WHITMAN RIVER DAM, INC.
c/o Stephen Hickey
56 Ryan Farm Rd.
Windham, NH 03087
(857) 205-1001
st.hickey@comcast.net

August 10, 2015

Low Impact Hydropower Institute
Dr. Michael Sale and Ms. Dana Hall
Executive Director, Deputy Director
Low Impact Hydropower Institute
PO Box 194
Harrington Park, NJ 07640

Re: Application of Crocker Dam for Certification by the Low Impact Hydro Institute

Dear Dr. Sale and Ms. Hall:

Attached please find an application for certification by the Low Impact Hydro Institute ("LIHI") of the Crocker Dam Hydroelectric Project (the "Project") of WHITMAN RIVER DAM, INC.. WHITMAN RIVER DAM, INC. is a domestic for profit corporation with its principal place of business at 135 S Ashburnham Rd P.O. BOX 145 Westminster, MA 01473.

For purposes of responding to inquiries regarding the application, persons should contact the following:

Primary Contact

Stephen J. Hickey
56 Ryan Farm Rd.
Windham, NH 03087
(857) 205-1001
st.hickey@comcast.net

On September 5, 2012 Whitman River Dam, Inc. was issued a 40-year license to construct, operate and maintain the proposed Crocker Dam hydroelectric project (FERC No. 13237-003). The Crocker Dam hydroelectric project ("Crocker Dam hydro") is a 0.145 MW licensed, run-of-river project located on the Whitman River in Worcester County, Massachusetts. The project, as licensed, will consists of one development – the 0.145 MW Crocker Dam station. Crocker Dam hydro will have an estimated annual production of 887.45 MWh.

The following text or computer files are attached to this application:

1. LIHI Questionnaire Form
2. Crocker Hydroelectric Project Contact Form
3. Appendix 1-1, FERC order issuing license, issued August 31, 2012
4. Appendix 1-2, FERC order rescinding order issuing original minor license, issued September 5, 2012
5. Appendix 1-3, FERC order issuing original minor license, issued September 5, 2012
6. Appendix 1-4, Agency comment letters to application for license No. 13237
7. Appendix 1-5, FERC Order granting extension of time to complete construction, issued July 29, 2015
8. Appendix 1-6, Requests to and responses from relevant hydroelectric agencies regarding the Crocker Dam Hydroelectric Project LIHI application.
9. Appendix 2, Agency Contacts
10. Appendix 3-1, Description of the Facility
11. Appendix 3-2, Mode of Operation
12. Appendix 3-3, First Amendment to Water Right and Access Agreement
13. Appendix 3-4, Locations of Major Items of the Facility
14. Appendix 3-5, Site Plan of the Facility
15. Appendix A, Flows
16. Appendix B, Water Quality
17. Appendix B-1, Massachusetts Department of Environmental Protection Water Quality Certification, issued February 4, 2011
18. Appendix C, Fish Passage and Protection
19. Appendix C-1, Massachusetts Division of Fisheries and Wildlife comments on application for exemption from licensing
20. Appendix C-2, July 27, 2015 email to Massachusetts Division of Fisheries and Wildlife request for comments on LIHI application
21. Appendix C-3, July 27, 2015 email to NOAA request for comments on LIHI application
22. Appendix D, Watershed Protection
23. Appendix E, Threatened and Endangered Species Protection
24. Appendix E-1, USFWS comment letter dated April 16, 2012 re presence of threatened or endangered species within the project area
25. Appendix E-2, July 27, 2015 email to USFWS request for comments on LIHI application
26. Appendix E-3 MA Rare Species Map 2015_07_28
27. Appendix F, Cultural Resource Protection
28. Appendix F-1, September 24, 2009 Mass Historical Commission comment letter
29. Appendix F-2, July 27, 2015 email to Mass Historical Commission request for comments on LIHI application
30. Appendix G, Recreation
31. Appendix H, Facilities Recommended for Removal

The application is arranged such that the control document is the LIHI Questionnaire. Back-up documents are cited in the questionnaire and may be found in the appendices.

I request that you review this application and let me know if anything additional is needed in order to place this application in front of the agency contacts and eventually the board of directors of LIHI for consideration.

Sincerely yours,

Stephen J. Hickey

Enclosures

LOW IMPACT HYDROPOWER INSTITUTE

APPENDIX B – QUESTIONNAIRE
April 2014 REVISION

Back**ground Information**	
1) Name of the Facility as used in the FERC license/exemption.	Crocker Dam Hydroelectric Project No. 13237
2) Applicant's complete contact information (please use Appendix D, Project Contact Form)	See Appendix D, Project Contact Form
3) Location of Facility including (a) the state in which Facility is located; (b) the river on which Facility is located; (c) the river-mile location of the Facility dam; (d) the river's drainage area in square miles at the Facility intake; (e) the location of other dams on the same river upstream and downstream of the Facility; and (f) the exact latitude and longitude of the Facility dam.	A. 102 S Ashburnham Road Westminster, Massachusetts 01473 B. Whitman River **C. River-mile 2.5** D. 20.0 sq./miles **E. See attached map *Appendix I.3 Crocker Dam Project Location Map.*** F. Latitude:42.5690570 Longitude:-71.8810455
4) Installed capacity.	145 kW
5) Average annual generation.	887.45 MWh
6) Regulatory status.	Licensed on August 31, 2012
7) Reservoir volume and surface area measured at the normal maximum operating level.	Volume:1,630 (Acre feet) Surface Area: 101 (Acres)

8) Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse).	4.515 Acres
9) Number of acres inundated by the Facility.	101
10) Number of acres contained in a 200-foot zone extending around entire reservoir.	About 42 acres
11) Contacts for Resource Agencies and non-governmental organizations	Please see Appendix 2, *Agency Contacts*
12) Description of the Facility, its mode of operation (i.e., peaking/run of river) and photographs, maps and diagrams.	Run of the River, Please see Appendix B-12-1 *Crocker Hydroelectric Dam Maps* and Appendix B-12-2 *Crocker Hydroelectric Dam Diagrams* **See *Appendix I.12 Crocker Dam Project* Images for photographs of the upstream and downstream reach, impoundment and existing installations of the Crocker Dam facility**
Questions for "New" Facilities Only: If the Facility you are applying for is "new" (i.e., an existing dam that added or increased power generation capacity after August of 1998) please answer the following questions to determine eligibility for the program.	
13) When was the dam associated with the Facility completed?	1933
14) When did the added or increased generation first generate electricity? If the added or increased generation is not yet operational, please answer question 18 as well.	N/A The project powerhouse has not been released for Construction by FERC at this time. **The project is not yet operational. The expected commercial operation date is with the next 12 months.**
15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?	**The project will be located at an existing dam. 42" of additional penstock will be added to the existing penstock.**
16) Did the added or increased capacity include or require a change in water flow through the facility that worsened conditions for fish, wildlife, or water	**No, outflow will remain run-of-river**

quality (for example, did operations change from run-of-river to peaking)?		
17 (a) Was the existing dam recommended for removal or decommissioning by resource agencies, or recommended for removal or decommissioning by a broad representation of interested persons and organizations in the local and/or regional community prior to the added or increased capacity? (b) If you answered "yes" to question 17(a), the Facility is not eligible for certification, unless you can show that the added or increased capacity resulted in specific measures to improve fish, wildlife, or water quality protection at the existing dam. If such measures were a result, please explain.	No	
18 (a) If the added or increased generation is not yet operational, has the increased or added generation received regulatory authorization (e.g., approval by the Federal Energy Regulatory Commission)? If not, the facility is not eligible for consideration; and (b) Are there any pending appeals or litigation regarding that authorization? If so, the facility is not eligible for consideration.	The project received a FERC License on August 31, 2012. There are no appeals pending.	
A. Flows	PASS	FAIL
1) Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?	YES = Pass, Go to B N/A = Go to A2 YES Please see Appendix B-1 for the projects Water Quality Certificate issued Feb 4, 2011. **The Applicant acknowledges that LIHI may suspend or**	NO = Fail

	revoke the certification if the impacts of the project once operational cause non-compliance with the certification criteria.	
2) If there is no flow condition recommended by any Resource Agency for the Facility, or if the recommendation was issued prior to January 1, 1987, is the Facility in Compliance with a flow release schedule, both below the tailrace and in all bypassed reaches, that at a minimum meets Aquatic Base Flow standards or "good" habitat flow standards calculated using the Montana-Tennant method?	YES = Pass, go to B NO = Go to A3 Please see Appendix B-1 for the projects Water Quality Certificate issued Feb 4, 2011.	
3) If the Facility is unable to meet the flow standards in A.2., has the Applicant demonstrated, and obtained a letter from the relevant Resource Agency confirming that demonstration, that the flow conditions at the Facility are appropriately protective of fish, wildlife, and water quality?	YES = Pass, go to B Please see Appendix B-1 for the conditions of the projects Water Quality Certificate issued Feb 4, 2011.	NO = Fail
B. Water Quality	PASS	FAIL
1) Is the Facility either: a) In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?	YES = Go to B2 Yes Please see Appendix B-1 for the conditions in the project's water quality certificate issued Feb 4, 2011. **The Applicant**	NO = Fail

	acknowledges that LIHI may suspend or revoke the certification if the impacts of the project once operational cause non-compliance with the certification criteria.	
2) Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?	YES = Go to B3 YES – low DO per the WQC. The project will monitor for DO and report to DEP. DO levels are expected to improve with project operations. **The Whitman River is not listed as impaired on the most recent 2012 303(d) report issued by Mass DEP. See http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf The river is listed as meeting its intended use for aesthetic purpose and fish, other aquatic life and wildlife. The applicant emailed Mass DEP for clarification regarding**	

	the fishery designation. See Appendix *Appendix B.2_2015_09_03_Follow up w.MA DEP re Fishery designation.* The response from DEP will be forward to LIHI upon receipt.	
3) If the answer to question B.2 is yes, has there been a determination that the Facility does not cause, or contribute to, the violation?	YES = Pass, go to B YES Please see Appendix B-1 for the conditions of the projects water quality certificate issued Feb 4, 2011. **Robert Kubit of the Mass DEP confirmed via email dated 9/3/2015 that "the Massachusetts Surface Water Quality Standards have yet to be updated to reflect the presence of a cold water fish population downstream of the Crocker Dam. However, the Nashua River is to be managed as a cold water fishery whether it is designated as such in the**	NO = Fail

	Standards or not." See *Appendix B.3 MDEP Kubit Water Classification inquiry.pdf*	
C. Fish Passage and Protection	PASS	FAIL
1) Are anadromous and/or catadromous fish present in the Facility area or are they know to have been present historically?	NO Please see Appendix C-1 for MDFW statement that no anadromous and/or catadromous fish are present at the project. It is unknown if they were present historically. NO = Go to C6	
2) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?	**N/A**	NO = Fail
3) Are there historic records of anadromous and/or catadromous fish movement through the Facility area, but anadromous and/or catadromous fish do not presently move through the Facility area (e.g., because passage is blocked at a downstream dam or the fish no longer have a migratory run)? a) If the fish are extinct or extirpated from the Facility area or downstream reach, has the Applicant demonstrated that the extinction or extirpation was not due in whole or part to the Facility? b) If a Resource Agency Recommended adoption of upstream and/or downstream fish passage measures at a specific future date, or when a triggering event occurs (such as completion of passage through a downstream	The applicant does not know if catadromous or anadromous fish were present historically at the project. The dam was built in 1933. (a) The dam was built in 1933. It is	NO = Fail NO = Fail

obstruction or the completion of a specified process), has the Facility owner/operator made a legally enforceable commitment to provide such passage?	unknown if anadromous/catadromous fish were present historically. (b) N/A = Go to C3	
4) If, since December 31, 1986: a) Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C.3.a above), and b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription, c) Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility?	(a) Fish passage was not requested by MDFW in their June 20, 2011 comment letter. See Appendix C-1 (b) YES (c) No. A determination as made in MDFW's June 20, 2011 comment letter (Appendix C-1) that no anadromous or catadromous fish are present in the project area.	YES = Fail

5) If C4 was not applicable: a) Are upstream and downstream fish passage survival rates for anadromous and catadromous fish at the dam each documented at greater than 95% over 80% of the run using a generally accepted monitoring methodology? Or b) If the Facility is unable to meet the fish passage standards in 5.a, has the Applicant either i) demonstrated, and obtained a letter from the U.S. Fish and Wildlife Service or National Marine Fisheries Service confirming that demonstration, that the upstream and downstream fish passage measures (if any) at the Facility are appropriately protective of the fishery resource, or ii) committed to the provision of fish passage measures in the future and obtained a letter from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service indicating that passage measures are not currently warranted?	(a) N/A – Neither anadromous or catadromous fish are present at the project. (See Appendix C-1) (b) N/A	NO = Fail
6) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of Riverine fish?	YES = Go to C7 N/A = Go to C7 Yes MDFW determined in their June 20, 2011 letter that fish were not present at the facility and therefore fish passage is not required at this time. (See Appendix C-1)	NO = Fail
7) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?	YES = Pass, go to D N/A = Pass, go to D **Applicant acknowledges that LIHI may suspend or**	NO = Fail

	revoke the certification if the impacts of the project once operational cause non-compliance with the certification criteria.	
D. Watershed Protection	PASS	FAIL
1) Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the average annual high water line for at least 50% of the shoreline, including all of the undeveloped shoreline?	**No** YES = Eligible for 3 extra years of certification; Go to D4	
2) Has the Facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1,and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?	No	NO = Go to D3
3) Has the Facility owner/operator established through a settlement agreement with appropriate stakeholders, with state and federal resource agencies agreement, an appropriate shoreland buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low impact recreation)?	**Yes.** **There is an existing "order of conditions" that establishes a buffer zone for the proposed project construction, and there is an additional town bylaw that also establishes a 25' "no touch" zone for the wetlands buffer zone/**	NO = Go to D4

	shoreline etc…There is a conservation easement on the pond for recreational use of the pond. **The attached *Appendix D.1 town bylaw chapter 202.pdf* enacted a 25' "No touch" zone around the resource area. An additional 25' around the impoundment is protected by the applicant's covenant assigned to any lot created and sold.**	
4) Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project?	YES = Pass, go to E N/A = Pass, go to E	No = Fail
E. Threatened and Endangered Species Protection	PASS	FAIL
1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?	NO = Pass, go to F **See attached *Appendix E.1 US FWS IPaC report.pdf* generated 9/16/2015 which shows the only T&E species**	

	impacted by the applicant's proposed development is the Northern Long eared Bat. The powering of an existing dam does not impact this species. The IPaC report confirms no critical habitat is withint he project boundary. The applicant has still not received a response to its request for comment from John Warner.	
2) If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?	YES = Go to E3 N/A = Go to E3 **See response to D.1**	NO = Fail
3) If the Facility has received authorization to incidentally Take a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authorization pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authorization?	YES = Go to E4 N/A = Go to E5 **See response to D.1**	NO = Fail
4) If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that:	N/A, USFWS determined during the	NO = Fail

a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or c) There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or d) The recovery plan under active development will have no material effect on the Facility's operations?	FERC licensing process that the project would not impact any threatened or endangered species. See Appendix E-1 and E-2. **See response to D.1 confirming no impact based on the 9/16/15 IPaC report.**	
5) If E.2 and E.3 are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?	YES = Pass, go to F See Appendix E-1 and E-2. **See response to D.1 confirming no impact based on the 9/16/15 IPaC report.** **A letter from John Warner confirming this statement will be sent to LIHI upon receipt.**	NO = Fail
F. Cultural Resource Protection	PASS	FAIL
1) If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?	YES = Pass, go to G See Appendix F-1 and F-2 for confirmation that	NO = Fail

	the project will not impact any cultural resources. **No response to the applicant's request for comment has been received from the Mass Historic Commission. Their response will be sent to LIHI upon receipt.** N/A = Go to F2	
2) If not FERC-regulated, does the Facility owner/operator have in place (and is in Compliance with) a plan for the protection, mitigation or enhancement of impacts to Cultural Resources approved by the relevant state or federal agency or Native American Tribe, or a letter from a senior officer of the relevant agency or Tribe that no plan is needed because Cultural Resources are not negatively affected by the Facility?	N/A, this is a FERC regulated facility.	NO = Fail
G. Recreation	PASS	FAIL
1) If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?	YES = Go to G3 **The Applicant acknowledges that LIHI may suspend or revoke the certification if the impacts of the project once operational cause non-**	

	compliance with the certification criteria.	
2) If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?	YES = Go to G3 N/A Crocker Dam Hydroelectric Facility is FERC regulated.	
3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?	YES = Pass, go to H	
H. Facilities Recommended for Removal	PASS	FAIL
1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?	NO = Pass, Facility is Low Impact	

APPENDIX 1-1

CROCKER DAM HYDROELECTRIC PROJECT

FERC ORDER ISSUING LICENSE
(MINOR PROJECT)
ISSUED August 31, 2012

Copy of FERC Order Issued August 31, 2012 may be found on the portion of the LIHI website devoted to the Crocker Dam application and is titled “Appendix 1-1_FERC Order 2012_08_31.”

APPENDIX 1-2

CROCKER DAM HYDROELECTRIC PROJECT

FERC ORDER RESCINDING ORDER ISSUING LICENSE (MINOR) ISSUED September 5, 2012

Copy of FERC Order Rescinding Order Issuing Minor license Issued September 5, 2012 may be found on the portion of the LIHI website devoted to the Crocker Dam application and is titled “Appendix 1-2_FERC Order Rescinding Order 2012_09_05.”

APPENDIX 1-3

CROCKER DAM HYDROELECTRIC PROJECT

FERC ORDER ISSUING LICENSE
(MINOR PROJECT)
ISSUED September 5, 2012

Copy of FERC Order Issued September 5, 2012 may be found on the portion of the LIHI website devoted to the Crocker Dam application and is titled “Appendix 1-3_FERC Order 2012_09_05.”

APPENDIX 1-4

CROCKER DAM HYDROELECTRIC PROJECT

AGENCY TERMS AND CONDITIONS LETTERS

Copies of relevant hydroelectric agency terms and conditions letter submitted in response to FERC's request for comment regarding Whitman River Dam Inc.'s application for exemption of the Crocker Dam Hydroelectric Project may be found on the portion of the LIHI website devoted to the Crocker Dam application and is titled "Appendix 1-4_Crocker Dam Agency Comment Letters re FERC application."

APPENDIX 1-5

CROCKER DAM HYDROELECTRIC PROJECT

FERC ORDER GRANTING TWO YEAR EXTENSION TO COMMENCE AND COMPLETE CONSTRUCTION ISSUED July 29, 2015

FERC order granting the licensee a two year extension to commence and complete construction, September 5, 2016 and September 5, 2019, respectively, may be found on the portion of the LIHI website devoted to the Crocker Dam application and is titled “Appendix 1-5_FERC Grant of Two Year Extension 007_29_2015.”

APPENDIX 1-6

CROCKER DAM HYDROELECTRIC PROJECT

REQUESTS FOR COMMENT FROM RELEVANT HYDROELECTRIC AGENCIES FOR INCLUSION IN LIHI APPLICATION
SENT July 27-28, 2015

Copies of emails sent to and responses received from relevant hydroelectric agencies concerning the Crocker Dam Hydroelectric ZProject LIHI application may be found on the portion of the LIHI website devoted to the Crocker Dam application and is titled "Appendix 1-1_LIHI Agency Comment Letters 2015_07."

APPENDIX 2

CROCKER DAM HYDROELECTRIC PROJECT

AGENCY CONTACTS[1]

[1] See Appendix 1-6 for requests for comment from relevant hydroelectric agencies.

National Marine Fisheries Service
Habitat Conservation, Northeast Region

Sean McDermott
One Blackburn Drive
F/GARFO
Gloucester, MA 01930-2298
sean.mcdermott@noaa.gov
(978) 281-9113

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: July 28, 2015. NOAA has no comment.

Trout Unlimited

Don Pugh
10 Old Stage Roard
Wendell, MA 01379
Don.Pugh@yahoo.com
(413) 863-3835

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: July 28, 2015. No comment until the project has commenced operation.

Town of Westminster Conservation Commission

Bob N. Maki, Conservation Agent
11 South Street
Westminster, MA 01473
bmaki@westminster-ma.gov
978-874-7413

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: July 28, 2015. Follow up requested regarding whether or not repairs have been made to the dam.

National Park Service, Rivers and Special Studies Branch

Kevin Mendik
National Park Service NER
Hydro Program Manager
15 State Street, 10th Floor
Boston MA 02109
Kevin_mendik@nps.gov
(617) 223-5299

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: NPS has no comment.

Environmental Protection Agency

Ralph Abele
Environmental Protection Agency
Mailcode CWQ
1 Congress Street, Suite 1100
Boston, MA 02144-2023
abele.ralph@epa.gov
(617) 918-1629

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: No response received as of July 29, 2015.

Massachusetts State Historic Preservation Office

Edward Bell
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125
Ed.Bell@sec.state.ma.us
(617) 727-8470

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: No response received as of July 29, 2015.

Massachusetts Department of Conservation and Recreation

Karst Hoogeboom
Deputy Commissioner of Planning and Engineering
251 Causeway Street, Suite 600
Boston, MA 02114-2104
Karst.Hoogeboom@state.ma.us
(617) 626-1250

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: No response received as of July 29, 2015.

U.S. Army Corps of Engineers

Christine Godfrey
New England Regulatory District
696 Virginia Road
Concord, MA 01742-2718
Christine.godfrey@usace.army.mil
(978) 318-8335

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: No response received as of July 29, 2015.

Massachusetts Department of Environmental Protection

Mr. Robert Kubit
Central Regional Office
Division of Watershed Management
67 Main Street, 2nd Floor
Worcester, MA 01608
Robert.kubit@state.ma.us
(617) 626-1700

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: No response received as of July 29, 2015.

U.S. Fish and Wildlife Service, New England Field Office

Melissa Grader
c/o CT River Coordinator's Office
103 East Plumtree Road
Sunderland, MA 01375
Melissa_grader@fws.gov
(413) 548-8002, x124

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: No response received as of July 29, 2015.

Massachusetts Division of Fisheries and Wildlife

Caleb Slater, PhD
Anadromous Fish Project Leader
100 Hartwell Street, Suite 230
West Boylston, MA 01583
Caleb.slater@state.ma.us
(508) 389-6331

Date and Reason for Most Recent Contact: July 27, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: July 28, 2015. No objection to the LIHI certification is the project is constructed as licensed.

U.S. Fish and Wildlife Service

John Warner
Assistant Supervisor Federal Activities/Endangered Species
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301
John_Warner@fws.gov
(603) 223-2541, x15

Date and Reason for Most Recent Contact: July 28, 2015. Request for comment for inclusion in the LIHI application.
Date response received and content of response: No response received as of July 29, 2015.

APPENDIX 3-1

Crocker Dam Hydroelectric Project

Description of the Facility

The Crocker Dam hydroelectric project

On August 29, 2011, Whitman River Dam, Inc. (Whitman) filed an application for an original license to construct, operate and maintain its proposed Crocker Dam Hydroelectric Project No. 13237 (Crocker Dam Project or project). The 145 kW project will be located at the existing Crocker Pond dam, on the Whitman River, near the town of Westminster, in Worcester County, Massachusetts.

On August 31, 2012 Whitman River Dam, Inc. was issued a 40-year license to construct, operate and maintain the Crocker Dam project.

The proposed project will consist of : (1) the existing 520-foot-long, 38.5-foot-high earthen embankment and masonry Crocker Pond dam with a 120-foot-long arched spillway section currently topped with 26-inch-high wooden flashboards; (2) an existing 102.9-acre impoundment with normal water surface elevation of 752.66 feet above mean sea level (msl); an existing 8-foot-wide, 12-foot-high floodgate; (3) an existing 3-foot-wide, 3-foot-high mud gate; (4) an existing gate house equipped with an existing 47-foot-long, 42-inch-diameter penstock and a new 18-foot-wide, 6.5-foot-high metal trashrack with 1-inch-wide bar spacing; (5) a 42-inch-diameter penstock extension; (6) a new powerhouse containing one 145-kW turbine generating unit; (7) a new 20-foot-wide, 6-foot-deep, 35-foot-long tailrace; (8) a new 240-foot-long, 480-volt (V) transmission line; and (9) appurtenant facilities.

The project boundary encloses the dam, impoundment, gates and gate house, penstock, powerhouse, tailrace, and a portion of the transmission line.

The project license authorizes 145 kW of renewable energy and requires a number of measures to protect and enhance environmental resources at the project. These measures include: (1) run-of-river operation with operation compliance monitoring; (2) water quality monitoring; (3) erosion and sediment control; (4) minimum flows during impoundment refilling; (5) a trashrack to

avoid fish entrainment; and (6) consultation if previously unidentified archaeological or historic properties are discovered during the course of constructing, operating, or maintaining project works.

APPENDIX 3-2

Crocker Dam Hydroelectric Project

Mode of Operation

The licensee will operate the Crocker Dam Hydroelectric Project in a run-of-river mode for the protection of water quality, aquatic resources, and aesthetic values in the Whitman River. The licensee, in operating the project in a run-of-river mode, at all times will maintain discharges from the project so that the flow in the Whitman River, as measured immediately downstream of the Lower Crocker Dam Hydroelectric Project powerhouse, approximates the instantaneous flows in the Whitman River as measured upstream of the Crocker Dam. Run-of-river operation may be temporarily modified, if required, by operating emergencies beyond the control of the licensee, or for short periods as required by the project existing Water Supply Contract (see Appendix 3-3) upon mutual agreement between the licensee and the Massachusetts Division of Fisheries and Wildlife.

APPENDIX 3-3

Crocker Dam Hydroelectric Project

FIRST AMENDMENT TO WATER RIGHTS AND ACCESS AGREEMENT DATED May 16, 2002

Copy of the first amendment to water rights and access agreement dated May 16, 2002 may be found on the portion of the LIHI website devoted to the Crocker Dam application and is titled "Appendix 3-3_Water Rights Agreement 2002_05_16."

APPENDIX 3-4

Crocker Dam Hydroelectric Project

Locations of Existing and Proposed Major Items of the Facility

The major components of the Crocker Dam Hydroelectric Project may be viewed on Goggle Earth and may be found at the following latitudes and longitudes:

Facility	Latitude	Longitude
Earthen embankment and masonry Crocker Pond dam	42^0 34'8.47" N	71^0 52'51.95" W
8-foot-wide, 12-foot-high floodgate	42^0 34'8.83" N	71^0 52'51.33"W
47-foot-long, 42-inch-diameter penstock	42^0 34'8.49" N	71^0 52'51.07" W
Gatehouse	42^0 34'8.74" N	71^0 52'51.10" W
Powerhouse (proposed)	42^0 34'8.25" N	71^0 52'50.91" W
Tailrace	42^0 34'7.80" N	71^0 52'50.88" W

APPENDIX 3-5

Crocker Dam Hydroelectric Project

Site Plan of the Facility

The site plan of the Crocker Dam Hydroelectric Project may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled “Appendix 3-4 Site Plan of the Facility.”

APPENIDX A

Crocker Dam Hydroelectric Project

Flows

The Crocker Pond Dam was built in 1933 to form Crocker Pond, a water supply that historically served the Crocker Paper Company and its predecessors for manufacturing purposes. Current downstream water uses include paper manufacturing and hydropower generation. Crocker Pond comprises an area of approximately 105 acres. The normal pool storage is approximately 1,027 acre-feet, while maximum pool storage is 1.835 acre-feet. Head at the dam is 38.5 feet with the top of the boards given at reference elevation (local datum) of 124.6 feet. The tail water level is 86.1 feet. The depth of the impoundment is approximately 25 feet at the dam.

The contributing watershed to Crocker Pond is approximately 20.33 square miles and includes the Whitman River, Muddy Pond, Whitmanville Reservoir, Lake Wampanoag, Whitney Pond and several unnamed and perennial and intermittent streams. The watershed includes portions of Westminster, Ashburnam and Gardner, Massachusetts.

The Whitman River begins at the outlet of Lake Wampanoag and terminates at Snow Mill's Pond in Fitchburg, MA at the confluence of the North Nashua River. The river is approximately 6.7 miles in length.

The bypass reach at the project is approximately 140 feet long consisting of bedrock, ledge and large boulders.

APPENIDX B

Crocker Dam Hydroelectric Project

Water Quality

The Crocker Dam Hydroelectric Project received a water quality certification from the Massachusetts Department of Environmental Protection ("MDEP") dated February 4, 2011. See Appendix B-1. In order to assure flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations), Whitman River Dam, Inc., the projected licensee, will prepare, on the schedule requested by MDEP, the following plans:

(1) Within three months of completion of turbine installation at the dam, or upon such other schedule established by FERC, Whitman River Dam, Inc. will submit a plan for monitoring run-of-river operation including pond level and flow releases from the project to MDEP for approval. The plan will include: a description and design of the mechanisms and structures that will be used; a description of periodic maintenance and/or calibration that will be conducted to ensure these mechanisms and structures work properly; a description of the method used to record project operation data for verification of proper operations and minimum flow releases; and a description of the manner in which data will be maintained for inspection by MDEP and the state and federal resource agencies. Whitman River Dam, Inc. will consult with the state and federal resource agencies in developing these plans, shall respond to all agency comments, and shall include agency comment letters when submitting the plans to MDEP for approval. Whitman River Dam, Inc. shall provide the state and federal resource agencies with at least thirty days to respond to a draft plan before it is submitted to MDEP for approval. Whitman River Dam, Inc. will implement the plan as approved by MDEP.

(2) Within three months of completion of turbine installation at the dam, Whitman River Dam, Inc. shall submit a plan of operations to insure dissolved oxygen levels in the Whitman River remain above 6 mg/l at all times. Operations shall include at a minimum, monitoring dissolved oxygen and temperature at stations South 1 and South 2 (identified during summer 2010 sampling) upon turbine discharge and during any

adjustments necessary to maintain the 6 mg/l standard. Adjustments could include providing continuous spill during the summer months (July – September) or improving aeration at the outlet, if needed. Whitman River Dam, Inc. shall consult with state and federal resource agencies in developing this plan, shall respond to all agency comments, and shall include agency comment letters when submitting the plans to MDEP for approval. Whitman River Dam, Inc. shall provide the state and federal resource agencies with at least thirty days to respond to a draft plan before it is submitted to MDEP for approval. Whitman River Dam, Inc. will implement the plan as approved by MDEP.

(3) Within one year of the effective date of the water quality certification, or upon such other scheduled as established by FERC, Whitman River Dam, Inc. shall install full-depth, one inch clear trash racks with velocities les than or equal to two feet per second (≤ 2 fps) at the intake to reduce impingement and entrainment of fish at the project.

Whitman River Dam, Inc. respectfully requests that the successful and timely completion of the above plans be included as a condition in its LIHI certification. LIHI will be copied on all correspondence concerning the plans and MDEP's approval of the plans will be forwarded to LIHI upon receipt.

APPENDIX B-1

Crocker Dam Hydroelectric Project

Water Quality Certification
Issued February 4, 2011

The water quality certification for the proposed Crocker Dam Hydroelectric Project issued by the Massachusetts Department of Environmental Protection may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled "Appendix 3-4 Site Plan of the Facility."

APPENDIX C

Crocker Dam Hydroelectric Project

Fish Passage and Protection

The facility is in compliance with mandatory fish passage prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by resource agencies after December 31, 1986.

Section 18 of the Act provides the Secretary of Interior the authority to prescribe fishways.[2] Although fish passage facilities were not recommended by Interior at the time of project licensing, the Commission included license articles which reserve Interior's prescription authority.[3] The FERC recognized that future fish passage needs and management objectives cannot always be predicted at the time of license issuance. Therefore, the licenses issued for this project were conditioned to reserve Interior's authority to prescribe fishways.

Fish passage was not requested by any state or federal agency during the FERC licensing process (see Appendix 1-4) nor was it required as a condition of FERC license No. 13237. Caleb Slater, Anadromous Fish Project Leader with the Massachusetts Division of Fishers and Wildlife (MDFW) stated in his comment letter dated February 2, 2010 that no anadromous or catadromous fish species are present in the vicinity of the project. (see Appendix C-1) Due to ongoing fish restoration efforts, MDFW reserved its right to prescribe fish passage requirements at some time in the future.

[2] Section 18 of the Federal Power Act provides: "The Commission shall require construction, maintenance, and operation by a licensee at its own expense ... such fishways as may be prescribed by the Secretary of Commerce or the Secretary of Interior as appropriate."

[3] Lynchburg Hydro Associates, 39 FERC 61,079 (1987).

APPENDIX C-1

Crocker Dam Hydroelectric Project

Comments from Massachusetts Division of Fisheries and Wildlife Issued June 20, 2011

Comments issued by the Massachusetts Division of Fishers and Wildlife during the FERC licensing process may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled "Appendix C-1 MDFW Comments."

APPENDIX C-2

Crocker Dam Hydroelectric Project

Comments from Massachusetts Division of Fisheries and Wildlife on Crocker Dam Hydroelectric LIHI application Issued July 28, 2015

Comments issued by the Massachusetts Division of Fishers and Wildlife requested in conjunction with the Crocker Dam Hydroelectric Project application for low impact certification may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled "Appendix C-2 MDFW LIHI Comments 2015_07_28."

APPENDIX C-3

Crocker Dam Hydroelectric Project

Comments from NOAA Habitat Conservation on Crocker Dam Hydroelectric LIHI application Issued July 28, 2015

Comments issued by the NOAA Habitat Conservation requested in conjunction with the Crocker Dam Hydroelectric Project application for low impact certification may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled “Appendix C-3 NOAA LIHI Comments 2015_07_28.”

APPENDIX D

Crocker Dam Hydroelectric Project

Watershed Protection

The Crocker Dam Hydroelectric project is located in the Nashua Valley in Westminster, Massachusetts. The boundaries of the Nashua River Valley are the Wachusetts range of mountains on the east, and to a lesser extent a lower range of mountains from Shrewsbury and Worcester on the South to the northern boundary of the Nashua River at the northern boundary of the state in Tyngsborough. The project is located on the Whitman River, a tributary to the North Nashua River about 10 miles northeast of the confluence of the Whitman River and the North Nashua River. The Nashua River drains a large area of central Massachusetts and flows into the Merrimac River at Pepperell and Dunstable and then to the Atlantic Ocean at Newburyport, Massachusetts.

The Crocker Dam Hydroelectric project will not modify the Whitman River except to excavate for a portion of the powerhouse and to create a discharge zone from the powerhouse. The construction project will only require the construction of the powerhouse and draft tube underground and slightly into the land adjacent to the stream course. Construction of the draft tube will require the installation of an inflatable cofferdam on the water side of the excavation, then all work will be accomplished in the dry on the left riverbank downstream of the dam. Because so little of the project area will be disturbed during construction and for a very short time, no change in the existing conditions are anticipated for the project and therefoire no issues of stability, mass soil movement or erosion is anticipated because the existing facilities have been in place since the 1930's.

There are no plans to modify the existing reservoir or the existing reservoir operation which is run of river. The project reservoir has existed in its present form since the 1930's when it was rebuilt on the site of a prior water storage dam. The side slopes of the reservoir at water's edge are shallow and have heavy vegetative cover of wood lands, brush and weedy thicket type sub-growth. The spillway is built of concrete placed on granite bed rock and has been of this design since the 1930'd. No erosion or change in river flow is anticipated as a result of the installation of the Crocker Pond Dam Hydroelectric Project.

There is no anticipated soil movement or other forms of instability evident in the area, and none is anticipate because future project operation will be identical to the current river operation to date. The project has existed in its present form since the 1930's. Normal river flow will result in a discharge over the spillway or through a waste gate even when the proposed generator is running. The discharge of the generator is into the pool at the base of the spillway and so, irrespective of the river flow, water will always flow into the pool at the base of the spillway. Flow through the project will be run of the river and therefore no changes to the existing river flow characteristics as a result of the project's operation.

APPENDIX E

Crocker Dam Hydroelectric Project

Threatened and Endangered Species Protection

There are no threatened or endangered species listed under state or federal Endangered Species Acts present in the facility area and/or the downstream reach. The applicant requested comments from the United States Fish and Wildlife Service during its application for a license. On April 16, 2012, Thomas R. Chapman confirmed via letter to the FERC that no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area. (see Appendix E-1) Furthermore, the applicant has requested comment from Mr. John Warner of the USFWS for confirmation that Mr. Chapman's no impact statement in 2012 is still accurate. (see Appendix E-2). Mr. Warner's comments will be forwarded to LIHI upon receipt. (A website link to an updated list of threatened and endangered species can be found in the footnote at the end of this Appendix).[4]

With regard to state listed species, Priority and Estimated Habitats have been delineated by the Natural Heritage and Endangered Species Program of the Division of Fisheries and Wildlife. These layers are used for screening Projects and Activities that may impact state-listed rare species and their habitats. Priority and Estimated Habitat maps have been delineated based on the Best Scientific Evidence Available and according to the regulations of the Massachusetts Endangered Species Act (321 CMR 10.12). Based on the attached map of the project area (see Appendix E-3) which can be found online using the following link: http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm no priority or estimated habitat for state-listed rare species exists within the project boundary.

[4] The Maine Department of Island Fisheries and Wildlife maintains a list of threatened and endangered species on its website at http://www.fws.gov/newengland/pdfs/MA%20species%20by%20town.pdf The following species are listed as threatened or endangered in Worcester County. None are found in the Whitman River.

Worcester County Proposed Endangered Species	Northen Long Eared Bat
Worcester County Threatened Species	Small whorled Pogonia (Laconia, MA only)

APPENDIX E-1

Crocker Dam Hydroelectric Project

Comments from USFWS during the FERC licensing process regarding the presence of threatened or Endangered Species Issued April 16, 2012

Comments issued by USFWS regarding the project's impact on threatened or endangered species requested in conjunction with the Crocker Dam Hydroelectric Project's FERC license application may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled "Appendix E-1 USFWS FERC Comments 2012_04_16."

APPENDIX E-2

Crocker Dam Hydroelectric Project

Request for comments during the LIHI application from USFWS regarding the presence of threatened or Endangered Species Requested July 28, 2015

Comments requested from USFWS regarding the project's impact on threatened or endangered species may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled "Appendix E-2 USFWS LIHI Request for Comments 2015_07_28."

APPENDIX E-3

Crocker Dam Hydroelectric Project

State Map of Priority or Estimated habitat for state-listed rare species
Printed July 28, 2015

A Massachusetts State Map of priority or estimated habitat for state-listed rare species may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled “Appendix E-3 MA Rare Species Map 2015_07_28.”

APPENDIX F

Crocker Dam Hydroelectric Project

Cultural Resource Protection

The facility in compliance with all requirements regarding cultural resource protection, mitigation or enhancement included in its FERC license. In a letter filed on September 29, 2009, Edward Bell with the Massachusetts Historic Commission stated that the proposed Crocker Dam Hydroelectric Project is unlikely to affect any significant historic properties and made a determination of "no historic properties affected." (see Appendix F-1) The applicant reached out to Mr. Bell on July 27, 2015 to confirm his no impact statement made in 2009 is still accurate. (see Appendix F-2) His response will be forwarded to LIHI upon receipt.

In view of the results of discovery efforts and the SHPO's determination, the FERC determined that construction, operation and maintenance of the Crocker Dam Hydroelectric Project would not affect historic properties. Article 403 requires Whitman River Dam, Inc. to stop work and consult with the Massachusetts SHPO if previously unidentified cultural resources are discovered during initial project construction or operation. Likewise, Article 404 requires Whitman River Dam, Inc. to consult with the Massachusetts SHPO prior to conducting any maintenance activities, land-clearing or land-disturbing activities, or changes to project operations or facilities that may occur during the term of the license that are not authorized under the license but could affect cultural resources.

APPENDIX F-1

Crocker Dam Hydroelectric Project

Massachusetts Historical Commission comments during the LIHI application regarding the presence of cultural or archaeologically significant resources
Issued September 24, 2009

MA Historical Commission determination of "no historic properties affected" by the development of the Croker Dam Hydroelectric Project may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled "Appendix F-1 MHC Comments 2009_9_24."

APPENDIX F-2

Crocker Dam Hydroelectric Project

Request for comments during the LIHI application from MA Historic Commission regarding the presence of cultural or archaeologically significant resources Requested July 28, 2015

Comments requested from MA Historical Commission regarding the presence of culturally or archaeologically significant resources in the project vicinity may be found on the portion of the LIHI website devoted to the Crocker Dam Hydroelectric Project application and is titled “Appendix E-2 MHC LIHI Request for Comments 2015_07_27.”

APPENDIX G

Crocker Dam Hydroelectric Project

Recreation

Recreational access was not included as a requirement in the Crocker Dam Hydroelectric Project FERC license No. 13237. The applicant was exempted from the filing of the FERC Form 80 recreation report. The licensee will, however, in accordance with Article 13 of the terms and conditions of the license "so far as it is consistent with the proper operation of the project, allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting."

In accordance with the June 20, 2011 comment letter from Caleb Slater of the Massachusetts Division of Fisheries and Wildlife, Whitman River Dam, Inc., (see Appendix C-1) the Licensee, will allow public access to project lands, where appropriate, for fishing and boating. The Licensee will investigate the need for a canoe take out above the dam as well as a portage route and put in below the dam. If deemed necessary, the Licensee will install the aforementioned recreational facilities.

APPENDIX H

Crocker Dam Hydroelectric Project

Facilities Recommended for Removal

There is no resource agency recommendation for removal of the dams associated with the facility.