseline Report and follow-up site monitoring efforts throughout the License term.

The HPMP and subsequent Monitoring Reports filed with FERC are Privileged and are available upon request.

3.8 Recreational Resources Standards

3.8.1 All Zones of Effect

Table 15. All ZoEs - Information Required to Support Recreational Resources Standards

Criterion	*Standard*	*Instructions*
H	2	<u>Agency Recommendation:</u> • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.

Criterion	*Standard*	*Instructions*
		• Document that the facility is in compliance with all such recommendations and plans.

Recreation facilities available at the Project include boat launches, fishing access, portage trail, a nature trail, and day use areas with picnic facilities and ball courts. YHPC provides recreation facilities on four significant islands (Battery, Goodling, Goosehorn, and Shelley) located in the Project impoundment. The Project impoundment contains smaller islands which do not have public facilities, but may be accessed by boaters. The Project recreation sites are depicted in Figure 2 and amenities at each site are listed in Table 16. All Project recreation sites are owned and operated by YHPC.

There are three non-Project recreation facilities owned and operated by public entities located adjacent to the Project impoundment: Newberry Township Boat Launch, Goldsboro Borough Boat Launch, and PFBC Boat Launch. These facilities are located on the east shore of the impoundment and provide boating access to the Project impoundment.

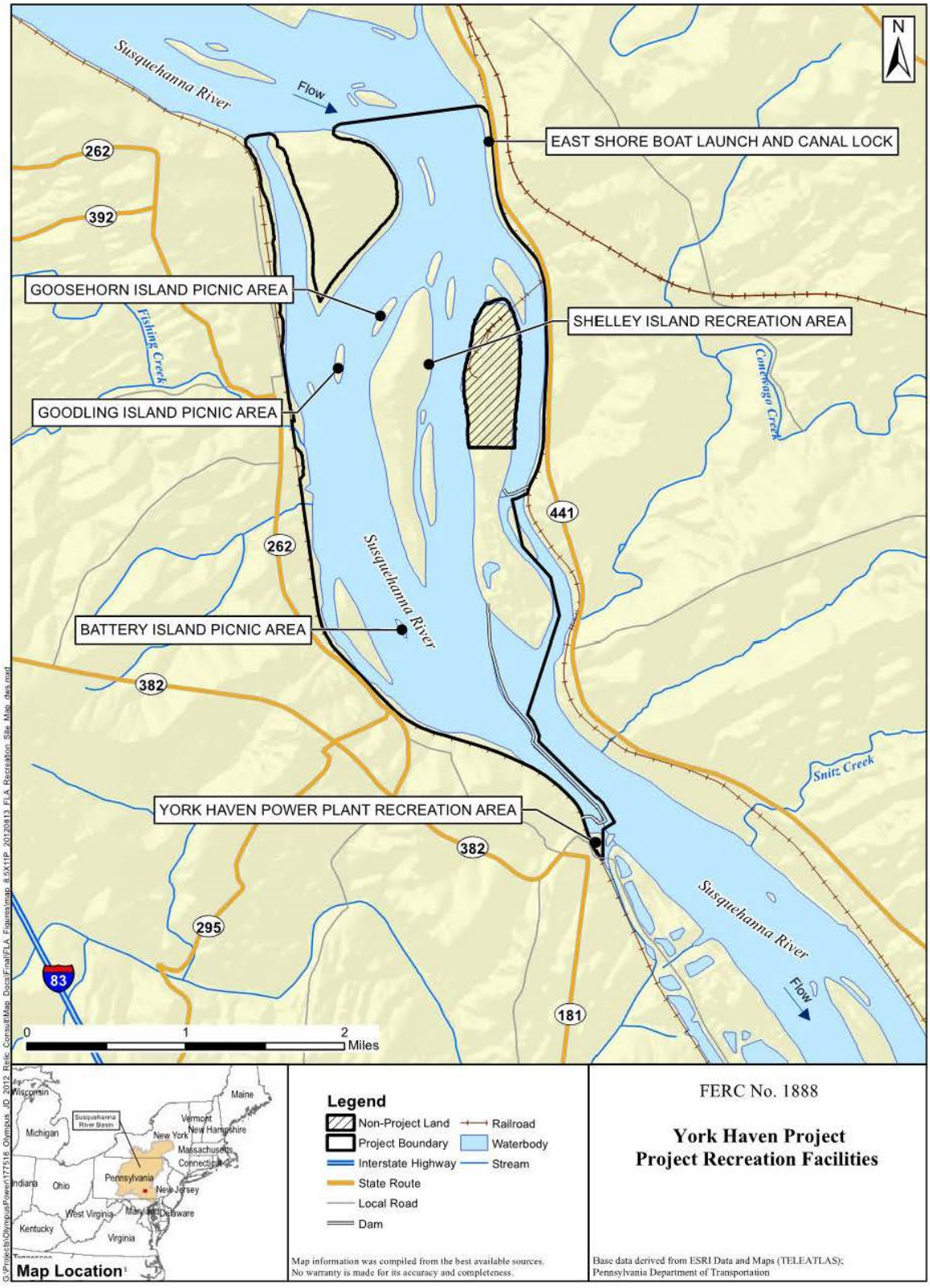
In accordance with Article 405 of the FERC License, YHPC submitted a Recreation Management Plan (RMP) for the Project on June 22, 2016 (Appendix F), which was approved by FERC on September 2, 2016.The RMP describes operations and maintenance at the recreation sites. Additionally, in accordance with the RMP, YHPC must collect recreation use information and complete recreation reports in consultation with stakeholders every 12 years. Based on the review of the recreation reports with the stakeholders, YHPC may propose changes to the recreation facilities or their operation. Monitoring of Project recreation sites will begin in 2026 and occur every 12 years throughout the License term. The periodic recreation monitoring and review of recreation monitoring data will help ensure that the Project recreation sites meet public demand and are operating as intended throughout the License term.

FERC has not conducted an environmental inspection at the Project since the Project was certified by LIHI in 2015.

Table 16. York Haven Recreation Facility Amenities

Recreation Site Name	Recreation Facility Amenities
York Haven Power Plant Recreation Area	30 vehicle parking spaces (all accessible), tailwater fishing, canoe portage (accessible), toilets, playground, picnic area (6 tables – all accessible), a covered pavilion with 5 additional picnic tables and sport courts (2 tennis courts; one basketball court)
Battery Island Picnic Area	Dock, picnic area (2 tables), and information signs
Goodling Island Picnic Area	Dock, picnic area (8 tables and 4 grills), and a sign showing a map of the Project area
Shelley Island Recreation Area	Dock, information sign, and nature trail (~0.47 miles long)
Goosehorn Island Picnic Area	Dock, picnic area (10 tables and 5 grills), and a map of the Project area
East Shore Boat Launch and Canal Lock	Parking for ~60 vehicles with trailers (6 accessible parking spaces), boat launch, picnic area (5 tables), two portable toilets (accessible), a sign showing a map of the Project area, and remnants of the old canal system

Figure 2: York Haven Project Recreation Sites



4.0 Sworn Statement and Waiver Form

All applications for LIHI Certification must include the following sworn statement before they can be reviewed by LIHI:

SWORN STATEMENT

As an Authorized Representative of York Haven Power Company, LLC, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's certification program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The Undersigned further acknowledges that if LIHI Certification of the applying facility is granted, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified®.

The Undersigned further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's certification program.

FOR PRE-OPERATIONAL CERTIFICATIONS:

The Undersigned acknowledges that LIHI may suspend or revoke the LIHI Certification should the impacts of the facility, once operational, fail to comply with the LIHI program requirements.

Company Name: York Haven Power Company, LLC

Authorized Representative:

Name: Jody J. Smet

Title: Vice President Regulatory Affairs

Authorized Signature: 

Date: 11/9/2020

5.0 Contacts

5.1 Facility Contacts

Contacts for YHPC are included All applications for LIHI Certification must include complete contact information.

Table 17. Applicant Contacts

Facility Owner:	
Name and Title	Tom O'Conner
Company	York Haven Power Company
Phone	717-860-6605
Email Address	Tom.OConnor@eaglecreekre.com
Mailing Address	PO Box 67, 1 Hydro Park Drive, York Haven, PA 17370
Facility Operator (if different from Owner):	
Name and Title	Tom O'Conner
Company	York Haven Power Company
Phone	717-860-6605
Email Address	Tom.OConnor@eaglecreekre.com
Mailing Address	PO Box 67, 1 Hydro Park Drive, York Haven, PA 17370
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	NA
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Jody Smet, Vice President Regulatory Affairs
Company	York Haven Power Company
Phone	804-739-0654
Email Address	Jody.Smet@eaglecreekre.com
Mailing Address	PO Box 167, Neshkoro, WI 54960-0157
Party responsible for accounts payable:	
Name and Title	Sharon Mechling, Plant Accounting and Administration
Company	York Haven Power Company
Phone	724-295-2764
Email Address	Sharon.Mechling@eaglecreekre.com
Mailing Address	PO Box 77, Schenley, PA 15682

5.2 Agency Contacts

Current relevant state, federal, and tribal resource agency contacts with knowledge of the facility are listed below.

Agency Contact		***Area of Responsibility***
Agency Name	Pennsylvania Department of Environmental Protection (PADEP)	☐ Flows ☒ Water Quality ☒ Fish/Wildlife ☒ Watershed ☐ T&E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Ronald C. Eberts, Jr. Environmental Protection Compliance Specialist	
Phone	717-705-4819	
Email address	reberts@pa.gov	
Mailing Address	Southcentral Regional Office Waterways & Wetlands Program 909 Elmerton Avenue Harrisburg, PA 17110	

Agency Contact		***Area of Responsibility***
Agency Name	Pennsylvania Fish & Boat Commission	☐ Flows ☐ Water Quality ☒ Fish/Wildlife ☐ Watershed ☐ T&E Species ☐ Cultural/Historic ☒ Recreation
Name and Title	Josh Tryninewski	
Phone	814-353-2239	
Email address	jtryninews@pa.gov	
Mailing Address	Anadromous Fish Restoration Unit 1735 Shiloh Rd. State College, PA 16801	

Agency Contact		*Area of Responsibility*
Agency Name	Pennsylvania Game Commission	☐ Flows ☐ Water Quality ☒ Fish/Wildlife ☐ Watershed ☒ T&E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Olivia Braun	
Phone	717-787-4250	
Email address	olbraun@pa.gov	
Mailing Address	2001 Elmerton Avenue Harrisburg, PA 17110	

Agency Contact		*Area of Responsibility*
Agency Name	Pennsylvania Historical and Museum Commission State Historic Preservation Office (SHPO)	☐ Flows ☐ Water Quality ☐ Fish/Wildlife ☐ Watershed ☐ T&E Species ☒ Cultural/Historic ☐ Recreation
Name and Title	Doug McLearen, Division Chief Archaeology and Protection	
Phone	717-772-0925	
Email address	dmclearen@pa.gov	
Mailing Address	Commonwealth Keystone Building 400 North Street Harrisburg, PA 17120	

Agency Contact		*Area of Responsibility*
Agency Name	Federal Energy Regulatory Commission	☒ Flows ☒ Water Quality ☒ Fish/Wildlife ☒ Watershed ☒ T&E Species ☒ Cultural/Historic ☒ Recreation
Name and Title	Emily Carter, Office of Energy Projects	
Phone	202-502-6512	
Email address		
Mailing Address	888 First Street, N.E. Washington, D.C. 20426	

Agency Contact		*Area of Responsibility*
Agency Name	U.S. Fish and Wildlife Service	☒ Flows ☐ Water Quality ☒ Fish/Wildlife ☐ Watershed ☒ T&E Species ☒ Cultural/Historic ☐ Recreation
Name and Title	Sheila Eyler, Project Leader	
Phone	717-387-2117	
Email address	sheila_eyler@fws.gov	
Mailing Address	Mid-Atlantic Fish and Wildlife Conservation Office 177 Admiral Cochrane Drive Annapolis, MD 21401	

5.3 Stakeholder Contacts

There are no stakeholders that are currently actively engaged with the Project.