



MASSACHUSETTS WATER RESOURCES AUTHORITY

Deer Island
33 Tafts Avenue
Boston, MA 02128

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
Fax: (617) 788-4899
TTY: (617) 788-4971

June 8, 2023

George Papadopoulos
US Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109

Jennifer Wood
Massachusetts Department of Environmental
Protection
100 Cambridge Street, Suite 900,
Boston, MA 02114

Re.: NPDES Permit Application Transmittal
Application for Permit to Discharge
Cosgrove Intake and Power Plant Facility,
301 Boylston Street Clinton
Hydroelectric Generating Facility General Permit

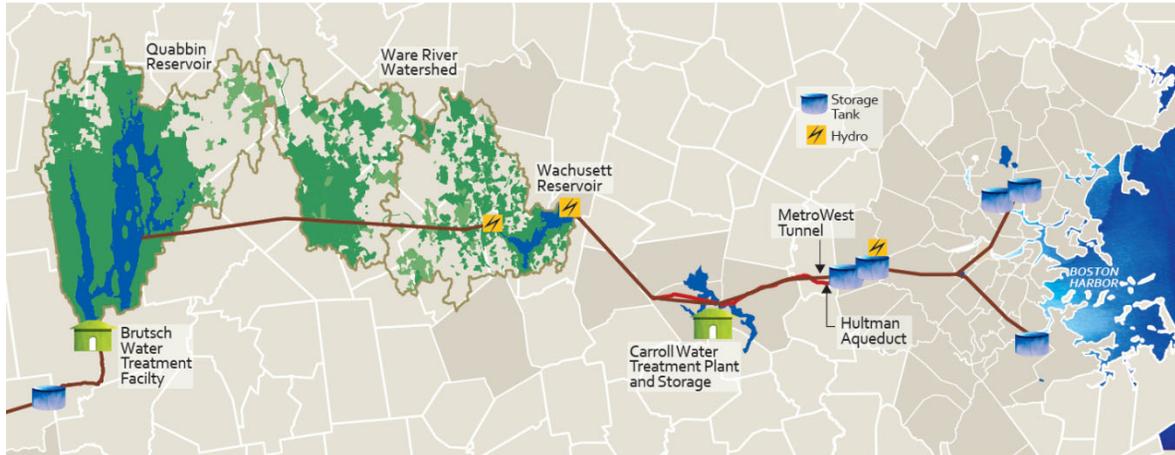
Dear Mr. Papadopoulos and Ms. Wood:

Attached please find a copy of the Notice of Intent (NOI) and supporting documents for the Hydroelectric Generating Facility General Permit. The specifics of the facility and the discharges are summarized on the attached forms.

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 manmade reservoirs, constructed for water supply purposes. More than 50% of the inflow into the Wachusett Reservoir is transferred from Quabbin Reservoir via the Quabbin Aqueduct; 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 transports water largely by gravity to points of distribution within the MWRA service area.

A schematic of the MWRA water system is presented below and the following page provides more detail on the Cosgrove Intake and Aqueduct.



Summary of Cosgrove Hydroelectric Operations

The Cosgrove Intake and hydroelectric facility regulates the flow of water from the Wachusett Reservoir into the Cosgrove Aqueduct, which is an important transmission leg in the supply of water to the Boston Metropolitan area. There are two sections, the North and South intakes. Both intakes include a hydraulic turbine and two bypass lines. Each intake has three channels with traveling water screens, which remove debris from the incoming reservoir water before it passes to the hydroelectric turbines and water transmission system. Each intake also has an upper intake sluice gate and lower intake sluice gate that allow operational flexibility to draw water from different levels of the reservoir.

On the North intake, after passing through the sluice gate, the water enters a common wet-well and from the wet-well, flow is directed to either the Turbine Generator 1, Bypass Line 1 or Bypass Line 2 or a combination. Each of the bypass lines contain a sleeve valve, which is designed to regulate flows to the water supply transmission system over a range of flows. The configuration of the South intake parallels the North intake and flows entering the South intake are directed to either Turbine Generator 2, Bypass Line 3, Bypass Line 4, or a combination.

NPDES Discharge

Average flow through the plant is approximately 184 MGD, with flows through each turbine varying from 60 MGD to 180 MGD.

Cooling water is withdrawn from the 54 inch scroll case through 1 inch copper pipes as shown in Attachment 5. Relative to the total water transported through the facility, a very small amount of water is diverted for cooling. In general, cooling water accounts for less than 0.032 % of the total water transported through the facility. Cooling water withdrawal is estimated based on the

combined NPDES discharge. The individual flows contributing to the NPDES discharge flow rate cannot be individually measured.

In its current configuration as outlined in Attachment 3, an approximate average of 6 gallons per minute (gpm) of flow from the following sources drains to a 10 foot long by 5 foot wide by 53.5 foot deep sump located below the turbine floor of the facility, which is located 48 feet below the ground floor level of the facility:

1. Foundation leakage from reservoir,
2. Intake screen washing
3. Continuous sample stream from pH, turbidity, conductivity, and UV254 (amount of organic matter) testing of raw water. Of these analyzers, only the UV254 uses an added reagent. Muratic acid, used at a concentration of approximately 2.6% is continuously fed into the sample stream to keep the internal parts of the instrument at the required cleanliness. Approximately 33 ml of this 2.6% solution are used per day.
4. Condensation and leakage to floor and trench drains from valve chambers and other areas near the turbines,
5. Water lubricated and cooled fiber-based lower bearing: contact cooling and lubrication water

The sump contains two float operated sump pumps that pump the facility sump discharge to an 8,000 gallon concrete storage tank located beneath the driveway of the facility. Catch basins for the intake facility parking lot and building roof drains are also connected to this tank. Water from this tank is pumped at a rate of 1,100 gpm to a distribution manhole located along the reservoir shoreline, adjacent to the facility to the west. Roof drains and parking area catch basins from the former Cosgrove Disinfection Facility, located west of the intake building, drain directly to this distribution manhole.

Drainage into this distribution manhole flows by gravity into a 7,000 cubic foot (52,360 gallon) storage capacity wet well of the pump station which has 1,100 gpm primary and backup pumps. The pump station pumps the accumulated facility sump discharge and facility stormwater approximately 860 feet via a 10 inch diameter force main to an outfall located in a wetland on the eastern side of Route 70. This approximately 14.5 acre wetland drains via an approximately 300 foot long, 3 foot diameter pipe conduit from the downstream end of this wetland to the upper tributary wetlands of North Brook. The drainage area of the Cosgrove facility that discharges into the pump station including both the intake building and disinfection building areas is approximately 3.22 acres.

NOI Section C: Best Technology Available for CWIS

The flow path of water from the Wachusett Reservoir to the facility has been described above. Cooling water is withdrawn from the 54-inch scroll case through 1-inch copper pipes, as shown in Attachment 5.

For the purposes of this General Permit the "Cooling Water Intake Structure" (CWIS) as defined in the permit is the one inch water line tap off of the 54 inch scroll as described. In accordance with Part 4 of the permit, because the Cosgrove facility has cooling water discharged regulated under this permit and the facility withdraws water for use in part as cooling water, this facility must comply with the "Best Technology Available" (BTA) requirements of this permit.

Section 4.2a of the General Permit requires that the permittee demonstrate that the volume of cooling water withdrawn is minimized.

The largest contributor to the average discharged flow of 8,755 gallons is intake screen washing, which occurs on a daily basis. The maximum monthly average discharge during the past 5 years was 16,220 gallons (0.0162 MGD) and occurred in March 2022. Based on the minimum hydroelectric turbine capacity of 50 MGD, the maximum daily discharge of 16,220 gallons per day (0.0162 MGD) of cooling, lubrication, misc. equipment and floor drain water that has potential contact with pollution sources represents 0.032% of the total flow through the facility.

Section 4.2b of the General Permit requires that the permittees satisfy one of the options listed under 4.2b for impingement mortality.

As noted above the cooling water utilized at the facility represents less than 0.032% of the total flow through the facility. The volume of water flowing through the facility relative to the volume of cooling water withdrawn minimizes the risk of impingement at the CWIS. In addition, the Cosgrove Intake is a conduit hydropower facility. The water inlet for the turbines and bypass valves at Cosgrove has a six travelling screen system, preventing fish and debris from entering the penstock. These aspects of the facility satisfies option 4.2b.iv of the general permit.

NOI Section E: Determination of Endangered Species act Eligibility

MWRA consulted the US Fish and Wildlife Service (FWS) and determined that no federally listed endangered species and two federally listed threatened species are reported in Worcester County, Massachusetts. The listed threatened species are the Small Whorled Pogonia (*Isotria medeoloides*) and the Northern Long-eared Bat (*Myotis septentrionalis*). The Northern long-eared Bat does not have any occurrences in Clinton nor does it have any designated critical habitat. This finding was confirmed with a review of the Massachusetts Natural Heritage Program, see Attachment 8. The Small Whorled Pogonia received a not likely to adversely affect determination, see Attachment 7 Therefore, eligibility criteria for Criterion B is met for this application. As required by the permit, a current copy of the listing of federally listed endangered and threatened species in Massachusetts from the FWS New England Field Office web site is attached to this letter.

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

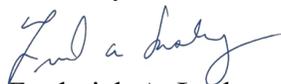
NOI Section F: National Historic Preservation Act Requirements

MWRA consulted the Massachusetts Historical Commission for a record of historic properties. The facility site is located on land that is owned and operated by the MWRA. There are several surrounding historic resources within the Wachusett Dam Historic District (CLI.G), which is a National Register Historic District and National Register Thematic Resource Area, in the area including the Wachusett Dam (CLI.903) and Wachusett Lower Gatehouse (CLI.906). The Wachusett Dam Historic District and the Wachusett Aqueduct Linear District are both listed on the National Register of Historic Places. The Cosgrove facility is not listed on the National Register of Historic Places or inventoried by the Massachusetts Historical Commission. There are no known cultural or historic resources located on the Cosgrove property and this facility does not impact any of surrounding historical resources including districts and structures.

There is no construction occurring at the facility and no impact to the surrounding historic resources is anticipated. As required by Part 5.B of the previous our Hydroelectric Generating Facility General Permit, a certification letter is submitted annually, certifying monthly BMP inspections are conducted. Monthly inspections are conducted, results recorded and records maintained at our office. The facility is in compliance with the BMP Plan and permit.

Should you have any questions, or if you would like to arrange a meeting to, please feel free to contact Maret Smolow at Maret.Smolow@mwra.com.

Sincerely,



Frederick A. Laskey
Executive Director

Attachments:

- Notice of Intent Form
- Attachment 1: Topographic Map
- Attachment 2: North Brook TMDL
- Attachment 3: Line Drawing Flow Schematic
- Attachment 4: Cooling water intake structure
- Attachment 5: Determination of Endangered Species Act Eligibility
- Attachment 6: MA Verification Letter
- Attachment 7: Consistency Letter
- Attachment 8: Documentation of National Historic Preservation Act Requirements

II. Suggested Format for the HYDRO General Permit Notice of Intent (NOD):

Request for General Permit Authorization to Discharge Wastewater Notice of Intent (NOI) to be covered by Hydroelectric Generating Facilities General Permit (HYDROGP) No. MAG360000 or NHG360000

Indicate Applicable General Permit for Discharge(s): **MAG360000** NHG360000

A. Facility Information

1. Facility Location	Name: Cosgrove Intake Facility	
	Street: 301 Boylston Street	
	City: Clinton	State: MA
	Zip: 01570	SIC Code: 4941 & 4911
	Latitude: 42⁰ 23' 53"	Longitude: 71⁰ 41' 22"
	Type of Business: Public Water Facility & Hydroelectric generating station	
2. Facility Mailing Address (if different from Location)	Street: 33 Tafts Avenue	
	City: Boston	State: MA
	Zip: 02128	
3. Facility Owner	Name: Massachusetts Water Resources Authority (Deer Island)	Email: Dave. Coppes@mwra.com
	Street: 33 Tafts Avenue	Telephone: 617-788-4359

	City: Boston	State: MA
	Contact Person: Dave Coppes	Zip: 02128
4. Facility Operator (if different from above)	Name: Eben Nash	Email: Eben.Nash@mwra.com
	Street: 266 Boston Road	Telephone: 508-424-3669
	City: Southboro	State: MA
	Zip: 01772	
5. Current Permit Status	Has prior HYDROGP coverage been granted for the discharge(s) listed in the NOI?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Permit number (if yes): MAG360001	
	Is the facility covered under an Individual Permit?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Is there a pending NPDES application of file with EPA for the discharge(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Date of Submittal (if yes):	Permit Number (if known):
	Attach a topographic map indicating the locations. of the facility and outfall(s) to the receiving water	<input checked="" type="checkbox"/> Map Attached
	Number of turbines: 2* *Due to operational constraints downstream, only one turbine runs at any given time	Attachment 1
	Combined turbine discharge (installed capacity) at:	Maximum capacity? 585 cfs Minimum capacity? 93 cfs
	Is this facility operated as a pump storage project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

B. Discharge Information

1. Name of Receiving Water(s): Tributary wetlands to North Brook	<input checked="" type="checkbox"/> Freshwater <input type="checkbox"/> Marine	
2. Waterbody classification: <input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B <input type="checkbox"/> Class SA <input type="checkbox"/> Class SB		
3. Is the receiving water is listed in the State’s Integrated List of Waters (i.e., CWA Section 303(d))?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
4. If the applicant answered yes to B.2, has the applicant identified the designated uses that are impaired, any pollutants indicated, and whether a final TMDL is available for any of the indicated pollutants in a separate attachment to the NOI?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Attachment 2	
5. Attach a line drawing or flow schematic showing water flow through the facility including location of intake(s), operations contributing to effluent flow, treatment units, outfalls, and receiving water(s).	<input checked="" type="checkbox"/> Line Drawing Attached Attachment 3	
6. List each outfall (numbered sequentially) discharging effluent from the following categories and provide an estimate of the average monthly flow (in gallons per day) for each discharge type. See Parts 1.1 through 1.5 (for MA) or Parts 2.1 through 2.5 (for NH) for descriptions and permit conditions for each discharge type.		
<p>Equipment-related cooling water, Equipment and floor drain water, Maintenance-related water, Equipment-related backwash strainer water</p> <p>See Attachment 3</p>	<p>Outfalls:</p> <p>All discharge to a single outfall on the North Brook wetlands Outfall A5B1</p>	<p>8,755 gpd</p>

7. For each outfall listed above, provide the following information (attach additional sheets if necessary). Outfalls may be eligible for alternative pH effluent limits. See Parts 1.7.1. and 2.7.1 of the permit for additional information. Contact MassDEP or NHDES to determine the required information and protocol to request alternative pH effluent limits.				
Outfall No.	Latitude: 42° 32' 42"		Longitude: 71° 41' 03"	
	Discharge is: <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal			
	Maximum Daily Flow 0.0162 MGD		Average Monthly Flow 0.0087 MGD	
	Maximum Daily Temperature 69.4 °F		Average Monthly Temperature 58.9 °F	
	Maximum Daily Oil & Grease 0 mg/L		Average Monthly Oil & Grease 0 mg/L	
	Maximum Monthly pH 10.36 s.u.		Minimum Monthly pH 6.55 s.u.	
	Alternative pH limits requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		State approval attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

C. Best Technology Available for Cooling Water Intake Structures

Facilities that checked “equipment-related cooling” as one of the discharges in Part B. of this NOI are subject to the following requirements.	
1. Does the facility intake water for cooling purposes subject to the BTA Requirements at Part 4 of the HYDROGP?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, skip to Part D of this NOI.
2. If yes, indicate which technology employed to comply with the general BTA requirements at Part 4.2.b of the HYDROGP:	
<input type="checkbox"/> An existing technology (e.g., a physical or behavioral barrier, spillway, or guidance device) that directs fish towards a downstream passage that minimizes exposure to the CWIS. Has the applicant attached a narrative description of the barrier to demonstrate that the downstream fish passage effectively transports live fish in a manner that minimizes the likelihood of becoming impinged or entrained at the cooling water intake? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> An effective intake velocity at the point of cooling water withdrawal, or alternatively, at the point where cooling water enters the penstock (for intakes located within the penstock), not to exceed 0.5 fps. Has the applicant attached a demonstration of compliance with this intake velocity through observation of live fish in the intake or calculation based on the maximum intake volume and minimum bypass flow? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> For cooling water withdrawn directly from the source waterbody (<i>i.e.</i> , not from within the penstock), a physical screen or other barrier technology with a mesh size no greater than ½-inch) that minimizes the potential for adult and juvenile fish to become entrapped in the CWIS. Has the applicant attached a description of the technology? <input type="checkbox"/> Yes <input type="checkbox"/> No If the mesh size of the screen is greater than ½-inch has the applicant demonstrated that the calculated intake velocity is less than <input type="checkbox"/> 0.5 fps based on the screen dimensions, maximum intake volume, and source water 7Q10 low flow?	
<input checked="" type="checkbox"/> Other aspects of the location, design, construction, and capacity of the intake that minimize impingement mortality.	
<p>The volume of water flowing through the penstock relative to the volume of cooling water withdrawn minimizes the risk of impingement at the CWIS. See Supplemental information and Attachment 4 and 5 for more details</p>	

3. If the answer to question C.1 is yes, in addition to complying with one of the criteria above, the applicant must submit the following information:	
Maximum daily volume of cooling water withdrawn during previous five (5) years:	16,220 gpd
Maximum monthly average volume of cooling water withdrawn during the previous five (5) years:	9,776 gpd
Maximum daily and average monthly volume of water used exclusively for cooling: Max: N/A gpd Avg: N/A gpd	
Maximum daily and average monthly volume of water used for another process before or after being used for cooling: Max: N/A gpd Avg: N/A gpd	
Has the applicant attached a narrative description explaining how cooling water is reused? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Volume of total intake water withdrawn and used in facility as a percentage of: Installed turbine capacity 0.005 % (max turbine capacity), 0.032 % (min turbine capacity) Average daily flow through penstock 0.009% Minimum flow through penstock N/A	
Source water annual mean flow (e.g., available from USGS, MassDEP, or NHDES):	N/A cfs
Source water 7-day mean low flow with 10-year recurrence interval (7Q10):	N/A cfs
Volume of total intake water withdrawn and used in facility as a percentage of: Source water mean annual flow N/A cfs Source water 7Q10 flow N/A cfs	

D. Chemical Additives

1.	Does the facility use or plan to use non-toxic chemicals for pH adjustment?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
2.	Does the facility use or plan to use chemicals for anti-freeze purposes?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
3.	If the answer to D.2 is yes, provide the following for EACH chemical additive used for anti-freeze:		
Chemical Name and Manufacturer:			
Maximum Dosage Concentration Used:		Average Dosage Concentration Used:	
Maximum Concentration in Discharge: mg/L		Average Concentration in Discharge: mg/L	
Material Safety Data Sheet (MSDS) or other toxicity documentation for each chemical attached? <input type="checkbox"/> Yes <input type="checkbox"/> No			

E. Endangered Species Act Certification

Appendix 2 to the HYDROGP explains the certification requirements related to threatened and endangered species and designated critical habitat. Indicate under which criteria the discharge is eligible for coverage under the HYDROGP:	
1. ESA eligibility for species under jurisdiction of USFWS	<input type="checkbox"/> Criterion A: No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the “action area.” See Appendix 2, Part B for documentation requirements. Documentation attached? <input type="checkbox"/> Yes <input type="checkbox"/> No
	<input checked="" type="checkbox"/> Criterion B: Formal or informal consultation with the USFWS under Section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by USFWS on a finding that the discharges and related activities are “not likely to adversely affect” listed species or critical habitat. Has the operator completed consultation with USFWS and attached documentation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No See Attachment 6, 7 and 8 for more details If no, is consultation underway? <input type="checkbox"/> Yes <input type="checkbox"/> No

	<input type="checkbox"/> Criterion C: Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and designated critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have “no effect” on any federally threatened or endangered species or designated critical habitat under the jurisdiction of the USFWS. Has the applicant attached documentation of the “no effect” finding? <input type="checkbox"/> Yes <input type="checkbox"/> No
2. ESA eligibility for species under jurisdiction of NMFS	<p>Is the facility located on: the Connecticut River between the Massachusetts/Connecticut state line and Turners Falls, MA; the Taunton River; the Merrimack River between Lawrence, MA and the Atlantic Ocean; the Piscataqua River including the Salmon Falls and Cocheco Rivers; or a marine water?</p> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	If yes, was the applicant authorized to discharge from the facility under the 2009 HYDROGP? <input type="checkbox"/> Yes <input type="checkbox"/> No
	If the discharge is to one of the named rivers above or to a marine water <i>and</i> the facility was not previously covered under the 2009 HYDROGP, has there been any previous formal or informal consultation with NMFS? <input type="checkbox"/> Yes <input type="checkbox"/> No Documentation of consultation attached? <input type="checkbox"/> Yes <input type="checkbox"/> No

F. National Historic Properties Act Eligibility

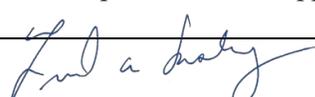
1. Indicate under which criterion the discharge(s) is eligible for covered under the HYDROGP:
<input type="checkbox"/> Criterion A: No historic properties are present.
<input checked="" type="checkbox"/> Criterion B: Historic properties are present. The discharges and related activities do not have the potential to impact historic properties.
<input type="checkbox"/> Criterion C: Historic properties are present. The discharges and related activities have the potential to impact or adversely impact historic properties.

2.	Has the applicant attached supporting documentation for NHPA eligibility described in Appendix 3, Part C of the HYDROGP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No See cover page and Attachment 9 for more details.
3.	Does supporting documentation include a written agreement from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or other tribal representative that outlines measures the operation will carry out to mitigate or prevent any adverse effects on historic properties? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

G. Supplemental Information

Please provide any supplemental information, including antidegradation review information applicable to new or increased discharges. Attach any certifications required by the HYDROGP. Supplemental information attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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H. Signature Requirements

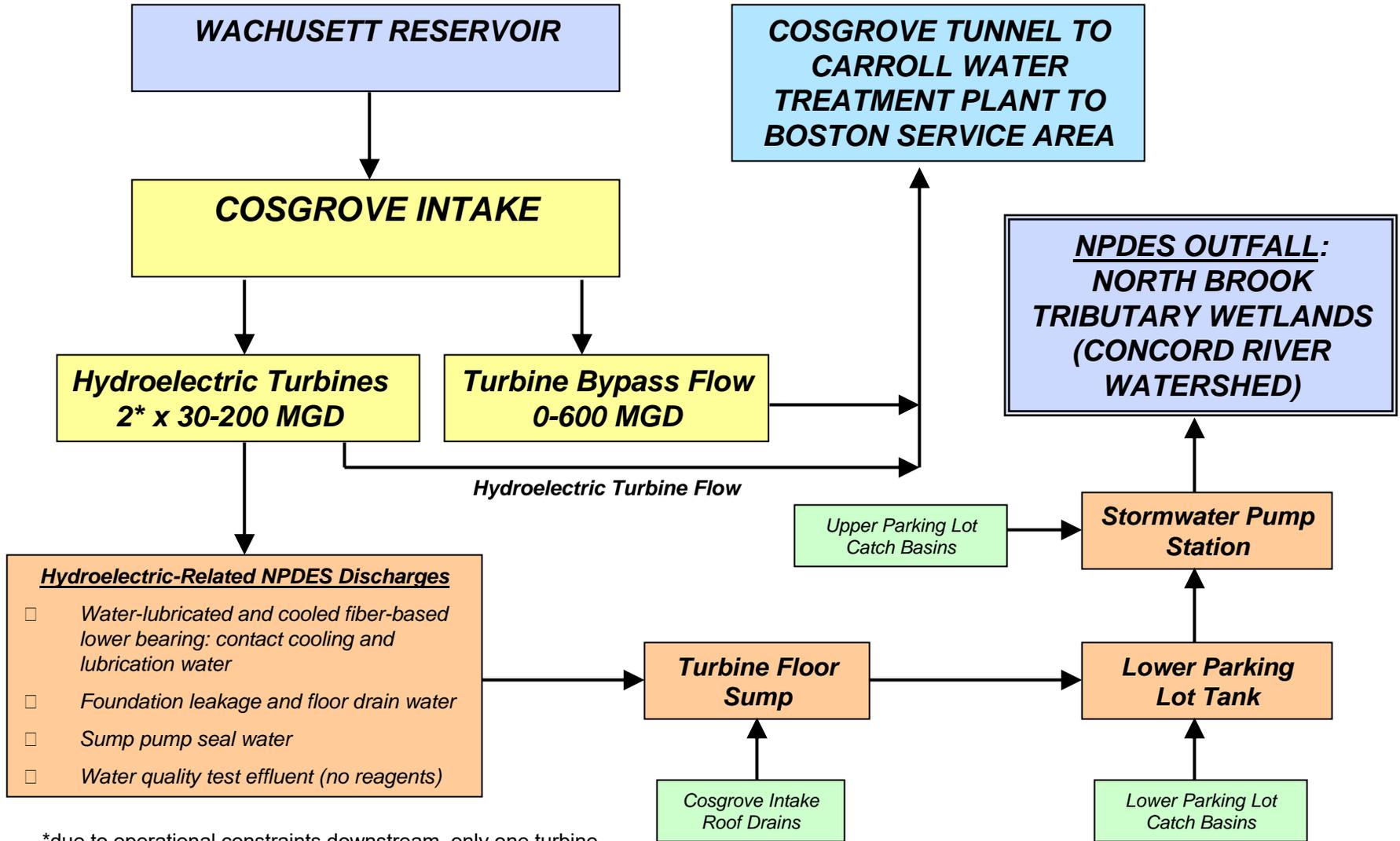
1.	The NOI must be signed by the operator in accordance with the signatory requirements of 40 C.F.R. § 122.22, including the following certification:	
	<p><i>I certify under penalty of law that no chemical additives are used in the discharges to be authorized under this General Permit except for those used for pH adjustment or anti-freeze purposes and that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
2.	Notification provided to the appropriate State, including a copy of this NOI, if required?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Signature: 	Date: 6/7/23
	Print Name and Title: Frederick A. Laskey	

**Category 5 waters listed alphabetically by major watershed
The 303(d) List – “Waters requiring a TMDL”**

Waterbody	AU_ID	Description	Size	Units	Impairment	ATTAINS Action ID
Lake Cochituate	MA82125	[Middle Basin] Natick/Wayland.	134.00	Acres	(Curly-leaf Pondweed*)	
					(Eurasian Water Milfoil, Myriophyllum Spicatum*)	
					(Non-Native Aquatic Plants*)	
					(Non-Native Fish/Shellfish/Zooplankton*)	
					Dissolved Oxygen	
					Enterococcus	
Lake Cochituate	MA82126	[Carling Basin] Natick.	14.00	Acres	(Curly-leaf Pondweed*)	
					(Eurasian Water Milfoil, Myriophyllum Spicatum*)	
					(Non-Native Aquatic Plants*)	
					(Non-Native Fish/Shellfish/Zooplankton*)	
					(Water Chestnut*)	
					PCBs in Fish Tissue	
Lake Cochituate	MA82127	[South Basin] Natick.	239.00	Acres	(Curly-leaf Pondweed*)	
					(Eurasian Water Milfoil, Myriophyllum Spicatum*)	
					(Non-Native Aquatic Plants*)	
					(Water Chestnut*)	
					Dissolved Oxygen	
					PCBs in Fish Tissue	
Little Chauncy Pond	MA82070	Northborough.	43.00	Acres	(Curly-leaf Pondweed*)	
					(Non-Native Aquatic Plants*)	
					Mercury in Fish Tissue	
Long Pond	MA82072	Littleton.	102.00	Acres	Algae	
					Dissolved Oxygen	
					Phosphorus, Total	
Nashoba Brook	MA82B-14	From source just south of Route 110, Westford to mouth at confluence with Fort Pond Brook, Concord (through former 2014 segment: Ice House Pond MA82066).	9.40	Miles	(Dewatering*)	
					Escherichia Coli (E. Coli)	
					Temperature	
North Brook	MA82B-21	Headwaters, east of Ballville Road and north of Wataquodock Hill Road, Bolton to mouth at confluence with the Assabet River, Berlin (excluding the approximately 0.1 mile through Wataquatic Pond (locally 'Fyfeshire Pond'), Bolton).	7.60	Miles	(Curly-leaf Pondweed*)	
Nutting Lake	MA82088	[East Basin] Billerica.	30.00	Acres	(Water Chestnut*)	
					Escherichia Coli (E. Coli)	
					Mercury in Fish Tissue	33880

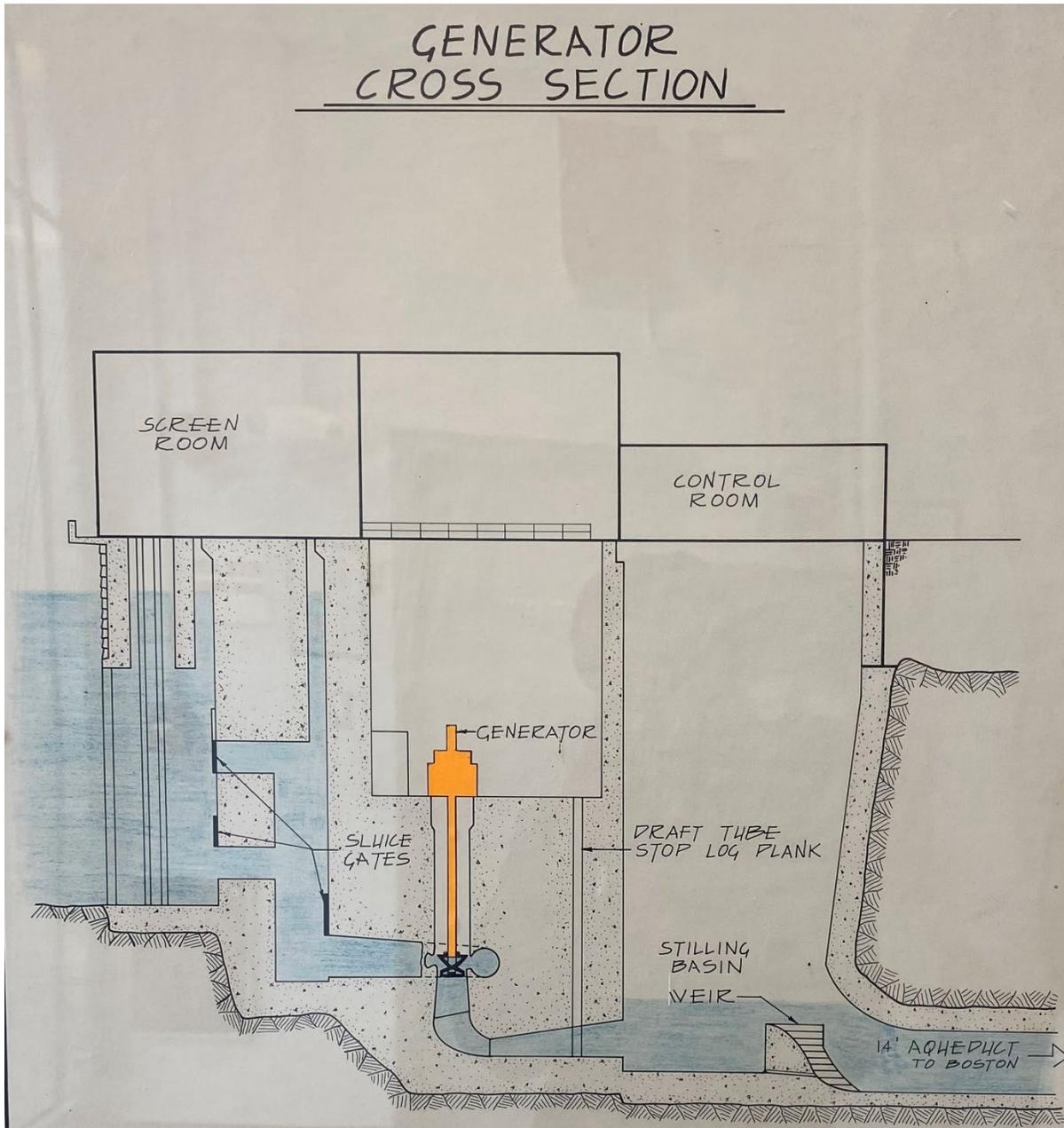


**Schematic of Water Flow
Cosgrove Intake Clinton
Massachusetts**

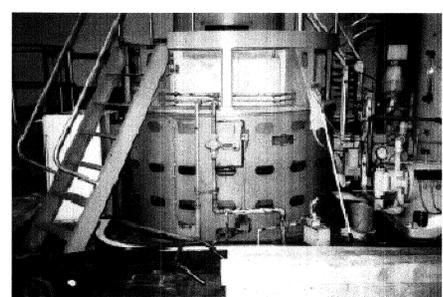
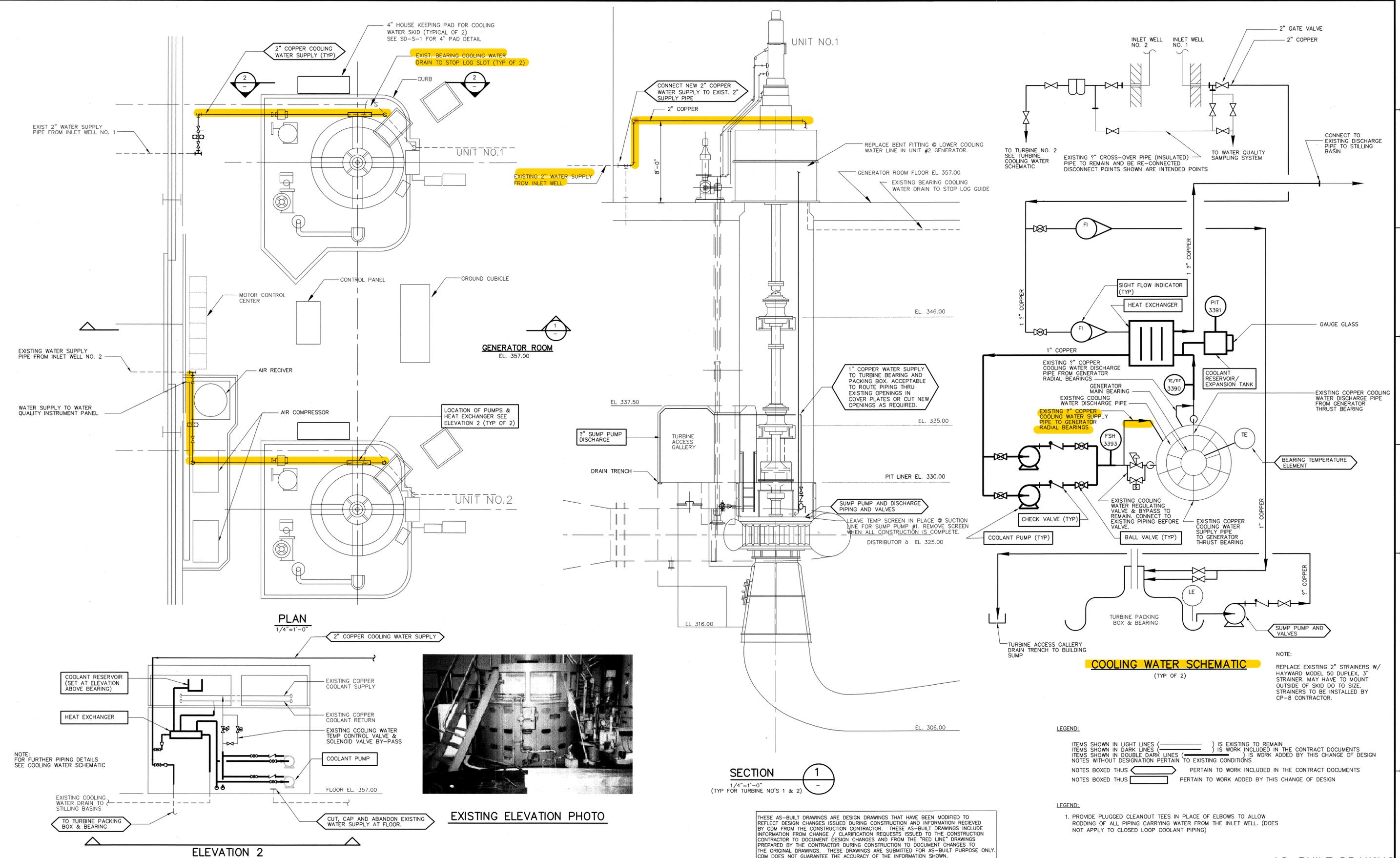


*due to operational constraints downstream, only one turbine runs at any given time

GENERATOR CROSS SECTION



[MWRA - WALNUT HILL WTP (RECORD WORK)]
 Plotted by: EZEQUELLEO Time: 3/13/2006 2:12:40 PM
 File name: W:\0176\20256\OFFSITE\CPI\RECORD\MECH\MCIPL04B.DWG Xref's: [GBD00000, MCWP004, MCWP001,]



EXISTING ELEVATION PHOTO

COOLING WATER SCHEMATIC (TYP OF 2)

NOTE:
 REPLACE EXISTING 2" STRAINERS W/ HAYWARD MODEL 50 DUPLEX, 3" STRAINER. MAY HAVE TO MOUNT OUTSIDE OF SKID DO TO SIZE. STRAINERS TO BE INSTALLED BY CP-8 CONTRACTOR.

LEGEND:
 ITEMS SHOWN IN LIGHT LINES () IS EXISTING TO REMAIN
 ITEMS SHOWN IN DARK LINES () IS WORK INCLUDED IN THE CONTRACT DOCUMENTS
 ITEMS SHOWN IN DOUBLE DARK LINES () IS WORK ADDED BY THIS CHANGE OF DESIGN
 NOTES WITHOUT DESIGNATION PERTAIN TO EXISTING CONDITIONS
 NOTES BOXED THIS () PERTAIN TO WORK INCLUDED IN THE CONTRACT DOCUMENTS
 NOTES BOXED THIS () PERTAIN TO WORK ADDED BY THIS CHANGE OF DESIGN

LEGEND:
 1. PROVIDE PLUGGED CLEANOUT TEES IN PLACE OF ELBOWS TO ALLOW RODDING OF ALL PIPING CARRYING WATER FROM THE INLET WELL. (DOES NOT APPLY TO CLOSED LOOP COOLANT PIPING)

THESE AS-BUILT DRAWINGS ARE DESIGN DRAWINGS THAT HAVE BEEN MODIFIED TO REFLECT DESIGN CHANGES ISSUED DURING CONSTRUCTION AND INFORMATION RECEIVED BY CDM FROM THE CONSTRUCTION CONTRACTOR. THESE AS-BUILT DRAWINGS INCLUDE INFORMATION FROM CHANGE / CLARIFICATION REQUESTS ISSUED TO THE CONSTRUCTION CONTRACTOR TO DOCUMENT DESIGN CHANGES AND FROM THE "RED LINE" DRAWINGS PREPARED BY THE CONTRACTOR DURING CONSTRUCTION TO DOCUMENT CHANGES TO THE ORIGINAL DRAWINGS. THESE DRAWINGS ARE SUBMITTED FOR AS-BUILT PURPOSE ONLY. CDM DOES NOT GUARANTEE THE ACCURACY OF THE INFORMATION SHOWN.

AS-BUILT DRAWING

REV. NO.	DATE	DRWN	CHKD	REMARKS
AB	5/12/03	ESS	SDR	ISSUED AS AS-BUILT DRAWINGS
1	9/01	VJB	RL	ISSUED FOR CHANGE OF DESIGN 003

CADD FILE NO.	MCIPLO4B.DWG
DESIGNED BY:	R. LOF
DRAWN BY:	V. BITTO
SHEET CHK'D BY:	R. LOF
CROSS CHK'D BY:	R. LOF
APPROVED BY:	J. WILLIS
DATE:	JUNE, 2002
SCALE:	AS SHOWN

CDM Camp Dresser & McKee Inc.
 environmental services office worldwide

MASSACHUSETTS WATER RESOURCES AUTHORITY
 CONTRACT NO. 6207
COSGROVE AND WACHUSETT INTAKE WHCP-1

COSGROVE INTAKE CHANGE OF DESIGN NO. 3
 MWRA ACCESSION: 513500

DRAWING NO.
CI M-3B



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:
Project Code: 2023-0048132
Project Name: Cosgrove Hydrogp

February 22, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Updated 12/27/2022 - Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the “**New England Field Office Endangered Species Project Review and Consultation**” website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

<https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review>

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat - (Updated 12/27/2022) Please visit our New England Field Office Project Review webpage at the link above for updated northern long-eared bat consultation guidance. The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule will go into effect on **January 30, 2023**. After that date, the current 4(d) rule for NLEB will no longer be in effect, and the 4(d) determination key will no longer be available. New compliance tools will be available by mid- to late-January, and information will be posted on our New England Field Office Project Review webpage in January, so please check this site often for updates.

Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project may result in incidental take of NLEB after the new listing goes into effect, this will need to be addressed in an updated consultation that includes an Incidental Take Statement. Many of these situations will be addressed through the new compliance tools. If your project may require re-initiation of consultation, please wait for information on the new tools to appear on our website or contact our office at **newengland@fws.gov** for additional guidance.

Additional Info About Section 7 of the Act

Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/service/section-7-consultations>

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the

ESA. The species' occurrence on an official species list does not convey a requirement to consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

<https://www.fws.gov/program/migratory-bird-permit>

<https://www.fws.gov/library/collections/bald-and-golden-eagle-management>

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List
-

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

PROJECT SUMMARY

Project Code: 2023-0048132

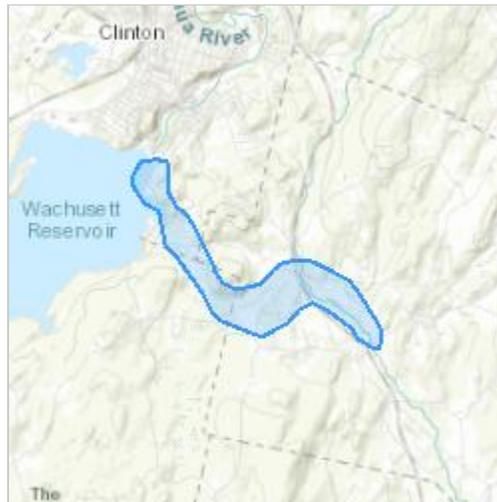
Project Name: Cosgrove Hydrogp

Project Type: Wastewater Discharge

Project Description: The Cosgrove Intake Facility is located on the shore of the Wachusett Reservoir in Clinton. The facility serves as the main intake for transferring water from the Wachusett Reservoir into the Cosgrove Tunnel where it flows toward the MWRA treatment plant in Marlborough and from there to the metropolitan Boston drinking water service area. The facility contains two 2,240 HP turbines with 1,600 KW generators

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.390184500000004,-71.68026714580526,14z>



Counties: Worcester County, Massachusetts

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [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.

MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Small Whorled Pogonia <i>Isotria medeoloides</i> Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1890	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPAC USER CONTACT INFORMATION

Agency: Massachusetts Water Resource Authority

Name: Shonesia Davis

Address: 190 Tafts ave

City: Winthrop

State: MA

Zip: 02152

Email: shonesia.davis@mwra.com

Phone: 6177784947



United States Department of the Interior



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New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:
Project code: 2023-0048132
Project Name: Cosgrove Hydrogp
IPaC Record Locator: 204-122740998

February 22, 2023

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for 'Cosgrove Hydrogp'

Dear Shonesia Davis:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on February 22, 2023, for “Cosgrove Hydrogp” (here forward, Project). This project has been assigned Project Code 2023-0048132 and all future correspondence should clearly reference this number.

The Service developed the IPaC system and associated species’ determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northeast Determination Key (Dkey), invalidates this letter. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative effect(s)), to a federally listed species or designated critical habitat.

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17). Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no further consultation with, or concurrence from, the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Service concurs, in writing, that a proposed action "is

not likely to adversely affect (NLAA)" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13]).

The IPaC results indicated the following species is (are) potentially present in your project area and, based on your responses to the Service's Northeast DKey, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
Small Whorled Pogonia (<i>Isotria medeoloides</i>)	Threatened	NLAA

Conclusion

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the species identified above. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project implements any changes which are final or commits additional resources.

In addition to the species listed above, the following species and/or critical habitats may also occur in your project area and are not covered by this conclusion:

- Monarch Butterfly *Danaus plexippus* Candidate
- Northern Long-eared Bat *Myotis septentrionalis* Threatened

To complete consultation for species that have reached a "May Affect" determination and/or species may occur in your project area and are not covered by this conclusion, please visit the "New England Field Office Endangered Species Project Review and Consultation" website for step-by-step instructions on how to consider effects on these listed species and/or critical habitats, avoid and minimize potential adverse effects, and prepare and submit a project review package if necessary: <https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review>

Please Note: If the Action may impact bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) by the prospective permittee may be required. Please contact the Migratory Birds Permit Office, (413) 253-8643, or PermitsR5MB@fws.gov, with any questions regarding potential impacts to Eagles.

If you have any questions regarding this letter or need further assistance, please contact the New England Ecological Services Field Office and reference the Project Code associated with this Project.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:
Project code: 2023-0048132
Project Name: Cosgrove Hydrogp

February 22, 2023

Subject: Consistency letter for the 'Cosgrove Hydrogp' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Shonesia Davis:

The U.S. Fish and Wildlife Service (Service) received on February 22, 2023 your effects determination for the 'Cosgrove Hydrogp' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause “take”^[1] of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species’ status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by March 31, 2023). If your project may result in incidental take of NLEB after the new listing goes into effect this will first

need to be addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action's effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

The IPaC-assisted determination for the northern long-eared bat **does not** apply to the following ESA-protected species that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Small Whorled Pogonia *Isotria medeoloides* Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Massachusetts Cultural Resource Information System

MACRIS



MACRIS Search Results

Search Date:

4/26/2023

Search Criteria:

Historic Resources in Clinton Area CLI.G

Inv. No.	Property Name	Street	Town	Year	Designations
CLI.906	Wachusett Lower Gate Chamber and Powerhouse	301 Boylston St	Clinton	C 1903	NRDIS; NRTRA;
CLI.905	Grove Street Bridge	Grove St	Clinton	1904	NRDIS; NRTRA;
CLI.903	Wachusett Dam	Lancaster Millpond	Clinton	R 1905	NRDIS; NRTRA;
CLI.907	Lightning Arrester Chamber - Wachusett Power House	1 River Rd	Clinton	1911	NRDIS; NRTRA;
CLI.902	Wachusett Reservoir	Wachusett Reservoir	Clinton	R 1905	NRDIS; NRTRA;
CLI.904	Wachusett Reservoir Waste Channel Railroad Bridge	Wachusett Reservoir	Clinton	1905	NRDIS; NRTRA;