MASSACHUSETTS WATER RESOURCES AUTHORITY
Chelsea Facility
2 Griffin Way
Chelsea, Massachusetts 02150

Telephone: (617) 242-6000
Facsimile: (617) 305-5990

Frederick A. Laskey
Executive Director

September 18, 2023

Maryalice Fischer, Certification Program Director
Low Impact Hydropower Institute
c/o NPCM
P.O. Box 211
Sterling, MA 01564

Re: Oakdale Hydroelectric Plant Low Impact Hydropower Institute Recertification Application

Dear Maryalice:

Please find enclosed the Low Impact Hydropower Institute recertification application for the Oakdale Hydroelectric Facility. As background, the Oakdale Hydroelectric Plant is located in West Boylston, MA and is owned by the Massachusetts Water Resources Authority. The facility, located at the outlet of the Quabbin Aqueduct just upstream of the Wachusett Reservoir, began operations in 1949. The hydroelectric turbines operate when the water drops from one elevation in the water supply system into a lower elevation as the drinking water enters the water distribution system.

Your assistance with our questions as we were completing the recertification applications was invaluable, thank you.

Please let me know if you have any questions about our application.

Regards,

Denise Breiteneicher
Program Manager, Energy and Environmental Management
(w) 617-305-5927
(c) 617-504-1514

Contents

Introduction with Narrative Summary of the Oakdale Hydroelectric Facility

Background

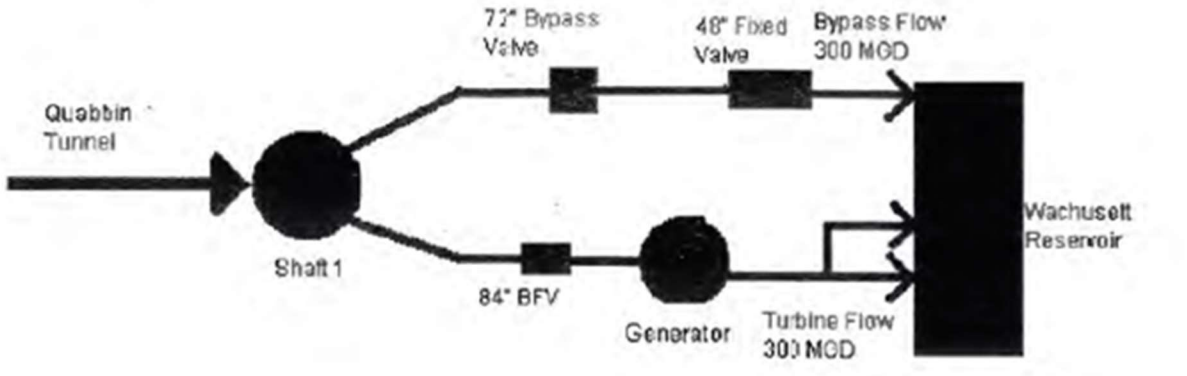
The MWRA supplies wholesale water to local water departments in 50 communities, primarily in the Boston metropolitan area. On average, MWRA supplies approximately 200 million gallons per day to its water system customers. MWRA's water comes from the Quabbin Reservoir, about 65 miles west of Boston, and the Wachusett Reservoir, about 35 miles west of Boston. Both Quabbin and Wachusett Reservoirs are man-made reservoirs, constructed for water supply purposes. Quabbin Reservoir water is required to meet MWRA's metropolitan demand. A transmission system consisting of over 100 miles of active tunnels and aqueducts that transport water largely by gravity to points of distribution within the MWRA service area.

There are three locations within this water transmission system where hydroelectric facilities are located. These include Oakdale (LIHI #57) at the end of the Quabbin Aqueduct; the Cosgrove Intake to the Cosgrove Aqueduct LIHI Certificate #55 – Cosgrove Hydroelectric Project, Massachusetts | Low Impact Hydropower; and the Loring Road Covered Storage Facility (LIHI #56).

Summary of Oakdale Hydroelectric Operations

The Oakdale facility was constructed in 1929 as an outlet works of the Quabbin Tunnel and was initially operated solely as a water transfer station, transferring water from the Ware River into Wachusett Reservoir. In 1949, a hydropower generator was added. After the construction of the Quabbin Reservoir.

Quabbin Aqueduct is a deep rock tunnel. The water enters the aqueduct at Quabbin Aqueduct Intake, Shaft 12 and travels over 24 miles to its terminus to the Oakdale transfer station in West Boylston Massachusetts. It is one of the locations in the water transmission system where MWRA captures energy in the falling water as it is conveyed from higher elevations in the western portion of the MWRA system (Quabbin Reservoir) to lower elevations in the distribution area. A schematic of the flow is shown below.



Generation of hydropower is secondary to MWRA's primary objective of water supply and is legally subordinate to MWRA's obligation to provide high quality drinking water. The hydropower generated is sold to the local distribution company, National Grid. Revenues from the sale of power to NGRID are used to offset the costs of operating the Massachusetts Department of Conservation and Recreation's (DCR) Watershed Protection Division. DCR and MWRA are partners in watershed protection and MWRA rate payers fund the DCR Watershed Protection Division.

The project operates as a conduit facility, is located at the outlet of the Quabbin Aqueduct just upstream of the Wachusett Reservoir. The project is not associated with a dam, bypass reach or flow release schedule. Waters are transferred from one water supply reservoir to another and do not discharge into a river.

At Oakdale, flow may be directed to either an 84 inch main that connects to the top of the outlet shaft or through a 72 inch bypass pipeline branch. Water that flows through either a turbine or the bypass is discharged to a short outlet channel that leads to the Quinepoxet River, which empties into the Wachusett Reservoir, approximately 750 feet downstream of the Oakdale station. The installed capacity of the Oakdale Hydroelectric facility is 3,500 kW.

There is one Francis runner turbine located at the facility having an installed capacity of 3.5 MW. The turbine generator was put into operation in 1949. There were some upgrades to the station in the 1990s and electrical upgrades completed in 2012/2013. In 1990, FERC granted the Oakdale Power Plant an exemption from licensing (conduit), Project 10689-000.

The project operates as a conduit facility and is located at the Quabbin Intake/Reservoir. Waters are transferred from one water supply reservoir to another via Shaft 1 at the outlet of the Quabbin Aqueduct at the Wachusett Reservoir and do not discharge into a river.

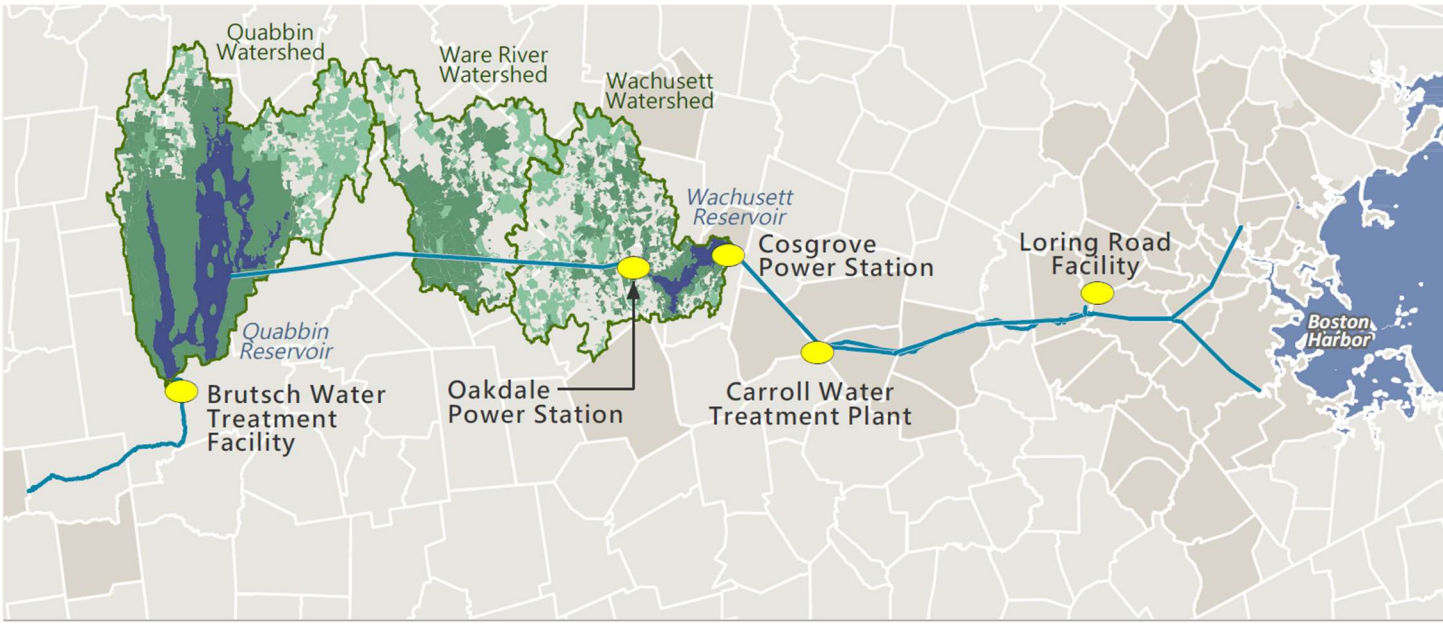
Waters within the project reach are treated and utilized for water supply purposes and are thus high quality and potable.

Fish passage is not necessary nor feasible due to the conduit nature of the project.

The facility is located in a water distribution facility and the DCR's Division of Water Supply is responsible for shoreline protection. The project is located at a public water supply which restricts public access to project facilities. Boating activities are prohibited as it is considered an unnecessary threat to water supply due to the likelihood of water contact and the fact that private boats would have the potential to introduce or perpetuate exotic and/or nuisance vegetation.

There are no threatened or endangered species potentially present at the hydro turbine location. Similarly, no cultural or historic resources exist at the hydro project site. However, an abundance of fish and wildlife species are found in the Quabbin and Wachusett Reservoirs. The Wachusett Reservoir is a large state-designated Natural Heritage and Endangered Species Program Priority Habitat area.

A schematic of the MWRA water system is presented below, as well as aerial photos of the Oakdale facility and the turbine.



Aerial Photo of the Oakdale Power Station

Francis Runner turbine at Oakdale

Federal Energy Regulatory Commission (FERC) Process

On January 19, 1990, FERC granted the Oakdale Hydroelectric Facility an Exemption from Licensing (Conduit), Project 10689-000. There were two comments submitted during the FERC review process: one from the Massachusetts Division of Fish and Wildlife and a second from the Massachusetts Historical Commission. The Massachusetts Historical Commission stated that there are no known or recorded historic structures or archaeological sites at on this site or affected by this facility.

MA Division of Fish and Wildlife had one primary concern and that was regarding to lake trout mortality from entering the turbine. MWRA installed tailrace racks to prevent fish from entering the turbine. The racks were removed for repairs in 1992, but have been in place continuously since then. MA Fish and Wildlife stated in their letter to the Low Impact Hydro Institute, dated October 22, 2015, that they had no objections to Oakdale being designated a low impact hydro facility given the lack of any issues with the facility since the installation of the tailrace racks.

4B.1 Facility Information Table

All applicable information identified in the table below must be summarized in the table and detailed in the application narrative for an application to be considered complete. If the information is provided in the application narrative, please identify in the table the application section where the information can be found. Alternative formats including the Excel Table 1.b are acceptable if all information is provided.

Table 1.a Facility Information.

Item	***Information Requested***	***Response (include references to further details)***
Name of the Facility	Facility name (use FERC project name or other legal name)	Oakdale Power Plant
Reason for applying for LIHI Certification	1. To participate in state RPS program 2. To participate in voluntary REC market (e.g., Green-e) 3. To satisfy a direct energy buyer's purchasing requirement 4. To satisfy the facility's own corporate sustainability goals 5. For the facility's corporate marketing purposes 6. Other (describe)	(select and describe only applicable reasons) 1. ☒ State Program: To participate in the Mass. RPS program 2. ☐ 3. ☐ 4. ☒ 5. ☐ 6. ☐ describe: MWRA is working to reduce its greenhouse gas emissions
	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	Amount of MWh participating: **10,418** % of total MWh generated: **about 100%.**
Location	River name (USGS proper name)	Oakdale is a hydroelectric conduit facility associated with the Quabbin Aqueduct outlet and not located on a river.
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	Nashua - 01070004
	Nearest town(s), county(ies), and state(s) to dam	Oakdale is not located on a river, it is a conduit facility. It is located in West Boylston, MA, Worchester county

Item	*Information Requested*	*Response (include references to further details)*
	River mile of dam above mouth	See note above.
	Geographic latitude and longitude of dam	Lat: 42.386783 Long: 71.802494
Facility Owner	Application contact names	Denise Breiteneicher (MWRA liaison with LIHI) David W. Coppes, Chief Operating Officer
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the effective date of the change.**	The hydropower facility is owned and operated by the Massachusetts Water Resources Authority (MWRA). The MWRA is a public instrumentality and a Commonwealth of Massachusetts authority, charged with providing water and sewer services. Denise Breiteneicher (Program Manager, Energy and Environmental Management) is authorized to represent MWRA in the LIHI Certification process.
	FERC licensee company name (if different from owner)	N/A
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	P-10689, exemption date 1990. See link below.
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	Conduit
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	Water Quality Certification was not required since it is a conduit hydropower facility within a drinking water aqueduct.
	Hyperlinks to key electronic records on FERC e-Library website or other publicly accessible data repositories[1]	https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19900125-0359&optimized=false.
Powerhouse	Date of initial operation (past or future for pre-operational applications)	1949

[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)*
	Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	3.5. This is unchanged since the last certification
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	10,418 MWh. This number is the average annual generation since the last certification in 2015. Generation has not changed since last certification.
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	Please see description of this conduit hydroelectric facility and its mode of operation in the introduction to this application. The mode of operation is based on water demand and other water system operational considerations. The facility harnesses energy as water drops from one elevation in the water supply system (Quabbin Reservoir) to another (Wachusett Reservoir).
	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 turbine is a vertically oriented, Francis Runner turbine, rated at a maximum output of 3.5 MW.
	Trashrack clear spacing (inches) for each trashrack	Not applicable
	Approach water velocity (ft/s) at each intake if known	At maximum water demand in the transmission system, the turbine has a hydraulic capacity of 510 cubic feet per second.
	Dates and types of major equipment upgrades **For recertifications: Indicate only those since last certification**	There have been no major equipment upgrades since the last certification in 2015. (or provide a separate list)
	Dates, purpose, and type of any recent operational changes **For recertifications: Indicate only those since last certification**	There have been no permanent operational changes since the last certification.
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	N/A

Item	*Information Requested*	*Response (include references to further details)*
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	N/A
	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	N/A
	Spillway maximum hydraulic capacity	N/A
	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.)	N/A
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	1949. Purpose of conduit is to transfer water from Quabbin Reservoir to the Wachusett Reservoir, suppling drinking water to the Metropolitan Boston area.
	Source water	Drinking water from the Quabbin Reservoir
	Receiving water and location of discharge	The Oakdale hydroelectric facility is located at the terminus of the Quabbin Aqueduct where the drinking water drops from the Quabbin Reservoir which is at a higher elevation into the Wachusett Reservoir, which is a lower elevation than the Quabbin..
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations **For recertifications: Indicate if these values have changed since last certification**	N/A
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	N/A
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	N/A

Item	*Information Requested*	*Response (include references to further details)*
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	N/A
	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 (including if owned by an affiliate of the applicant's company) and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	N/A
	Downstream dams by name, ownership (including if owned by an affiliate of the applicant's company), river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	N/A
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	N/A
	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.	N/A
Hydrologic Setting	Average annual flow at the dam, and period of record used	N/A
	Average monthly flows and period of record used	N/A
	Location and name of closest stream gaging stations above and below the facility	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.	N/A
	Other facility specific hydrologic information (e.g., average hydrograph)	N/A

Item	*Information Requested*	*Response (include references to further details)*
Designated Zones of Effect	Numbers and names of each zone of effect (e.g., "Zone 1: Impoundment")	There is one zone of effect – the area within and immediately surrounding the intake facility, encompassing the intake and discharge lines.
	River mile of upstream and downstream limits of each zone of effect (e.g., "Zone 1 Impoundment: RM 6.3 - 5.1")	N/A
Pre-Operational Facilities Only		
Expected operational date	Date generation is expected to begin	Click or tap here to enter text.
Dam, diversion structure or conduit modification	Description of modifications made to a pre-existing conduit, dam or diversion structure needed to accommodate facility generation. This includes installation of flashboards or raising the flashboard height. Date the modification is expected to be completed	Click or tap here to enter text.
Change in water flow regime	Description of any change in impoundment levels, water flows or operations required for new generation	Click or tap here to enter text.

Table 2.a. Standards Matrix Template for One ZoE.

Copy the table for each ZoE.

Facility Name: Oakdale Power Plant **Zone of Effect: Conduit**

Criterion		*Alternative Standards (check one numbered box and PLUS if applicable)*				
		1	***2***	***3***	***4***	***Plus***
A	**Ecological Flow Regimes**	☒	☐	☐	☐	☐
B	**Water Quality**	☒	☐	☐		☐
C	**Upstream Fish Passage**	☒	☐	☐	☐	☐
D	**Downstream Fish Passage**	☒	☐	☐	☐	☐
E	**Watershed and Shoreline Protection**	☒	☐	☐		☐
F	**Threatened and Endangered Species Protection**	☒	☐	☐	☐	☐
G	**Cultural and Historic Resources Protection**	☒	☐			☐
H	**Recreational Resources**	☒	☐	☐		☐

B.2.1 Ecological Flow Standards

Required regardless of standard selected:

1. Identify any deviations that have occurred in the past 10 years; if none have occurred, state so. If deviations have occurred, identify the date, duration, cause, and the measures taken to minimize reoccurrence. Links to FERC notifications and responses should be included.
2. Identify how flows and water levels are monitored and explain how compliance with requirements is demonstrated.
3. Describe any enforceable agreements with upstream or downstream facilities that regulate inflow or outflow at the facility (see Section 4.1.1 as these "regulated reaches" may need to be designated as separate Zones of Effect).

Table 3. Ecological Flows Standards
(select one standard, and PLUS if requested for each ZoE).

Criterion	*Standard*	*Instructions*
A	1	Not Applicable / De Minimis Effect: • Confirm the location of the powerhouse relative to any dam/diversion structures and demonstrate that there are no bypassed reaches in the designated Zone of Effect. • For run-of-river facilities, provide details on operations and describe how flows, water levels, and operations are monitored to ensure such an operational mode is maintained. In a conduit facility, identify the source waters, location of discharge points, and receiving waters for the conduit system within which the hydropower facility is located. This standard cannot be used for conduits that discharge to a natural waterbody. • For impoundment zones, explain water management (e.g., fluctuations, ramping, refill rates, restrictions) and how those requirements support fish and wildlife habitat within the ZoE.

The Oakdale Power Plant is a conduit facility that is located in the Town of West Boylston and is situated between the Quabbin Reservoir and the Wachusett Reservoir, both public water supply reservoirs in the MWRA's drinking water distribution system. At no point does this facility directly receive from surface waters.. The water in the Quabbin is considered a higher quality since it has been naturally treated by the long detention time in the reservoir. The water in the Wachusett Reservoir is considered "younger" and therefore improved by the inflow of water from the Quabbin. There are no bypassed reaches and there is no flow release schedule associated with the FERC approval. US. Fish and Wildlife did not provide flow recommendations related to the facility tailrace. Generation is based on the amount of flow passing being transferred between reservoirs. The hydro turbine run most of the time between the months of June and September when water demand is high, and at a lower rate between the months of October through February due to lower demand for water. There are bypass lines so that if the generators are down for maintenance, etc. drinking water continues to flow into the Wachusett Reservoir.

B.2.2 Water Quality Standards

Required regardless of standard selected:

1. 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. Provide a link to the state's most recent final Clean Water Act Section 303(d) impaired waters list, the Section 305(b) integrated water quality report; and lists of other stressed waters (if applicable) and indicate the page(s) therein that apply to facility waters or state that the facility waters are not included on any list.

Table 4. Water Quality Standards
(select one standard, and PLUS if requested for each ZoE).

Criterion	***Standard***	***Instructions***
B	1	<u>Not Applicable / De Minimis Effect:</u> • Explain the rationale for why the facility does not alter water quality characteristics below, around, and above the facility.

The Oakdale Power Plant is not located on a Water Quality Limited reach river, it is a conduit facility that discharges into the Wachusett Reservoir in MWRA's water distribution system. The water within the facility does not affect the water quality below, around, or above the facility. The water flows from the Quabbin Reservoir into the Wachusett Reservoir and is part of MWRA's drinking water distribution system. The drinking water passing through the conduit is of the highest quality and is a Class A water.

B.2.3 Upstream Fish Passage Standards

Required regardless of standard selected:

1. Provide a list all migratory fish species (anadromous, catadromous, and potamodromous species) that occur now or have occurred historically at the facility.

Table 5. Upstream Fish Passage Standards
(select one standard, and PLUS if requested for each ZoE).

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

The Oakdale Power Plant is a conduit hydropower facility that is located at the terminus of the Quabbin Aqueduct that transports drinking water from the Quabbin Reservoir into the Wachusett Reservoir. Tail race racks were installed in 1996 to prevent fish from entering the turbine from the Wachusett Reservoir.

*The original LIHI certification review report details the original issue dating back to the 1970s of fish getting into the turbine and MWRA's solution to this problem, which involved installing the tail race racks. Based on the situation in 2010 which continues today, the Reviewer for LIHI stated, "*Based on my review of information submitted by the applicant, my review of additional documentation, and my consultations with resource agency staff, I believe the Oakdale Hydroelectric Project meet all of the criteria to be certified and I recommend certification for the full five years."
https://lowimpacthydro.org/wp-content/uploads/2020/07/MWRA_Final_Cert_Report.pdf

Additionally, USFWS filed LIHI comments in 2010 and Mass Fish and Wildlife did in 2015, both of which supported LIHI certification.

B.2.4 Downstream Fish Passage and Protection Standards

Required regardless of standard selected:

1. 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.

Table 6. Downstream Fish Passage Standards
(select one standard, and PLUS if requested for each ZoE).

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated ZoE, 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 additional 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 in the designated ZoE does not contribute adversely to the species populations or to their access to habitat necessary for successful completion of their life cycles; or • Document available fish distribution data and the lack of fish species requiring passage in the ZoE; or • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

The Oakdale Power Plant is located at the end of the terminus of the MWRA's Quabbin Aqueduct, as the water leaving the aqueduct enters the Wachusett Reservoir. The Oakdale Power Plant has 2" x 2" gauge 8 stainless steel mesh tailrace racks to prevent fish from entering the turbine. They are inspected twice per year, either manually where they are pulled out with the crane or a remote inspection with a submersible remote operated vehicle (ROV).

This link shows a list of fish present in the Wachusett Reservoir. https://www.aa-fishing.com/ma/ma-fishing-lake-wachusett.html#lakesspecies

B.2.5 Shoreline and Watershed Protection Standards

***Required regardless of standard selected*:**

1. 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: state or local regulatory restrictions: critical or core habitats for sensitive species, etc.)

Table 7. Shoreline and Watershed Protection Standards
(select one standard, and PLUS if requested for each ZoE).

Criterion	*Standard*	*Instructions*
E	1	Not Applicable / De Minimis Effect: • If there are no lands with significant ecological value associated with the designated ZoE, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary, and absence of critical habitat for protected species). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

As the hydroelectric equipment is within a building, there are no impacts to shoreline or watersheds. There is a buffer zone around the facility intake for water supply protection purposes. MWRA has a partnership with the Department of Conservation and Recreation Division of Water Supply Protection who is responsible for managing the watersheds and watershed protection activities funded by the MWRA. Additionally, MWRA operates the Wachusett Reservoir as a terminal reservoir within the Quabbin and Wachusett system, typically maintaining a relatively narrow operating band in the reservoir for water quality purposes, reducing the risk of erosion.

MWRA and the Department of Conservation and Recreation Division of Water Supply Protection DCR DWSP) work cooperatively to protect the Quabbin, Ware and Wachusett watersheds for water supply quality, and to manage the two reservoirs. MWRA provides 100 percent of the DCR's operating budget through the legislatively created Water Supply Trust. With MWRA funding, DCR manages and maintain the 400 square miles of watersheds, monitors water quality in the tributary streams and the reservoirs, and conducts water supply protection activities. The DCR's extensive water quality databases and aquatic and terrestrial protection surveys as posted on their website - https://www.mass.gov/orgs/dcr-division-of-water-supply-protection.

B.2.6 Threatened and Endangered Species Standards

***Required regardless of standard selected*:**

1. 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.

Table 8. Threatened and Endangered Species Standards
(select one standard, and PLUS if requested for each ZoE).

Criterion	*Standard*	*Instructions*
F	1	Not Applicable / De Minimis Effect: • Document that there are no listed species in the designated ZoE; or • If listed species are known to have existed in the facility area in the past but are not currently present, explain why the facility was not the cause of the extirpation of such species. • If the facility is making significant efforts to reintroduce an extirpated species, describe the actions that are being taken.

The Oakdale Facility is located at the western shore of the Wachusett Reservoir at the terminus of the Quabbine aqueduct. The Wachusett Reservoir is designated under the Massachusetts Endangered Species Act (MESA) as Estimated Habitat of Rare Wildlife or Priority Habitat of Rare Species, due to the presence of the Common Loon. The turbine is located within an intake building. The US Fish and Wildlife Service lists the Northern long-eared bat the candidate species Monarch butterfly as federally endangered species in the vicinity of the project, but this project does not impact these species as it is located within a conduit.

The maintenance of the hydroelectric generating equipment does not require any cutting of trees and therefore, there is no impact on bird species nesting or living in the area around the facility. The grass at the site is mowed periodically to keep the site accessible for MWRA maintenance staff. According to the USFWS IIPaC report, birds that may be present in the area include the Bald Eagle (Haliaeetus leucocephalus), Bobolink (Dolichonyx oryzivorus), Blackbilled Cuckoo (Coccyzus erythropthalmus), Blue-winged Warbler (Vermivora pinus), Canada Warbler (Cardellina Canadensis), Cerulean Warbler (Dendroica cerulean), Chimney Swift (Chaetura pelagica), Eastern Whip-poor-will (Antrostomus vociferous), Lesser Yellowlegs (Tringa flavipes), Prairie Warble(Dendroica discolor), Rusty Blackbird (Euphagus carolinus), Wood Thrush (Hylocichla mustelina). All of the above birds, with the exception of the Bald Eagle, are listed as Birds of Concern regionally. However, as stated, the hydro turbines are inside a conduit inside a building, and therefore, there would be no impact to any of these bird species.

B.2.7 Cultural and Historic Resources Standards

Required regardless of standard selected:

1. 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.

Table 9. Cultural and Historic Resources Standards
(select one standard, and PLUS if requested for each ZoE).

Criterion	***Standard***	***Instructions***
G	1	<u>Not Applicable / De Minimis Effect:</u> • Document that there are no cultural or historic resources located on facility lands associated with the designated ZoE that can be affected by construction or operations of the facility; or • Document that the facility construction and operation have not in the past, nor currently adversely affect any cultural or historic resources that are present on facility lands in the designated ZoE; and • Provide a letter from the state and tribal (if applicable) historic preservation office that confirms no effect (this may be newly obtained or issued during prior FERC licensing or exemption proceedings).

The Oakdale Power Station is an in-conduit hydropower facility located in the Town of West Boylston, MA. The very small project site is located in-conduit within MWRA's Quabbin Aqueduct Shaft 1/Oakdale Power Station Building. This building is the terminus of the Quabbin Aqueduct, where water transferred from the Quabbin Reservoir rises to the surface, generating energy, and enters the Wachusett Reservoir. The Quabbin Aqueduct Shaft 1 Building (WBY.907) as well as the adjacent Quabbin Aqueduct Outlet Service Building (WBY.168) and Quinapoxet River Dam (WBY.905) are all Massachusetts Historical Commission (MHC) inventoried properties and considered eligible for listing on the National Register of Historic Places. These structures are located within the Quabbin Aqueduct Outlet Work (WBY.G) and adjacent to the Quabbin Aqueduct (WBY.C), which are both MHC inventoried areas. MWRA and the Massachusetts Historical Commission (MHC) have a Programmatic Memorandum of Agreement (MOA) that ensures projects undertaken by MWRA will not have any adverse effects on properties listed on or eligible for listing on the National Register of Historic Places. This power generation station is in-conduit and has no impact on these historic resources. No digging or land disturbance was performed during construction, and all work occurred inside the Quabbin Aqueduct Shaft 1/Oakdale Power Station building.

B.2.8 Recreational Resources Standards

Required regardless of standard selected:

1. 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.
2. 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.
3. Provide representative photos of recreational facilities and amenities taken within the last 12 months, and a map showing locations.
4. If applicable, provide a weblink to any public website or describe signage informing the public about the facility's recreational amenities.

Table 10. Recreational Resources Standards
(select one standard, and PLUS if requested for each ZoE).

Criterion	***Standard***	***Instructions***
H	1	Not Applicable / De Minimis Effect: • Document that the facility does not occupy lands or waters in the designated ZoE to which public access can be granted and that the facility does not otherwise impact recreational opportunities in the facility area.

There were no recreational access and facilities conditions in the FERC exemption. The hydroelectric facility is located at the terminus of the Quabbin Aqueduct where it discharges drinking water from the Quabbin Reservoir into the Wachusett Reservoir. Access in the immediate area is restricted. The facility is a secure and locked area, with no opportunities for public access. There is a Wachusett Reservoir Public Access Plan that provides for passive recreation elsewhere in the watershed. The plan allows for public enjoyment and shoreline fishing and passive recreation, including hiking, walking, nature study, bird watching, and snowshoeing.

B.4 Contacts Forms

All applications for LIHI Certification must include complete contact information.

Table 11. Applicant-related contacts

Facility Owner:	
Name and Title	N/A
Company	Massachusetts Water Resources Authority – see contact below
Phone	Click or tap here to enter text.
Email Address	Click or tap here to enter text.
Mailing Address	Click or tap here to enter text.
Facility Operator (if different from Owner):	
Name and Title	David W. Coppes, Chief Operating Officer
Company	Massachusetts Water Resources Authority
Phone	617-788-4359
Email Address	David.coppes@mwra.com
Mailing Address	33 Tafts Avenue, Boston, MA 02128
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	N/A
Company	Click or tap here to enter text.
Phone	Click or tap here to enter text.
Email Address	Click or tap here to enter text.
Mailing Address	Click or tap here to enter text.
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Denise Breiteneicher, Program Manager, Energy and Environmental Management
Company	Massachusetts Water Resources Authority
Phone	617-305-5927
Email Address	Denise.breiteneicher@mwra.com
Mailing Address	2 Griffin Way, Chelsea, MA 02150
Party responsible for accounts payable:	
Name and Title	Christine Pieroni, Manager, Finance and Administration
Company	Massachusetts Water Resources Authority
Phone	617-788- 2223
Email Address	Christine.Pieroni@mwra.com
Mailing Address	2 Griffin Way, Chelsea, MA 02150

Table 12. Current relevant state, federal, and tribal resource agency contacts (excluding FERC).

Agency Contact		*Area of Responsibility (check applicable boxes)*
Agency Name	Massachusetts Department of Conservation and Recreation	☐ Flows ☐ Water Quality ☐ Fish/Wildlife ☒ Watershed ☐ T&E Species ☐ Cultural/Historic ☒ Recreation
Name and Title	John M. Scannell, Division Director, Div. of Water Supply Protection, DCR	
Phone	617-592-2436	
Email address	john.m.scannell@state.ma.us	
Mailing Address	180 Beaman Street, West Boylston, MA 01583	

Agency Contact		*Area of Responsibility (check applicable boxes)*
Agency Name	Click or tap here to enter text.	☐ Flows ☐ Water Quality ☐ Fish/Wildlife ☐ Watershed ☐ T&E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Click or tap here to enter text.	
Phone	Click or tap here to enter text.	
Email address	Click or tap here to enter text.	
Mailing Address	Click or tap here to enter text.	

B.3 Attestation and Waiver Form

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

ATTESTATION

As an Authorized Representative of Massachusetts Water Resources Authority, 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 the final certification decision and prior to marketing the electricity product as LIHI Certified® (which includes selling RECs in a market that requires LIHI Certification).

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.

Authorized Representative:

Name: _____David W. Coppes, P.E._____

Title: _____Chief Operating Officer_____

Authorized Signature: 

Date: September 19, 2023

ATTACHMENT A

50 ferc 62, 036
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Massachusetts Water Resources Authority — Project No. 10689-000 — Massachusetts

ORDER GRANTING EXEMPTION FROM LICENSING
(CONDUIT)

JANUARY 19, 1990

On November 4, 1988, the Massachusetts Water Resources Authority filed an application to exempt the Oakdale Power Plant Project from the licensing requirements set forth in Part I of the Federal Power Act. The proposed small hydropower project is described in the attached public notice. 1/ The comments of interested agencies and individuals, including the U.S. Fish and Wildlife Service and the state fish and wildlife agency, have been fully considered in determining whether to issue this exemption from licensing.

Article 2 of this exemption requires compliance with the terms and conditions prepared by federal or state fish and wildlife agencies to protect fish and wildlife resources. These mandatory terms and conditions are contained in any attached letters commenting on the exemption application. 2/ If contested, the Commission will determine whether any mandatory term or condition is outside the scope of article 2.

After considering the mandatory terms and conditions designed to protect fish and wildlife resources, the environmental information in the exemption application, the staff's independent assessment, and other public comments, the Director finds that issuance of this order is not a major federal action significantly affecting the quality of the human environment.

1/ A joint motion to intervene was filed by the Town of West

Boylston, Massachusetts and West Boylston Municipal Light Plant to be a party to the case proceedings.

2/ No relevant letters are attached to this order from resource agencies, even though the U.S. Department of the Interior filed on September 21, 1989, terms and conditions that staff has determined are not related and germane to the project or its operation.

The Director orders:

(A) The Oakdale Power Plant Project is exempted from the licensing requirements of Part I of the Federal Power Act, subject to the attached standard articles.

(B) Article 2 of this exemption is amended to include the National Marine Fisheries Service as a fish and wildlife agency that can provide terms and conditions.

(C) The exemptee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to that filing. Proof of service on these entities must accompany the filing with the Commission.

(D) This order is issued under authority delegated to the Director and is final unless appealed to the Commission within 30 days from the date of this order.

Dean L. Shumway
Director, Division
of Project Review

a. Type of Application: Conduit Exemption

b. Project No.: 10689-000

c. Date Filed: November 4, 1988

d. Applicant: Massachusetts Water Resources Authority,
Waterworks Division

e. Name of Project: Oakdale Power Plant Project

f. Location: On the Quabbin Pressure Aqueduct at the Wachusett
Reservoir in Worcester County, Massachusetts

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) -
825(r)

h. Applicant Contact: Mr. William A. Brutsch
Massachusetts Water Resources Authority
Waterworks Division

100 First Avenue, Charlestown Navy Yard
Boston, MA 02129
(617) 242-6000

i. FERC Contact: Ed Lee, (202) 376-5786

j. Comment Date: September 5, 1989

k. Description of Project: The existing operating project consists of: (1) one turbine-generator rated at 3,500 kW; and (2) appurtenant facilities. The project generates an average of 13,000 MWh annually. The project is owned by the Metropolitan District Commission. The project is operated and maintained by the applicant.

l. Purpose of Project: Project power would continue to be sold to the New England Power Company and Boston Edison Company.

m. This notice also consists of the following standard paragraphs: A3, A9, B, C, D3b.

ATTACHMENT B

IPaC U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. 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

Worcester County, Massachusetts

Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

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 species[1] 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 Fisheries[2]).

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
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

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 Act[1] and the Bald and Golden Eagle Protection Act[2].

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 https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.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
Bald Eagle Haliaeetus leucocephalus 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.	Breeds Oct 15 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus 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
Blue-winged Warbler Vermivora pinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Bobolink Dolichonyx oryzivorus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31

Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

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.

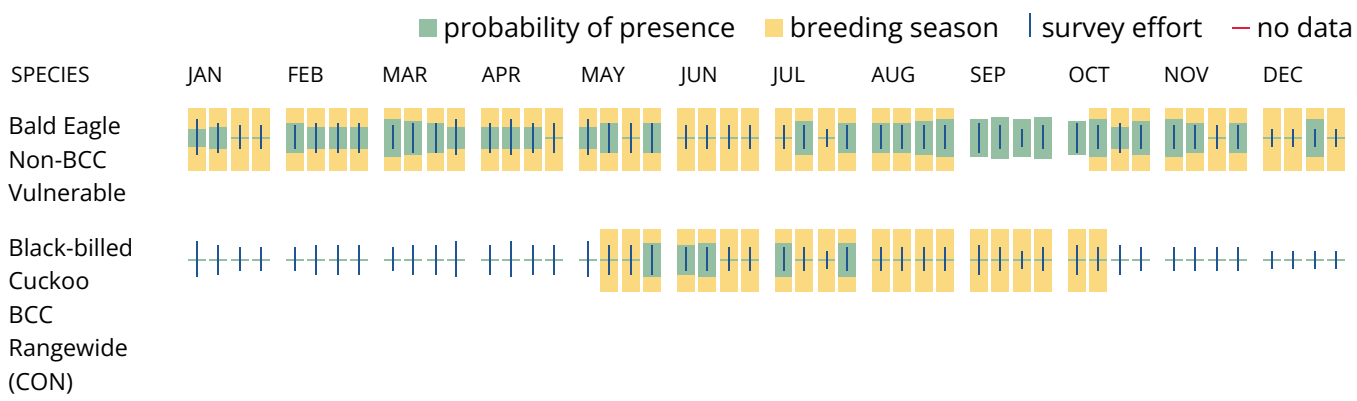
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

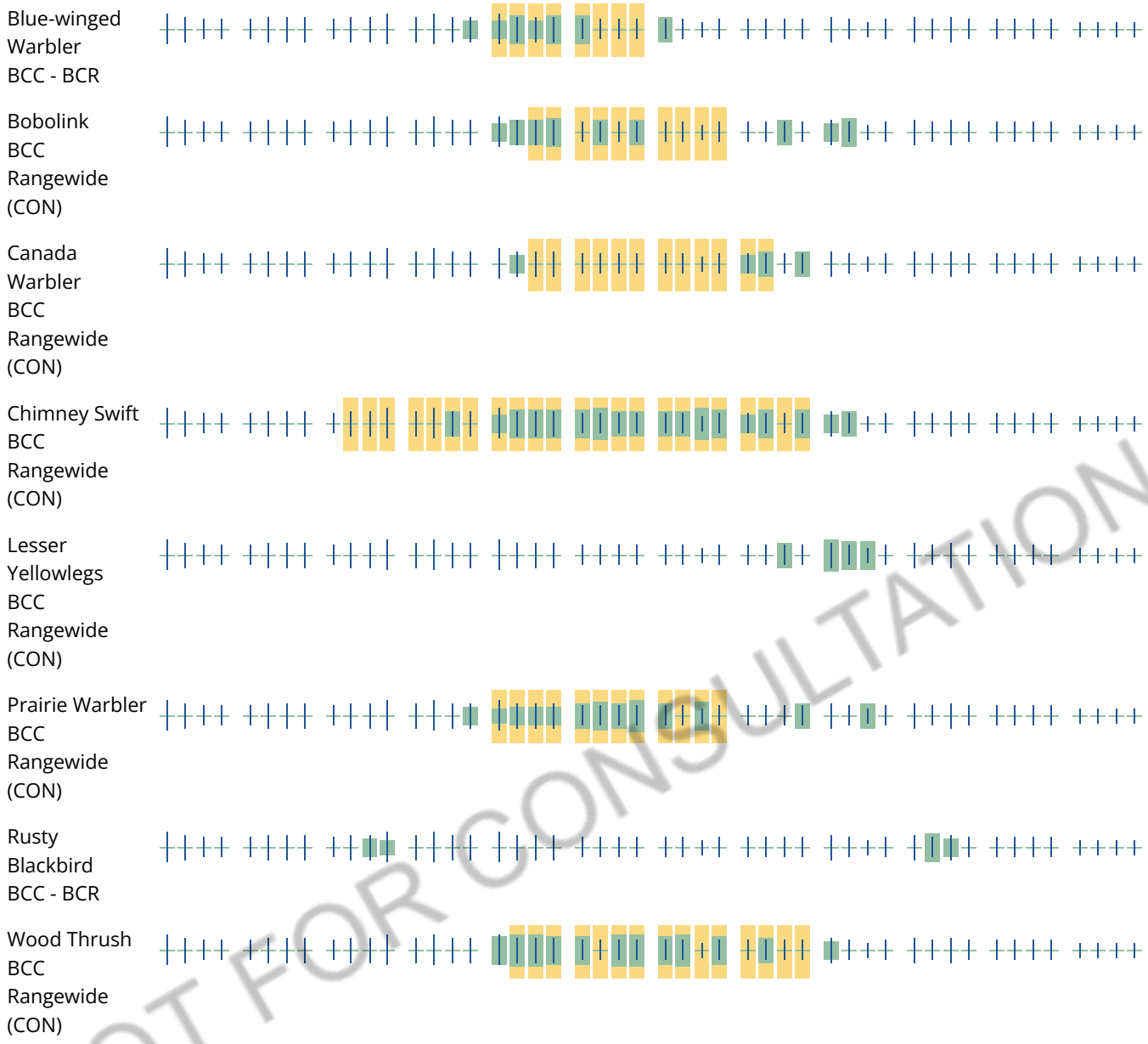
Survey Effort ( )
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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.





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 list of migratory birds that potentially occur 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 Rapid Avian Information Locator (RAIL) 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 or migrating in my 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 query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. 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 (NWI)

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
- R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does not replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

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 tuberficid 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.