# South Milton Hydropower Facility

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

LIHI #100 and FERC Project No. 3984

*Revised by*

Stephen Hickey, agent

SFR Hydro Corporation

October 25, 2017

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## INTRODUCTION

This is an application to the Low Impact Hydropower Institute (LIHI) for recertification of South Milton hydroelectric facility (LIHI #100) subsequent to a previous LIHI certification that expires September 6, 2017. An extension has been requested until LIHI completes its review. There have been no material changes in the facility design or operation since the most recent LIHI review that was concluded in 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 the installation of upstream and downstream eel passage facilities as required by the original conditions of the facility's LIHI certification and those changes in the revised LIHI certification criteria described in the 2016 version of LIHI's certification handbook.

I have reviewed the project description for South Milton facility 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 key features of the South Milton Hydroelectric Facility (the "Facility") are described in Table 1. A description of the facility can be found on the LIHI website at http://lowimpacthydro.org/lihi-certificate-100-south-milton-hydroelectric-project-milton-new-hampshire/

**Table 1. Facility Description Information for recertification of the South Milton Hydropower Facility (LIHI #100).**

| *Information Type* | *Facility Description* |
|---|---|
| ***Name of the Facility*** | • South Milton hydroelectric facility, FERC Project No. 3984 |
| ***Location*** | • Salmon River, River Mile 12.0 (of 36)<br>• Piscataqua River/NH Atlantic Coast Watershed<br>• Strafford County, New Hampshire, town of Milton<br>**Lat/Long: 43.403187, -70.986232** |
| ***Facility Owner*** | • Owner: SFR Hydro Corporation<br>• Operator: SFR Hydro Corporation<br>• Authorized Representative: Stephen Hickey, agent |
| ***Regulatory Status*** | • FERC Project Number 3984<br>• Exemption from Licensing, Issued June 30, 1981, Expires: N/A<br>• Water Quality Certification: Signoff from NH DES dated **10/24/2017**.<br>Three significant documents are:<br>**Issuing of P-3984 Exemption** See Appendix 5<br>**Flow Monitoring Plan** - http://lowimpacthydro.org/wp-content/uploads/2013/01/SFRFlowplan1.pdf<br>**Photographs and Facility Layout** – http://lowimpacthydro.org/wp-content/uploads/2013/01/Appendix-3-Project-Photographs-and-Facility-layout.pdf<br>**The applicant does not have copies of the agency terms and condition letters.** |
| ***Characteristics of the Power Plant*** | • Date of construction – Dam: 1893, Hydro: early 1900's<br>• Total name-plate capacity – 1.55 MW<br>• Average annual generation – **6.2 GWh/year (2012-2016)**<br>• Plant has four turbine/generators |

| | |
|---|---|
| | Mill Building No. 1: Turbine 1: 50 cfs max and 15 cfs min hydraulic capacity<br>Mill Building No. 1: Turbine 2: 65 cfs max and 25 cfs min hydraulic capacity<br><br>Mill Building No. 1: Turbine 3, 40 cfs max and 16 cfs min hydraulic capacity<br>Mill Building No. 2: Turbine 4, 70 cfs max and 40 cfs min hydraulic capacity<br><br>Mode of Operation: Run-of-river<br><br>**Mean sea level election of spillway: 341'**<br>**Mean seal level elevation of tailwater: 239'**<br>**Spillway hydraulic capacity: unknown** |

| ***Information Type*** | ***Facility Description*** |
|---|---|
| | • See the below links for upgrades made to the project during the term of the LIHI the certification:<br>http://lowimpacthydro.org/wp-content/uploads/2013/01/Proposed-Eel-Passage.pdf<br>• http://lowimpacthydro.org/wp-content/uploads/2013/01/SFRFlowplan1.pdf<br>• There are no planned facility upgrades at this time |
| ***Characteristics of the Dam or Diversion*** | The Milton Generating Station is a 1550 kW plant in Milton, New Hampshire near the Maine border. The site utilizes a mixture of modern and old generating equipment in a vintage powerhouse, located 984.3 feet downstream of the 164 feet long concrete gravity crib dam. At its highest point, the dam is 16.4 feet high. The annual drawdown of the upstream lakes provides a boost to energy generation at the site during fall season. The diversion structure comprises two primary elements: (1) a concrete capped stone crib and a timber spillway, approximately 15 feet high by 160 feet long completed in 1893; and (2) two new 10.5 feet wide by 6.5 feet high wooden waste gates completed in 1999. There are electric motors on the two waste gates. The intake structure is comprised of a trash rack, a custom built trash rake system (Clark Custom Hydraulic), a manually operated head gate, and transition section which feeds the penstock. The trash rake system is operated manually on a daily basis and more frequently during specific times of the year such as during the fall and during ice break-up periods. The penstock is 6' 6" diameter by approximately 3800 feet in length. The penstock is constructed of riveted steel and was installed circa 1914. The penstock was lined with cement circa 1975. The upper 1000 feet is situated above ground with the remainder buried under approximately 17.7 inches of cover. |
| ***Characteristics of Reservoir Watershed:*** | • Gross Reservoir volume: 768 acre-feet<br>Surface area: 100 acres<br>• Upper/Lower: Maximum water surface elevation (ft. MSL) – unknown – Flood of Record, April, 2007. |

| | |
|---|---|
| | • Upstream dams by name, ownership and river mile<br><br>Milton 3 Ponds Dam, NH DES, River Mile 11.5<br><br>Milton Leatherboard Dam, Milton Land Corporation, River Mile 11<br><br>**Downstream dams by name, ownership and river mile**<br><br>**Spaulding Dam, Spaulding Ave Industrial Complex, LLC, River Mile 9** |

| ***Information Type*** | ***Facility Description*** |
|---|---|
| | • Area inside project boundary – less than 100 acres. Privately owned by SFR Hydro Corp. See attached *SFR HydroTax Map.pdf* |
| ***Hydrologic Setting:*** | • Average annual flow at the dam – 163 cfs<br>• **Average Monthly flows cfs (2000-2004 based on USGS approved data):**<br>• **Jan: 109, Feb: 80, Mar: 213, Apr: 423, May: 228, Jun: 126, Jul: 49, Aug: 78, Sep: 53, Oct: 165, Nov: 186, Dec: 234**<br>• Maximum discharge of record, 5,500 cfs (estimated), occurred in 2007<br>• minimum, 30 cfs occurred in 2016.<br>• Location and name of relevant stream gauging stations above and below the facility:<br><br>USGS 01072100 SALMON FALLS RIVER AT MILTON, NH<br>Drainage is 108 sq. miles<br>**Latitude 43°24'48", Longitude 70°59'15" NAD27** |
| ***Designated Zones of Effect:*** | • The South Milton Hydroelectric Station has three Zones of Effect on the main stem of the Salmon Falls River as defined by LIHI.<br>1. The development impoundment<br>2. The bypass reach<br>3. The river below the confluence of the bypass reach and the Lower development's tailrace **up to Spaulding Pond, created by the downstream dam. Downstream impacts are the result of flow released from Spaulding Pond dam.**<br>• Attached is a map that shows the Designated Zones of Effect.<br>• According to the 2016 draft New Hampshire Department of Environmental Services 303 d list, the segment of the Salmon Falls River where the South Milton Facility is located is designated supporting aquatic life. See https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2016/documents/r-wd-17-09-app-a1.pdf **See Appendix 2 for the letter from DES supporting LIHI's re certification of the South Milton project for a list of designated uses in each Zone of Effect.** |
| ***Additional Contact*** | • **See Table V-2** for a list of names, addresses, phone numbers and e-mail for local resource agencies and non-governmental stakeholders: |

| *Information Type* | *Facility Description* |
|---|---|
| | |
| ***Photographs of the Facility*** | Photographs of key features of the facility and each of the designated zones of effect |

| *Information Type* | *Facility Description* |
|---|---|

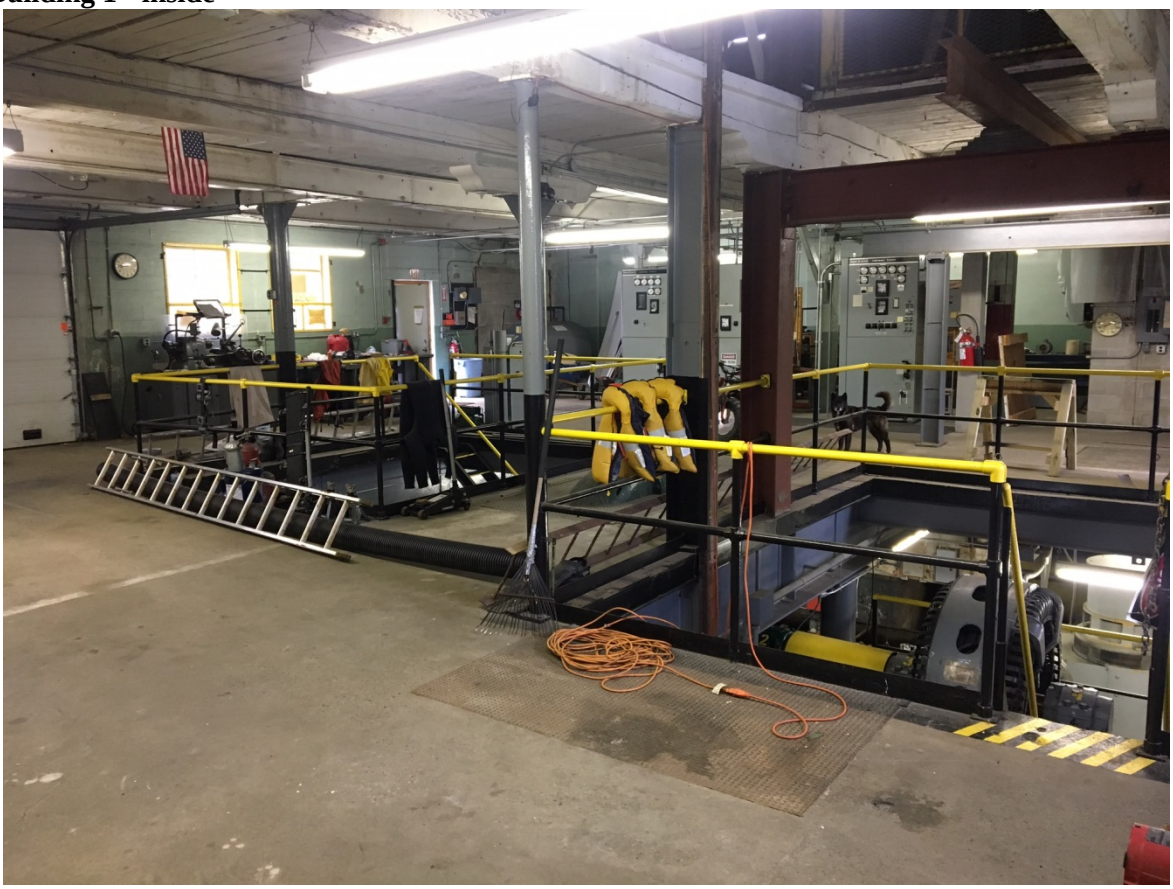
**Zone 1: Impoundment above the Dam**

**Zone 2: Bypass reach**

**Zone 3: Confluence of Tailrace and Bypass**

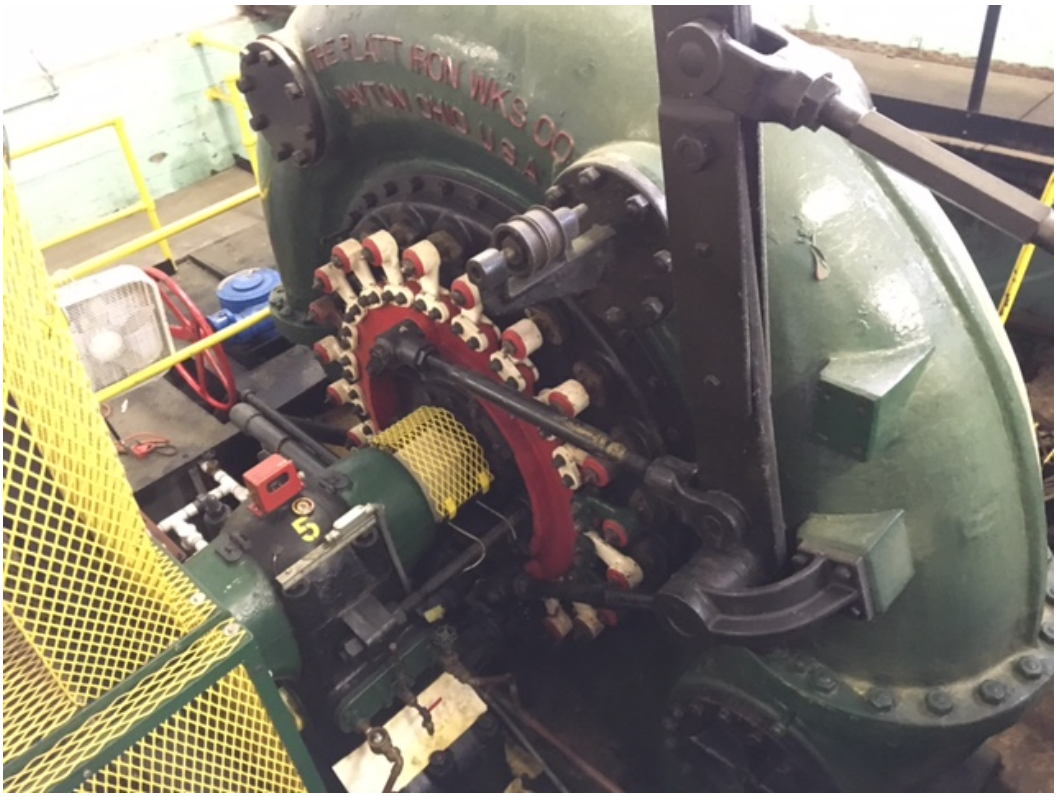
**Mill Building 1 - outside**

**Building 1 - inside**

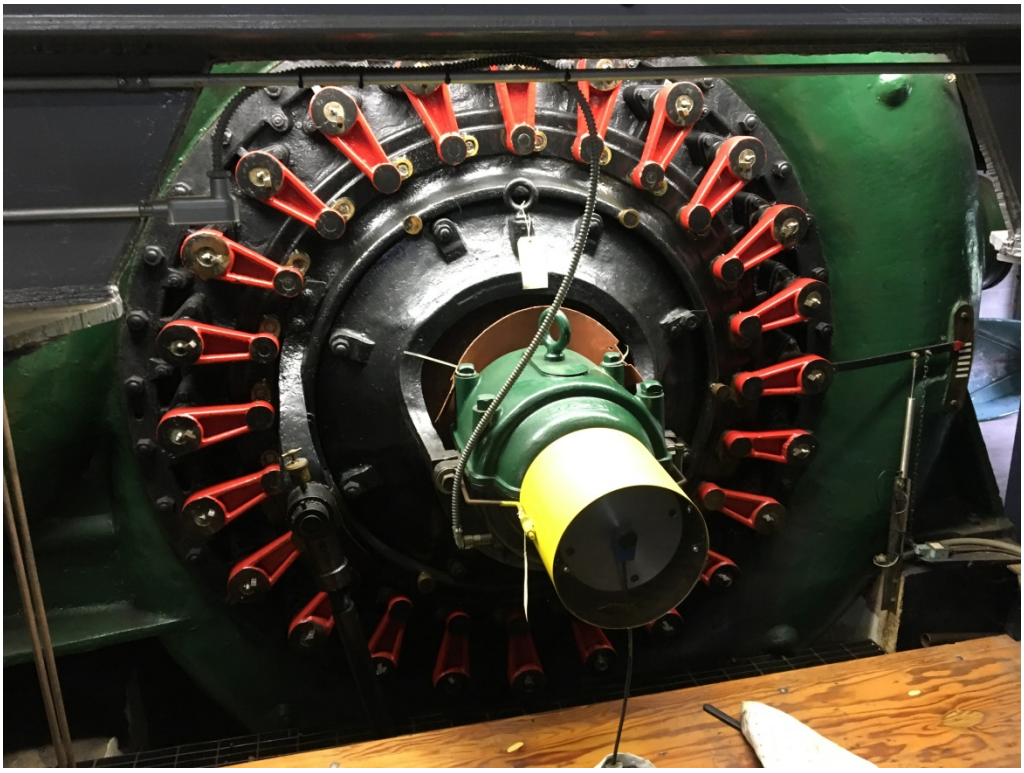


**Turbine 1**

**Turbine 2**




**Turbine 3**

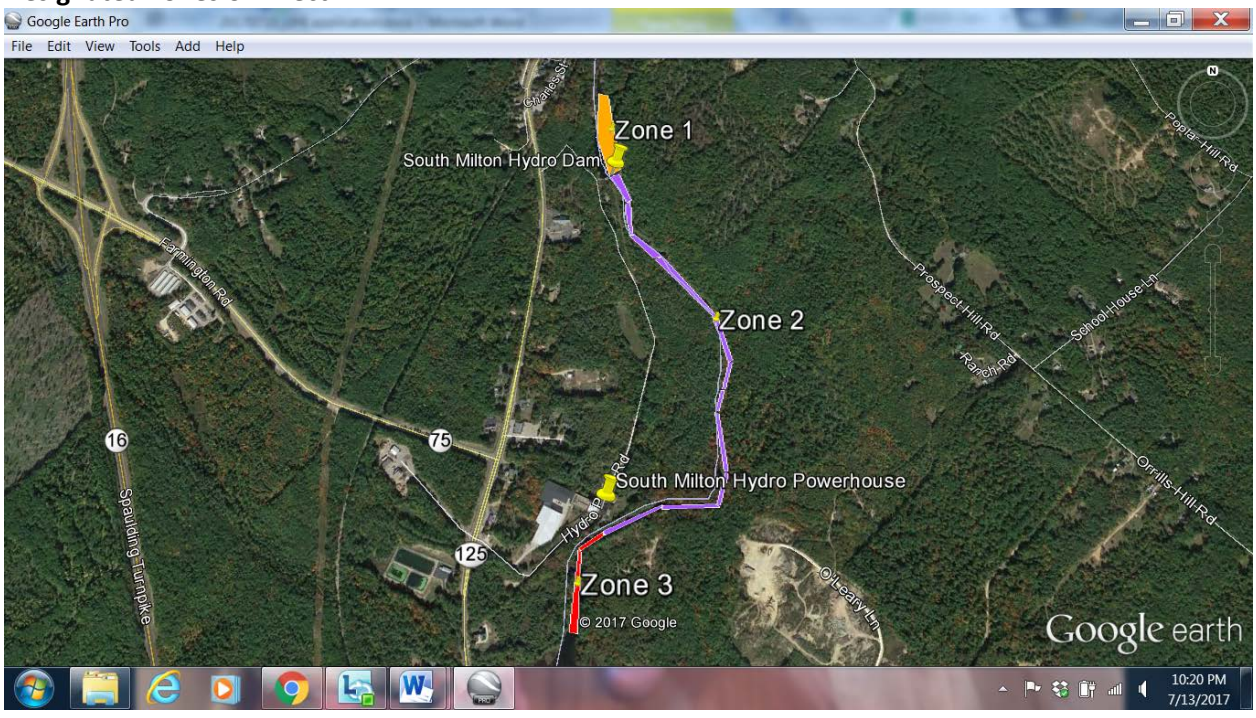


**Turbine 4**

**Mill Building 2 – outside**

**Mill Building 2 – inside**


**Designated Zones of Effect**



## PART II. STANDARDS MATRICES

There are three designated zones of effect for this application: (1) the upper impoundment including the upper dam; (2) the bypass reach below the project dam; and (3) the confluence of the project tailrace and the project bypass reach. The standards selected to satisfy the LIHI certification criteria in these zones are identify in the following tables.

**Table II-1a. LIHI standards selected for each certification criterion for Zone 1.**

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

### SUPPORTING INFORMATION for Zone 1

This section contains information that explains and justifies the standards selected to pass the LIHI certification criteria (see Table II-1a for selections).

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

The facility satisfies Standard A-**1, Not Applicable / De Minimis Effect**:, in Zone 1.

**Supporting Information Required.**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *A* | *2* | **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.** |

- ***Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility.***

  **See the above Designated Zones of Effect map for the location of the powerhouse relative to the dam. Condition A-1 was chosen as the appropriate response for Zone 1 based on feedback during the intake review.**

- ***If Run-of-River operation, provide details on how flows, water levels, and operations are monitored to ensure such an operation is maintained.***

**See http://lowimpacthydro.org/wp-content/uploads/2013/01/SFRFlowplan1.pdf for the project's flow monitoring plan**

- ***In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located.***

**N/A not a conduit project.**

- ***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.***

  **The impoundment is not subject to drawdowns. Therefore, the acquatic biota and other wildlife using the impoundment and shoreline areas are protected.**

***B. Water Quality Protection for Zone 1.***

The facility satisfies Standard B-**3, Site-Specific Monitoring Studies**, in Zone 1.

**Supporting Information Required.**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *B* | ***3*** | **Site-Specific Monitoring Studies** |
| | | • **Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required.**<br>• **Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.** |

- ***Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required.***

**See Appendix 3 for a copy of the water quality monitoring plan developed by Gomez & Sullivan in consultation with the New Hampshire Department of Environmental Resources.**

- ***Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.***

  **The water quality data collected by Gomez & Sullivan was transmitted directly to New Hampshire DES for their review and approval. The applicant does not have a copy of the data. See Appendix 2 for sign-off from NH DES accepting and summarizing the results of the data.**

***C. Upstream Fish Passage for Zone 1.***

The facility satisfies Standard C-3, Best Practice / Best Available Technology, in Zone 1.

**Supporting Information Required.**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *C* | *3* | Best Practice / Best Available Technology |
| | | • Describe the upstream fish passage technologies that have been deployed and are in operation, and justify why they qualify as best practices or best available technology.<br>• Identify all the migratory fish species in the area and explain how the upstream fish passage facilities provide adequate and safe passage for them.<br>• Describe the monitoring and effectiveness activities that have been or are being conducted for the upstream passage facilities. |

- *Describe the upstream fish passage technologies that have been deployed and are in operation, and justify why they qualify as best practices or best available technology.*

A description of the applicant's upstream eel passage design at the following link:
http://lowimpacthydro.org/wp-content/uploads/2013/01/Proposed-Eel-Passage.pdf

See Appendix 4 for email dated **August 23, 2017** for comment from John Warner of the USFWS approving the current design and operation of the applicant's upstream passage.

- *Identify all the migratory fish species in the area and explain how the upstream fish passage facilities provide adequate and safe passage for them.*

The applicant does not have access to fish distribution data and migratory fish species in the vicinity. SFR Hydro has committed to be a good steward of the Salmon Falls River and has worked with the agencies and LIHI to install appropriate upstream passage measure for migrating eel.

Several anadromous species continue to enter the Piscataqua River but are blocked from reaching the Project dam due to several downstream dams. American eel, a catadromous species, persists in the watershed, including upstream of the Project dam.

See Appendix 7 for email from Gail Wippelhauser from the Maine Department of Marine Resources for confirmation passage has only been requested at this time for eel migration.

- *Describe the monitoring and effectiveness activities that have been or are being conducted for the upstream passage facilities.*

SFR Hydro's operations team checks the eel ladder every day to make sure it's running and clear of debris. Flows and eel substrate are regularly adjusted to confirm the upstream ladder is working at max efficiency. Juvenile eel were observed using the ladder in the spring of 2016 which confirms the effectiveness of the installation as designed.

***D. Downstream Fish Passage for Zone 1.***

The facility satisfies Standard D-3, Best Practice/Best Available Technology, in Zone 1.

**Supporting Information Required.**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *D* | *3* | Best Practice/Best Available Technology<br>• Describe the downstream fish passage technologies that have been deployed and are in operation, and justify why they qualify as best practices or best available technology.<br>• Identify all the migratory fish species in the area and explain how the downstream fish passage facilities provide adequate and safe passage for them.<br>• Describe the monitoring and effectiveness activities that have been or are being conducted for the downstream passage facilities. |

- *Describe the downstream fish passage technologies that have been deployed and are in operation, and justify why they qualify as best practices or best available technology.*

A description of the applicant's **downstream** eel passage design at the following link:
http://lowimpacthydro.org/wp-content/uploads/2013/01/Proposed-Eel-Passage.pdf

See Appendix 4 for email dated **August 23, 2017** for comment from John Warner of the USFWS approving the current design and operation of the applicant's upstream passage.

- *Identify all the migratory fish species in the area and explain how the downstream fish passage facilities provide adequate and safe passage for them.*

The applicant does not have access to fish distribution data and migratory fish species in the vicinity. SFR Hydro has committed to be a good steward of the Salmon Falls River and has worked with the agencies and LIHI to install appropriate upstream passage measure for migrating eel.

Several anadromous species continue to enter the Piscataqua River but are blocked from reaching the Project dam due to several downstream dams. American eel, a catadromous species, persists in the watershed, including upstream of the Project dam.

See Appendix 7 for email from Gail Wippelhauser from the Maine Department of Marine Resources for confirmation passage has only been requested at this time for eel migration.

- *Describe the monitoring and effectiveness activities that have been or are being conducted for the downstream passage facilities.*

The downstream passage is checked and cleared of debris 7 days a week and maintains a -10psi suction. That combine with the overly gives the eels appropriate incentive to utilize down the eel bypass pipe.

***E. Watershed and Shoreline Protection for Zone 1.***

The facility satisfies Standard E-1, Not Applicable/De Minimis Effect, in Zone 1.

**Supporting Information Required.**

| | | |
|---|---|---|
| *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.* |

- *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).*
-

The Salmon Falls River Watershed drains 238 square miles from eight towns in Maine and ten towns in New Hampshire. Significant water features include Great East Lake, Lovell Lake, Lake Murdock, Little River, Branch River, and the main stem of the Salmon Falls River. The watershed includes hundreds of small streams, ponds, and wetlands. Landscapes range from forested floodplains and peat lands, to open grasslands and mixed pine, oak and hemlock forests. The landscape in the upper reaches of the watershed, **including the immediate vicinity of the South Milton project,** includes large areas of forested and agricultural land. Development is concentrated mainly around the lakes and ponds. Parcels of state and privately managed conservation land are located in Milton, Brookfield, and Middleton, NH. The Milton Municipal Wastewater Facility empties to the Salmon Falls River.

The middle section of the watershed is characterized by increased development around the town centers and major roads. Large blocks of forest, wetland, and agricultural land are scattered throughout the area. Several parcels of municipal, public, and privately controlled conservation land are located in Lebanon and Berwick, ME, and Rochester, NH.

The lower section of the watershed is highly developed around the centers of Berwick, South Berwick, ME, and Somersworth, NH. High levels of impervious surface contribute to increased levels of stormwater runoff into the watershed. Several parcels of state, municipal, and privately managed conservation land are located in the towns of South Berwick, ME, and Somersworth and Rollinsford, NH. The Salmon Falls River is the source of water for the Berwick and Somersworth Water Districts. The river also receives the outflow from the waste treatment plants in Berwick and South Berwick, ME, and Somersworth and Rollinsford, NH.

The Salmon Falls River runs for 37.5 miles from its headwaters at Great East Lake to its confluence with the Cocheco River. It forms the border between several Maine and New Hampshire towns. There are 15 dams on the river, the last forms the head of tide at the Route 4 bridge in South Berwick, ME.

The watershed of the Salmon Falls River upon which the Milton Project is located is primarily forested. Given the very small impoundment area of the Project and intense commercial development in and around the Project there is little neither need nor opportunity for Project watershed protection.

- *Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.*

There were no Shoreline Management Plans or similar protection requirements for the facility identified in the Environmental Assessment that was part of the facility's 1981 FERC Exemption, and no resource agencies have ever proposed Shoreline Management Plans or similar protection requirements for the facility or this land. See Appendix 5 for a copy of the facility's FERC Exemption

***F. Threatened and Endangered Species Protection for Zone 1.***

The facility satisfies Standard F-2, Finding of No Negative Effect, in Zone 1.

**Supporting Information Required.**

| | | |
|---|---|---|
| *F* | *2* | *Finding of No Negative Effect:*<br>• Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.<br>• Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency. |

- *Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.*

Based on documentation provided by the New England Field Office of the United States Fish and Wildlife Service and the New Hampshire Fish and Game Department, the following species are listed as threatened and are located in the project vicinity (See Appendix 6):

| **Scientific name** | **Common Name** | **Taxonomic Group** | **State Status** |
|---|---|---|---|
| Isotria medeoloides | Small whorled Pogonia | unknown | Threatened |
| Myotis septentrionalis | Northern long-eared bat | Monocot | Threatened |

- *Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency.*

The Project operates in a run-of-river mode over a range of flows up to 1,200 cfs while maintaining a conservation flow of 58 cfs, or inflow if less, in the bypassed reach. The 58 cfs is equal to the USFWS summer aquatic base flow of 0.5 cfs/sq. mile as prescribed in the Interim Regional Policy for New England Streams Flow Recommendations (1981). The 58 cfs is equal to the USFWS summer aquatic base flow of 0.5 cfs/sq. mile as prescribed in the Interim Regional Policy for New England Streams Flow Recommendations (1981). The ABF of 58cfs, equivalent to 0.5cfsm, was approved by John Warner of the USFWS by email to LIHI's Jeffrey Cueto dated December 28, 2012. See Appendix 1.

**The impoundment is not subject to drawdowns. Aquatic biota and other wildlife using the impoundment and shoreline areas are protected**.

***G. Cultural and Historic Resource Protection for Zone 1.***

The facility satisfies Standard G-1, Not Applicable/De Minimis Effect, in Zone 1.

**Supporting Information Required.**

| | | |
|---|---|---|
| *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.* |

- *Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.*

The applicant submitted a Request for Project Review to the New Hampshire Division of Historical Resources by letter dated April 19, 2012. The Division responded on April 27, 2012 that the LIHI certification process is not an undertaking that would affect facilities and that the facility may become National Register eligible at a future date, necessitating architectural inventories. No such registration has occurred to date.

There is no specific site information concerning archaeological or architectural/historical resources; however, it is known that this site has a rich history as related to mill development. There is no programmatic agreement between the applicant, FERC, and the New Hampshire Division of Historical Resources nor is there a historic properties management plan to protect such resources, if present. Consequently, re certification should be subject to the original LIHI exemption Condition #4. *In the event that the facility owner decides to undertake any new activities that may have an adverse effect on historic properties, such as new excavation, demolition, and structural alteration, the facility owner shall notify LIHI within 30 days of such decision. The facility owner shall then consult with, and obtain approval from, the State Historic Preservation Office of such activities and send LIHI a copy of that approval when it is obtained.*

No significant undiscovered properties in the project area have been discovered that could be adversely affected by the project. The continued operation of the plant should have no impact on any Cultural or Historic resources.

- *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.*

SFR Hydro Corporation purchased the project in 2000 and there has been no construction or demolition that would adversely affect cultural or historic resources. Likewise, the continued operation of the plant has no adverse impact on cultural or historic resources.

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

The facility satisfies Standard H-3, Assured Accessibility, in Zone 1.

**Supporting Information Required.**

| | | |
|---|---|---|
| H | *3* | *Assured Accessibility:* |

| | | |
|---|---|---|
| | | • *In lieu of existing recommendations and plans for recreational uses, document the facility's current and future commitment to accommodate reasonable requests from public interest groups for adequate public access for recreational use of lands and waters of the facility, including appropriate recreational water flows and levels, without fees or charges.* |

Recreational access was not included as a requirement in the Project's FERC Exemption (Project No. 3984) issued June 30, 1981. Due to the rocky nature of the reach of the Salmon Falls River upon which the project is located and the commercially developed aspect of the project property, little to no recreational activity occurs at the project to date. **All lands in the immediate vicinity of the project are privately owned by SFR Hydro Corporation. See Appendix 8 for a tax map showing SFR Hydro's land ownership associated with the project. While there is some hunting and hiking by locals known by the applicant and who have received permission from the applicant due to the inherent dangers of the dam, past experiences with public opioid use on the property and high voltage the applicant does encourage public access. Recreational access is free of charge within a safe distance of the project works.**

**Table II-1b. LIHI standards selected for each certification criterion for Zone 2.**

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

**SUPPORTING INFORMATION for Zone 2**

This section contains information that explains and justifies the standards selected to pass the LIHI certification criteria (see Table II-1b for selections).

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

The facility satisfies Standard A-2, Agency Recommendation, in Zone 2.

**Supporting Information Required.**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *A* | *2* | Agency Recommendation |
| | | • 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). |

| | | |
|---|---|---|
| | | • 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. |

- *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).*

See response for Zone 1

- *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*

See response for Zone 1 as well as Appendix **2** for the letter from NH DES dated confirming flows through the facility bypass reach are supportive of aquatic life.

- *Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.*

The minimum flow release of 58cfs was approved by the USFWS in accordance with the Interim Regional Policy for New England Streams Flow Recommendations, a policy developed due to the critical importance of instream flow to the protection and propagation of stream fishes and related aquatic life because flowing water within certain velocity, depth, substrate, cover and other micro and macro habitat variables is required to sustain the life cycles of these fluvial life forms.

- *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.*

The project is operated as run-of-the river with inflows equal to outflows at all times. Impacts to wildlife habitat and shoreline erosion are minimal.

***B. Water Quality Protection for Zone 2.***

The facility satisfies Standard B-**3, Site-Specific Monitoring Studies**, in Zone 2.

**Supporting Information Required.**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *B* | ***3*** | **Site-Specific Monitoring Studies** |
| | | • **Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required.** |

| | | |
|---|---|---|
| | | • **Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.** |

- ***Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required.***

**See Appendix 3 for a copy of the water quality monitoring plan developed by Gomez & Sullivan in consultation with the New Hampshire Department of Environmental Resources.**

- ***Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.***

  **The water quality data collected by Gomez & Sullivan was transmitted directly to New Hampshire DES for their review and approval. The applicant does not have a copy of the data. See Appendix 2 for sign-off from NH DES accepting and summarizing the results of the data.**

***C. Upstream Fish Passage for Zone 2.***

The facility satisfies Standard C-1, Not Applicable/De Minimis Effect, in Zone 2.

**Supporting Information Required.**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *C* | *1* | Not Applicable/De Minimis Effect |
| | | • Explain why the facility does not impose a barrier to upstream fish passage in the designated 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. |

- *Explain why the facility does not impose a barrier to upstream fish passage in the designated zone.*

Zone 2 represents the bypass reach between the project tailrace and the project dam. This is a free flowing section of river without any man-made impediment to upstream fish passage.

- *Document available fish distribution data and the lack of migratory fish species in the vicinity.*

See information provided for Zone 1

- *If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.*

The applicant is unaware of migratory fish species that historically passed the project but no longer do. The Spaulding Fibre Company developed the South Milton hydroelectric project at the turn of the 20th century. The Project dam is one of fifteen dams located on the Salmon Falls River. Six federally licensed or

exempted hydroelectric projects are located between the Project and South Berwick, Maine: North Rochester (FERC Project No. 3985), Boston Felt (FERC Project No. 4542), Somersworth (FERC Project No. 3820), Lower Great Falls (FERC Project No. 4451), Rollinsford (FERC Project No. 3777), and South Berwick (FERC Project No. 11163). Below South Berwick, the river becomes tidal for its last three miles before entering the Piscataqua River. Regardless, Zone 2 represents a free flowing section of river without any man-made impediment to upstream fish passage.

***D. Downstream Fish Passage for Zone 2.***

The facility satisfies Standard D-1, Not Applicable / De Minimis Effect, in Zone 2.

**Supporting Information Required.**

| ***Criterion*** | ***Standard*** | ***Instructions*** |
|---|---|---|
| *D* | *1* | Not Applicable / De Minimis Effect |
| | | • The facility does not create a barrier to downstream passage, or there are no migratory fish in the vicinity of the facility<br>• if migratory fish had been present historically, the Facility is not responsible for extirpation of such species.<br>• The Facility does not contribute adversely to the sustainability of riverine fish populations or to their access to habitat necessary for the completion of their life cycles. |

- *The facility does not create a barrier to downstream passage, or there are no migratory fish in the vicinity of the facility*

Zone 2 represents the bypass reach between the project tailrace and the project dam. This is a free flowing section of river without any man-made impediment to downstream fish passage.

- *if migratory fish had been present historically, the Facility is not responsible for extirpation of such species.*

The applicant is unaware of migratory fish species that historically passed the project but no longer do. The Spaulding Fibre Company developed the South Milton hydroelectric project at the turn of the 20th century. The Project dam is one of fifteen dams located on the Salmon Falls River. Six federally licensed or exempted hydroelectric projects are located between the Project and South Berwick, Maine: North Rochester (FERC Project No. 3985), Boston Felt (FERC Project No. 4542), Somersworth (FERC Project No. 3820), Lower Great Falls (FERC Project No. 4451), Rollinsford (FERC Project No. 3777), and South Berwick (FERC Project No. 11163). Below South Berwick, the river becomes tidal for its last three miles before entering the Piscataqua River. Regardless, Zone 3 represents a free flowing section of river without any man-made impediment to downstream fish passage.

- *The Facility does not contribute adversely to the sustainability of riverine fish populations or to their access to habitat necessary for the completion of their life cycles.*

Zone 2 represents a free flowing section of the Salmon Falls River. See Appendix 2 for the letter from NH DES dated **October 24, 2017** for confirmation that the facility does not adversely

contribute to violations of NH State Water Quality Standards which would contribute adversely to the sustainability of riverine fish populations.

***E. Watershed and Shoreline Protection for Zone 2.***

The facility satisfies Standard E-1, Not Applicable/De Minimis Effect, in Zone 2.

**Supporting Information Required.**

| | | |
|---|---|---|
| *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.* |

- *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).*

See response to Zone 1

- *Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.*

See response to Zone 1

***F. Threatened and Endangered Species Protection for Zone 2.***

The facility satisfies Standard F-2, Finding of No Negative Effect, in Zone 2.

**Supporting Information Required.**

| | | |
|---|---|---|
| *F* | *2* | *Finding of No Negative Effect:*<br>• Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.<br>• Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency. |

- *Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.*

See responses for Zone 1.

- *Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency*.

See responses for Zone 1.

***G. Cultural and Historic Resource Protection for Zone 2.***

The facility satisfies Standard G-1, Not Applicable/De Minimis Effect, in Zone 2.

**Supporting Information Required.**

| | | |
|---|---|---|
| *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.* |

- *Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.*

See responses for Zone 1.

- *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 responses for Zone 1.

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

The facility satisfies Standard H-3, Assured Accessibility, in Zone 2.

**Supporting Information Required.**

| | | |
|---|---|---|
| H | *3* | *Assured Accessibility:*<br>• *In lieu of existing recommendations and plans for recreational uses, document the facility's current and future commitment to accommodate reasonable requests from public interest groups for adequate public access for recreational use of lands and waters of the facility, including appropriate recreational water flows and levels, without fees or charges.* |

See responses to Zone 1.

**Table** II-**1d. LIHI standards selected for each certification criterion for Zone 3.**

| | | ***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*** | | |

**SUPPORTING INFORMATION for Zone 3**

This section contains information that explains and justifies the standards selected to pass the LIHI certification criteria (see Table II-1d for selections).

***A. Ecological Flow Standard for Zone 3.***

The facility satisfies Standard A-2, Agency Recommendation, in Zone 3.

**Supporting Information Required.**

| ***Criterion*** | ***Standard*** | ***Instructions*** |
|---|---|---|
| *A* | *2* | Not Applicable/De Minimis Effect |
| | | • 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). |

- *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).*

Zone 3 represents the river stretch including but not limited to the downstream confluence of the bypass reach and project tailrace. See response for Zone 1.

- *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.*

See response for Zone 2.

- *Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.*

See response for Zone 2.

- *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).*

See response for Zone 2.

***B. Water Quality Protection for Zone 3.***

The facility satisfies Standard B-**3, Site-Specific Monitoring Studies**, in Zone 3.

**Supporting Information Required.**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *B* | ***3*** | **Site-Specific Monitoring Studies** |
| | | • **Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required.**<br>• **Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.** |

- ***Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required.***

**See Appendix 3 for a copy of the water quality monitoring plan developed by Gomez & Sullivan in consultation with the New Hampshire Department of Environmental Resources.**

- ***Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.***

  **The water quality data collected by Gomez & Sullivan was transmitted directly to New Hampshire DES for their review and approval. The applicant does not have a copy of the data. See Appendix 2 for sign-off from NH DES accepting and summarizing the results of the data.**

***C. Upstream Fish Passage for Zone 3.***

The facility satisfies Standard C-1, Not Applicable/De Minimis Effect, in Zone 3.

**Supporting Information Required.**

| *Criterion* | *Standard* | *Instructions* |
|---|---|---|
| *C* | *1* | Not Applicable/De Minimis Effect |
| | | • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. |

| | | |
|---|---|---|
| | | • 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. |

- *Explain why the facility does not impose a barrier to upstream fish passage in the designated zone.*

Zone 3 is open water from the project tailrace downstream.

- *Document available fish distribution data and the lack of migratory fish species in the vicinity.*

See information provided for Zone 1

- *If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.*

See information provided for Zone 1

***D. Downstream Fish Passage for Zone 3.***

The facility satisfies Standard D-1 Not applicable.

**Supporting Information Required.**

| ***Criterion*** | ***Standard*** | ***Instructions*** |
|---|---|---|
| *D* | *1* | Not Applicable / De Minimis Effect: |
| | | • Explain why the facility does not impose a barrier to downstream fish passage in the designated 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. |

- *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).*

See response for Zone 2

- *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.*

See response for Zone 2

- *Document available fish distribution data and the lack of migratory fish species in the vicinity.*

See response for Zone 2

- *If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.*

See response for Zone 2

***E. Watershed and Shoreline Protection for Zone 3.***

The facility satisfies Standard E-1, Not Applicable/De Minimis Effect, in Zone 3.

**Supporting Information Required.**

| | | |
|---|---|---|
| *E* | *1* | *Not Applicable/De Minimis Effect:* |
| | | • *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.* |

- *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).*

See response to Zone 1

- *Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.*

See response to Zone 1

***F. Threatened and Endangered Species Protection for Zone 3.***

The facility satisfies Standard F-2, Finding of No Negative Effect, in Zone 3.

**Supporting Information Required.**

| | | |
|---|---|---|
| *F* | *2* | *Finding of No Negative Effect:*<br>• Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.<br>• Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency. |

- *Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.*

See responses for Zone 1. The species review was conducted for the entire project.

- *Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency.*

See responses for Zone 1.

***G. Cultural and Historic Resource Protection for Zone 3.***

The facility satisfies Standard G-1, Not Applicable/De Minimis Effect, in Zone 3.

**Supporting Information Required.**

| | | |
|---|---|---|
| *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.* |

- *Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.*

See responses for Zone 1. Project reviews were completed for the entire South Milton project.

- *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 responses for Zone 1.

***H. Recreational Resources for Zone 3.***

The facility satisfies Standard H-3, Assured Accessibility, in Zone 3.

**Supporting Information Required.**

| | | |
|---|---|---|
| H | *3* | *Assured Accessibility:* |

| | | |
|---|---|---|
| | | • *In lieu of existing recommendations and plans for recreational uses, document the facility's current and future commitment to accommodate reasonable requests from public interest groups for adequate public access for recreational use of lands and waters of the facility, including appropriate recreational water flows and levels, without fees or charges.* |

See responses to Zone 1.


**PART IV. SWORN STATEMENT AND WAIVER**

As an Authorized Representative of SFR Hydro Corporation, owner and operator of the South Milton hydroelectric project, 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.

Steven B. French 7/19/17

Steven B. French
President
SFR Hydro Corporation

Date

## PART V. CONTACTS

**Table V-1. Complete contact information for the facility owner and other associated parties.**

| | |
|---|---|
| **Project Owner:** | |
| Name and Title | Steve French, President |
| Company | SFR Hydro Corporation |
| Phone | 781-249-0438 |
| Email Address | sbf-atc@abenakitimber.com |
| Mailing Address | PO Box 699 Church Street Kingston, NH 03848 |
| **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 | Stephen Hickey, agent |
| Company | N/A |
| Phone | 857-205-1001 |
| Email Address | st.hickey@comcast.net |
| Mailing Address | 56 Ryan Farm Rd. Windham, NH 03087 |
| **Compliance Contact (responsible for LIHI Program requirements):** | |
| Name and Title | Will French, Operations Manager |
| Company | SFR Hydro Corporation |
| Phone | 603-571-8408 |
| Email Address | french.williamh@gmail.com |
| Mailing Address | PO Box 699 Church Street Kingston, NH 03848 |
| **Party responsible for accounts payable:** | |
| Name and Title | Niki Beuschel |
| Company | SFR Hydro Corporation |
| Phone | 603-642-3304 |
| Email Address | niki@abenakitimber.com |
| Mailing Address | PO Box 699 Church Street Kingston, NH 03848 |

**Table V-2. Current and relevant state, federal, provincial, and tribal resource agency contacts (copy and repeat the following table as needed).**

| **Agency Contact** (Check area of responsibility: Flows _X_, Water Quality __ , Fish/Wildlife Resources _ X _, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation | |
|---|---|
| Agency Name | United States Fish and Wildlife Service |
| Name and Title | John Warner, Assistant Supervisor Federal Activities |
| Phone | 603-227-6420 |
| Email address | John_Warner@fws.gov |
| Mailing Address | 70 Commercial Street, Suite 300 Concord, NH 03301 |

| **Agency Contact** (Check area of responsibility: Flows __ , Water Quality _X_, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __): | |
|---|---|
| Agency Name | New Hampshire Department of Environmental Resources |
| Name and Title | Ted Walsh |
| Phone | 603-271-2083 |
| Email address | ted.walsh@des.nh.gov |
| Mailing Address | 29 Hazen Drive Concord, NH 03302 |

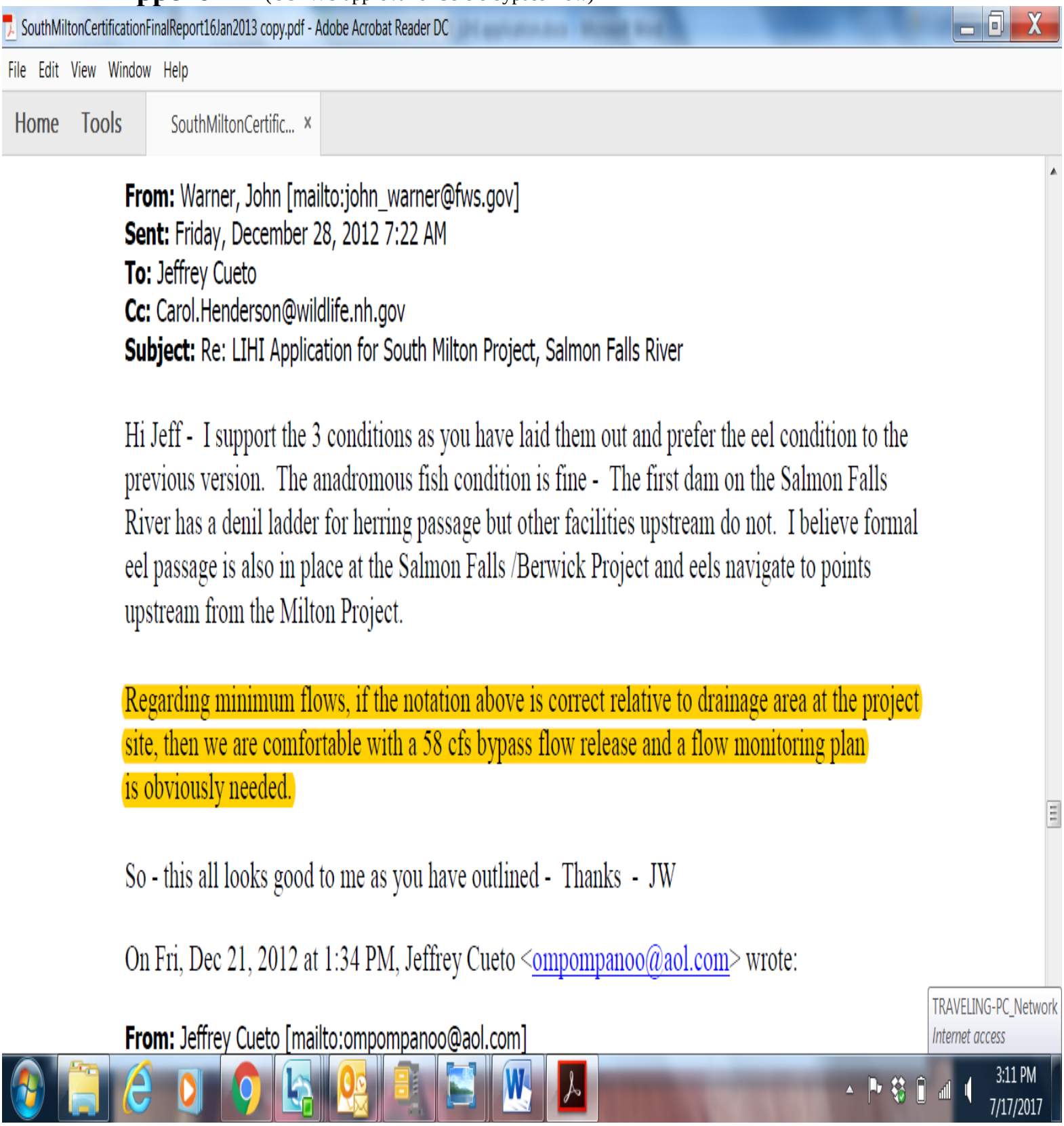
| **Agency Contact** (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. , Cultural/Historic Resources __, Recreation __): | |
|---|---|
| Agency Name | New Hampshire Fish and Game Department |
| Name and Title | Carol Henderson, Environmental Review Coordinator |
| Phone | 603-271-3511 |
| Email address | carol.henderson@wildlife.nh.gov |
| Mailing Address | 11 Hazen Drive Concord, NH 03301 |

| **Agency Contact** (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds _X_, T/E Spp. __, Cultural/Historic Resources __, Recreation __): | |
|---|---|
| Agency Name | New Hampshire Div. of Environmental Services Watershed Management Bureau |
| Name and Title | Ted Diers |
| Phone | (603) 271-3289 |
| Email address | ted.diers@des.nh.gov |
| Mailing Address | 29 Hazen Drive Concord, NH 03302 |

| **Agency Contact** (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _ **X** _, Watersheds __, T/E Spp. _**X**_, Cultural/Historic Resources __, Recreation_): | |
|---|---|
| Agency Name | U.S. Fish and Wildlife Service, New England Field Office |
| Name and Title | Julianne Rosset |
| Phone | 603-227-6436 |
| Email address | julianne_rosset@fws.gov |
| Mailing Address | 70 Commercial Street, Suite 300 Concord, NH 03301 |

| **Agency Contact** (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _x_, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __): | |
|---|---|
| Agency Name | Maine Department of Marine Resources |
| Name and Title | Gail Wippelhauser, Fish restoration |
| Phone | 207-624-6349 |
| Email address | gail.wippelhauser@maine.gov |
| Mailing Address | Marquardt Building, 32 Blossom Lane in Augusta |

**Appendix 1** (USFWS approval of 58 cfs bypass flow)



SouthMiltonCertificationFinalReport16Jan2013 copy.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools SouthMiltonCertific... x

**From:** Warner, John [mailto:john_warner@fws.gov]
**Sent:** Friday, December 28, 2012 7:22 AM
**To:** Jeffrey Cueto
**Cc:** Carol.Henderson@wildlife.nh.gov
**Subject:** Re: LIHI Application for South Milton Project, Salmon Falls River

Hi Jeff - I support the 3 conditions as you have laid them out and prefer the eel condition to the previous version. The anadromous fish condition is fine - The first dam on the Salmon Falls River has a denil ladder for herring passage but other facilities upstream do not. I believe formal eel passage is also in place at the Salmon Falls /Berwick Project and eels navigate to points upstream from the Milton Project.

Regarding minimum flows, if the notation above is correct relative to drainage area at the project site, then we are comfortable with a 58 cfs bypass flow release and a flow monitoring plan is obviously needed.

So - this all looks good to me as you have outlined - Thanks - JW

On Fri, Dec 21, 2012 at 1:34 PM, Jeffrey Cueto <ompompanoo@aol.com> wrote:

**From:** Jeffrey Cueto [mailto:ompompanoo@aol.com]

TRAVELING-PC_Network
Internet access

3:11 PM
7/17/2017

**Appendix 2** (letter from NH DES determining no impact on water quality)

The State of New Hampshire

DEPARTMENT OF ENVIRONMENTAL SERVICES

Robert R. Scott, Commissioner

October 24, 2017

Shannon Ames, Executive Director
Low Impact Hydropower Institute
34 Providence Street
Portland, Maine 04103

RE: Water Quality Status of the Salmon Falls River for Low Impact Hydropower Institute Recertification of the Milton Hydroelectric Project (FERC Exemption No. 3984) Salmon Falls River – Milton, NH

Dear Ms. Ames:

SFR Hydro Corp. is applying for recertification from the Low Impact Hydropower Institute (LIHI) for the Milton Hydroelectric Project (FERC License Exemption No. 3984) on the Salmon Falls River in Milton, NH. We understand that for the applicant to receive LIHI recertification, you require a statement from the New Hampshire Department of Environmental Services (NHDES) stating that the project is complying with state water quality standards. In 2016, NHDES communicated with SFR Hydro Corp. regarding that the following additional data/information would be needed to determine if the Salmon Falls River in the vicinity of the Milton Hydroelectric Project was or was not attaining water quality standards:

1. Impact on ambient water quality criteria and thresholds;
2. Impact of pond fluctuations on aquatic habitat;
3. Maintenance of adequate minimum flows to protect downstream aquatic life; and
4. Adequate upstream and downstream fish passage.

The purpose of this letter is to provide you with our assessment of the data and information received from SFR Hydro Corp. and our conclusions as to whether or not the Milton Hydroelectric Project is complying with New Hampshire surface water quality standards in the Salmon Falls River.

Water quality data was collected for dissolved oxygen, water temperature, total phosphorus, and chlorophyll-a during 2016 and 2017. Monitoring locations in the upstream impoundment (23-SFR), in the bypass reach (22-SFR), and in the downstream tailrace section of the river (21-SFR) were monitored continuously for water temperature and dissolved oxygen using multi-parameter dataloggers during the summer of 2016 (8/2/16 - 9/6/16). NHDES specified that the multi-parameter continuous water quality data should be collected under critical low flow (< 3 x 7Q10) and higher water temperature conditions (>23° C). There is a USGS stream gage (# 01073000) on the Oyster River in Durham, NH approximately fifteen miles from the Milton Hydroelectric Project. This gage was used as a surrogate to estimate low flow conditions in the vicinity of the project. During the datalogger deployment in August and September of 2016 the flows at the Oyster River gage were below the target conditions of 3 x 7Q10 (1.5 cfs) for over 90% of the time. For more than half of the deployment the discharge was below the 7Q10 level. The daily average water temperature in the Salmon Falls River was at or above the target of 23° C for the majority of days during the deployment. SFR Hydro Corp. has stated that during the collection of the continuous water quality data the Milton Hydroelectric Project was operating under normal operating procedures. In August of 2016 and September of 2017, SFR Hydro Corp. also collected 11 samples of total phosphorus and chlorophyll-a at stations 23-SFR (impoundment) and 21-SFR (tailrace).

NHDES has assessed the water quality data collected in 2016 and 2017, and based on this assessment concludes that the water quality in the impoundment, bypass reach and downstream section of the Salmon Falls River, under the project operating conditions and flow conditions during which the data was

www.des.nh.gov
29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095
(603) 271-3503 • Fax: (603) 271-7894 • TDD Access: Relay NH 1-800-735-2964

collected, is meeting existing water quality criteria or thresholds for dissolved oxygen, total phosphorus and chlorophyll-a. At the time of the deployment, during and at retrieval of the dataloggers, vertical profiles of dissolved oxygen and water temperature were measured at the station in the impoundment (23-SFR) to determine if thermal stratification was present. The vertical profiles collected at 23-SFR indicate that the impoundment is not thermally stratified.

In 2016 NHDES provided to SFR Hydro Corp. the assessment status for the parameters of concern for the reaches of the Salmon Falls River upstream and downstream of the Milton Hydroelectric Project. Table 1 provides an update to the current assessment status of the river reaches in question for the parameters collected in 2016 and 2017. The assessments are based on the methodology described in the NHDES Consolidated Assessment and Listing Methodology (CALM)[1]. This information will be used in the next Section 305(b)/303(d) Water Quality Assessment report which is expected to be issued by NHDES in 2018. Please note that the assessment status listed in Table 1 could change if water quality criteria or thresholds change and/or if additional data indicate water quality violations. For example, data collected at lower flows and/or higher temperatures might result in a different assessment.

[1] NHDES. 2016. Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology. NH Department of Environmental Services, Watershed Management Bureau, Concord, NH

**Table 1. Assessment Status for Water Quality Monitoring Parameters – Milton Hydroelectric Project**

| Assessment Unit and Monitoring Station | Location | Parameter | Designated Use | Updated Assessment Status |
|---|---|---|---|---|
| NHIMP600030405-02 23-SFR | Milton Hydroelectric Project - Impoundment | Dissolved Oxygen (mg/L) | Aquatic Life | Fully Supporting |
| | | Dissolved Oxygen (% Sat.) | Aquatic Life | Fully Supporting |
| | | Chlorophyll-a | Primary Contact Recreation | Fully Supporting |
| | | | Aquatic Life | Potentially Supporting [A] |
| | | Total Phosphorus | Aquatic Life | Indeterminate[A] |
| | | Water Temperature | Aquatic Life | No numeric criteria[C] |
| NHRIV600030405-03 22-SFR | Milton Hydroelectric Project – Bypass Reach | Dissolved Oxygen (mg/L) | Aquatic Life | Fully Supporting |
| | | Dissolved Oxygen (% Sat.) | Aquatic Life | Fully Supporting |
| | | Water Temperature | Aquatic Life | No numeric criteria[C] |
| NHRIV600030405-03 21-SFR | Downstream of Milton Hydroelectric Project– Tailrace | Dissolved Oxygen (mg/L) | Aquatic Life | Fully Supporting |
| | | Dissolved Oxygen (% Sat.) | Aquatic Life | Fully Supporting |
| | | Chlorophyll-a | Primary Contact Recreation | Fully Supporting |
| | | Total Phosphorus | Aquatic Life | No numeric criteria[B] |
| | | Water Temperature | Aquatic Life | No numeric criteria[C] |

[A] NHDES does have numeric water quality thresholds for the aquatic life designated use for total phosphorus and chlorophyll-a in lakes/ponds and impoundments with characteristics similar to lakes/ponds but it can only be applied to waterbodies where the tropic class is known- For waterbodies where the trophic class is known the median total phosphorus and chlorophyll-a value is used to make the threshold comparison. The aquatic life designated use nutrient and chlorophyll-a thresholds are depicted below with the median values for each parameter for the data collected at station 23-SFR in assessment unit NHIMP600030405-02 and station 21-SFR in assessment unit NHRIV600030405-03 during the summers of 2016 and 2017.

| | TP (ug/L) | Chl-a (ug/L) |
|---|---|---|
| **Median 23-SFR (2016/2017)** | **5** | **3.01** |
| **Median 21-SFR (2016/2017)** | **5** | **2.97** |
| Oligotrophic | $< 8$ | $< 3.3$ |
| Mesotrophic | $\leq 12$ | $\leq 5$ |
| Eutrophic | $\leq 28$ | $\leq 11$ |

[B] NHDES does not have numeric water quality criteria for nutrients in rivers or streams. The narrative criteria states that "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring.
[C] Although there is currently no numerical water quality criteria for water temperature, NHDES is in the process of collecting biological and water temperature data that will contribute to the development of a procedure for assessing rivers and stream based on water temperature and its corresponding impact to the biological integrity of the waterbody.

SFR Hydro Corp. has confirmed with NHDES that the minimum flow operations have not changed since the original LIHI certification in 2013. Under FERC terms this project is required to be operated as a run of river operation with a continuous minimum flow of 58 cfs in the bypass reach or the inflow to the reservoir, whichever is less. In response to LIHI certification SFR Hydro Corp. has prepared and implemented a Run of River and Minimum Flow Monitoring Plan. The U.S. Fish and Wildlife Service (USFWS) and New Hampshire Fish and Game (NHFG) have indicated that they support the 58 cfs minimum flow in the bypass reach as adequate for achieving acceptable habitat conditions. A minimum flow of 58 cfs is approximately equal to a yield of 0.5 cfs/sq. mile multiplied by the upstream drainage area.

As per the 2013 LIHI certification, SFR Hydro Corp committed to installing both interim and permanent downstream passage and permanent upstream passage for American eel. This agreement was to be approved by the USFWS and NHFG and the permanent facilities for downstream passage were to be in place and operational by August 1, 2015. In August of 2015 SFR Hydro Corp. completed modifications that were installed to accommodate eel passage. USFWS and NHFG have provided NHDES with verification of their approval of the implementation of eel passage and for LIHI recertification of the facility.

In summary, based on the current operation of the facility, current water quality standards, water quality data collected in 2016-2017 and information provided to NHDES by SFR Hydro Corp., the Salmon Falls River immediately upstream and downstream of the Milton Hydroelectric Project is meeting water quality standards or thresholds for dissolved oxygen, total phosphorus and chlorophyll-a under the conditions during which the data was collected. As previously noted, the above water quality assessment could change in the future should a change in water quality criteria or thresholds and/or new data indicate water quality violations or the potential for water quality violations. It could also change if the NHDES, USFWS and/or NHFG conclude in the future that the project is not in compliance with upstream or downstream fish/eel passage requirements or minimum flow requirements.

Should you have any questions or require additional information please contact me at (603)271-2083 or ted.walsh@des.nh.gov.

Sincerely,

Ted Walsh, Surface Water Monitoring Coordinator
NHDES Watershed Management Bureau

Cc (via email): Maryalice Fisher, Low Impact Hydropower Institute
Steve Hickey, Enel Green Power North America, Inc.
Carol Henderson, NHFG
John Magee, NHFG
John Warner, USFWS
Julianne Rosset, USFWS

**Appendix 3** (Gomez & Sullivan water quality sampling plan)

# MILTON HYDROELECTRIC PROJECT
# FERC Project No. 3984

## Water Quality Monitoring Field Sampling Plan

*Submitted by:*
**SFR Hydro Corp.**

*Prepared by:*
**Gomez and Sullivan Engineers, DPC**
**Henniker, NH 03242**

**July 2016**

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## Introduction

Background

SFR Hydro Corp. owns and operates the Milton Hydroelectric Project (Project) in Milton, NH located on the Salmon Falls River, which borders NH and ME. SFR Hydro received Low Impact Hydropower Institute (LIHI) Certification for a 5-year period effective September 6, 2013 and expiring on September 6, 2017. As part of that initial certification, SFR Hydro was required by the New Hampshire Department of Environmental Services (NHDES) to conduct various studies, including a water quality monitoring study to determine if the Project could be causing or contributing to violations of state water quality standards. SFR Hydro conducted the water quality monitoring study in the summer of 2012. In a January 14, 2013 letter from NHDES to SFR Hydro, it concluded that the Project was not causing or contributing to violations of state water quality standards—the data showed that state water quality standards were met.

SFR Hydro is now seeking to certify the Project with LIHI again, and is required by NHDES to conduct the same water quality monitoring study as it did in 2012. SFR Hydro is seeking to conduct the water quality monitoring from August 1 to September 15, 2016.

Prior to conducting the water quality monitoring study, NHDES requires a Sampling Plan (Plan) be approved. The objective of the study is to collect dissolved oxygen (DO), water temperature, chlorophyll a, phosphorus and discharge measurements as was required in 2012 to demonstrate that the Project is not causing or contributing to violations of state water quality standards. The purpose of this Plan is to provide an overview of the water quality monitoring study that will be conducted, details of sampling protocols and procedures, and quality control/quality assurance (QA/QC) measures while conducting water quality monitoring study at the Milton Hydroelectric Project.

Project Layout and Operation

Project works consist of: (1) a 164-foot-long concrete-capped timber crib dam which is 16.4 feet high at its highest point; (2) a 6-foot 6-inch-diameter, 3,800-foot-long steel penstock; (3) a powerhouse located in the former Spaulding Fiber Company Mill 4,600 feet downstream of the dam; (4) three turbines, with Units 1, 2, and 4 located in Mill Building No. 1 and Unit 3 located in adjacent Mill Building No. 2. Each of the generating units has individual draft tubes which discharge flow into a common tailrace. The Project dam forms a 100-acre impoundment with an average depth of 15 feet and a gross storage capacity of about 768 acre-feet. The FERC exemption application indicates that the headpond elevation is 340 feet and the tailwater 238 feet, presumably referenced to sea level.

The Project is operated as run-of-river and maintains a year-round minimum continuous flow of 58 cfs, or inflow, whichever is less, in the bypass reach. Per the NH StreamStats, the drainage area at the Milton Dam is approximately 107.4 square miles. Thus a flow of 58 cfs is equates to 0.54 cfs/sq mi of drainage area (close to the New England Aquatic Base Flow policy of 0.5 cfs/sq mi).

## 1.0 Water Quality Sampling Plan

# 1.1 Sampling Goal

This goal of the study is to collect water temperature, DO, chlorophyll-a, total phosphorus and flow measurements to confirm that, in its present state, the Project is meeting State of NH Water Quality Standards.

# 1.2 Sampling Locations

Listed in Table 1.2-1 and shown in Figure 1.2-1 are the sampling locations for the water quality monitoring study. Shown in Table 1.2-2 for each sampling location is the proposed sampling location, purpose of sampling, parameters to be collected, and the frequency of data collection.

**Table 1.2-1: Water Quality Monitoring Sampling Locations**

| Assessment Unit | Location | NHDES Station ID | Size/Acreage |
|---|---|---|---|
| NHIMP600030405-02 | Milton Hydroelectric Dam Impoundment | 23-SFR | 8 acres |
| NHRIV600304405-03 | Downstream of Milton Hydroelectric Dam- in Bypass Reach | 22-SFR | ~4,900 feet |
| | Downstream of Milton Hydroelectric Dam Bypass Reach - Downstream of Powerhouse- Upstream of Spaulding Pond | 21-SFR | ~900 feet |

**Table 1.2-2. Water Quality Sampling Plan Details**

| Site ID | Location | Purpose | Parameters | Frequency |
|---|---|---|---|---|
| 23-SFR | ~200 feet upstream of Milton Hydroelectric Project | Determine water quality impacts of river being impoundment by the Milton Hydroelectric Project | Continuous DO (mg/L and % Saturation) and Continuous Water temperature (collected with dataloggers) | At least 10 days of data collected at 15 minute increments during period of low flow (≤ 3 x 7Q10) and high temperatures (preferably over 23°C). Dataloggers should be set at the bottom of the epilimnion[1] (if stratified) or at 25% depth if not stratified. |
| | | | Instantaneous DO (mg/L and % Saturation) and Water Temperature | 2 vertical profiles collected on 2 days when continuous dataloggers are deployed. Profiles should be at 1 foot increments from surface to bottom. |
| | | | Total Phosphorus and Chlorophyll-a | 7 samples- once a week from August 1 through September 15.[1] |
| 22-SFR | Milton Hydroelectric Project Bypass Reach | Determine water quality and quantity impact in bypass reach | Continuous DO (mg/L and % Saturation) and Continuous Water temperature (collected with dataloggers) | At least 10 days of data collected at 15 minute increments during period of low flow (≤ 3 x 7Q10) and high temperatures (preferably over 23°C). |
| | | | Discharge | 3 measurements taken during period of low flow (≤ 3 x 7Q10) during normal operation of the Project.[2] |
| 21-SFR | ~150 feet downstream of the confluence of | Determine water quality condition downstream of | Continuous DO (mg/L and % Saturation) and Continuous Water | At least 10 days of data collected at 15 minute increments during period of low flow (≤ 3 x 7Q10) and high temperatures (preferably |

[1] Per Env-Wq 1702.22 "Epilimnion" means the upper, well-circulated warm layer of a thermally stratified lake, pond, impoundment or reservoir.

| Site ID | Location | Purpose | Parameters | Frequency |
|---|---|---|---|---|
| | the powerhouse tailrace and bypass reach | Milton Hydroelectric Project and associated bypass reach | temperature (collected with dataloggers) | over 23°C). |
| | | | Total Phosphorus and Chlorophyll-a | 7 samples- once a week from August 1 through September 15 |
| | | | Discharge | 3 measurements taken during period of low flow (≤ 3 x 7Q10) during normal operation of the Project.[2] |

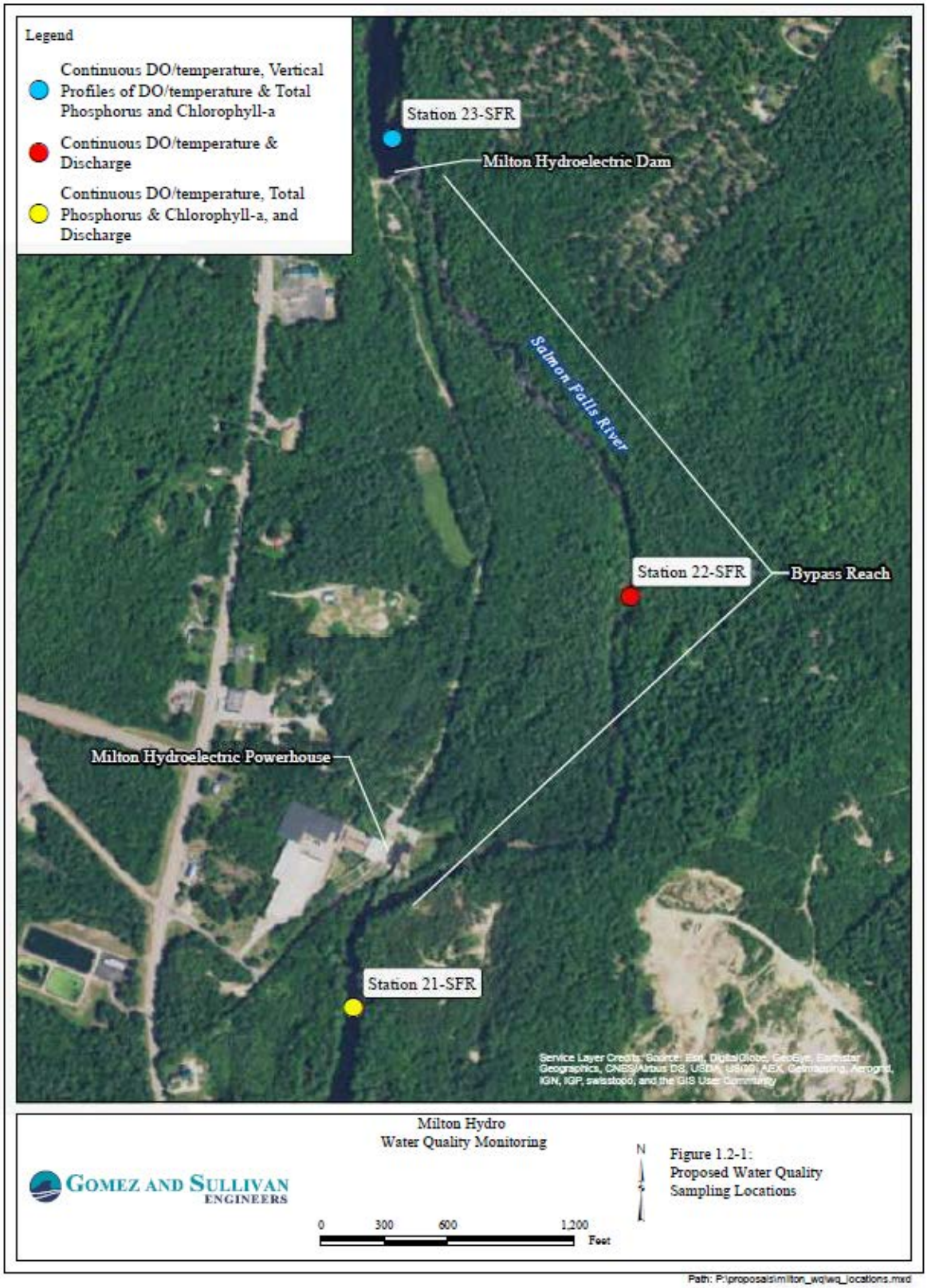
[1]In NHDES May 24, 2012 water quality monitoring recommendations, total phosphorus and Chlorophyll-a were to be collected from May 24 to September 15 for a total of 10 samples once a week.
[2]Discharge measurements for Stations 22-SFR and 21-SFR will be taken within one hour of each other.

The upstream multi-parameter datalogger will be installed in the Milton Dam Impoundment approximately 200 ft upstream from the dam at the deepest location of the channel. The bypass logger will be installed approximately 2,600 feet below the Milton Dam. The third logger will be placed approximately 150 downstream of the bypass and tailrace confluence, but upstream of the Spaulding Pond backwater.

Vertical profile measurements at Station S23-SFR will be marked with a buoy to ensure that vertical profile measurements will be collected at the same location. Sampling locations in the bypass and below the bypass/powerhouse discharge confluence will be marked with survey tape to again ensure the same location is visited each time. In addition, at all three sampling locations the longitudinal and latitudinal coordinates will be recorded using a GPS.

In the case of the discharge measurements, it will be important to select a transect that is free-flowing and where all flow is contained within a single transect (no branches).

**Figure 1.2-1: Proposed Sampling Locations**



# 1.3 Sampling Frequency

Vertical Profiles of Dissolved and Temperature (23-SFR)

SFR Hydro will collect a vertical profile of DO and water temperature in one foot increments through the water column at a deep hole approximately 200 feet upstream of the dam. The profiles will be collected at the onset of the water quality monitoring program and on the last day when the continuous monitoring equipment is removed. Probing upstream of the dam will be conducted in advance to identify a deep hole. Once a location is selected, a buoy will be placed such that the same location is used for the second vertical profile. In addition, at this same location the datalogger used to record continuous DO and water temperature will be installed at the buoy. By collecting the DO and water temperature profile on the Day 1 of the water quality monitoring program, it can be determined if the impoundment is, or is not, stratified. Based on NHDES' January 14, 2013 letter to SFR Hydro commenting on the 2012 water quality survey, the impoundment depth was noted as approximately 10 feet and the impoundment was not stratified.

Continuous Dissolved Oxygen and Temperature Sampling (23-SFR, 22-SFR and 21-SFR)

Continuous DO and temperature sampling will be conducted as close to critical low flow/high water temperature conditions as possible. Per NHDES protocol, at least 10 days of data will be collected at 15 minute increments during a period of low flow and water temperatures preferably exceeding 23°C (73.4° F). Low flow is defined as a flow less than 3 x 7Q10. There are no active United States Geological Survey (USGS) gages on the Salmon Falls River, thus the NHDES suggested monitoring the USGS Gage on the Oyster River near Durham, NH, which has a drainage area of 12.1 sq miles (compared to 107.4 sq miles at the Milton Dam). NHDES reported in its May 12, 2012 letter to SFR Hydro that 3 x 7Q10 flow at the Oyster River gage is approximately 1.5 cfs. Based on the USGS Streamstats Program, the estimated 7Q10 at the Milton Dam is 7.9 cfs (3 x7.9 = 23.7 cfs). In any event, SFR Hydro proposes to install continuous DO and temperature monitoring equipment starting on August 1 and leaving the equipment in place through September 15, 2016 with the goal of capturing the 10 days of low flow high water temperature conditions.

In the case of sample site 23-SFR, the continuous water quality logger will be set at the bottom of the epilimnion (if stratified) or at 25% depth if not stratified. As noted above, the vertical profile of DO and temperature in the impoundment will be collected on the Day 1 of the water quality monitoring program, which will dictate the depth at which the continuous water quality logger is placed.

Total Phosphorus and Chlorophyll-a (23-SFR, 21-SFR)

Total Phosphorus and Chlorophyll-a will be collected once a week for seven weeks between August 1 and September 15. Samples will be brought to the laboratory the day of sample collection, when possible, to ensure holding times are met. It is important to note that Chlorophyll-a samples have a holding time of just 24 hrs.

Discharge Measurements (22-SFR, 21-SFR)

Discharge measurements will be collected on three separate site visits to the Project under low flow conditions (≤ 3 x 7Q10) during normal Project operations. To determine when to collect the three discharge measurements the USGS Gage on the Oyster River near Durham, NH will be monitored real-time. The discharge measurements will be obtained using standard techniques from the bypass reach and downstream sites, and will be collected each day within an hour, if possible as recommended by NHDES (Table 1.2-2).

# 1.4 Sampling Equipment

### 1.4.1 Vertical Profiles of Dissolved Oxygen and Temperature

To obtain a vertical profile, a boat or canoe will be used to navigate to the area just upstream of the dam and a survey rod will be used to identify a deep hole above the dam. Once a location is found, a buoy will be secured in place such

that the same location is visited each time. A GPS point will also be recorded in case the buoy becomes dislodged due to high flows or debris build-up.

Vertical profile measurements will be collected with a portable hand held dissolved oxygen and temperature meter. The meter used for this study will be the YSI ProODO dissolved oxygen and temperature meter equipped with a 50-meter cable. The equipment performance specifications are shown in Table 2.4.2 below.

**Table 2.4.1-1 YSI ProODO Equipment Specifications**

| Parameter | Range | Accuracy | Resolution |
|---|---|---|---|
| Dissolved Oxygen | 0 to 50 mg/L | 0-20 mg/l: ± 0.1 mg/L<br>20-50 mg/l: ± 10% of the reading | 0.01 mg/L |
| Temperature | -5 to +70°C | ±0.2°C | 0.1°C |

### 1.4.2 Continuous Sampling of Dissolved Oxygen and Temperature

Continuous water temperature and dissolved oxygen measurements will be collected with Onset HOBO Dissolved Oxygen Logger's (Model U26-001). Onset documentation specifies that the loggers operate between a temperature range of -5 to 40 °C, with an accuracy of 0.2 °C. The dissolved oxygen measurement range is from 0 to 30 mg/L with an accuracy of 0.2 mg/L.

In order to collect dissolved oxygen as percent saturation (in addition to mg/L), the HOBO loggers require barometric pressure data to be input into the logger. Barometric pressure data will be collected with a HOBO water level logger (Model U20). This logger will be deployed in a secure area and set to continuously collect data in 15 minute intervals throughout the study period. The barometric pressure data obtained by the water level logger will be combined with the DO data and processed by the manufacturer's software (HOBOware) to calculate dissolved oxygen as percent saturation.

### 1.4.3 Total Phosphorus and Chlorophyll-a

Listed in Table 1.4.3-1 is the sample volume, container size and type, preservation requirements and maximum holding times for the total phosphorus and chlorophyll-a samples.

The total phosphorus and chlorophyll-a samples collected in the impoundment (23-SFR) will be obtained at the middle of the metalimnion (or thermocline), if stratified, or the top 25% of the overall depth, if not stratified, using a Van Dorn bottle.

The total phosphorus and chlorophyll-a samples collected below the bypass/powerhouse tailrace (21-SFR) will be obtained in the top 25% of the water column using a Kemmerer bottle.

**Table 1.4.3-1: Analytical Parameter, Sample Volume, Container Size, Preservation Requirements and Maximum Holding Times**

| Analytical Parameter | Sample Volume | Container Size and Type | Preservation Requirements | Maximum Holding Time |
|---|---|---|---|---|
| Total Phosphorus | 50 mL | 250 mL brown polyethylene | Acidified (pH <2), light protected, chilled to 4°C. | 28 days |
| Chlorophyll a | 500 mL | 500 mL light protected polyethylene | Light protected, chilled to 4°C. | 24 hours |

### 1.4.4 Discharge Measurements

Discharge measurement will be collected with the following equipment: a tape measure strung across the river and secured tightly, a Marsh-McBirney Flo-Mate 2000 flow meter, and survey flagging to denote the left and range banks. The velocity specifications for the Flo-Mate 2000 flow meter are -0.5 to +20 ft/sec.

## 1.5 Data Collection Methods

For each sampling station a site map with longitudinal and latitudinal coordinates as well as photographs of the sampling sites (23-SFR, 22-SFR and 21-SFR) will be obtained. In addition, a daily field log will be kept denoting: weather, vegetation growth, flow conditions, and any other site conditions that could potentially impact water quality.

### 1.5.1 Vertical Profiles of Dissolved Oxygen and Temperature

The following steps will be performed when collecting the vertical profiles of dissolved oxygen and temperature:

1. Ensure that the meter has been calibrated and that appropriate quality control procedures have been followed.
2. Place the sensor into the body of water at the desired sampling depth.
3. Allow at least 30 seconds for temperature equilibration. Record the temperature.
4. On the field data sheet, record the dissolved oxygen (mg/L and % saturation). The reading should stabilize to within ±0.2 mg/L.
5. Lower the sensor to the next depth or return the sensor to the storage chamber.
6. Collect one replicate reading per profile.

### 1.5.2 Temperature and Continuous Sampling of Dissolved Oxygen and Temperature

The HOBO loggers will be inspected prior to deployment and bi-weekly when samples of phosphorus and chlorophyll-a are collected. Data will be downloaded and quality control measures described later will be implemented before placing the logger back into the water. A spot check will be performed using the ProODO meter prior to data offload (see Section 1.6.2).

### 1.5.3 Total Phosphorus and Chlorophyll-a

As noted above, a Van Dorn sampler will be used to obtain the total phosphorus and chlorophyll-a samples. The sampler will be cleaned prior to each sampling event and will be rinsed with site water prior to use and then lowered into the water column to the appropriate depth for sample collection. The water sample will be poured out of the sampler into each sample container. The brown polyethylene bottle used for the total phosphorus will already contain sulfuric acid, thus it is important to not overfill the bottle. All bottles will be labeled with the sample location, date and time and will be placed in a cooler on ice.

At the end of each sampling day, the samples on ice in the cooler will be brought to a NH-certified laboratory for testing within 24 hours.

### 1.5.4 Discharge Measurements

Prior to any flow measurements a temporary staff gage (stake or rebar) will be placed in the river and the distance from the top of the staff gage to the water surface elevation (WSEL) will be measured prior to conducting the total flow measurement. The temporary staff gage will be measured at the conclusion of the total flow measurement to determine if the magnitude of flow has changed over the data collection period. If the before and after staff gage measurements are the same, it is concluded that the flow remained steady throughout the collection period. If the before and after staff gage measurements are different, the flow is considered unsteady and the reasoning for changes should be investigated. A second flow measurement may be required.

The discharge will be measured using the velocity-area method. After stringing the measuring tape across the river, the wetted width of the river will be computed. The river will then be subdivided into segments (sometimes referred to as verticals) and at each vertical the depth and velocity will be measured with the Marsh-McBirney meter. The total

discharge is the summation of the products of the partial areas of the cross-section. If more than 10% of the computed total flow occurs in any one segment, that segment will be further divided and an additional depth and velocity measurement will be obtained so that no one segment exceeds 10% of the total flow.

## 1.6 Quality Control Measures

Only personnel trained or experienced in the measurement and data recording techniques provided in this document shall conduct monitoring. All vertical profile field data, total phosphorus/chlorophyll-a samples, discharge measurements and observations will be recorded in a field notebook or field data sheets, examples of which are located in Appendix A. Water quality instrumentation used during this study will be properly maintained and calibrated according to the applicable instructions provided by the manufacturer and contained within this document.

### 1.6.1 HOBO Logger Calibration

HOBO loggers will be calibrated using the Lab Calibration tool found in the HOBOware software. The loggers will need to be calibrated before deployment or after replacing an expired sensor cap. The Lab Calibration tool sets the gain and offset adjustment for the logger by: 1) restoring logger calibration values to factory defaults; 2) using your own gain and offset adjustment values; or 3) calculating the values with a three-step calibration procedure. If the three-step calibration procedure is chosen, the logger is first calibrated to 100% saturation by placing it in water-saturated air. Following this, the logger is then calibrated to 0% saturation by placing it in sodium sulfite or another 0% oxygen environment. This method is recommended if the logger will be deployed in water with DO levels of 4 mg/L or less.

### 1.6.2 Spot Checks

The YSI ProODO meter will be used to collect spot checks (DO concentration, DO saturation, temperature) at each datalogger location a minimum of every two weeks, prior to offloading data from the loggers. The spot checks will be collected at the same depth the loggers are deployed in order to obtain the most comparable measurement. The ProODO will be kept out of direct sunlight and allowed to equilibrate at the datalogger deployment depth prior to making measurements. Spot checks will be compared against the datalogger measurements within the same time frame to determine if the dataloggers are maintaining their calibration, or potentially being affected by biofouling. If a difference in DO concentration of 0.4mg/L is observed between the HOBO logger and ProODO meter, the spot check measurement will be used to adjust the DO data to a more accurate measurement using the dataloggers' software (HOBOware).

### 1.6.3 Saturation Calibration (Water Saturated Air) – YSI ProODO

A one-point calibration (water saturated air) will be conducted at the beginning (prior to sampling) of each sampling day. Calibration will follow the instructions described in the YSI ProODO manual and found below. Calibration results will be saved on the logger and redundantly written on the applicable field data sheet.

The following steps describe the water saturated air calibration:

1. To be sure that the sensor inside the meter's calibration/storage chamber remains moist, pull the probe out and add a small amount of clean water to the sponge inside the calibration chamber.
2. Make sure there are no water droplets on the sensor cap and temperature sensor, and then install the storage sleeve over the probe. Make sure that the DO and temperature sensors are not immersed in water.
3. Wait 5 to 10 minutes for the storage container to become completely saturated and to allow the temperature and dissolved oxygen sensors to stabilize.
4. Press the probe's calibration button. Optionally, enter a User ID to track who calibrated the unit.
5. Highlight DO and press enter.

6. Highlight DO% (Under the Calibrate DO menu) and press enter to confirm.
7. Wait for the temperature and DO% values to stabilize, then highlight "Accept Calibration" and press enter.
8. Press the "Calibration" button and then the "Esc" button to end the calibration.

### 1.6.4 Replicate Sampling – Vertical Profiles

As a quality assurance check on the YSI ProODO, a replicate measurement should be conducted at least once per profile, or after every twentieth measurement. Once the vertical profile measurements are collected, the sensor will be placed at a random depth to collect a replicate measurement. The thermocline, if stratified, will be avoided because temperature and dissolved oxygen gradients can express subtle changes in relation to depth in this layer of the impoundment. The replicate measurements will be recorded on the field data sheet.

### 1.6.5 Replicate Sampling – Laboratory Samples

During two of the sampling events, replicate samples of phosphorus and chlorophyll-a will be collected and during one event, a field blank will be collected for laboratory analysis.

### 1.6.6 Data Review

All field collected data will undergo a thorough QA/QC review process to ensure accuracy and completeness of the dataset. Data will be reviewed at the end of each day (vertical profiles, total phosphorus/chlorophyll-a, discharge) or periodically throughout the course of the sampling program (continuous data). Vertical profile data collected at the same location over 2 separate days will be analyzed and compared. All continuous water quality data will be analyzed for outliers or other erroneous data points. Vertical profile data will be compared to corresponding continuous data as an additional quality control check.

## 2.0 Recordkeeping and Reporting

# 2.1 Data Management

Water quality measurements collected during the vertical profiles will be recorded in a field notebook or on field data sheets (Appendix A) on the day of sampling. Data will include dissolved oxygen and water temperature measurements, general weather and flow conditions, and QA/QC data records. Continuous data collected using the HOBO loggers will be stored on the equipment's memory and downloaded at the half way point of the study and again at the end of the study.

Discharge measurements including depth and velocity data collected at stations will be recorded in a field notebook or field data sheets (Appendix B) on the day of sampling.

Data will be obtained from SFR Hydro regarding the elevation of the impoundment and the downstream flow release at the time of sampling. Additionally, a daily log will be maintained denoting: weather, vegetation, flow conditions, and any other applicable site conditions.

# 2.2 Reporting

At the conclusion of the study and following QA/QC of the data, a final report will be generated, summarizing the findings of the study. All water quality data collected as part of this study will be submitted to NHDES electronically in a format that can be automatically uploaded into the NHDES Environmental Monitoring Database (EMD).

## 3.0 Schedule and Consultation

This field sampling plan shall be filed with NHDES prior to initiating the water quality monitoring study. It is assumed that field work will be initiated on August 1 and continue through September 15, 2016 with the goal of having low flow and high water temperature conditions during a 10 consecutive day period.

The draft sampling plan was submitted to NHDES on _____. We are asking for NHDES to return any comments by July 29, 2016, or earlier if possible. We will work with NHDES to resolve any comments so that a final approved plan is in place prior to the beginning of the sampling season.

## 4.0 References and Bibliography

YSI Incorporated. 2012. YSI ProODO Operations Manual. YSI, Inc., Yellow Springs, OH.

Onset Computer Corporation. 2013. HOBO Dissolved Oxygen Logger (U26-001) Manual. Onset Computer Corporation, Bourne, MA.

## Appendix A: Vertical Profile of Temperature/Dissolved Oxygen, Field Data Sheet

**Milton Hydroelectric Project**
**Temperature/Dissolved Oxygen Profile- Field Data Sheet**

Station Description:_____ Personnel:_____

Station No.: _____ Lat/Long: _____

Date: _____ Start Time: _____ End Time: _____

Meter: _____ Calibration Time and Date: _____

Weather Conditions: _____

| Depth (ft) | Temp (°C) | DO (mg/l) | DO (% Saturation) | Notes |
|---|---|---|---|---|
| Surface | | | | |

## Appendix B: Total Flow Measurement, Field Data Sheet

**Milton Hydroelectric Project**
**Total Flow Measurement- Field Data Sheet**

Station Description: _____ Personnel: _____

Station No.: _____ Lat/Long: _____

Date: _____ Start Time: _____ End Time: _____

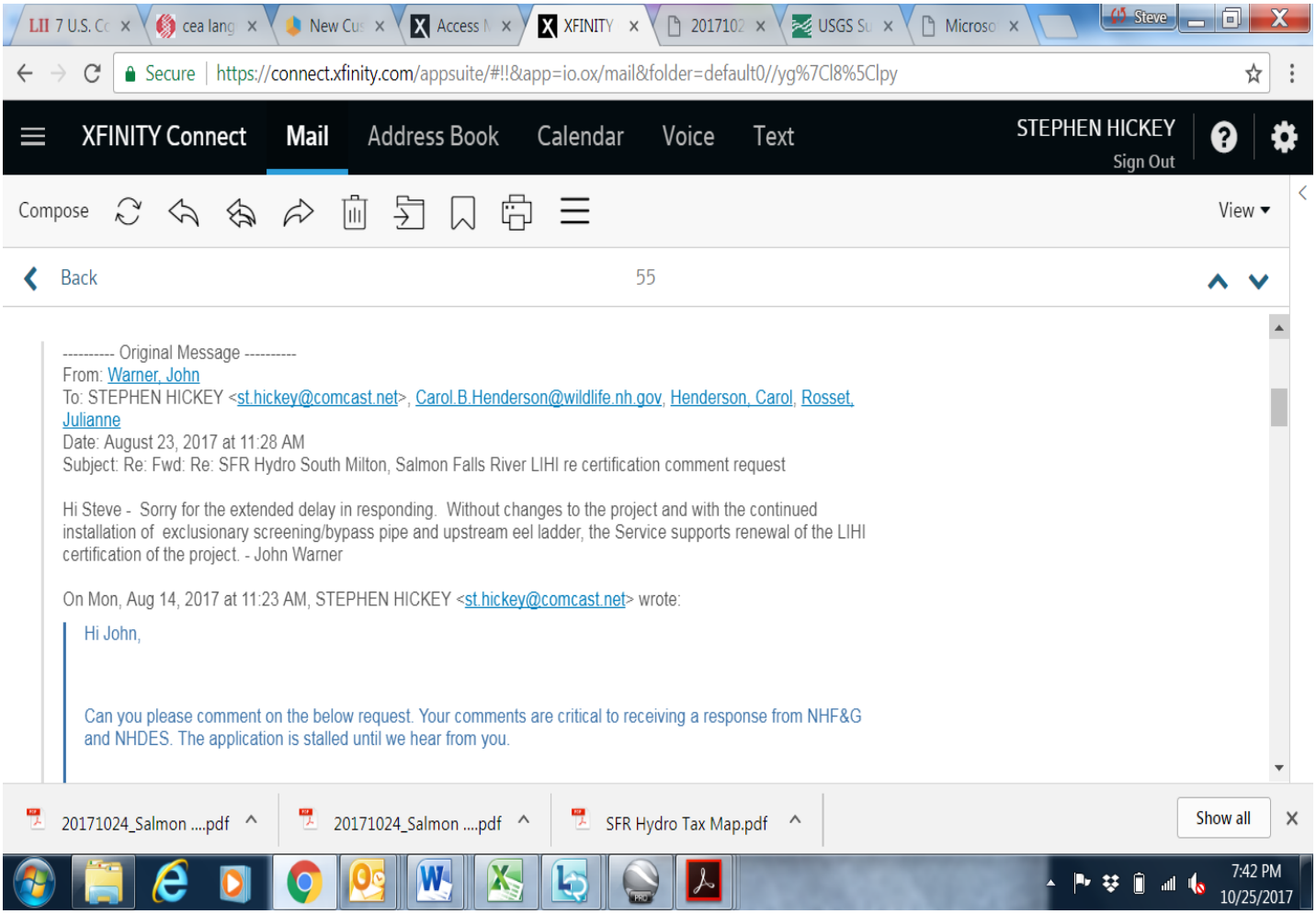
Staff Gage Starting WSEL: _____ Staff Gage Ending WSEL: _____

Meter: _____ Weather Conditions: _____

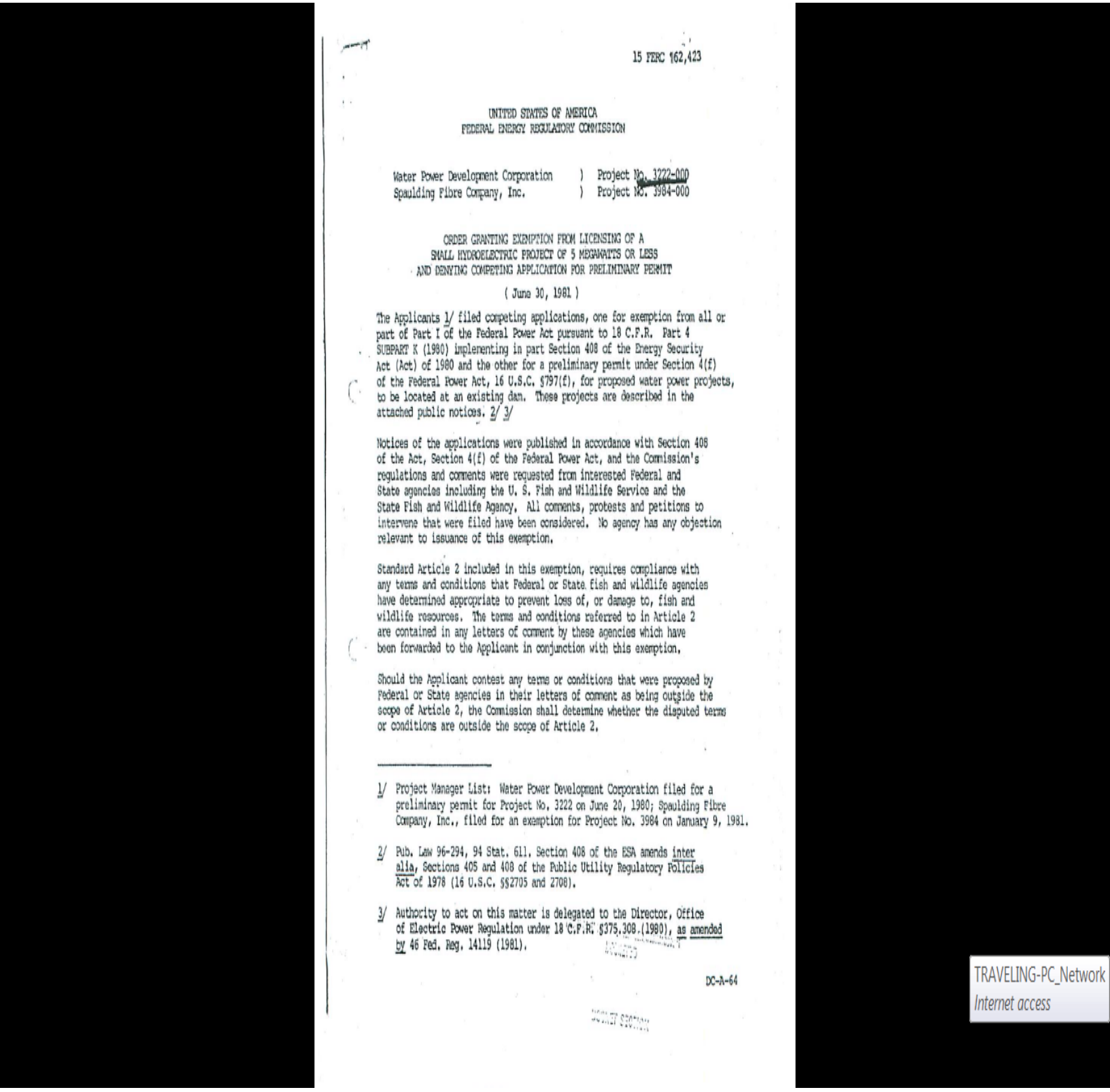
| Station (ft) | Depth (ft) | Velocity (ft/sec) | Flow (cfs) | Notes |
|---|---|---|---|---|

**Note: No one segment can have more than 10% of the total flow.**

## **Appendix 4** (Eel design approval from USFWS)



# **Appendix 5** (P-3984 FERC project exemption)



15 FERC ¶62,423

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Water Power Development Corporation ) Project No. 3222-000
Spaulding Fibre Company, Inc. ) Project No. 3984-000

ORDER GRANTING EXEMPTION FROM LICENSING OF A
SMALL HYDROELECTRIC PROJECT OF 5 MEGAWATTS OR LESS
AND DENYING COMPETING APPLICATION FOR PRELIMINARY PERMIT

( June 30, 1981 )

The Applicants 1/ filed competing applications, one for exemption from all or part of Part I of the Federal Power Act pursuant to 18 C.F.R. Part 4 SUBPART K (1980) implementing in part Section 408 of the Energy Security Act (Act) of 1980 and the other for a preliminary permit under Section 4(f) of the Federal Power Act, 16 U.S.C. §797(f), for proposed water power projects, to be located at an existing dam. These projects are described in the attached public notices. 2/ 3/

Notices of the applications were published in accordance with Section 408 of the Act, Section 4(f) of the Federal Power Act, and the Commission's regulations and comments were requested from interested Federal and State agencies including the U. S. Fish and Wildlife Service and the State Fish and Wildlife Agency. All comments, protests and petitions to intervene that were filed have been considered. No agency has any objection relevant to issuance of this exemption.

Standard Article 2 included in this exemption, requires compliance with any terms and conditions that Federal or State fish and wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources. The terms and conditions referred to in Article 2 are contained in any letters of comment by these agencies which have been forwarded to the Applicant in conjunction with this exemption.

Should the Applicant contest any terms or conditions that were proposed by Federal or State agencies in their letters of comment as being outside the scope of Article 2, the Commission shall determine whether the disputed terms or conditions are outside the scope of Article 2.

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1/ Project Manager List: Water Power Development Corporation filed for a preliminary permit for Project No. 3222 on June 20, 1980; Spaulding Fibre Company, Inc., filed for an exemption for Project No. 3984 on January 9, 1981.

2/ Pub. Law 96-294, 94 Stat. 611, Section 408 of the ESA amends inter alia, Sections 405 and 408 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. §§2705 and 2708).

3/ Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation under 18 C.F.R. §375.308.(1980), as amended by 46 Fed. Reg. 14119 (1981).

DC-A-64

Competing Applications

Consistent with Section 4.104(c)(1) of the Commission's regulations, which states that the Commission will favor applications for exemptions over applications for preliminary permits, this exemption is issued to the Applicant described in Ordering Paragraph (A).

It is ordered that:

(A) The South Milton Project No. 3984 as described and designated in the Spaulding Fibre Company, Inc.'s application filed on January 9, 1981, is exempted from all of the requirements of Part I of the Federal Power Act, including licensing, subject to the standard articles in §4.106 of the Commission's regulations, 18 C.F.R. §4.106 45 Fed. Reg. 76115 (November 18, 1980).

(B) The application for preliminary permit for Project No. 3222 filed on June 20, 1980, is denied.

(C) This order is final unless a petition appealing it to the Commission is filed within 30 days from the date of its issuance, as provided in Section 1.7(d) of the Commission's regulations, 18 C.F.R. 1.7(d)(1979), as amended, 44 Fed. Reg. 46449 (1979). The filing of a petition appealing this order to the Commission or an application for rehearing as provided in Section 313(a) of the Act does not operate as a stay of the effective date of this order, except as specifically ordered by the Commission.

( S E A L )

William W. Lindsay
Director, Office of Electric
Power Regulation

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

| | | |
|---|---|---|
| SFR Hydro Corporation | ) | Docket No. QF86-1062-001 |

NOTICE OF QUALIFYING SMALL
POWER PRODUCTION FACILITY STATUS

Pursuant to section 292.207(a)(2) of the regulations of the Federal Energy Regulatory Commission ("FERC" or "Commission"), 18 C.F.R. § 292.207(a)(2), SFR Hydro Corporation, a New Hampshire corporation, hereby furnishes notice to the Commission that it is the owner and operator of a small power production facility, the South Milton Hydroelectric Project, FERC Project No. 3964, which is a qualifying facility within the meaning of sections 201 and 210 of the Public Utility Regulatory Policies Act of 1978 ("PURPA"), 16 U.S.C. §§796, 824a-3, and 18 C.F.R. § 292.203 of the Commission's regulations.

This notice is being filed to reflect a change in ownership of the South Milton facility from Hydro-Op One Associates to SFR Hydro Corporation. Hydro-Op One Associates filed a Notice of Qualifying Small Power

Production Facility Status on September 12, 1986. SFR Hydro Corporation is a wholly-owned subsidiary of Hydro-Op One Associates. Neither SFR Hydro Corporation nor Hydro-Op One Associates is an electric utility, an electric utility holding company, or a person owned by either.

In addition, the power production capacity of the South Milton facility has increased from 1.045 megawatts to 1.350 megawatts. No other technical aspects of the facility have changed.

Pursuant to section 292.207(a)(2), SFR Hydro Corporation submits the following information:

Section 292.207(b)(2)(i). Name and Address of Applicant and Location of Facility.

The address and principal place of business of SFR Hydro Corporation are:

SFR Hydro Corporation
c/o National Hydro Corporation
99 Bedford Street
Boston, Massachusetts 02111-2217

The South Milton facility is located in Strafford County, New Hampshire and York County, Maine near South Milton, New Hampshire and utilizes the water resources of the Salmon Falls River. The South Milton facility has been docketed by the Commission as Project No. 3984 for purposes of receiving authorization under the Federal Power Act.

Section 292.207(b)(2)(ii). Description of the Facility. The South Milton facility is a small power production facility located at an existing dam. Electrical energy is produced through the use of four hydraulic turbines with connected generators. Electricity produced is sold to Public Service Company of New Hampshire.

Section 292.207(b)(2)(iii). Primary Energy Source of the Facility. The primary energy source of the South Milton facility is falling water.

Section 292.207(b)(2)(iv). Power Production Capacity of the Facility. The power production capacity of the South Milton facility is 1.350 megawatts. As used in this Notice, the "power production capacity" of the facility is its maximum net output and is equal to gross design capacity less full auxiliary load.

Section 292.207(b)(2)(v). Percentage of Ownership by Any Electric Utility Company, Electric Utility Holding Company, or Any Company Owned by Either. Neither SFR Hydro Corporation nor any entity owning an interest in SFR Hydro Corporation is an electric utility, an electric utility holding company, or a person owned by either.

Section 292.207(b)(3)(i). Location of Other Small Power Production Facilities. No other facility owned by SFR Hydro Corporation is located within one mile of the South Milton facility and uses water from the same impoundment for power generation.

Section 292.207(b)(3)(ii). Information Identifying Any Planned Use of Natural Gas, Oil, or Coal. Because the energy source of the South Milton facility is wholly hydropower, no fossil fuels are used.

Respectfully submitted,

Gary D. Bachman
Paul C. Blackburn
Van Ness, Feldman, Sutcliffe & Curtis
A Professional Corporation
1050 Thomas Jefferson Street,
Seventh Floor
Washington, D.C. 20007
(202) 298-1800

Attorneys for
SFR Hydro Corporation

December 20, 1989

**Appendix 6** (T&E review from New England Field Office of the United States Fish and Wildlife Service and the New Hampshire Fish and Game Department)

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: July 15, 2017
Consultation Code: 05E1NE00-2017-SLI-2216
Event Code: 05E1NE00-2017-E-04818
Project Name: South Milton Low Impact re certification

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

To Whom It May Concern:

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

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

# Official Species List

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

This species list is provided by:

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

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office:

**Maine Ecological Services Field Office**
P. O. Box A
East Orland, ME 04431
(207) 469-7300

## Project Summary

Consultation Code: 05E1NE00-2017-SLI-2216

Event Code: 05E1NE00-2017-E-04818

Project Name: South Milton Low Impact re certification

Project Type: DAM

Project Description: This is an existing hydroelectric project which has operated at this site since the late nineteenth, early twentieth century. The project was originally certified by the Low Impact Hydropower Institue in 2012 and is seeking re certification in 2017. No ground disturbing activities will take place and no change in operations are planned.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.39930220126266N70.98333193657476W


Counties: York, ME | Strafford, NH

## Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

## Mammals

| NAME | STATUS |
|---|---|
| Northern Long-eared Bat *(Myotis septentrionalis)* | Threatened |

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9045

## Flowering Plants

| NAME | STATUS |
|---|---|
| Small Whorled Pogonia *(Isotria medeoloides)* | Threatened |

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1890

## Critical habitats

There are no critical habitats within your project area.

# FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN NEW HAMPSHIRE

| COUNTY | SPECIES | FEDERAL STATUS | GENERAL LOCATION/HABITAT | TOWNS |
|---|---|---|---|---|
| Belknap | Small whorled Pogonia | Threatened | Forests with somewhat poorly drained soils and/or a seasonally high water table | Meredith, Alton and Laconia |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |
| Carroll | Small whorled Pogonia | Threatened | Forests with somewhat poorly drained soils and/or a seasonally high water table | Albany, Brookfield, Eaton, Effingham, Madison, Ossipee, Wakefield and Wolfeboro |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |
| Coos | Canada Lynx | Threatened | Regenerating softwood forest, usually with a high density of snowshoe hare. | All Towns |
| | Dwarf wedgemussel | Endangered | Connecticut River main channel and Johns River | Northumberland, Lancaster and Dalton |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |
| Cheshire | Dwarf wedgemussel | Endangered | S. Branch Ashuelot River and Ashuelot River | Swanzey, Keene and Surry |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |
| Grafton | Dwarf wedgemussel | Endangered | Connecticut River main channel | Haverhill, Piermont, Orford and Lyme |
| | Small whorled Pogonia | Threatened | Forests with somewhat poorly drained soils and/or a seasonally high water table | Holderness |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |
| Hillsborough | Small whorled Pogonia | Threatened | Forests with somewhat poorly drained soils and/or a seasonally high water table | Manchester, Weare |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |
| Merrimack | Karner Blue Butterfly | Endangered | Pine Barrens with wild blue lupine | Concord and Pembroke |
| | Small whorled Pogonia | Threatened | Forests | Bow, Danbury, Epsom, Loudon, Warner and Allenstown |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |

Updated 02/05/2016

# FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN NEW HAMPSHIRE

| COUNTY | SPECIES | FEDERAL STATUS | GENERAL LOCATION/HABITAT | TOWNS |
|---|---|---|---|---|
| Rockingham | Piping Plover | Threatened | Coastal Beaches | Hampton and Seabrook |
| | Roseate Tern | Endangered | Atlantic Ocean and nesting at the Isle of Shoals | |
| | Red knot[1] | Threatened | Coastal Beaches and Rocky Shores, sand and mud flats | Coastal towns |
| | Small whorled Pogonia | Threatened | Forests | Deerfield, Northwood, Nottingham, and Epping |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |
| Strafford | Small whorled Pogonia | Threatened | Forests with somewhat poorly drained soils and/or a seasonally high water table | Middleton, New Durham, Milton, Farmington, Strafford, Barrington, and Madbury |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |
| Sullivan | Northeastern bulrush | Endangered | Wetlands | Acworth, Charlestown, Langdon |
| | Dwarf wedgemussel | Endangered | Connecticut River main channel | Plainfield, Cornish, Claremont and Charlestown |
| | Jesup's milk-vetch | Endangered | Banks of the Connecticut River | Plainfield and Claremont |
| | Northern Long-eared Bat | Threatened Final 4(d) Rule | Winter- mines and caves, Summer – wide variety of forested habitats | Statewide |

[1]Migratory only, scattered along the coast in small numbers
-Eastern cougar, gray wolf and Puritan tiger beetle are considered extirpated in New Hampshire.
-Endangered gray wolves are not known to be present in New Hampshire, but dispersing individuals from source populations in Canada may occur statewide.-There is no federally-designated Critical Habitat in New Hampshire

Updated 02/05/2016

**Appendix 7** (email from Gail Wippelhauser Maine Department of Marine Resources)

Will be sent to LIHI upon receipt

# Appendix 8 Project map