

Braddock Locks and Dam Hydroelectric Facility

Application to Low Impact Hydroelectric Institute



Submitted by:

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Table of Contents

Introduction and History	3
Facility Description	3
Table B-1.1. Facility Information for Braddock Locks and Dam.....	3
Standards Selection	11
Table 2. LIHI standards selected for ZoE No. 1 – Upstream Channel.....	12
Table 3. LIHI standards selected for ZoE No. 2 – Downstream Channel.....	12
Supporting Information	13
Ecological Flow Standard for Zone 1 – Upstream Channel	13
Ecological Flow Standard for Zone 2 – Downstream Channel	13
Water Quality Standard for Zone 1 – Upstream Channel	14
Water Quality Standard for Zone 2 – Downstream Channel	16
Upstream Fish Passage Standard for Zone 1 – Upstream Channel	17
Upstream Fish Passage Standard for Zone 2 – Downstream Channel	18
Downstream Fish Passage Standard for Zone 1 – Upstream Channel	19
Downstream Fish Passage Standard for Zone 2 – Downstream Channel	20
Shoreline and Watershed Protection Standard for Zone 1 – Upstream Channel	20
Shoreline and Watershed Protection Standard for Zone 2 – Downstream Channel	21
Threatened and Endangered Species Standard for Zone 1 – Upstream Channel	22
Threatened and Endangered Species Standard for Zone 2 – Downstream Channel	23
Cultural and Historic Resources Standard for Zone 1 – Upstream Channel.....	23
Cultural and Historic Resources Standard for Zone 2 – Downstream Channel.....	25
Recreational Resources Standard for Zone 1 – Upstream Channel.....	25
Recreational Resources Standard for Zone 2 – Downstream Channel.....	27
Sworn Statement and Waiver Form	28
Contacts Forms	29

Introduction and History

The Braddock Locks and Dam (Braddock Project) is one of nine Corps navigation structures that comprise the Monongahela River System, authorized by Congress to provide year-round navigation on the Monongahela River between Pittsburgh, Pennsylvania, and Fairmont, West Virginia. The project site was constructed between 1902 and 1906 and originally named Monongahela Dam 2. The facility underwent a reconstruction that ended in 1953, and was consequently demolished and replaced in 2004, renamed as the Braddock Locks and Dam. The Braddock Pool is maintained above the Braddock Project for 12.6 miles, while the Emsworth Pool begins immediately downstream of the Braddock Project, extending for 11.2 miles. The Braddock Project is the last dam on the Monongahela River, and is located 11.2 river miles of upstream of the confluence of the Monongahela and Allegheny Rivers.

Facility Description

The Braddock Project is comprised of a gated dam, a land-side lock, and a river-side lock and is located at river mile 11.2 of the Monongahela River (Figure 1). In 2004, the fixed crest dam was replaced with a gated dam. It is operated as a run-of-river facility in order to maintain a near-constant upper pool, and is operated primarily for navigational purposes on the Monongahela River. Braddock Locks and Dam is one of nine structures which provide year round navigation on the Monongahela River between Pittsburg, PA and Fairmon, WV. It maintains a pool for 12.6 miles upstream. The Braddock Project was issued a Federal Energy Regulatory Commission (FERC) original license as Project No. 13739-002 on June 4, 2015.

The Project is operated by the United States Army Corp of Engineers (USACE) and is manned during routine business hours.



Figure 1. Braddock Project layout.

Table B-1.1. Facility Information for Braddock Locks and Dam.

Item	Information Requested	Response (include references to further details)
Name of the Facility	Facility name (use FERC project name or other legal name)	Braddock Locks and Dam Hydroelectric Project No. 13739
Reason for applying for LIHI Certification	<ol style="list-style-type: none"> 1. To participate in state RPS program 2. and specify the state and the total MW/MWh associated with that participation (value and % of facility total Mw/MWh). 3. To participate in voluntary REC market (e.g., Green-e) 4. To satisfy a direct energy buyer's purchasing requirement 5. To satisfy the facility's own corporate sustainability goals 6. For the facility's corporate marketing purposes 7. Other (describe) 	To participate in state (Pennsylvania) RPS program for a total of 5.25 MW, with a projected 32,000 MWh per year, as well as to participate in voluntary REC market and to satisfy a direct energy buyer's purchasing requirement.
	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	32,266 MWh/year, with REC's for 100% of this
Location	River name (USGS proper name)	Monongahela River Sub Basin
	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 Monongahela River Watershed- 05020005
	Nearest town(s), <u>county(ies)</u> , and state(s) to dam	Braddock & West Mifflin, Allegheny County, Pennsylvania
	River mile of dam above mouth	11.2
	Geographic latitude of dam	40°23'21.03"N
	Geographic longitude of dam	-79°51'28.90"N
Facility Owner	Application contact names:	Wayne F. Krouse, Lock+ Hydro Friends Fund XLII, LLC Application prepared by: Normandeau Associates, Inc. 25 Nashua Road Bedford, NH 03110

Item	Information Requested	Response (include references to further details)
	Facility owner company and authorized owner representative name.	Wayne F. Krouse, Lock+ Hydro Friends Fund XLII, LLC
	FERC licensee company name (if different from owner)	Same as owner
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	P-13739-002, FERC Order issuing the original major license for the project issued June 4, 2015, expiration June 2065 (i.e., 50 year license term)
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	Major
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	Number N/A Issued by Pennsylvania DEP on February 10, 2015
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories ¹	https://hgenergy.com/projects
Powerhouse	Date of initial operation (past or future for pre-operational applications)	n/a
	Total installed capacity (MW)	5.25 MW
	Average annual generation (MWh) and period of record used	32,263 MWh
	<u>Mode of operation</u> (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.)	Run-of-river

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	The development is presently licensed for seven low-head, horizontal modular bulb turbine/generator units, each with installed capacity of 0.75 MW for total capacity of 5.25 MW. Pending Hydro Friends submittal and FERC approval of a non-capacity related amendment, the original turbine design will be modified to include four horizontal Kaplan bulb turbines each with a capacity of approximately 1312 kW. Total capacity of the installed project will remain the same. Expect non-capacity related amendment to be filed by Hydro Friends with FERC by approximately March 1, 2022.
	Trashrack clear spacing (inches) for each trashrack	6 inches
	Approach water velocity (ft/s) at each intake if known	aprox. 2 ft/s
	Dates and types of major equipment upgrades	In 2004, the fixed-crest dam was replaced with a gated spillway structure.
	Dates, purpose, and type of any recent operational changes	None

Item	Information Requested	Response (include references to further details)
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	<p>The proposed new facilities include:</p> <ul style="list-style-type: none"> (1) A 105 foot wide, 22 foot deep, and 40 foot high steel powerhouse anchored to the USACE's left closure weir. (2) A trash rack at the powerhouse intakes, to be constructed approximately 10 feet below river surface and measuring approximately 30 feet tall and 20 feet wide for each intake, with 6 inch spacing. (3) Four horizontal Kaplan bulb turbines each with a capacity of approximately 1312 kW, for a total capacity of 5.25 MW². (4) An approach channel to the powerhouse (5) A tailrace channel returning flow to the Monongahela River and, (6) A 0.45 mile long, 23 kilovolt (kV) transmission line.
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	Original dam built in 1906; reconstructed in 1953; demolished and replaced in 2004.
	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	In total, the Locks and Dam are 1,007 feet long, consisting of: a 504 feet long, gated section; an 84 foot long crest weir; a 110 feet wide by 360 feet long land-side lock; a 56 feet wide by 360 feet long river-side lock. Locks provide 8.7 foot vertical lift.
	Spillway maximum hydraulic capacity	Unknown
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	N/A
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Hydropower (current facility is for navigation)

² Note, the turbine description as licensed by FERC on June 4, 2015 describes seven low-head, horizontal modular bulb turbine/generator units, each with installed capacity of 0.75 MW for total capacity of 5.25 MW.. Pending FERC approval of non-capacity related amendment, project will consist of a total of four horizontal Kaplan bulb turbines with the same 5.25 MW total capacity.

Item	Information Requested	Response (include references to further details)
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations	Normal pool elevation for Braddock pool is 718.7 feet above mean sea level (msl), elevation of the downstream Emsworth pool is 710 feet msl.
	Normal operating elevations and normal fluctuation range	Reservoir surface area at 721.8 feet is 1,190 acres.
	Gross storage volume and surface area at full pool	Reservoir gross storage capacity at 721.8 feet is 18.937 acre-feet.
	Usable storage volume and surface area	0 (Run-of-release facility)
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	N/A
	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.	<p>Locks & Dam 3, owned by USACE, river mile 23.8</p> <p>Locks & Dam 4, owned by USACE, river mile 41.5, FERC Project No. 13767-002</p> <p>Maxwell, owned by USACE, river mile 61.2, FERC Project No. 13766-002</p> <p>Grays Landing, owned by USACE, river mile 82, FERC Project No. 13763-002</p> <p>Point Marion, owned by USACE, river mile 90.8, FERC Project No. 13771-002</p> <p>Morgantown, owned by USACE, river mile 102.0, FERC Project No. 13762-002</p> <p>Hildebrand Lock, owned by USACE, river mile 108.0</p> <p>Opekiska Lock, owned by USACE, river mile 115.4, FERC Project No. 13753-002</p> <p>Downstream fish passage available through lock structures at all eight facilities</p>
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	This is the last dam on the Monongahela River.
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	All upstream facilities are operated by USACE for navigational purposes.

Item	Information Requested	Response (include references to further details)																										
	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.	1.38 acres of land, 0.28 acre of which is federal land administered by the Corps and 1.1 are land owned by Union Railroad Company. Area of water in acres is less than 1.0 acres.																										
Hydrologic Setting	Average annual flow at the dam, and period of record used	12,692 cfs (monthly recordings 1943-2004).																										
	Average monthly flows and period of record used	Monthly recordings from 1943-2004: <table><tr><th>Month</th><th>Average Flow (cfs)</th></tr><tr><td>January</td><td>17,552</td></tr><tr><td>February</td><td>20,691</td></tr><tr><td>March</td><td>24,266</td></tr><tr><td>April</td><td>18,642</td></tr><tr><td>May</td><td>14,770</td></tr><tr><td>June</td><td>9,216</td></tr><tr><td>July</td><td>6,296</td></tr><tr><td>August</td><td>5,747</td></tr><tr><td>September</td><td>4,980</td></tr><tr><td>October</td><td>5,390</td></tr><tr><td>November</td><td>9,569</td></tr><tr><td>December</td><td>15,496</td></tr></table>	Month	Average Flow (cfs)	January	17,552	February	20,691	March	24,266	April	18,642	May	14,770	June	9,216	July	6,296	August	5,747	September	4,980	October	5,390	November	9,569	December	15,496
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Location and name of closest stream gaging stations above and below the facility	Downstream: USGS Gage No. 0308500 Upstream: N/A																											
Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.	Approx. 7,337 square miles																											
	Other facility specific hydrologic information	N/A																										
Designated Zones of Effect	Number of zones of effect	2, upstream channel and downstream tailrace channel.																										
	Type of waterbody (river, impoundment, bypassed reach, etc.)	Zone 1: River upstream. Zone 2: River downstream.																										
	Upstream and downstream locations by river miles	Upstream location extends from just above dam to river mile 15.6, where the Youghioheny River meets the Monongahela. The downstream location extends from directly below the dam to river mile 9 where Turtle Creek enters.																										

Item	Information Requested	Response (include references to further details)
	Delimiting structures or features	The existing dam is the delimiting structure
Pre-Operational Facilities Only		
Expected operational date	Date generation is expected to begin	Assuming construction completion for mid-year 2023, generation is anticipated to begin during late 2023.
Dam, diversion structure or conduit modification	<p>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.</p> <p>Date the modification is expected to be completed</p>	<p>The proposed project will be constructed on the south (river left) side of the dam, opposite the location of the existing navigational locks and at the upstream face of the existing left closure weir. The proposed project will include the construction of a 105-foot-long, 22-foot-wide, and 40-foot-high structural grade steel powerhouse constructed on a concrete foundation on rock that is anchored to the weir and will include a trash rack at the powerhouse intakes, to be constructed approximately 17 feet below the river surface, with 6-inch spacing. A waterway barrier (e.g., Tuff Boom) will be installed upstream of the project to prevent debris and boats from interacting with the project. The existing dam crest will remain unmodified.</p> <p>Construction of the Project is currently anticipated for mid-year 2023.</p>
Change in water flow regime	Description of any change in impoundment levels, water flows or operations required for new generation	The existing facilities at the Braddock Locks and Dam will be used to facilitate hydro generation, and the proposed Project will operate in run-of-river fashion; therefore, it will not impound additional water or result in additional storage capacity and the USACE will continue to control reservoir levels

Standards Selection

In consultation with LIHI, two designated zones of effect have been identified for the Braddock Locks and Dam (Figure 2). Zone 1 has been identified as the upstream channel, and Zone 2 has been selected as the downstream channel. Zone 1 includes the confluence of the Youghiohony River with the Monongahela River (to river mile 15.6), while Zone 2 includes the confluence of Turtle Creek into the Monongahela River (to river mile 9).

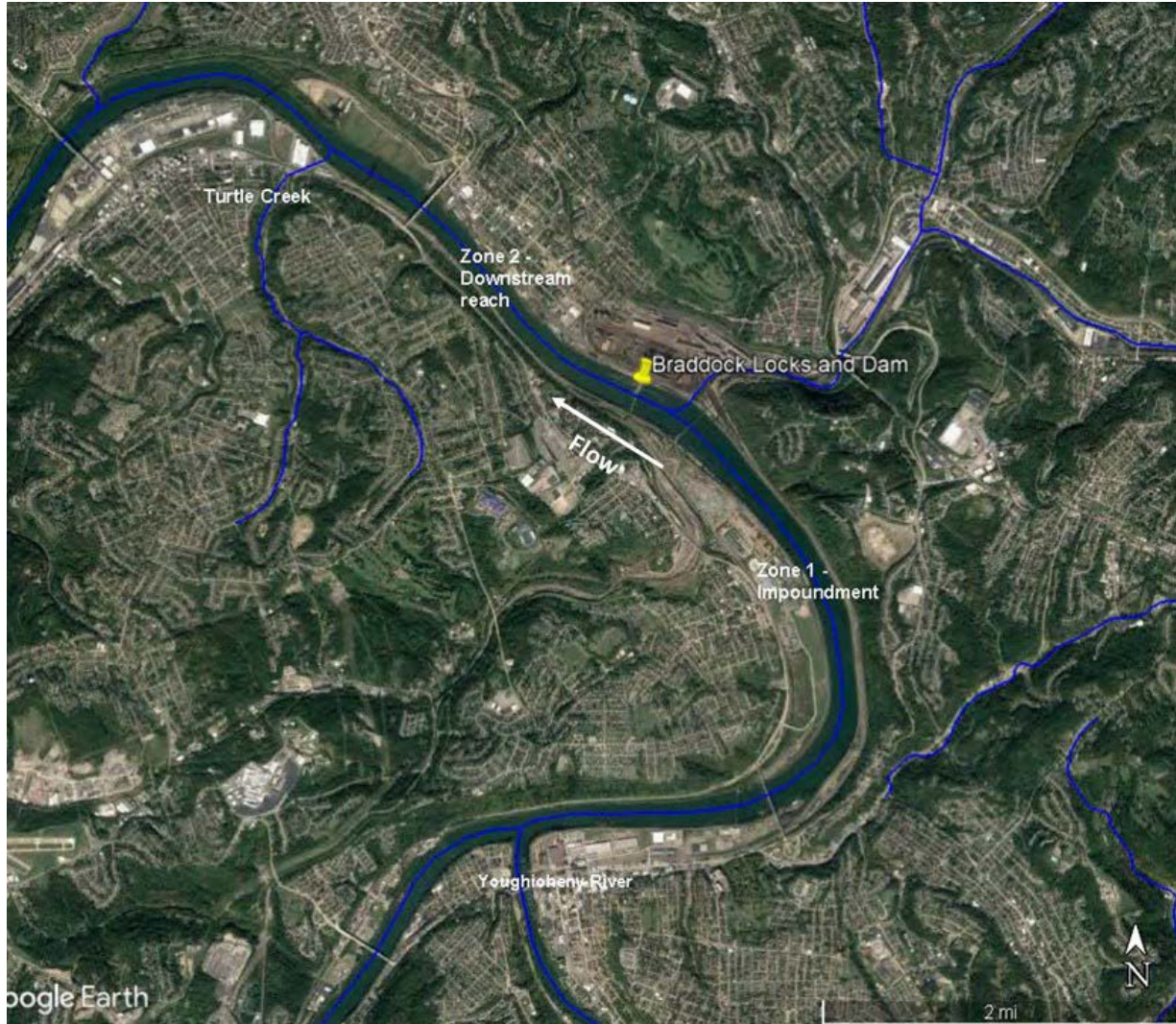


Figure 2. Braddock Project designated zones of effect (impoundment and downstream reach).

Table 2. LIHI standards selected for ZoE No. 1 – Upstream Channel**Facility Name: Braddock Locks and Dam****Zone of Effect: Upstream Channel**

Criterion		<i>Alternative Standards</i>				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Plus</i>
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					
G	Cultural and Historic Resources Protection		x			
H	Recreational Resources		x			

Table 3. LIHI standards selected for ZoE No. 2 – Downstream Channel**Facility Name: Braddock Locks and Dam****Zone of Effect: Downstream Channel**

Criterion		<i>Alternative Standards</i>				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Plus</i>
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 Resources Protection		x			
H	Recreational Resources		x			

Supporting Information

Ecological Flow Standard for Zone 1 – Upstream Channel

Criterion	Standard	Instructions
A	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"> 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. Explain how the recommendation relates to formal 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 USACE currently operates Braddock Locks and Dam as a run-of-river facility to maintain water levels within Braddock pool at a pool elevation of 721.8 feet, as approved by the EA and final FERC license order. Four gated bays in the dam control water levels and releases; one of which serving as a water quality gate, by which the USACE releases flow to manage dissolve oxygen levels downstream of Braddock Locks and Dam during the time of year that it can do so due the ambient temperature. No changes from the current navigation water levels are required as part of the FERC license.

Ecological Flow Standard for Zone 2 – Downstream Channel

Criterion	Standard	Instructions
A	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"> 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. Explain how the recommendation relates to formal 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.

Braddock Locks and Dam currently operates as a run-of-river facility to maintain water levels within Braddock pool at an elevation of 721.8 feet, as approved by the EA and final FERC license order. Four gated bays in the dam control water levels and releases; one of which serves as a water quality gate (or

environmental gate), by which the USACE releases flow to manage dissolve oxygen levels downstream of Braddock Locks and Dam during the time of year that it can do so due the ambient temperature. The environmental gate can pass up to a total of 9,440 cfs. A locking flow of 250 cfs is assumed on a constant basis, and any other flow is released through the spillway gates and/or overflow weir.

In the final EA from October 2015, staff concluded that operating as run-of-release will protect aquatic resources and near-shore habitats. As such, Article 401 of the 2015 FERC license requires the Project to operate in a run-of-release mode. This requires the Project must not deviate from the flow constraints (including flow release) which will be established by the USACE in Article 313, Regulating Plan. Article 401 also states that run-of-release operation may temporarily modified if required by operating emergencies beyond the control of the Project owner, for short periods upon mutual agreement among the owner, the USACE, the USFWS, and the Pennsylvania Department of Environmental Protection, or as directed by the USACE to accommodate the authorized purpose of the Corps' facilities. The Project is required to notify FERC as soon as possible if the flow is modified.

Furthermore, Article 402 required Hydro Friends to develop an operation compliance monitoring plan to describe how it plans on complying with the operational requirements of the license. As a part of this Plan, the Project must file an operation compliance monitoring plan that describes how the facility will comply with the operational requirements of this license for approval at least 90 days prior to the start of project operation. Since construction on the facility has not yet begun, this plan has not been developed yet.

As a part of monitoring for compliance, Article 8 of the FERC License terms and conditions states that the Project must install and maintain gages and stream-gaging stations to determine the state and flow of the body of water on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines.

Water Quality Standard for Zone 1 – Upstream Channel

Criterion	Standard	Instructions
B	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"> • 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.

1. Please specify the state's water quality classification and designated uses for the river at the facility or, for each zone if they differ. For instance, "*The impoundment is a Class B water designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation*".
2. If the facility is located on a Water Quality Limited river reach, provide a link to the state's most

recent impaired waters list and indicate the page(s) therein that apply to facility waters. If possible, provide an agency letter stating that the facility is not a cause of such limitation.

To better understand baseline conditions in the proposed Project area, Hydro Friends conducted an extensive field study to collect continuous and discrete water quality data upstream and downstream of Braddock Locks and Dam during summer 2012³. Data collected during the 2012 field sampling was incorporated into subsequent modeling activities to quantify the changes in dissolved oxygen levels due to the placement of turbine units at Braddock Locks and Dams⁴. The development of the water quality model was in response to a study request submitted by the Pittsburgh District of the USACE in response to the September 17, 2012 Final License Application⁵.

On February 10, 2015, the Pennsylvania DEP issued the water quality certification for the Braddock Project, containing 12 conditions⁶. Certification condition 6 requires Hydro Friends to comply with the water quality monitoring recommendation outlined in the FERC license order. Certification condition 7 requires Hydro Friends to submit a monthly water quality report and an annual summary report to the Pennsylvania DEP, while Condition 9 requires Hydro Friends to consult with the Pennsylvania DEP to find alternate routes to achieve compliance with the DEP's specific water quality criteria if the monitoring data suggests criteria are not being met.

In the final EA, FERC staff recommended that Hydro Friends develop a water quality monitoring plan to include the following: monitoring summer water quality parameters (including dissolved oxygen) prior to construction; continuous, real-time monitoring of water quality parameters during project construction and; continuous, real-time monitoring of summer water quality parameters for 5 years following construction of the project. An additional 5 years of real-time monitoring of summer water quality parameters was recommended if the Lower Mon Project is completed during the license term. The Lower Mon Project (1) replaced the fixed crest dam at Braddock Locks and Dam with a gated dam, (2) will remove Locks and Dam 3; and (3) will construct two new larger locks and Locks and Dam 4⁷. The Staff concluded that monitoring for a five year period would likely capture an extremely hot or dry year that would lead to dissolved oxygen stratification above Braddock dam.

Waters in the project vicinity are designated under the state water quality standards as a warm water fishery and are consequently protected for that use, as well as for navigation⁸. Additionally, based on the available listing of impaired waters in the state of Pennsylvania⁹, Zone 1 is under a Category 4a classification, as these waters are impaired for fish consumption due to polychlorinated biphenyls (PCBs). It is also listed under Category 5 due to pathogen impairment.

³ 2012 Water Quality Study Report: <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=13065172>

⁴ Braddock Locks and Dams Water Quality Monitoring: <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=13356776>

⁵ Pittsburgh District Request for Additional Studies: https://elibrary.ferc.gov/eLibrary/filelist?document_id=14067467&optimized=false

⁶ Pennsylvania DEP Water Quality Certification: <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=13774168>

⁷ <https://www.lrp.usace.army.mil/Portals/72/docs/HotProjects/LMPJune2013.pdf>; <https://www.waterwaysjournal.net/2021/01/29/lower-monongahela-river-project-advances/>

⁸ Pennsylvania Water Quality Standards: http://www.pacodeandbulletin.gov/secure/pacode/data/025/chapter93/025_0093.pdf

⁹ Pennsylvania Integrated Water Quality Report (2020):

<https://www.dep.pa.gov/Business/Water/CleanWater/WaterQuality/IntegratedWatersReport/Pages/2020-Integrated-Water-Quality-Report.aspx>

Additionally, there are a number of streams that empty into the upstream channel that are listed under various categories. Crooked Run is also listed under Category 5 due to impairment from streambank modifications and destabilization. Thompson Run, which empties into the Monongahela, is listed under Category 4a due to metal impairment as a cause of acid mine drainage. Turtle Creek, is listed under Category 5 due to metal impairment from acid mine drainage.

Water Quality Standard for Zone 2 – Downstream Channel

Criterion	Standard	Instructions
B	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> • 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.

3. Please specify the state's water quality classification and designated uses for the river at the facility or, for each zone if they differ. For instance, *"The impoundment is a Class B water designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation"*.
4. If the facility is located on a Water Quality Limited river reach, provide a link to the state's most recent impaired waters list and indicate the page(s) therein that apply to facility waters. If possible, provide an agency letter stating that the facility is not a cause of such limitation.

Condition 6 of the Water Quality Certificate states that Hydro Friends must monitor water quality downstream of the Braddock Locks and Dam prior to and during project construction as well as for 5 years following construction.

Based on the available listing of impaired waters in the state of Pennsylvania¹⁰, Zone 2 is under a Category 4a classification, as these waters are impaired for fish consumption due to PCBs, as well as Category 5 due impairment from pathogens.

¹⁰ Pennsylvania Integrated Water Quality Report (2020):
<https://www.dep.pa.gov/Business/Water/CleanWater/WaterQuality/IntegratedWatersReport/Pages/2020-Integrated-Water-Quality-Report.aspx>

Upstream Fish Passage Standard for Zone 1 – Upstream Channel

Criterion	Standard	Instructions
C	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none"> 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.

Required regardless of standard selected: Provide a list all migratory fish species (anadromous, catadromous, and potamodromous species) that occur now or have occurred historically at the facility.

This zone does not present a challenge for fish migrating upstream; there are no remaining barriers once the fish has passed through the dam itself.

The aquatic habitat of the Monongahela River watershed has historically suffered from coal mining and industrial development, leading to a loss of habitat complexity. However, conditions have been found to have improved in recent years (Anderson et al. 2000). Prior to 1970, poor water quality led to significant declines and eradication of multiple fish communities on the Monongahela River. However, lock chamber and nighttime pool electrofishing surveys conducted by the Pennsylvania Fish and Boat Commission (PFBC) (2003 and 2010) as well as data in the ORSANCO database¹¹ suggests some recovery of fish assemblages. Two migratory species that have historically inhabited the Monongahela River were not found during sampling at the Braddock Locks and Dam facility during these studies: the American paddlefish, *Polyodon spathula*, and the skipjack herring, *Alosa chrysochloris*. Skipjack herring were collected in boat electrofish sampling conducted during 2003 and 2010 at the upstream Maxwell and Grays Landing lock chamber surveys and a single paddlefish was collected during 2003 sampling at the Maxwell lock chamber.

The following table is a summary of 2003 and 2010 results of lock and chamber fish assemblage surveys at Braddock Locks and Dam conducted by PFBC (PFBC 2003; PFBC 2010).

Common Name	Scientific Name	Number Collected		Total Collected
		9/15/2003	10/1/2010	
Bluegill	<i>Lepomis macrochirus</i>	5	408	413
Bluntnose minnow	<i>Pimephales notatus</i>	0	1,437	1,437
Brook silverside	<i>Labidesthes sicculus</i>	0	6	6
Channel catfish	<i>Ictalurus punctatus</i>	68	113	181
Channel darter	<i>Percina copelandi</i>	0	6	6
Channel shiner	<i>Notropis wickliff</i>	96	2,507	2,603
Common carp	<i>Cyprinus carpio</i>	79	6	85
Emerald shiner	<i>Notropis atherinoides</i>	344	4,535	4,879
Flathead catfish	<i>Pylodictis olivaris</i>	32	6	27

¹¹ Ohio River Valley Water Sanitation Commission – Fish Population: <http://www.orsanco.org/data/fish-population/>

Common Name	Scientific Name	Number Collected		Total Collected
		9/15/2003	10/1/2010	
Freshwater drum	<i>Aplodinotus grunniens</i>	181	196	377
Ghost shiner	<i>Notropis buechanani</i>	81	465	546
Gizzard shad	<i>Dorosoma cepedianum</i>	60	13,294	13,354
Green sunfish	<i>Lepomis cyanellus</i>	0	9	9
Largemouth bass	<i>Micropterus salmoides</i>	0	2	2
Logperch	<i>Percina caprodes</i>	0	11	11
Longnose gar	<i>Lepisosteus osseus</i>	0	1	1
Mimic shiner	<i>Notropis volucellus</i>	119	0	119
Mooneye	<i>Hiodon tergisus</i>	1	0	1
Pumpkinseed	<i>Lepomis gibbosus</i>	0	32	32
Quillback	<i>Carpodes cyprinus</i>	0	1	1
Redear sunfish	<i>Lepomis microlophus</i>	1	0	1
River carpsucker	<i>Carpodes carpio</i>	1	0	1
Rock bass	<i>Ambloplites rupestris</i>	1	3	4
Sauger	<i>Sander canadense</i>	6	8	14
Saugeye	<i>Sander vitreus</i> x <i>Sander canadense</i>	1	0	1
Silver chub	<i>Macrhybopsis storeriana</i>	0	6	6
Silver redhorse	<i>Moxostoma anisurum</i>	1	3	4
Skipjack herring	<i>Alosa chrysochloris</i>	1	38	39
Smallmouth bass	<i>Micropterus dolomieu</i>	1	3	4
Smallmouth buffalo	<i>Ictiobus bubalus</i>	18	3	21
Smallmouth redhorse	<i>Moxostoma breviceps</i>	2	3	5
Spotfin shiner	<i>Cyprinella spiloptera</i>	1	66	67
Spotted bass	<i>Micropterus punctulatus</i>	0	94	94
Walleye	<i>Sander vitreus</i>	9	7	16
White bass	<i>Morone chrysops</i>	27	98	125
White crappie	<i>Pomoxis annularis</i>	0	2	2
White perch	<i>Morone americana</i>	2	0	2
Yellow perch	<i>Perca flavescens</i>	0	1	1

Upstream Fish Passage Standard for Zone 2 – Downstream Channel

Criterion	Standard	Instructions
C	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none"> 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.

Required regardless of standard selected: Provide a list all migratory fish species (anadromous, catadromous, and potamodromous species) that occur now or have occurred historically at the facility.

The lock chambers pass fish and other aquatic organisms upstream of the dams during scheduled lockages, specifically allowing for fish passage during the spring spawning period. Additionally, during high flow events at the end of the winter and in spring, the dam gates are raised to allow a free flowing river due to high flows. There were no anadromous or catadromous fish species observed during the 2003 and 2010 fish assemblage surveys at Braddock Locks and Dam conducted by PFBC. See Upstream Fish Passage Standard for Zone 1 for fish distribution data and description of migratory fish species in the vicinity.

Downstream Fish Passage Standard for Zone 1 – Upstream Channel

Criterion	Standard	Instructions
D	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none"> • 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.

Required regardless of standard selected: In addition to the migratory species list provided for criterion C above, provide a list of all riverine/resident fish species that occur now or have occurred historically at the facility.

The lock chambers pass fish and other aquatic organisms downstream of the dams during scheduled lockages, specifically allowing for fish passage during the spring spawning period. Furthermore, the 6-inch trashrack spacing will allow most sizes of target species to pass through. There were no anadromous or catadromous fish species observed during the 2003 and 2010 fish assemblage surveys at Braddock Locks and Dam conducted by PFBC that require downstream passage.

The Licensee submitted a desktop entrainment and survival study as part of their Final License Application to FERC on September 17, 2012¹². The report concluded the Project will result in some fish mortality due to entrainment and impingement. The report analysis indicated that the entrainment potential of the proposed Project vary with river flow, species, season, and fish size/life stage. The

¹² Fish Entrainment and Survival Assessment Report: <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=13065173>

majority of entrained fishes will likely be clupeids, sunfish, and young life stages of all species, including eggs, fry, juveniles, and some young adults incapable of intake avoidance or exclusion by the trashracks. Entrainment densities will likely be the highest in the summer and fall months. Fish survival rates through modular-bulb turbine units are expected to be relatively high, particularly for small fish that make up the majority entrained (survival rate of 95%). FERC issued their notice of application ready for environmental analysis (REA) and solicited any comments, recommendations, terms and conditions or prescriptions on February 15, 2013¹³. The U.S. Department of the Interior notified FERC on April 17, 2013 that they had no comments related to the REA¹⁴.

Downstream Fish Passage Standard for Zone 2 – Downstream Channel

Criterion	Standard	Instructions
D	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none"> • 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.

Required regardless of standard selected: In addition to the migratory species list provided for criterion C above, provide a list of all riverine/resident fish species that occur now or have occurred historically at the facility.

Once in the downstream channel, there are no barriers that would inhibit downstream passage of fish from the project. As such, downstream migratory species are not impacted by this zone.

Shoreline and Watershed Protection Standard for Zone 1 – Upstream Channel

Criterion	Standard	Instructions
E	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> • 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.

¹³ https://elibrary.ferc.gov/eLibrary/filelist?document_id=14090758&optimized=false

¹⁴ https://elibrary.ferc.gov/eLibrary/filelist?document_id=14107453&optimized=false

Required regardless of standard selected: Describe land use and land cover around the facility. Describe any protections afforded the river or lands around the facility (e.g., Wild and Scenic River, conservation lands surrounding the impoundment, critical habitats, etc.)

The lands surrounding the Braddock Locks and Dam are primarily industrial, vacant, or unclassified. The Braddock Project is bordered by railroad corridors parallel to the river on both sides, which transition into industrial or vacant land. The existing shoreline consists mostly of gravelly soils formed on outwash deposits. The river-right bank at the Project is flanked by a concrete embankment that comprises part of the locks structure, while the remaining shoreline is buffered by rock rip-rap. Additionally, there are several greenways in the vicinity of the Braddock Project that are a part of the Allegheny Land Trust GREENPRINT¹⁵.

The Project will not include an impoundment; as such, no shoreline buffer zones exist within the Project boundary. The final EA draft concluded there would be no significant changes to the upstream and downstream shoreline conditions that would alter current shoreline conditions.

In the Project area, there are several brownfields where industrial facilities once existed. Brownfields are defined by the United States Environmental Protection Agency (EPA) as “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant” (EPA 2013).

Wetland habitat in the Project vicinity is classified by the USFWS as permanently flooded, lower perennial riverine habitat with an unconsolidated bottom. Given the degree of industrial development along the shoreline (e.g. placement of rip rap, concrete walls), little riparian or bottomland habitat exists in the vicinity of the project. A limited number of tree species are found along the shore in the Project vicinity, although none appear to be present within the area to be disturbed by project construction.

Wildlife species anticipated to use the shoreline area as habitat are typically tolerant of human development and activity (e.g. raccoon, Virginia opossum, eastern gray squirrel and various passerine bird species), as well as those that would use aquatic habitat (e.g. waterfowl, muskrat, and beaver).

However, to minimize soil erosion and sedimentation into the Monongahela River during construction, the FERC license mandated that, under Article 302, Hydro Friends develop a soil erosion and sediment control plan. An Erosion and Sedimentation Control Plan and BMPs was provided to Allegheny County (see Attachment 1).

Shoreline and Watershed Protection Standard for Zone 2 – Downstream Channel

Criterion	Standard	Instructions
E	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• 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.

¹⁵ https://alleghenylandtrust.org/wp-content/uploads/2014/10/20141027_finalgreenprint_fullmultipg.pdf

Required regardless of standard selected: Describe land use and land cover around the facility. Describe any protections afforded the river or lands around the facility (e.g., Wild and Scenic River, conservation lands surrounding the impoundment, critical habitats, etc.)

See Zone 1.

Threatened and Endangered Species Standard for Zone 1 – Upstream Channel

Criterion	Standard	Instructions
F	2	<p>Finding of No Negative Effects:</p> <ul style="list-style-type: none"> 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.

Required regardless of standard selected: Identify all federal and state listed species (fish, aquatic plants and organisms, and terrestrial plants and wildlife) in the facility area based on current data. Avoid using privileged locational information or provide that information in a separate confidential attachment.

There are five federally endangered mussel species listed by the USFWS as potentially occurring within Allegheny County and the reach of the Monongahela River where the Braddock Project would be constructed: the fanshell (*Cyprogenia stegaria*), snuffbox (*Epioblasma triquetra*), pink mucket (*Lampsilis abrupta*), orange-foot pimpleback (*Plethobasus cooperianus*), and sheepsnose (*Plethobasus cyphus*) mussels. However, Hart (2012) did not observe these species during comprehensive field surveys of the Monongahela River, including the Braddock Project area. Furthermore, email exchange between Hydro Friends and USFWS state there are no significant concerns regarding the Braddock Project given its location and small footprint. As such, the final EA concluded there was no effect by the Project on these species.

According to the USFWS's Information, Planning and Conservation System (IPaC) website (<http://ecos.fws.gov/ipac/>) indicates that the federally listed endangered Indiana bat (*Myotis sodalist*) and the threatened northern long-eared bat (*Myotis septentrionalis*) occur within Allegheny County, Pennsylvania (see Attachment 2). In the final EA, it was noted that an area of 460 ft² of previously disturbed land would be removed during construction of the proposed switchyard and a single transmission line pole, and no clearing would be necessary to develop the storage or lay-down area. The proposed transmission line would be placed under an existing elevated railway or on existing poles located below or alongside elevated tracks. Given this, it was established in the FERC license that there is no habitat suitable for listed bats on these sections of land that would be disturbed by project construction and maintenance and therefore no effect on the Indiana bat or northern long-eared bat.

Four fish species state-listed endangered within Pennsylvania are known or have the potential to occur within the project area (HUC8 Watershed – Lower Monogahela) based on information available in the

Pennsylvania Natural Heritage Program species and natural features list¹⁶. These include the warmouth (*Chaenobryttus gulosus*), Eastern sand darter (*Ammocrypta pellucida*), ghost shiner (*Notropis buechanani*) and lake sturgeon (*Acipenser fulvescens*). Ghost shiner were captured in relatively large numbers in electrofishing surveys of the Braddock lock chambers (PFBC 2003; PFBC 2010).

The Pennsylvania Department of Conservation and Natural Resources identifies a single Natural Heritage Area (NHA) within the Lower Monongahela HUC8 Watershed (see Attachment 3). The Monongahela River at Homestead NHA has been identified critical habitat for species or natural communities of concern¹⁷.

Threatened and Endangered Species Standard for Zone 2 – Downstream Channel

Criterion	Standard	Instructions
F	2	<p><u>Finding of No Negative Effects:</u></p> <ul style="list-style-type: none"> 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.

Required regardless of standard selected: Identify all federal and state listed species (fish, aquatic plants and organisms, and terrestrial plants and wildlife) in the facility area based on current data. Avoid using privileged locational information or provide that information in a separate confidential attachment.

See Zone 1.

Cultural and Historic Resources Standard for Zone 1 – Upstream Channel

Criterion	Standard	Instructions
G	2	<p><u>Approved Plan:</u></p> <ul style="list-style-type: none"> 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.

Required regardless of standard selected: Identify the cultural and historic resources present on facility-owned property or that may be affected by facility operations. Avoid using privileged locational information or provide that information in a separate confidential attachment.

Hydro Friends Fund believes the Braddock Project's small footprint and its potential to impact historical properties are limited. In preparation for FERC license filing, Hydro Friends Fund conducted a search of the PHMC's Cultural Resources Geographic Information System to identify any known archeological historic resources within the Project boundary. No known resources were found in this search. However, one archaeological resource was identified more than 2,900 feet upstream of the Braddock Locks and

¹⁶ <http://www.naturalheritage.state.pa.us/SpeciesFeatures.aspx>: accessed April 13, 2021

¹⁷ Monongahela River at Homestead NHA:

https://www.naturalheritage.state.pa.us/cnhi/cnhi/MonongahelaRiveratHomestead_20210113053429.pdf

Dam: the submerged remains of the original Monongahela Navigation Company Lock and Dam No. 2, constructed between 1838-1841. Given that this occurs well outside the Project vicinity, no action by Hydro Friends is required.

Article 405 of the FERC Project license states that if there is discovery of previously unidentified cultural resources during the course of constructing or maintaining project works or other facilities at the project, the Project is required to stop all land-clearing and land-disturbing activities within the vicinity of the resource and consult with the Pennsylvania State Historic Preservation Officer (Pennsylvania SHPO) to determine the need for any cultural resource studies.

If a cultural resource discovered in the Project vicinity is determined to be eligible for the National Register of Historic Places (National Register), Hydro Friends must file for FERC approval a historic properties management plan (HPMP) prepared by a qualified cultural resource specialist after consultation with the Pennsylvania SHPO. The HPMP must include a description of each discovered property, indicating whether it is listed in or eligible to be listed in the National Register, a description of the potential effect on each discovered property, proposed measures for avoiding or mitigating adverse effects, documentation of consultation, and a schedule for implementing mitigation and conducting additional studies. The Project is not allowed to resume land-clearing or land-disturbing activities in the vicinity of a cultural resource discovered during construction, until informed by FERC that the requirements of this article have been fulfilled.

Construction and operation of the project are likely to not affect cultural resources at the Braddock Project, given that the area has been heavily disturbed and no cultural resources have been identified within the project boundary.

Known historic resources within the Project's vicinity (e.g. buildings, structures, and districts) are listed in or eligible for inclusion in the National Register. The table below summarizes known historic resources within approximately 1,500 feet of the Project. A National Historic Landmark district is located within the Project's vicinity: Kennywood Park, a historic amusement park located near the left shoreline of the Monongahela River. It is in the general vicinity of the Project, but is separated by rail lines and infrastructure. Construction and operation of the Project are not anticipated to impact this Landmark.

Resource Name	PHMC Key Number	Resource Type	Description	National Register Status	Notes
Pittsburgh & Lake Erie Railroad (Port Perry to Rankin)	107871	Historic District	Linear resource	Eligible	--
Baltimore & Ohio Railroad: Pittsburgh Division (Maryland Line to City of Pittsburgh)	107870	Historic District	Linear resource	Eligible	--
Union Railroad (Dravosburg Borough to Monroeville Borough)	110340	Historic District	Linear resource	Eligible	--
Pennsylvania Railroad: Monongahela Line	112369	Historic District	Linear resource	Eligible	--
Edgar Thomson	107760	NA	Historic	Eligible	--

Resource Name	PHMC Key Number	Resource Type	Description	National Register Status	Notes
Works of the Carnegie Steel Company			manufacturing facility		
Kennywood Park	093768	District	Historic amusement park	Listed	National Historic Landmark
Union Railroad Trestle	105560	Structure	Railroad bridge	Eligible	--

Cultural and Historic Resources Standard for Zone 2 – Downstream Channel

Criterion	Standard	Instructions
G	2	<u>Approved Plan:</u> <ul style="list-style-type: none"> 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.

Required regardless of standard selected: Identify the cultural and historic resources present on facility-owned property or that may be affected by facility operations. Avoid using privileged locational information or provide that information in a separate confidential attachment.

See Zone 1.

Recreational Resources Standard for Zone 1 – Upstream Channel

Criterion	Standard	Instructions
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"> Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. Document that the facility is in compliance with all such recommendations and plans.

Required regardless of standard selected: Identify and briefly describe all recreational amenities associated with the facility, identify which are owned by the facility, and which not owned or operated by the facility. If there has been a FERC Environmental and Recreation Inspection, please provide a link to or copy of the report and any follow up activities. If there was no inspection, please state that.

The Braddock Project is located in a highly industrialized area, and therefore offers few recreational opportunities. The Great Allegheny Passage's Steel Valley Trail¹⁸ runs along the Monongahela River and allows visitors along the trail a view of the project facilities, which will be located 300 feet north of the Steel Valley Trail (Figure 3). The Great Allegheny Passage¹⁹ is a rail-trail that offers 135 miles of hiking and biking between Cumberland, Maryland, and Munhall, Pennsylvania. It is the central trail of a network of long-distance hiker-biker trails covering hundreds of miles through the Allegheny region of

¹⁸ Steel Valley Trail Council: <https://steelvalleytrail.org/map/>

¹⁹ Great Allegheny Passage: <https://gaptrail.org/>

the Appalachian Mountains.

In order to improve the access of recreational activities in the vicinity of the Project, Hydro Friends proposed to install and maintain a rest area along the Steel Valley Trail adjacent to the Braddock Project Site, which includes benches (possibly with cover), bike racks, and interpretive signs (per recommendation by the final EA). Article 404 required the installation of the rest area, and in order to ensure Hydro Friends maintains the rest area for the term of the license, Article 203 requires revised Exhibit G drawings that include the rest area within the project boundary.

As of 2015, Hydro Friends has indicated that the Corps has already installed a new rest bench and interpretive sign along the Steel Valley Trail, adjacent to the project area. Furthermore, there were considerations for other recreational improvement options along the trail, including: the installation of a bicycle tune-up station near the Historic Pump House, which is approximately 2 miles from the project, and serves as the Great Allegheny Passage trailhead. The Licensee intends to install the bicycle tune-up station during construction of the project. To date there has been no FERC Environmental and Recreation Inspection.

It should be noted that while the project would not adversely affect recreation resources over the long-term, short-term impacts from construction noise and equipment have the potential to adversely impact recreation opportunities in the area.

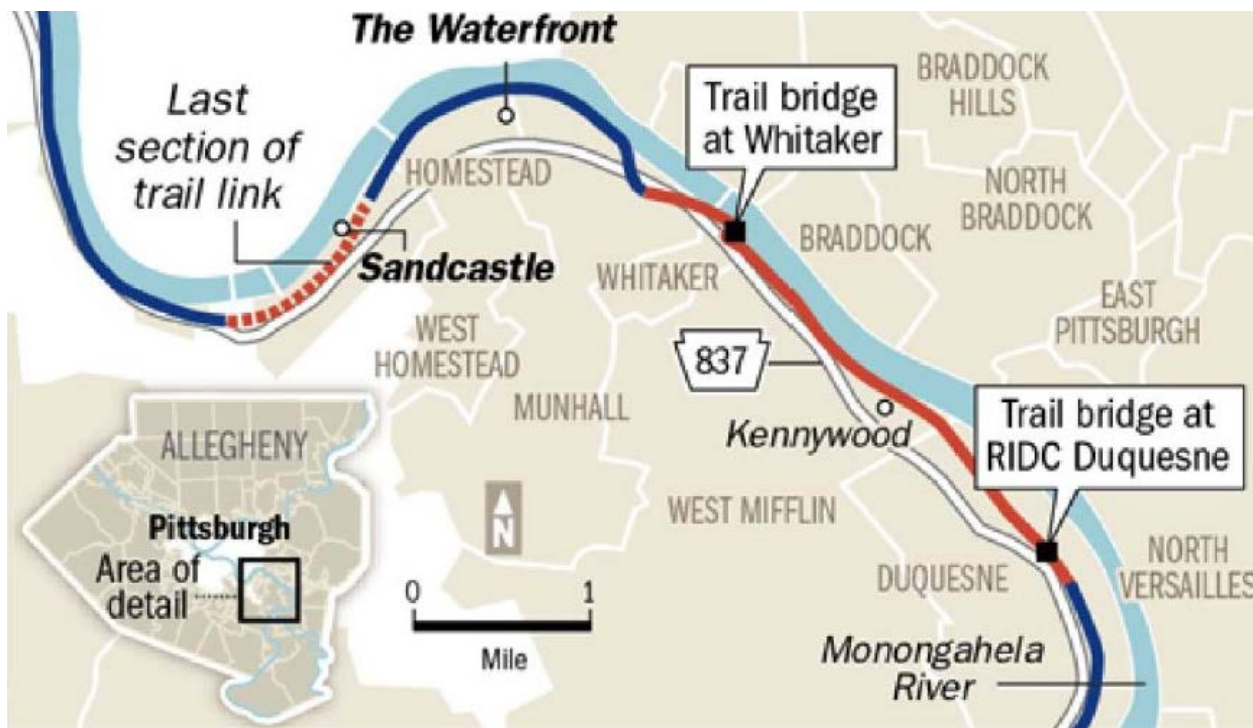


Figure 3. Great Allegheny Passage trail within vicinity of the project (Source: Allegheny Trail Alliance).

Recreational Resources Standard for Zone 2 – Downstream Channel

Criterion	Standard	Instructions
H	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. Document that the facility is in compliance with all such recommendations and plans.

Required regardless of standard selected: Identify and briefly describe all recreational amenities associated with the facility, identify which are owned by the facility, and which not owned or operated by the facility. If there has been a FERC Environmental and Recreation Inspection, please provide a link to or copy of the report and any follow up activities. If there was no inspection, please state that.

As discussed above in Zone 1, The Great Allegheny Passage is located in close proximity to the proposed Project Boundary.

Angling opportunities near the project are somewhat limited due to the industrialized nature of the area, however, fishing opportunities do exist downstream of the Braddock Project and along accessible shoreline areas. Downstream of the project, fishing access is available on the Monongahela River at 11th Street in the Town of Braddock, PA, at a town-owned public boat ramp area (Figure 4).



Figure 4. Location of public boat launch in relation to Braddock Project.

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 Lock+Hydro Friends Fund xLII, 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: Lock+Hydro Friends Fund xLII, LLC

Authorized Representative:

Name: Wayne Krouse

Title: Member, CEO Hydro Green Energy

Authorized Signature: 

Date: 1 JUN 21

Contacts Forms

All applications for LIHI Certification must include complete contact information.

A. Applicant-related contacts

Facility Owner:	
Name and Title	Wayne Krouse, President & CEO
Company	Lock+ Hydro Friends Fund XLII, LLC
Phone	877-556-6566 x 709
Email Address	wayne@hgenergy.com
Mailing Address	PO Box 43769, Birmingham, AL 35243
Facility Operator (if different from Owner):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Wayne Krouse, President & CEO
Company	Lock+ Hydro Friends Fund XLII, LLC
Phone	877-556-6566 x 709
Email Address	wayne@hgenergy.com
Mailing Address	PO Box 43769, Birmingham, AL 35243
Party responsible for accounts payable:	
Name and Title	Wayne Krouse, President & CEO
Company	Lock+ Hydro Friends Fund XLII, LLC
Phone	877-556-6566 x 709
Email Address	wayne@hgenergy.com
Mailing Address	PO Box 43769, Birmingham, AL 35243

B. Current and relevant state, federal, and tribal resource agency contacts with knowledge of the facility (copy and repeat the following table as needed).

Agency Contact		Area of Responsibility
Agency Name	U.S. Fish & Wildlife Service	<input checked="" type="checkbox"/> Flows
Name and Title	Richard C. McCorkle Fish and Wildlife Biologist	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Fish/Wildlife
Phone	Office: (814) 206-7470 Personal cell (while teleworking): (302) 382-0284	<input type="checkbox"/> Watershed
Email address	Richard.Mccorkle@fws.gov	<input checked="" type="checkbox"/> T&E Species
Mailing Address	Pennsylvania Field Office 110 Radnor Road, Ste 101 State College, PA 16801	<input type="checkbox"/> Cultural/Historic <input type="checkbox"/> Recreation

Agency Contact		Area of Responsibility
Agency Name	Pennsylvania Dept. of Environmental Protection	<input checked="" type="checkbox"/> Flows
Name and Title	Joseph Snyder Aquatic Biologist Supervisor	<input checked="" type="checkbox"/> Water Quality <input type="checkbox"/> Fish/Wildlife
Phone	(412) 442-4308	<input checked="" type="checkbox"/> Watershed
Email address	jossnyder@pa.gov	<input type="checkbox"/> T&E Species
Mailing Address	Department of Environmental Protection 400 Waterfront Drive Pittsburgh, PA 15222-4745	<input type="checkbox"/> Cultural/Historic <input type="checkbox"/> Recreation

Agency Contact		Area of Responsibility
Agency Name	U.S. Army Corps of Engineers, Pittsburg District	<input checked="" type="checkbox"/> Flows
Name and Title	Julia Butzler Biologist, 408 Coordinator	<input checked="" type="checkbox"/> Water Quality <input type="checkbox"/> Fish/Wildlife
Phone	(412) 395-7206	<input checked="" type="checkbox"/> Watershed
Email address	julia.butzler@usace.army.mil	<input type="checkbox"/> T&E Species
Mailing Address	1000 Liberty Ave Rm 2200 Pittsburgh, PA 15222-4186	<input type="checkbox"/> Cultural/Historic <input type="checkbox"/> Recreation

Agency Contact		Area of Responsibility
Agency Name	Pennsylvania Boat and Fish Commission	<input checked="" type="checkbox"/> Flows
Name and Title	Staff	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Fish/Wildlife
Phone	(814) 445-8974	<input type="checkbox"/> Watershed
Email address	ra-swedureach@pa.gov	

Mailing Address	236 Lake Road Somerset, PA 15501	<input checked="" type="checkbox"/> T&E Species <input type="checkbox"/> Cultural/Historic <input checked="" type="checkbox"/> Recreation
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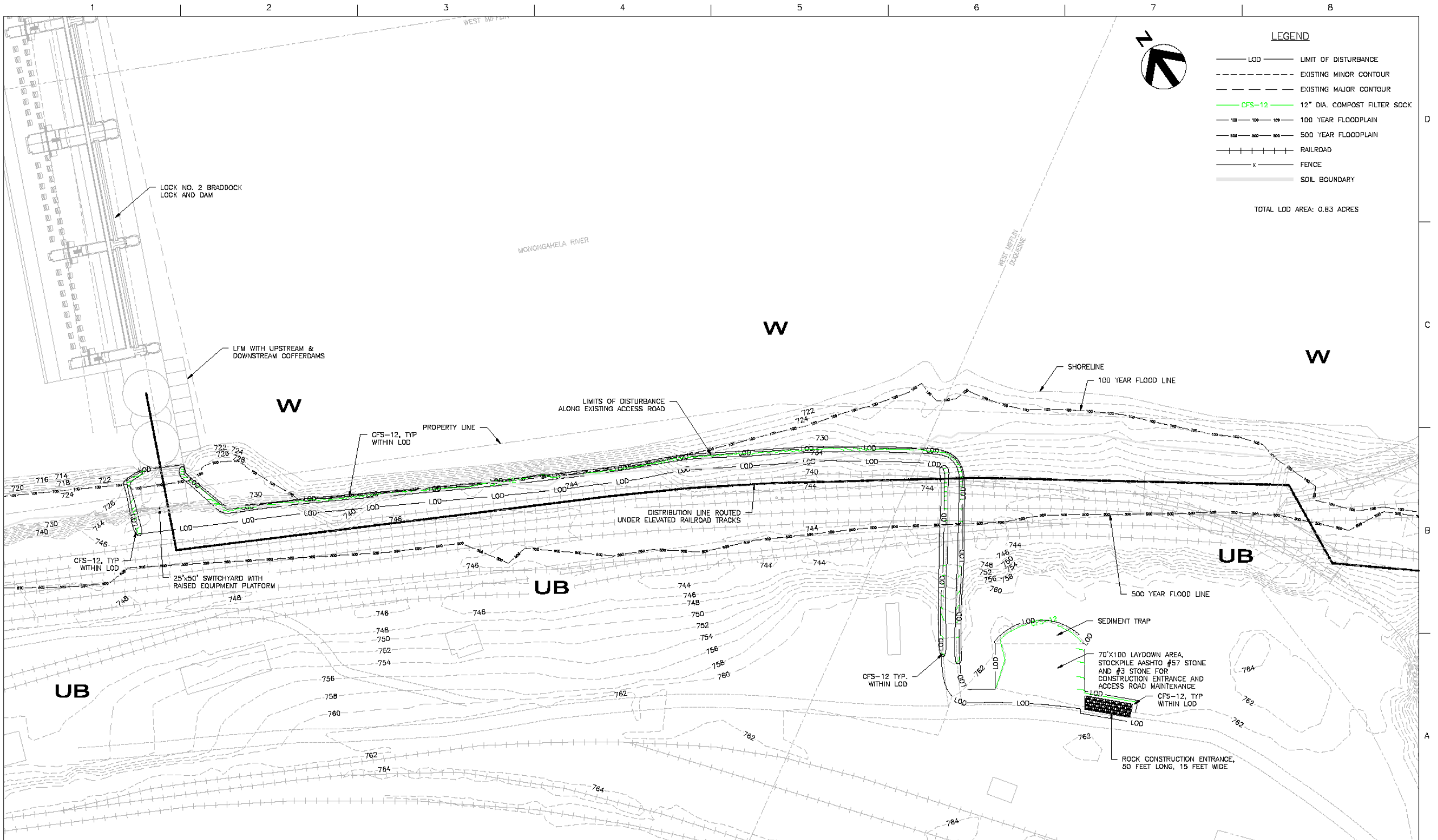
C. Current stakeholder contacts that are actively engaged with the facility (copy and repeat the following table as needed).

Stakeholder Contact		Area of Responsibility
Organization Name	Steel Valley Trail Council	<input type="checkbox"/> Flows <input type="checkbox"/> Water Quality <input type="checkbox"/> Fish/Wildlife <input type="checkbox"/> Watershed <input type="checkbox"/> T&E Species <input type="checkbox"/> Cultural/Historic <input checked="" type="checkbox"/> Recreation
Name and Title	George Schmidt President	
Phone	(412) 521 1538	
Email address	gschmidt1@verizon.net	
Mailing Address	P.O. Box 318 Homestead, PA 15120	

References

- Anderson, R.M., K.M. Beer, T.F. Buckwalter, M.E. Clark, S.D. McAuley, J.I. Sams, III, and D.R. Williams. 2000. Water quality in the Allegheny and Monongahela River Basins, Pennsylvania, West Virginia, New York, and Maryland, 1996-98. U.S. Geological Survey Circular 1202, 32 p.
- Hart, J. 2012. Freshwater Mussel Populations of the Monongahela River, PA and Evaluation of the ORSANCO Copper Pole Substrate Sampling Technique Using G.I.S. Interpolation with Geometric Means. Thesis and Dissertations. Paper 242. Marshall University, Huntington, WV. Online URL: <http://mds.marshall.edu/etd/242>. Accessed April 4, 2021.
- Pennsylvania Fish and Boat Commission (PFBC). 2003. Monongahela River Lock Chamber Fish Sampling; September 15-17, 2003. [Online] URL: https://pfbc.pa.gov/images/fisheries/afm/2003/8_09-29mon.htm. Accessed April 13, 2021
- Pennsylvania Fish and Boat Commission (PFBC). 2010. Monongahela River Biological Monitoring Study. Navigation Lockchamber Surveys at Braddock, Maxwell, and Grays Landing Locks and Dams; September 27 – October 1, 2010. [Online] URL: https://pfbc.pa.gov/images/reports/2011bio/8x04_01mon.htm. Accessed April 13, 2021.

Attachment 1. Erosion and sedimentation control plan and BMPs



3	8/20/14	REVISED PER AGCD COMMENTS - CFS AND STONE
2	8/1/14	REVISED PER AGCD COMMENTS
1	5/2/14	ISSUED FOR EROSION AND SEDIMENT CONTROL PLAN REVIEW
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	J. GIBSON
ENGINEER	J. VAN GEHUCHTEN
CADD	M. ROBLE
REVIEWED BY	R. NELSON
PROJECT NUMBER	229990



Hydro Green Energy

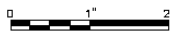
HYDRO GREEN ENERGY, LLC

BRADDOCK LOCKS & DAM HYDROPOWER

PROJECT

EROSION AND SEDIMENTATION CONTROL

PLAN AND BMPs



FILENAME: DDC-01.DWG

SCALE: 1"=50'

SHEET

00C-01

Attachment 2. USFWS Information for Planning and Consultation (Allegheny County, PA)

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This resource list is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

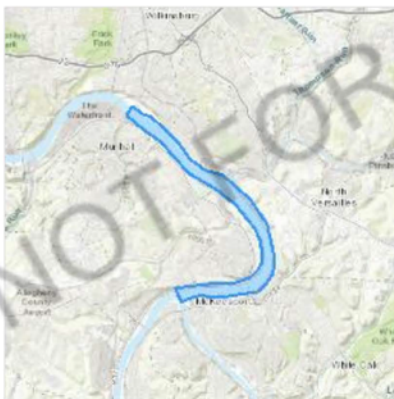
IPaC is experiencing performance issues. We are working on the issue and hope to have it resolved soon. We apologize for any inconvenience this may cause.

The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Allegheny County, Pennsylvania



Local office

Pennsylvania Ecological Services Field Office

☎ (814) 234-4090

📅 (814) 234-0748

MAILING ADDRESS

110 Radnor Road Suite 101
State College, PA 16801-7987

PHYSICAL ADDRESS

110 Radnor Road
Suite 101}
State College, PA 16801-7987

<http://www.fws.gov/northeast/pafo/>

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>

- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

Breeds Sep 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Black-capped Chickadee <i>Poecile atricapillus praticus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 10 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 27 to Jul 20
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

Wood Thrush *Hylocichla mustelina***Breeds May 10 to Aug 31**

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-bellied Sapsucker *sphyrapicus varius***Breeds May 10 to Jul 15**

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/8792>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (●)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

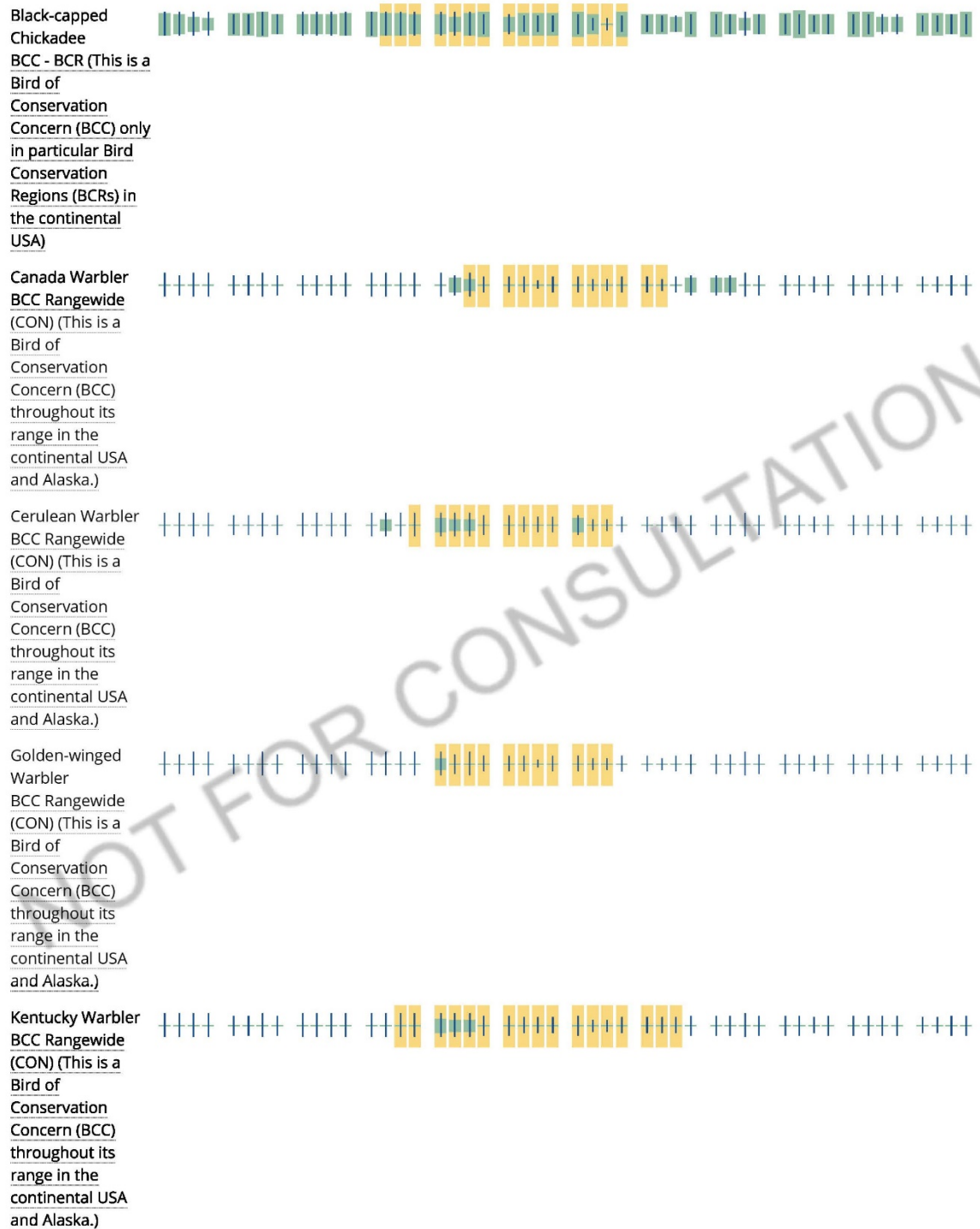
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





<p>Prairie Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)</p>	
<p>Red-headed Woodpecker BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)</p>	
<p>Rusty Blackbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)</p>	
<p>Wood Thrush BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)</p>	
<p>Yellow-bellied Sapsucker BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)</p>	

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

[R2UBH](#)

[R3UBH](#)

[R4SBC](#)

[R5UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment 3. Pennsylvania Department of Conservation and Natural Resources: Conservation Planning
Report

Introduction

This Conservation Planning Report compiles names, descriptions, maps, locations, measurements, links and references for Natural Heritage Areas (core and supporting habitats), Important Bird Areas, State Lands, and agency designated water resources that are coincident with an area of interest defined by the user of the Pennsylvania Conservation Explorer tool. For an overview and additional details, please be sure to visit the website at www.naturalheritage.state.pa.us and download the applicable County Natural Heritage Inventory report(s).

Site Area: 1,122.15 acres

County(s): Allegheny

Township/Municipality(s): BRADDOCK; DUQUESNE; MUNHALL; NORTH BRADDOCK; NORTH VERSAILLES TOWNSHIP; RANKIN; SWISSVALE; WEST MIFFLIN; WHITAKER

Quadrangle Name(s): BRADDOCK; PITTSBURGH EAST

Watersheds HUC 8: Lower Monongahela

Watersheds HUC 12: Sawmill Run-Turtle Creek; Streets Run-Monongahela River

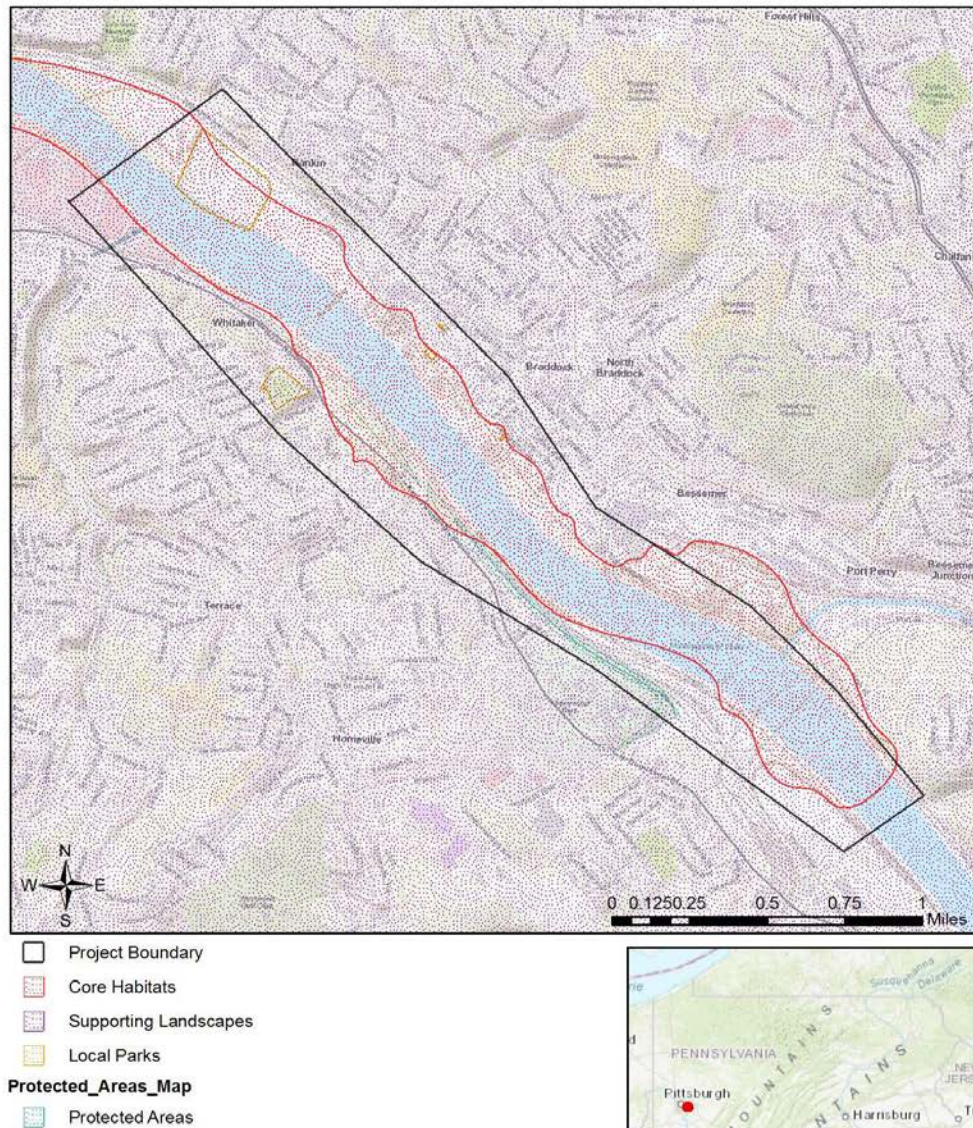
Decimal Degrees: 40.398792 N, -79.871854 W

Degrees Minutes Seconds: 40° 23' 55.6528" N, 79° 52' 18.6757" W

SEARCH RESULT SUMMARY

Conservation Planning Category	Detected Area Summary
Natural Heritage Areas	1 site
Protected Lands	6 tracts; 69.18 acres

braddock2



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c)

Natural Heritage Areas

Natural Heritage Areas (NHAs) are sites that have been identified as critical habitat for species or natural communities of concern. This dataset is designed to identify, map and discuss areas that support species of concern, exemplary natural communities, and broad expanses of intact natural ecosystems that support components of Pennsylvania's native species biodiversity. These areas are prioritized based upon their ecological qualities and provided with recommendations regarding their management and protection. Most of the existing NHAs have been developed through PNHPs County Natural Heritage Inventories -- systematic studies of the critical biological resources of a county.

Natural Heritage Site Name	Description	Reference
Monongahela River at Homestead	This stretch of the Monongahela River supports several aquatic and riparian species of concern.	Link

Protected Lands

Protected lands or conservation areas are locations which receive protection, through legal or other means, because of their recognized natural, ecological and/or cultural values.

Name	Description	Owner	Website	Total Acres
3rd Street Playground	Mini-Park			0.00
Arkansas Ave Park	Neighborhood Park			7.00
Carrie Furnace Stabilization	Community Park			36.00
Cherry Way Park	Mini-Park			0.00
Washington Ave Playground	Mini-Park			0.00
US Steel Acquisition	Land Trust	Regional Trail Corporation	Link	27.00

Local Parks

A local park is a publicly owned and publicly accessible park or natural area that engages participants of all ages in outdoor recreational experiences. Local parks and open spaces connect citizens to close-to-home outdoor recreation opportunities for play and physical activities; promote health and wellness, and environmental stewardship.

Local Park	Park Type	County	State or Federal Grant Funding
Carrie Furnace Stabilization	Community Parks	Allegheny	Yes, click here for more information.
Cherry Way Park	Mini-Parks	Allegheny	Yes, click here for more information.
Washington Ave Playground	Mini-Parks	Allegheny	No
3rd Street Playground	Mini-Parks	Allegheny	Yes, click here for more information.
Arkansas Ave Park	Neighborhood Parks	Allegheny	Yes, click here for more information.

For additional information about the Pennsylvania Natural Heritage Program, visit the website at www.naturalheritage.state.pa.us or you can email your questions and comments to RA-HeritageReview@pa.gov.