# Mechanicsville Hydropower Facility

## *Recertification Application to the Low Impact Hydropower Institute*

LIHI #74 and FERC Project No. 9611

*Prepared by*

Rolland Zeleny

Saywatt Hydroelectric, LLC

November 20, 2016

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**INTRODUCTION**

This is an application to the Low Impact Hydropower Institute (LIHI) for recertification of Mechanicsville hydroelectric, relative to a previous LIHI certification that expired July 27, 2016. There have been no material changes in the facility design or operation since the most recent LIHI review that was concluded in December 2015 (reference Fred Ayers' letter dated May 3, 2012). There also have been no material changes in the environmental conditions in the project vicinity since that most recent LIHI review. The only material changes that have occurred recently are in the revised LIHI certification criteria described in the 2016 version of LIHI's certification handbook.

I have reviewed the project description for Mechanicsville that is posted on the LIHI website and determined that it is an accurate representation of the subject facility. The information provided in this recertification application provides an update to support a new LIHI certification.

**PART I. FACILITY DESCRIPTION**

The Mechanicsville Hydroelectric Project (the "Project"), exempted from licensing by the Federal Energy Regulatory Commission ("FERC") as Project No. P-9611, is owned by Saywatt Hydroelectric, LLC. The Project is located on the French River in the Town of Thompson, Windham County, Connecticut. The Project is 1000 feet upstream from the confluence of the French River into the Quinebaug River. The French River joins the Quinebaug River, which eventually joins with the Shetucket and forms the Thames River. The Thames River flows into Long Island Sound in New London, Connecticut.

The major Project works consist of a dam and impoundment, an intake structure and a powerhouse. Specifically, the Project consists of: (1) a granite block dam, 200 feet long with a height of 20 feet to the top of the bridge structure, 13 feet to the top of the permanent crest elevation of 301.5 feet mean sea level (msl) and 15 feet to the top of the flashboard elevation of 303.5 feet msl, (2) an impoundment approximately 3,900 feet long, with a surface area of 48 acres and 256 acre-feet gross storage, (3) a brick and concrete powerhouse with a turbine-generator capacity of 337 kW, (4) a 35-foot long forebay with an average width of 30 feet and depth of 8.5 feet, (5) a 100 feet long by 55 feet wide tailrace, and (6) three 100 kVA transformers, which convert 480V three phase power up to 23.0 kV, which travel out on a 900 feet long Eversource Energy transmission line.

The powerhouse is located adjacent to the dam. The plunge pool at the base of the dam is in constant communication with the tailrace and downstream river flow.

The Mechanicsville Hydroelectric Project is located about nine miles downstream from another hydroelectric project on the French River in Webster, MA. Two other projects are located about three miles downstream on the Quinebaug River in Putnam, CT. One of the Putnam projects, Putnam Hydro, has received LIHI certification.

**Table 1. Facility Description Information for the Mechanicsville Hydropower Facility (LIHI #74). Table B-1.**

| ***Information Type*** | ***Variable Description*** | ***Response (add references where needed to expand on the response)*** |
|---|---|---|
| ***Name of the Facility*** | Facility name (use FERC project name if possible) | Mechanicsville |
| ***Location*** | River name (USGS proper name) | French River |
| | River basin name | Thames River basin |
| | Nearest town, county, and state | Thompson, Windham County, Connecticut |
| | River mile of dam above next major river | USACE West Thompson Dam 0.5 Miles |
| | Geographic latitude | $41^0$ 56'35.25" N |

| | | |
|---|---|---|
| | Geographic longitude | $71^0$ 53'41.35" W |
| ***Facility Owner*** | Application contact names: | Rolland Zeleny, Saywatt Hydroelectric, LLC |
| | - Facility owner (individual and company names) | (same as above) |
| | - Operating affiliate (if different from owner) | (same as above) |
| | - Representative in LIHI certification | (same as above) |
| ***Regulatory Status*** | FERC Project Number (e.g., P-xxxxx), issuance and expiration dates | P-9611 |
| | FERC license type or special classification (e.g., "qualified conduit") | Exemption issued Jan. 27, 1988 |
| | Water Quality Certificate identifier and issuance date, plus source agency name | See Appendix A: CT DEEP letter dated July 11, 2011 & USFWS Melissa Grader Emails dated October 29, 2013 |
| | Hyperlinks to key electronic records on FERC e-library website (e.g., most recent Commission Orders, WQC, ESA documents, etc.) | http://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=12930061 |
| ***Power Plant Character-istics*** | Date of initial operation (past or future for operational applications) | 1989 |
| | Total name-plate capacity (MW) | 0.337 MW |
| | Average annual generation (MWh) | 950 MWh |
| | Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit | Two Units:<br>• One Hydrolec T-15 Vertical Semi-Kaplan, 225 kW, Min Flow: 64 CFS, Max Flow: 260 CFS<br>• One S. Morgan Smith 36 Type "O" Vertical Francis, 112 kW, Min Flow: 38 CFS, Max Flow: 120 |
| | Modes of operation (run-of-river, peaking, pulsing, seasonal storage, etc.) | Run-of-River |
| | Dates and types of major equipment upgrades | Installation of 112-kW Unit No. 2: March 2013 |
| | Dates, purpose, and type of any recent operational changes | None |
| | Plans, authorization, and regulatory activities for any facility upgrades | FERC Authorization of Amendment to install U2: March 29, 2012 |
| ***Character-istics of Dam, Diversion, or Conduit*** | Date of construction | Dam mid-1800s & Powerhouse 1922 |
| | Dam height | 15 ft to top of two-foot flashboards |
| | Spillway elevation and hydraulic capacity | 303.5 MSL, Hydraulic Capacity: Estimated at 3600 CFS |
| | Tailwater elevation | 288.5 MSL |

| | | |
|---|---|---|
| | Length and type of all penstocks and water conveyance structures between reservoir and powerhouse | A 35-foot long forebay with an average width of 30 feet and depth of 8.5 feet |
| | Dates and types of major, generation-related infrastructure improvements to dam | Dam bridge deck, piers and abutments rehabilitated in 1997 |
| | Designated facility purposes (e.g., power, navigation, flood control, water suppy, etc.) | Hydropower |
| | Water source | French River |
| | Water discharge location or facility | French River |
| ***Charact-eristics of Reservoir and Watershed*** | Gross volume and surface area at full pool | 44-acre reservoir with a 256-acre-foot storage capacity |
| | Maximum water surface elevation (ft. MSL) | 306 ft. MSL |
| | Maximum and minimum volume and water surface elevations for designated power pool, if available | Not available |
| | Upstream dam(s) by name, ownership, FERC number (if applicable), and river mile | • Grosvenordale, Town of Thompson, 2.4 miles<br>• N. Grosvenordale, Rivermill, 4.3 miles<br>• Wilsonville, Town of Thompson, 5.9 miles<br>• Perryville, Unknown, 6.9 miles<br>• South Webster, William Faye, 9.2 miles<br>• North Village Webster, Ware River Power, 10.4 miles<br>• Two USACE Dams in Oxford, MA ~18 miles |
| | Downstream dam(s) by name, ownership, FERC number (if applicable), and river mile | Metal Selling Company (M.S.C.), Energy Stream, LLC, P-5679, Putnam CT, 1.9 Miles<br><br>Putnam Hydro, Charles Rosenfield, P-5645, Putnam CT, 2 Miles |
| | Operating agreements with upstream or downstream reservoirs that affect water availability, if any, and facility operation | None. |
| | Area inside FERC project boundary, where appropriate | 4 acres |
| | Average annual flow at the dam | 234 cfs (average), 145 cfs (median) |

| | | |
|---|---|---|
| ***Hydrologic Setting*** | Average monthly flows | JAN 245, FEB 233, MAR 398, APR 418, MAY 194, JUN 202, JUL 99, AUG 76, SEP 97, OCT 157, NOV 208, DEC 295 |
| | Location and name of relevant stream gauging stations above and below the facility | Upstream gage: Webster USGS 01125000; Downstream gage: Putnam USGS 01125500 |
| | Watershed area at the dam | 112 sq. miles |
| ***Designated Zones of Effect*** | Number of zones of effect | Two |
| | Upstream and downstream locations by river miles | Zone 1: RM zero to RM 0.2<br>Zone 2: RM 0.1 to RM zero |
| | Type of waterbody (river, impoundment, by-passed reach, etc.) | Zone 1: river<br>Zone 2: impoundment |
| | Delimiting structures | Zone 1: Mechanicsville dam down to French River confluence with Quinebaug River<br>Zone 2: impoundment headwater down to Mechanicsville dam |
| | Designated uses by state water quality agency | |
| ***Additional Contact Information*** | Names, addresses, phone numbers, and e-mail for local state and federal resource agencies | See attached LIHI Facility Contact Form |
| | Names, addresses, phone numbers, and e-mail for local non-governmental stakeholders | See attached LIHI Facility Contact Form |
| ***Photographs and Maps*** | Photographs of key features of the facility and each of the designated zones of effect | See Saywatt LIHI Application dated Jan 2011 2 |
| | Maps, aerial photos, and/or plan view diagrams of facility area and river basin | See Saywatt LIHI Application dated Jan 2011 2 |

**PART II. STANDARDS SELECTION**

There are two designated zones of effect for this application. Zone 1 is defined as extending from the power plant intake on the upstream of the dam downstream to the confluence of the French and Quinebaug rivers. Zone 2 is defined at the impoundment from the railroad crossing down to the intake for the power plant. These zones are shown in Figure 1. The standards selected to satisfy the LIHI certification criteria in these zones are identify in the following tables.

**FIGURE 1**


**Table 1. LIHI standards selected for Zone of Effect No. 1.**

| | | *Alternative Standards Applied* | | | | |
|---|---|---|---|---|---|---|
| | ***Criterion*** | ***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 | | | | |

**Table 1. LIHI standards selected for Zone of Effect No. 2.**

| | | *Alternative Standards Applied* | | | | |
|---|---|---|---|---|---|---|
| | ***Criterion*** | ***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 | | | | |

**PART III. SUPPORTING INFORMATION**

This section contains information that explains and justifies the standards selected to pass the LIHI certification criteria (see Part II for selections).

### *III.A.1 Ecological Flow Standard for Zone 1.*

**Table III-1. Information Required to Support Ecological Flows Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *A* | *2* | *Agency Recommendation:*<br>• *Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent).*<br>• *Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.*<br>• *Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.*<br>• *Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).* |

Source and Date: FERC Exemption 1988 as Amended 2012, Dept of Interior USFWS and CT DEEP
Recommendation: Operate the facility in Run-Of-River mode. Release a minimum 22 CFS through the dam at all times.

Fish and Wildlife resource agencies have agreed that the 22 CFS flows are adequate to protect the area below the dam.

### *III.A.2 Ecological Flow Standard for Zone 2.*

**Table III-2. Information Required to Support Ecological Flows Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *A* | *1* | *Not Applicable / De Minimis Effect:*<br>• *Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility.*<br>• *If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained.*<br>• *In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located.*<br>• *For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – **NOTE:** this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.* |

Source and Date: FERC Exemption 1988 as Amended 2012, Dept of Interior USFWS and CT DEEP
Recommendation: Remove one foot of flashboards from July 1 – October 1 and release all flows below 60 CFS.

The basis for the recommendation is to improve DO levels in the impoundment above the dam. This aligns with the agencies goals of protecting aquatic life. This protects aquatic life by allowing the water in the impoundment to turn over more frequently, thus reducing temperatures and increasing DO. By lowering the water level in the pond during summer months, the acre-feet of the pond is reduced, thus water turnover is increased.

### *III.B.1 Water Quality Standard for Zone 1.*

**Table III-3. Information Required to Support Water Quality Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *B* | *2* | *Agency Recommendation:*<br>• *If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation.*<br>• *Provide a copy of the most recent Water Quality Certificate, including the date of issuance.*<br>• *Identify any other agency recommendations related to water quality and explain their scientific or technical basis.*<br>• *Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.* |

CT DEEP provided letters during initial licensing in 1988 and after an Amendment in 2012 stating that the facility is not the cause of water quality issues along the zone of effect. They are attached to the LIHI Application dated 2011. The licensee was ordered in 1988 and again in 2012 to conduct a DO study. The results of the DO tests ordered in 1988. They are attached to the LIHI Application dated 2011. The results of the studies show that the water in and around the project pass the State minimum for DO.

A search of the latest Connecticut 303(d) and 305(b) Integrated Water Quality studies reveals on page 60 that "from mouth at confluence with Quinebaug River (just DS of West Thompson Flood Control dam), US to North Grosvenordale Pond outlet dam (just US of Buckley Hill Road crossing), Thompson" the French river is "Fully Supporting" of both aquatic life and recreational use. See Link Below:

http://www.ct.gov/deep/lib/deep/water/water_quality_management/305b/2014_iwqr_305b_303d_final.pdf

The Town of Thompson's Together coalition, along with the Massachusetts-based French River Connection and other watershed stakeholders, continue action strategy development for water quality and watershed issues along the French River, and across State boundaries. Existing state and federal agency water monitoring data continues to be shared.

### *III.B.2 Water Quality Standard for Zone 2.*

**Table III-4. Information Required to Support Water Quality Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *B* | *2* | *Agency Recommendation:*<br>• *If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation.*<br>• *Provide a copy of the most recent Water Quality Certificate, including the date of issuance.*<br>• *Identify any other agency recommendations related to water quality and explain their scientific or technical basis.*<br>• *Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.* |

CT DEEP provided letters during initial licensing in 1988 and after an Amendment in 2012 stating that the facility is not the cause of water quality issues along the zone of effect. They are attached to the LIHI Application dated 2011. The licensee was ordered in 1988 and again in 2012 to conduct a DO study. The results of the DO tests ordered in 1988. They are attached to the LIHI Application dated 2011.The results of the studies show that the water in and around the project pass the State minimum for DO.

A search of the latest Connecticut 303(d) and 305(b) Integrated Water Quality studies reveals on page 60 that "from mouth at confluence with Quinebaug River (just DS of West Thompson Flood Control dam), US to North Grosvenordale Pond outlet dam (just US of Buckley Hill Road crossing), Thompson" the French river is "Fully Supporting" of both aquatic life and recreational use. See Link Below:

http://www.ct.gov/deep/lib/deep/water/water_quality_management/305b/2014_iwqr_305b_303d_final.pdf

The Town of Thompson's Together coalition, along with the Massachusetts-based French River Connection and other watershed stakeholders, continue action strategy development for water quality and watershed issues along the French River, and across State boundaries. Existing state and federal agency water monitoring data continues to be shared.

### *III.C.1 Upstream Fish Passage Standard for Zone 1.*

**Table III-5. Information Required to Support Upstream Fish Passage Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *C* | *2* | *Agency Recommendation:*<br>• *Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent).*<br>• *Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.*<br>• *Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.* |

Source: FERC Authorization of Amendment, March 2012, CT DEEP and LIHI Certification 2011

Recommendation: Deploy a Delaware style eel ladder along the face of the dam from July 1 – September.

The basis for the recommendation is to provide American Eels additional support to migrate upstream through dams. There is no monitoring plan in place.

### *III.C.2 Upstream Fish Passage Standard for Zone 2.*

There are no upstream fish passage barriers or migratory fish management issues in Zone 2 because it is an impoundment.

**Table III-6. Information Required to Support Upstream Fish Passage Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *C* | *1* | *Not Applicable / De Minimis Effect:*<br>• *Explain why the facility does not impose a barrier to upstream fish passage in the designated zone.*<br>• *Document available fish distribution data and the lack of migratory fish species in the vicinity.*<br>• *If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.* |

Source: FERC Authorization of Amendment, March 2012, CT DEEP and LIHI Certification 2011

Recommendation: Deploy a Delaware style eel ladder along the face of the dam from July 1 – September.

The basis for the recommendation is to provide American Eels additional support to migrate upstream through dams. There is no monitoring plan in place.

### *III.D.1 Downstream Fish Passage and Protection Standards for Zone 1.*

In all cases, the applicant shall list all fish species (for example, riverine, ***anadromous***, ***catadromous***, and ***potamodromous***) that occur now or have occurred historically in the area affected by the Facility.

Anadromous fish are not purported to visit these waters. The French River is known to contain such warm water species as:

American Eel
Bluegill
Largemouth Bass
Smallmouth Bass
Common Carp
Chain Pickerel
Brook Trout
Brown Trout
Rainbow Trout
Golden Shiner
Pumpkin Seed
White Sucker
Brown Bullhead

There are no downstream fish passage barriers or management issues in Zone 1, because waters leaving the Mechanicsville facility flow into the Quinebaug River, a much larger river system. Downstream fish passage issues for this application are addressed in Section III.D.2.

**Table III-7. Information Required to Support Downstream Fish Passage Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *D* | *1* | *Not Applicable / De Minimis Effect:*<br>• *Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines).*<br>• *For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.*<br>• *Document available fish distribution data and the lack of migratory fish species in the vicinity.*<br>• *If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.* |

Source: FERC Authorization of Amendment, March 2012, CT DEEP and LIHI Certification 2011

Recommendation: Cease production on rainy nights from dusk until dawn from September 1st – November 15th.

The basis for the recommendation is to provide American Eels additional support to migrate downstream through dams. There is no monitoring plan in place.

### *III.D.2 Downstream Fish Passage and Protection Standards for Zone 2.*

In all cases, the applicant shall list all fish species (for example, riverine, ***anadromous***, ***catadromous***, and ***potamodromous***) that occur now or have occurred historically in the area affected by the Facility.

Anadromous fish are not purported to visit these waters. The French River is known to contain such warm water species as:

American Eel
Bluegill
Largemouth Bass
Smallmouth Bass
Common Carp
Chain Pickerel
Brook Trout
Brown Trout
Rainbow Trout
Golden Shiner
Pumpkin Seed
White Sucker
Brown Bullhead

**Table III-8. Information Required to Support Downstream Fish Passage Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *D* | *2* | *Agency Recommendation:*<br>• *Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent).*<br>• *Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not.*<br>• *Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.* |

Source: FERC Authorization of Amendment, March 2012, CT DEEP and LIHI Certification 2011

Recommendation: Cease production on rainy nights from dusk until dawn from September 1st – November 15th.

The basis for the recommendation is to provide American Eels additional support to migrate downstream through dams. There is no monitoring plan in place.

### *III.E.1 Shoreline and Watershed Protection Standards for Zone 1.*

**Table III-9. Information Required to Support Shoreline and Watershed Protection Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *E* | *1* | *Not Applicable / De Minimis Effect:*<br>• *If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the project boundary).*<br>• *Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.* |

There are no erosion issues between zone 1 and zone 2. There are no Shoreline Management Plans in effect.

### *III.E.2 Shoreline and Watershed Protection Standards for Zone 2.*

[insert any information responsive to the introduction to the Shoreline and Watershed standards here; for example, are there any Shoreline Management Plans in effect, etc.]

**Table III-10. Information Required to Support Shoreline and Watershed Protection Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *E* | *1* | *Not Applicable / De Minimis Effect:*<br>• *If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the project boundary).*<br>• *Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.* |

There are no erosion issues between zone 1 and zone 2. There are no Shoreline Management Plans in effect.

### *III.F.1. Threatened and Endangered Species Standards for Zone 1.*

In all cases, the applicant shall identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.

**Table III-11. Information Required to Support Threatened and Endangered Species Standards**

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

The link below lists endangered species in Connecticut. A search of each link provided for each species did not reveal endangered species , which habitate in the project area.

**http://www.ct.gov/deep/cwp/view.asp?a=2723&q=326210&deepNav_GID=1655**

### *III.F.2. Threatened and Endangered Species Standards for Zone 2.*

In all cases, the applicant shall identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.

**Table III-12. Information Required to Support Threatened and Endangered Species Standards**

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

The link below lists endangered species in Connecticut. A search of each link provided for each species did not reveal endangered species , which habitate in the project area.

**http://www.ct.gov/deep/cwp/view.asp?a=2723&q=326210&deepNav_GID=1655**

*III.G.1 Cultural and Historic Resources Standards for Zone 1.*

**Table III-13. Information Required to Support Cultural and Historic Resources Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *G* | *1* | *Not Applicable / De Minimis Effect:*<br>• *Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.*<br>• *Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.* |

See the State Historic Preservation Office letter attached to the 2011 LIHI Application.

***III.G.2 Cultural and Historic Resources Standards for Zone 2.***

**Table B-14. Information Required to Support Cultural and Historic Resources Standards**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *G* | *1* | *Not Applicable / De Minimis Effect:*<br>• *Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.*<br>• *Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.* |

See the State Historic Preservation Office letter attached to the 2011 LIHI Application.

**III.H.1** *Recreational Resources Standards for Zone 1.*

**Table B-15. Information Required to Support Recreational Resources Standards**

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

There are no recreational resources in the project areas. See the section, which describes recreational issues in the 2011 LIHI application.

***III.H.2 Recreational Resources Standards for Zone 2.***

**Table B-16. Information Required to Support Recreational Resources Standards**

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

There are no recreational resources in the project areas. See the section, which describes recreational issues in the 2011 LIHI application.

**PART IV. SWORN STATEMENT AND WAIVER**

As an Authorized Representative of Saywatt Hydroelectric, LLC 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 certification of the applying facility is issued, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified.

The undersigned Applicant 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.

**PLEASE INSERT ONLY FOR PRE-OPERATIONAL CERTIFICATIONS** (See Section 4.5.3)**:**

For applications for pre-operational certification of a "new" facility the applicant must also acknowledge that the Institute may suspend or revoke the certification should the impacts of the project, once operational, fail to comply with the certification criteria.

Company Name: Saywatt Hydroelectric, LLC

Authorize Representative Name: Rolland Zeleny Title: President

State of Massachusetts )

County of Norfolk )

On this, the_____day of _____, 2016, before me a notary public, the undersigned officer, personally appeared_____, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained. In witness hereof, I hereunto set my hand and official seal.

Notary Public _____

**PART V. CONTACTS**

**1. Facility Contacts**

| **Project Owner:** | |
|---|---|
| Name and Title | Rolland Zeleny |
| Company | Saywatt Hydroelectric, LLC |
| Phone | 603-498-8089 |
| Email Address | indigoharbor@yahoo.com |
| Mailing Address | 18 Washington St., Suite 18, Canton, MA 02021 |
| **Project Operator (if different from Owner):** | |
| Name and Title | |
| Company | |
| Phone | |
| Email Address | |
| Mailing Address | |
| **Consulting Firm / Agent for LIHI Program (if different from above):** | |
| Name and Title | |
| Company | |
| Phone | |
| Email Address | |
| Mailing Address | |
| **Compliance Contact (responsible for LIHI Program requirements):** | |
| Name and Title | Same as Above |
| Company | |
| Phone | |
| Email Address | |
| Mailing Address | |
| **Party responsible for accounts payable:** | |
| Name and Title | Same As Above |
| Company | |
| Phone | |
| Email Address | |
| Mailing Address | |

**2. Current state, federal, provincial, and tribal resource agency contacts.**

| **Agency Contact** (Check area of responsibility: Flows_X_, Water Quality _X_, Fish/Wildlife Resources __, Watersheds _X_, T/E Spp. __, Cultural/Historic Resources __, Recreation __): | |
|---|---|
| Agency Name | Connecticut Department of Energy and Environmental Protection (DEEP) |
| Name and Title | Robert Hannon, Esq. |
| Phone | |
| Email address | Robert.Hannon@ct.gov |
| Mailing Address | 79 Elm Street, Hartford, CT 06106-5127 |

| **Agency Contact** (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __): | |
|---|---|
| Agency Name | Connecticut Department of Energy and Environmental Protection (DEEP) |
| Name and Title | Stephen Gephard |
| Phone | 860-447-4316 |
| Email address | steve.gephard@ct.gov |
| Mailing Address | 79 Elm Street, Hartford, CT 06106-5127 |

| **Agency Contact** (Check area of responsibility: Flows_X_, Water Quality __, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __): | |
|---|---|
| Agency Name | US Fish and Wildlife Service |
| Name and Title | Melissa Grader |
| Phone | 413-548-9138 |
| Email address | Melissa_Grader@fws.gov |
| Mailing Address | 300 Westgate Center Drive, Hadley, MA 01035 |

| **Agency Contact** (Check area of responsibility: Flows_X_, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __): | |
|---|---|
| Agency Name | Federal Energy Regulatory Commission |
| Name and Title | Cheryl LaFleur |
| Phone | 866-208-3372 |
| Email address | customer@ferc.gov |
| Mailing Address | 888 First Street, NE, Washington, DC 20426 |

| **Agency Contact** (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources _X_, Recreation __): | |
|---|---|
| Agency Name | Connecticut State Historic Preservation Office (SHPO) |
| Name and Title | |
| Phone | Hartford, Connecticut 06103 |
| Email address | 860-256-2800 |
| Mailing Address | One Constitution Plaza, 2nd Floor, |

# Appendix A

**Water Quality Certificate**

See attached letter from CT DEEP dated July 11, 2011

Letter from the US Fish and Wildlife Service:

From: Grader, Melissa <melissa_grader@fws.gov> 10/29/13 at 2:42 PM

To: Rolland Zeleny

CC: Eric Thomas

Hi Rolland,

Thank you very much for sending me the Dissolved Oxygen Monitoring Study results for the Mechanicsville Project. I have reviewed the report and results indicate that the new turbine's lower hydraulic capacity does not appear to have an adverse impact on water quality in the tailrace or bypass reach.

The redundancy built into the study methodology (using both a continuous and hand held meter) was beneficial; it provided data when the continuous logger became clogged with silt as well as at a given site during times when the continuous logger was deployed at the other site.

Having long-term monitoring was also beneficial (July through September) because it allowed for collection of data over a variety of operational and environmental conditions. The many graphs you included showing the relationships between DO, temperature, unit generation and inflow were very helpful in visualizing the raw data.

We appreciate the effort you put into providing a thorough report.

Regards,
Melissa

Melissa Grader
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service - New England Field Office
103 East Plumtree Road
Sunderland, MA 01375
413-548-8002 x124
melissa_grader@fws.gov
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"Heaven is under our feet as well as over our heads" Henry David Thoreau
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From: Grader, Melissa <melissa_grader@fws.gov> 10/29/13 at 4:11 PM

To: Rolland Zeleny

Hi Rolland,

The FWS concurs that additional monitoring at the site is not necessary at this time.

Best,
Melissa

Melissa Grader
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service - New England Field Office
103 East Plumtree Road
Sunderland, MA 01375
413-548-8002 x124
melissa_grader@fws.gov
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