

LIHI Mid-Term Review - Applicant Submittal Outline

Mid-term reviews are now required under Section 5.3.4 of the [LIHI Handbook](#) when material changes have occurred at the Certified facility. Submittals in support of the review must be made within 3 months of the material changes; or within 6 months of issuance of a new FERC license or material license or exemption amendment. The following information must be provided to facilitate the mid-term review.

1. Project Name, LIHI #- **Red Bridge # 96, Putts Bridge #102, Indian orchard #112, Dwight #170**
2. Date of submittal- August 16, 2023
3. Effective date of the material change(s) – **March 13, 2023**
4. Identify the type(s) of material change(s):

a. ***Facility or operational change:***

In the amendment application, CRP (now Patriot Hydro) proposed to formally change the four project operating regimes from peaking, with 0.25 to 2 feet of available storage, to run-of-river (ROR) with limits on impoundment elevations and refill restrictions and modified minimum flow requirements.

b. ***New FERC License or material FERC license or exemption amendment:***

FERC Exemption Amendment link:

<https://elibrary.ferc.gov/elibrary/filedownload?fileid=95DCE3AD-0473-CC55-A3A7-86DB48100000> The amendment is consolidated for all four projects and includes revised agency terms and conditions in Appendices A and B.

FERC conducted an Environmental Assessment (EA) for the amendment application and found that the proposed ROR operation would benefit aquatic and fishery resources and had no effect on historic properties or threatened and endangered species.

FERC EA link: <https://elibrary.ferc.gov/elibrary/filedownload?fileid=123B2EED-24B3-C465-A212-85DEB5B00000>

5. Identify all of the LIHI criteria affected by the material change(s):

a. **Ecological Flow Regimes-**

Changed to ROR operation based on agency settlement agreement and revised agency terms and conditions.

- Red Bridge- Requires minimum bypass flow release of 100 cfs or inflow if less year-round. Requires to operate in instantaneous ROR mode whereby inflow equals outflow within +/- 0.25 ft of target headpond elevation of 272.3 feet NGVD.
- Putts Bridge- Requires minimum bypass flow release of 25 cfs or inflow if less year-round which did not change from the existing FERC exemption. Requires to operate in instantaneous ROR mode whereby inflow equals outflow with +/- 0.25 ft of target headpond elevation of 205.3 feet NGVD (top of flashboards).
- Indian Orchard- Requires minimum bypass flow release of 144 cfs (or inflow, if less) from April 1 through September 30, and 104 cfs (or inflow, if less) the remainder of the year. Requires instantaneous ROR mode whereby inflow equals outflow within +/- 0.33 ft of target headpond elevation of 161.0 ft NGVD.

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- Dwight- Requires minimum bypass flow release of 258 cfs or inflow if less from April 15 through June 30, and 134 cfs or inflow if less the remainder of the year. Requires to operate in instantaneous ROR mode whereby inflow equals outflow with target elevation of at least 76.92 ft NGVD from April 15 – June 30, and at least 76.75 ft NGVD during the remainder of the year.

A revised Operations Compliance Monitoring Plan (OCMP) was filed with FERC as Attachment C to the amendment application filed with FERC on January 7, 2022.

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=1A23C208-5B06-CE9F-AB7B-7E3545700000>

An amendment application supplement was filed with FERC on September 9, 2022, See Attachment B for bypass flow/habitat study reports (Red Bridge, Indian Orchard & Dwight, no habitat study was conducted at Putts Bridge since there were no changes in the bypass minimum flow). <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9852A320-FB1D-CD13-AA64-832280A00000>

b. **Water Quality-**

The OCMP provides a plan for water quality monitoring. A study is to be conducted in the bypass reaches in summer of 2023 during the low flow period. See the water quality plan in Appendix A in the September 9, 2022 supplement to the amendment application linked above.

c. **Shoreline and Watershed Protection-**

There has been no change in the Shoreline and Watershed Protection requirement of the projects since they were last certified by LIHI for any of the ZOE's. Changing operation to ROR supports stable impoundment water levels and reduced shoreline erosion in the impoundments.

An Erosion Control Plan is required under Article 14 of each project's existing FERC exemption, whenever land-disturbing, land-clearing or spoil producing activity adjacent to the impoundment is undertaken.

6. Identify each Zone of Effect impacted by the changes (e.g., impoundment, bypassed reach, tailrace/downstream reach).

All 3 zones at each project are impacted by changes in the ecological flow regime. Impoundment zone ecological flows for each project used standard A-1 not applicable in the prior LIHI certifications but should be standard A-2 agency recommendation due to the agency settlement agreement and revised agency terms and conditions. New impoundment elevation restrictions and refill requirements of the project impoundments after dam maintenance (including flashboard replacement at the Putts Bridge and Indian Orchard projects) or emergency drawdown, requires that 90 percent of inflow to each Project is released below each Project and the impoundment is refilled on the remaining 10 percent of inflow.

The bypass reaches are also impacted by the water quality criterion. For Putts Bridge and Dwight, the water quality standard B-1, not applicable, should now be standard B-2, agency recommendation, due to the modified minimum flows and the water quality monitoring plan that resulted from the agency settlement agreement and agency revised terms and conditions. The water quality standard of B-2 for Red Bridge and Indian Orchard has not changed.

The Impoundment zones are also impacted under shoreline and watershed protection although there is no change in the standards selected in prior LIHI certifications.

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7. Provide an updated Standards Matrix (see Program Forms and Documents) for all affected Zones of Effect and select the now-appropriate numbered standard for each affected LIHI criteria in each affected Zone of Effect. Identify any changes in the standards (refer to the Zones of Effect and Standards section in the most recent LIHI certification review report).

ZOE #1 – Impoundment – All Projects

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

ZOE #2 – Bypass Reaches – All Projects

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

ZOE #3 – Tailrace and Downstream Regulated Reaches – All Projects

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

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8. Provide updated lists of agency and stakeholder contacts.

Agency Contact		Area of Responsibility (check applicable boxes)
Agency Name	US Fish and Wildlife Service	<input checked="" type="checkbox"/> Flows <input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Fish/Wildlife <input checked="" type="checkbox"/> Watershed <input checked="" type="checkbox"/> T&E Species <input type="checkbox"/> Cultural/Historic <input type="checkbox"/> Recreation
Name and Title	Melissa Grader	
Phone	(413) 548-9138, x-124	
Email address	Melissa_Grader@fws.gov	
Mailing Address		

Agency Contact		Area of Responsibility (check applicable boxes)
Agency Name	Mass Dept of Fish and Wildlife	<input checked="" type="checkbox"/> Flows <input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Fish/Wildlife <input checked="" type="checkbox"/> Watershed <input checked="" type="checkbox"/> T&E Species <input type="checkbox"/> Cultural/Historic <input type="checkbox"/> Recreation
Name and Title	Rebecca Quinones	
Phone	(508) 389-6333	
Email address	rebecca.quinones@mass.gov	
Mailing Address		

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Stakeholder Contact		Area of Responsibility (check applicable boxes)
Organization Name	Connecticut River Conservancy	<input checked="" type="checkbox"/> Flows <input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Fish/Wildlife <input checked="" type="checkbox"/> Watershed <input checked="" type="checkbox"/> T&E Species <input checked="" type="checkbox"/> Cultural/Historic <input checked="" type="checkbox"/> Recreation
Name and Title	Kelsey Wentling, River Steward Massachusetts	
Phone	(413) 772-2020 ext. 216	
Email address	kwentling@ctriver.org	
Mailing Address		

Stakeholder Contact		Area of Responsibility (check applicable boxes)
Organization Name	Chicopee 4 Rivers	<input checked="" type="checkbox"/> Flows <input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Fish/Wildlife <input checked="" type="checkbox"/> Watershed <input type="checkbox"/> T&E Species <input type="checkbox"/> Cultural/Historic <input checked="" type="checkbox"/> Recreation
Name and Title	Keith Davies	
Phone	(413) 772-2020 ext. 216	
Email address	chicopeewatershed@gmail.com	
Mailing Address	PO Box 126, Three Rivers, MA 01080	

9. Complete and attach the Attestation and Waiver Form.

10. Compile and submit all information to mfischer@lowimpacthydro.org or compliance@lowimpacthydro.org.

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 _CRP (now Patriot Hydro)

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: Dave Olsheski _____

Title: VP Patriot Hydro _____

Authorized Signature:  _____

Date: August 16, 2023