APPLICATION FOR WATER QUALITY CERTIFICATION

Water Division
Water Quality Certification Program

RSA: 485-A:12

Date of Request 19 April, 2024

Date Request Received by NHDES _____

I. Applicant Information

Principal Place of Business of the Applicant Great River Hydro, LLC	
Mailing Address [Street, PO Box, RR, etc.] 69 Milk Street, Suite 306	
City/Town and Zip Code Westborough, MA 01581	
Telephone No. 603-498-2851	Email Address jragonese@greatriverhydro.com
Name and Title of Signatory Official Responsible for the Activity for which Certification is Sought (e.g., President, Administrator) John L. Ragonese, FERC License Manager	

II. Project Information

Name of Project Wilder Hydroelectric Project, FERC No. 1892
Name of Town and County that contains the Project New Hampshire: Lebanon, Grafton; Vermont: Hartford, Windsor
Name of Receiving Waterbody and Drainage Basin Connecticut River, Connecticut River Drainage Basin
Summary of Activity (e.g., construction, operation, or other practice or action) The Applicant has filed with the Federal Energy Regulatory Commission Amended Applications for New License for Major Project - Existing Dam for the existing Wilder Hydroelectric Project. Additional information is provided in the attached narrative.

III. Additional Submittal Information

PLEASE SUBMIT AS MUCH INFORMATION AS POSSIBLE IN ELECTRONIC FORMAT

phone (603) 271-2457
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PO Box 95, Concord, NH 03302-0095
www.des.nh.gov

Please provide an individual response to each bullet, below. If applicable information is contained in the application materials, please provide a reference to the specific section in the application materials that will represent the response to the individual bullets below.

- Type of activity (e.g., construction, operation, other action such as water withdrawal) and the start and end dates of the activity.
- The characteristics of the activity: Whether the activity is associated with a discharge and/or water withdrawal and whether the discharge and/or withdrawal is proposed or occurring.
- The characteristics of the discharge and/or withdrawal
    - Flow rate (cfs)
    - Potential chemical, physical, biological constituents
    - Frequency (e.g., daily, hourly,)
    - Duration
    - Temperature (Celsius)
    - Latitude and longitude (dd:mm:ss)

- The existing and designated use(s) that are potentially affected by the proposed activities. (Designated Uses are listed in the NHDES Consolidated Assessment and Listing Methodology).
- The provision(s) of surface water quality standards (Env-Wq 1700) that are applicable to the designated uses affected by the proposed activities.
- A pollutant loading analysis to show the difference between predevelopment and post-development pollutant loads for a typical year. The objective of the loading analysis is to show post-development pollutant loads do not exceed pre-development pollutant loads. Loading analysis guidance and a simple spreadsheet model will be provided by NHDES. The loading analysis will be used to determine appropriate stormwater management measures, which must be effectively designed, installed, and maintained to ensure compliance with surface water quality standards.
- A description of any other aspect of associated with construction and operation of the activity that would affect the chemical composition, temperature, flow, or physical aquatic habitat of the surface water.
- An original or color copy/reproduction of a United States Geological Survey Quadrangle Map that clearly shows the location of the activity and all potential discharge points.
- A copy of the final complete federal permit application or federal license application, including the federal permit, license, or project number.
- A copy of the NHDES wetlands permit (RSA 482-A:3), if necessary.
- A copy of the NHDES alteration of terrain permit (RSA 485-A:17), if necessary.
- The name(s) and address(es) of adjoining riparian or littoral abutters.
- A plan showing the proposed activities to scale including:
    - The location(s) and boundaries of the activities;
    - The location(s), dimension(s), and type(s) of any existing and/or proposed structures; and
    - The location(s), name(s), identification number(s), and extent of all potentially affected surface water bodies, including wetlands.
- For projects that involve a new surface water withdrawal, provide the following:

- a copy of the water conservation plan (WCP) submitted to the NHDES Water Conservation Program and the status of NHDES approval, or
- a copy of a waiver approved by the NHDES Water Conservation Program that waives the requirement to submit a WCP prior to or in conjunction with the application for water quality certification.

[Pursuant to Env-Wq 2101, and unless a waiver is applied for and granted by NHDES, all applicants for water quality certification are required to submit a water conservation plan (WCP) for projects that involve a new withdrawal from a surface water prior to or in conjunction with this application. Contact the NHDES Water Conservation Program for guidance related to drafting a WCP and the review and approval process. Information regarding the WCP, including contact information, may be found at NHDES' Water Conservation website.

- If the project is located within ¼ (one quarter) mile of a designated river, as defined under RSA 483 (the Rivers Management and Protection Act), provide documentation showing that the Local River Management Advisory Committee (LAC) has been provided with a copy of this complete application. A list and map of the designated rivers, as well as contact information, may be found at NHDES' Designated Rivers website.

Signature – MUST BE SIGNED AND DATED BY APPLICANT

To the best of my knowledge, the data and information described above, which I have submitted to the New Hampshire Department of Environmental Services, is true and correct. I understand that an approval of the requested water quality certification based upon incorrect data may be subject to revocation of the certification. I have complied with all local regulations or ordinances relative to the proposed activity and have obtained or will obtain, prior to the commencement of any work, all other approvals that may be required.

Signed: John Ragonese

Date: April 19, 2024

III Additional Submittal Information

1. Type of activity (e.g., construction, operation, other action such as water withdrawal) and the start and end dates of the activity.

The proposed activity consists of continued operation of the existing Wilder Hydroelectric Project (Project) in accordance with the amended Wilder Final License Application (Wilder FLA) submitted to Federal Energy Regulatory Commission (FERC or the Commission) on December 7, 2020[1], with a further revised composite Exhibit E for Wilder, Bellows Falls and Vernon Projects (Exhibit E) filed on June 7, 2023[2] . The Great River Hydro (GRH) proposal, as outlined in the Wilder FLA Exhibit B (Exhibit B) reflects the proposed operation in accordance with a Memorandum of Understanding (MOU) executed on December 1, 2020[3] between Great River Hydro, the Project certifying authorities (including NHDES), and other participating stakeholders. The MOU includes an Exhibit A "Great River Hydro's Proposed Alternative Operation for the Projects" that is the basis of the proposed Project operation in the Wilder FLA. The Wilder FLA also included a proposed set of fish passage environmental measures that have since been incorporated into a Settlement Agreement on Fish Passage (SAFP) executed by New Hampshire Fish and Game Department among other state and federal agencies and filed with the Commission on August 2, 2022[4]. This Water Quality Certificate application presents information collected and presented in Exhibit E and assumes future operations consistent with the Wilder FLA, MOU and the SAFP. Exhibit E provides a full description of the proposed Project activity and is summarized below. Additional supporting information is provided in the ILP Water Quality Study 6 Updated Study Report dated 12-15-2016[5] and ILP Fish Assemblage Study 10 Report dated 08-01-2016[6].

Project Description

The Wilder Project dam and powerhouse are located on the Connecticut River at river mile (RM) 217.4, approximately 1.5 miles upstream of the White River confluence and 7 miles downstream of the Ompompanoosuc River in the town of Hartford, Windsor County, Vermont, and in the city of Lebanon,

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[1] Accession Nos. 20201207-5219 (Public), - 5220 (Privileged);-5221 (CEII); Amended Final License Applications of Great River Hydro, LLC for Bellows Falls Project, et. al. under P-1855 et. al.

[2] Accession No. 20230608-5103 Great River Hydro, LLC submits Revised Final License Application and Exhibits for the Bellows Falls Hydroelectric Project et. al. under P-1855 et. al. Includes composite Exhibit E for Wilder, Bellows Falls and Vernon Projects revised 06-07-2023.

[3] Memorandum of Understanding between Great River Hydro and the United States Fish and Wildlife Service, the New Hampshire Department of Environmental Services, the New Hampshire Fish and Game Department, the Vermont Department of Environmental Conservation, the Vermont Department of Fish and Wildlife, The Nature Conservancy, and the Connecticut River Conservancy; filed with Wilder Project FLA Exhibit B of Amended Final License Applications of Great River Hydro, LLC for Bellows Falls Project, et. al. under P-1855 et. al. Accession Nos. 20201207-5219 (Public),

[4] Accession No. 20220803-5124 Great River Hydro, LLC submits Offer of Settlement between Great River Hydro, LLC and the U.S. Department of Interior et. al, and Revisions to Exhibit D Documents for the Wilder Hydroelectric Project et, al. under P-1855, et. al.

[5] Accession No. 20161215-5280 ILP Study Reports 6, 25 and 30, final reports and supplements, TransCanada Hydro Northeast Inc. under P-1892, et al filed December 15, 2016

[6] Accession No. 20160801-5232 TransCanada Hydro Northeast Inc. August 1, 2016 Updated Study Report under P-1855, et. al.

Grafton County, New Hampshire. The Project consists of a rolled earthen embankment and earthen dike dam with a concrete gravity spillway; an approximate 45-mile-long impoundment; a powerhouse, a garage/service building, and buildings used for offices; fish passage facilities; and appurtenant facilities.

The dam is a concrete gravity structure extending across the Connecticut River from Hartford, Vermont, to Lebanon, New Hampshire. The dam structures include an earthen embankment that is about 400 feet (ft) long, a non-overflow gravity concrete bulkhead wall that is 232 ft long, a concrete forebay intake that is 208 ft long, a gravity concrete spillway that is about 526 ft long and 59 ft in maximum height, and another earthen embankment that is about 180 ft long. The south embankment is 13 ft in maximum height and the north embankment is primarily a natural bank to which protection has been added. The spillway portion of the dam is divided into four sections: skimmer gate, 6 tainter gates, 4 stanchion flashboards, and another skimmer gate. The various bays are separated by concrete piers supporting a steel and concrete bridge.

The Project impoundment extends upstream about 45 miles to a point about 4.0 miles below the Wells River-Woodsville Bridge. The Project has limited storage capacity because of the relatively flat terrain from the upper extent of the Project impoundment to the dam. The impoundment has a surface area of 3,100 acres and about 105 miles of shoreline and a total volume of 34,600 acre-feet (acre-ft) at elevation (El.) 385.07 ft at the top of the stanchion boards. The total usable storage amounts to about 13,350 acre-ft in 5 ft of drawdown to El. 380.

The powerhouse contains three turbine generating units. Unit Nos. 1 and 2 are adjustable blade Kaplan units with a maximum hydraulic capacity of 6,000 cfs and minimum hydraulic capacity of 400 cfs. Nameplate capacity for Unit Nos. 1 and 2 is 18,000 kilovolt-amperes (kVA) at 0.9 power factor, or 16,200 kilowatts (kW), for each unit. Unit No. 3 is a vertical Francis unit with a maximum hydraulic capacity of 700 cfs and a minimum hydraulic capacity of 400 cfs. Unit No. 3 nameplate capacity is 3,555 kVA at 0.9 power factor, or 3,200 kW.

At full load, with inflow equaling a maximum station discharge of at least 11,700 cfs, the Project has the capability of producing 43.4 megawatts (MW) and 10-year average annual generation (2007–2016) of approximately 161,739 MWh.

The Project also includes an upstream fish passage ladder and downstream fish passage through a surface spill gate, recreation facilities including a boat launch, portage, picnic areas, hiking trail, fish ladder viewing area, and fishing access. Plans and schedules for additional upstream and downstream passage enhancements are detailed in the SAFP.

Proposed Project Operations

Great River Hydro, with support from relevant state and federal resource agencies, and regional and national non-governmental organizations that have actively participated in scoping and study phases of relicensing, proposes a modified project operation (proposed operation) that significantly reduces both the frequency, amplitude, and rate of change in project-related discharge and impoundment water surface fluctuation in comparison to the current operation. The proposed operation is detailed in the Wilder FLA Exhibit B “Project Operations and Resource Utilization” and the MOU.

The proposed operation focuses on creating more stable reservoir water surface elevations, reducing the magnitude of changes and the frequency of sub-daily changes in discharge from the project,

increasing the amount of time that the project is operated as inflow equals outflow and at full reservoir. At the same time, the proposed operation maintains Great River Hydro's capability to be flexible and responsive to current wholesale energy, forward capacity, reserve and other ancillary services markets managed by the New England Independent System Operator (ISO-NE). The proposed operation will also remain responsive to ISO-NE system emergencies when ISO-NE requires operation for reserves, security, system stability (e.g. VAR support), system over-supply conditions (ISO-NE minimum generation emergency or negative prices), and critical events or emergencies involving dam and public safety. The proposed operation ensures the Project's ability to address future regional energy demands and system needs as those evolve over time.

The proposed operation will predominantly maintain a specified water surface elevation (Target WSE) at the dam and, as a result, maintain flow below the Project equal to the approximate inflow as measured or calculated at the dam (inflow equals outflow or IEO). Specifically, a Target WSE of 384.5 ft m.s.l. (NVGD 29) will be maintained at the Wilder dam by passing inflow within a Target WSE Bandwidth between 385.0 ft and 384.0 ft to account for potential differences between anticipated inflow and actual instantaneous inflow. In addition to IEO Operation, the Project will have restricted discretionary Flexible Operation capability to respond to elevated energy prices as well as unrestricted capability to respond to emergencies and ISO-NE transmission and power system requirements. The Proposed Project Operation is described in detail in Attachment A of the MOU, and evidence of stakeholder support is provided in Attachment B of the MOU. Elements associated with the Proposed Project Operations including modes of operation, capabilities, restrictions, requirements, and allowances are defined and described below.

The Project will comply with an Inflow Equals Outflow (IEO) operating condition, as described in the Wilder FLA Exhibit B and MOU, applying Target WSE and associated Target WSE Bandwidths as described below, unless:

- Flexible Operation along with Transition Operation are applied and implemented;
- IEO Operation is suspended due to either High Water Operation, or Emergency and System Operation Requirements; or
- IEO Operation is suspended due to non-emergency maintenance requirements that mandate deviating from IEO Operation, but only after consultation with relevant state and federal resource agencies prior to initiating a necessary deviation and developing a suitable refill plan and schedule.

Target WSE for the Project is 384.5 ft except during Dwarf Wedgemussel (DWM) Winter Habitat Protection Operation. The corresponding Target WSE bandwidth is between 384 and 385 ft, representing 0.5 ft above and below the Target WSE. Rates of change in station discharge to maintain a Target WSE (matching inflow with outflow) will be limited to reasonable changes necessary to continue or adjust the actual WSE to the Target WSE within the Target WSE Bandwidth.

Flexible Operations, when the Project is operated at the discretion of GRH and deviates from IEO Operation, are limited, in part, by maximum allowable Flexible Operation hours specified below, which are allocated on a monthly basis in order to reflect the seasonal criticality of instream aquatic resources as well as the criticality and fuel security concerns associated with winter peaking loads in New England.

- December, January, February, March: no more than 65 hours in each month.

- April, May, June: no more than 10 hours in each month.
- July: A total of 20 hours with no more than 10 hours from July 1 through July 15. Although a maximum of 10 hours is allowed from July 1 through July 15, in order to further enhance the potential for successful Sea Lamprey spawning, Great River Hydro will strive to minimize the hours of Flexible Operation during this period when conditions allow.
- August, September, October: a total of no more than 20 hours in each month.
- November: a total of 42 hours with no more than 10 hours from November 1 through 15.

Flexible Operations will comply with the Flexible Operations Impoundment Range, which is between 383.0 and 384.5 ft, excluding DWM Winter Habitat Protection Operation, and will be in accordance with Flexible Operations Operation Hours requirements.

Flexible Operations Maximum Discharge will be based upon the calculated inflow as follows:

- When calculated inflow is approximately 1,800 cfs or less, Flexible Operation Maximum Discharge is 4,500 cfs;
- When calculated inflow is greater than approximately 1,800 cfs, the Flexible Operation Maximum Discharge is limited to 2.5 times the calculated inflow and will not exceed the Wilder Maximum Station Generating Capacity of 11,700 cfs.

For the purpose of protecting DWM from freezing in the winter, the Wilder Project impoundment will be temporarily lowered in the fall of each year as described for Dwarf Wedgemussel Winter Habitat Protection Operation in the Wilder FLA and MOU.

There are no limitations on the number of Flexible Operation events per day or the duration of Flexible Operation events other than those indirect limitations due to Inflow and Transition Operation requirements as specified in the Wilder FLA and MOU.

Scheduled Flexible Operation will require one hour of Transition Operation up-ramping (i.e. gradual flow increase from IEO Operation to Flexible Operation). Unscheduled (in response to Real-Time price signals) Flexible Operation, and Emergency and System Operation Requirements will not require up-ramping.

All Flexible Operation events will require Transition Operation down-ramping (i.e. gradual flow decrease from Flexible Operation to IEO Operation) and refill (i.e. to restore stable Target WSE) as defined in the Wilder FLA and MOU. The Transition Operation modes will be applied as follows:

	Up-Ramping	Down-Ramping	Refill
IEO Operations	Not Applied	Not Applied	Not Applied
Flexible Operations, Scheduled	Applied during the hour prior	Applied as Defined	Applied as Defined
Flexible Operations, Un-scheduled	Not Applied	Applied as Defined	Applied as Defined
High Water Operations	Not Applied	Not Applied	Not Applied
Claimed Capacity Audits and Reactive Power Demonstrations	Not Applied	Applied as Defined	Applied as Defined
Emergencies and System Emergencies	Not Applied	Not Applied	Not Applied

Start and End Dates of the Activity

The Project is currently operating under the terms and conditions of the most recent FERC License originally issued on December 10, 1979, as amended, and expired on April 30, 2019. Since the expiration of the present license in 2019, FERC has issued from year-to-year an annual license under the terms and conditions of the present license until a new license is issued, or the project is otherwise disposed of. Great River Hydro is seeking a new 40-year license as outlined in its Wilder FLA. The start of the proposed activity will be the date of license Issuance and the term typically is based upon the last day of the month in which the license is issued by the FERC.

2. The characteristics of the activity: Whether the activity is associated with a discharge and/or water withdrawal and whether the discharge and/or withdrawal is proposed or occurring

The activity is proposed modified continuation of hydroelectric power generation operations at the Wilder Project under a new Federal License and consists of maintenance of a target water surface elevation in the Project impoundment, direction of flows through the three generating units in the powerhouse, and regulation of outflows through various flow control structures within the spillway as well as upstream and downstream fish passage structures in accordance with the proposed operations in the Wilder FLA, MOU and SAFP. The powerhouse is integrated with the dam and there is no bypassed reach downstream of the dam. Current and proposed water withdrawals and discharges are limited to non-consumptive flow through the powerhouse and passage of river flow. The proposed operation for the Project will predominantly consist of run-of-river operations, where inflow equals outflow for the majority of time, and minimal water surface elevation fluctuations; both of which will reduce the degree of sub-daily discharge fluctuation that occurs under current operation. Under the relicensing proceeding or associated with this WQC application, there are no immediate proposed construction activities or activities that require water withdrawals or discharges outside of the proposed operations presented in the Wilder FLA and MOU.

3. The Characteristics of the Discharge and/or Withdrawal: a) Flow Rate; b) Potential Chemical, Physical, Biological Constituents; c) Frequency (e.g. daily, hourly); d) Duration; e) Temperature (Celsius); f) Latitude and Longitude

The withdrawals and discharges associated with the proposed operation consist of passing flows in the Connecticut River at Wilder Dam through the Wilder station or powerhouse and discharging into the tailrace at the base of the station. The remaining river flow in excess of powerhouse capacity is passed instantaneously through spillway structures and as needed through fish passage structures.

Flow in the Connecticut River equal to or less than station capacity (i.e. flows used for hydroelectric power production) are passed through the gravity concrete intake structure on the upstream face of the powerhouse, through the turbine(s), discharging through draft tubes cast in the concrete foundation, into the tailrace area on the downstream side of the Wilder powerhouse. There are two intake bays

associated with Units 1 and 2 (unit intake area of 1314.4 ft^2); four head gates (2 gates per unit) that are 25 ft high by 20 ft wide; and trashracks with clear spacing between bars of 5 inches. Unit 3 has a single intake bay; a 96 inch diameter butterfly valve acting as a head gate; and trashracks with clear spacing between bars of 1.625 inches. for Unit 3. The invert elevation for the intake gates is 365 ft which is about 19.5 ft below the Target WSE for the proposed operation. The tailrace area is located immediately west of the Wilder powerhouse which spans approximately the northern third of the dam length and is adjacent to the Vermont shoreline.

3.a. Flow Rate (cfs)

Under proposed operation, flow rates below the Project are determined by inflow as measured at the dam, when operating in an inflow equals outflow operation (IEO Operation). In addition to IEO Operation, the Project will have restricted discretionary Flexible Operation capability to respond to elevated energy prices as well as unrestricted capability to respond to emergencies and ISO-NE transmission and power system requirements. During these events, flow rates will exceed inflow for short periods and be lower than inflow during impoundment re-fill periods. While operating in Flexible Operation, preceding Up-ramping and subsequent Down-ramping, flows will be maintained above or equal to inflow. While operating in Transition Refill Operation (item 19.c in the MOU), discharge will be approximately 70% of estimated inflow and adjusted as necessary through hourly real-time monitoring and calculation of estimated inflow. Discharge during refill will not fall below the seasonal Minimum Base Flows as specified in the MOU, of: Oct 1 - March 31: 1,500 cfs; April 1 - May 31: 2,000 cfs; June 1 - Sept 30: 1,100 cfs. These are not minimum flows nor guaranteed minimum inflows. They represent levels which for Flexible Operation planning and decisions would need to consider before initiating such operation. If inflows were low and the required discharge of 70% of inflow (to refill the impoundment) were below the minimum base flows, the flexible operation should not be initiated. Inflow is not guaranteed to be above these levels but based upon upstream seasonal minimum flow requirements, it is anticipated that inflow would be above these flow rates. When inflow exceeds the station capacity of 11,700 cfs the excess flow is spilled through the tainter gates. In extreme flood events that exceed the flow capacity of the tainter gates, stanchion bays would be removed to facilitate additional flows, although this condition has never occurred in the operating history of the Wilder Project. The proposed operation, including specific flow criteria, is described in Wilder FLA Exhibit B and in Exhibit A of the MOU.

3.b. Potential Chemical, Physical, Biological Constituents

Project operations pass Connecticut River flow instantaneously through turbines, flow control structures, or fish passage structures and therefore have limited direct effects on the chemical, physical, or biological constituents in the discharge. The potential effects on water quality are primarily through the hydrologic modification associated with the dam structure/operations and the variable source of outflows – i.e. at depth in the forebay through the turbines or through the tainter gates at the dam crest. The greatest concern for hydroelectric operations on water quality is thermal/chemical stratification in the impoundment which can then be preferentially conveyed downstream via submerged intake structures (Friedl and Wüest, 2002). Therefore, water quality studies for hydroelectric projects tend to be most focused on dissolved oxygen and temperature patterns in the project area. Nutrient cycling in an impoundment is also a concern, particularly phosphorus which is the limiting nutrient in freshwater systems (NHDES, 2020) and therefore phosphorus data and chlorophyll-a data

(another trophic state indicator) are typically collected and reviewed for hydroelectric water quality demonstrations (NHDES, 2020).

Water quality studies were completed for the FERC license application for Wilder Project in 2012 and 2015, the scope of which included continuous monitoring of dissolved oxygen, temperature, specific conductance, and pH as well periodic discrete measurements of the same parameters, including vertical profiles in the dam forebay, and collection of samples for laboratory analysis of nutrients and other chemical parameters (including phosphorus and chlorophyll-a). The water quality data collected in 2012 indicated no exceedances of the dissolved oxygen instantaneous standard of 5 mg/L for Class B waters in NH, as determined from both the continuous monitoring data and the periodic discrete measurements at multiple Wilder stations and vertical profiles in the Wilder forebay (Table 3.5-18 in Exhibit E). Likewise, the 2015 study did not document any exceedances of NH DO standards at the Wilder continuous or discrete monitoring stations, including vertical profiles in the forebay (Tables 3.5-20 through 3.5-24 in Exhibit E). The dissolved oxygen and temperature data collected in 2012 and 2015 indicate that thermal/chemical stratification in the Wilder impoundment was uncommon, spatially limited, and did not result in upstream or downstream impairments as determined by NH water quality standards (Exhibit E pages 3-158 through 3-160).

In both the 2012 and 2015 water quality studies pH was measured continuously at multiple stations with additional discrete measurements at multiple stations, including as vertical profiles. The state pH standard for Class B waters is 6.5-8.0 standard pH units, unless due to natural causes. On average, during the 2012 and 2015 studies, pH was within the 6.5-8.0 range at all monitoring stations, with no documented exceedances of pH standards at the Wilder tailrace station (Exhibit E Pages 3-174 through 3-175). However, there were exceedances of both the low and high pH standards at stations in the Wilder impoundment during the 2012 and 2015 studies (Exhibit E Pages 3-174 through 3-175). While pH values were more variable in the Wilder Impoundment versus the Wilder tailrace, there was little evidence of vertical stratification in the impoundment as is consistent with the DO and temperature data. pH exceedances of state water quality standards in the Wilder impoundment were determined to be related to atmospheric deposition and increased rates of photosynthesis of algae and aquatic vegetation, not to Project operations effects (Exhibit E Pages 3-247 to 3-248).

Water samples were collected from the Wilder forebay and laboratory analyzed for nutrients and chlorophyll-a during the 2012 and 2015 water quality studies. Samples collected in 2012 indicated total phosphorus samples were on average in the eutrophic range of $0.012 < TP <= 0.028$ mg/L with a median value of 0.017 mg/L and samples collected in 2015 were on average in the mesotrophic range of $8 < TP <= 12$ mg/L with a median concentration of 0.011 mg/L. Chlorophyll-a concentrations in samples collected from the Wilder forebay in 2012 had a median concentration of 3.2 ug/L and in 2015 had a median concentration of 2.4 ug/L, within the oligotrophic range of chlorophyll-a <3.3 ug/L. There were no visual observations of algal blooms during the Wilder water quality studies, and it was determined that Project-affected waters met state water quality standards for nutrients and designated uses were maintained and supported (Exhibit E Page 3-252).

Additional details of water quality in the vicinity of the Wilder project and potential Project impacts on water quality are provided in Exhibit E sections 3.5.1.2, 3.5.2.2, 3.5.3.2, and 3.5.4.2.

Water quality data were collected in 2004 by NHDES and EPA and all sites sampled for that study in the Wilder Project area were found to fully support the designated uses of aquatic life and primary and secondary contact recreation (Exhibit E Page 3-143). Water quality data collected in 2008 and 2009 to evaluate the effectiveness of reduced combined sewer overflow discharges in the Connecticut River watershed indicated that on average bacteria concentrations were below the NH state standard, however, there were some instances of individual samples exceeding water quality standards, particularly under wet weather conditions (Exhibit E Page 3-146). Data collected at the USGS gage "Connecticut River at Wells River, Vermont" (USGS Gage No. 01138500) from 2005 through 2007 indicated no exceedances of dissolved oxygen or pH standards and phosphorus levels that were on average in the eutrophic range (median TP = 0.019 mg/L).

3.c. Frequency (e.g. daily, hourly)

Flow through the Project is continuous, based primarily on inflow at the dam. During IEO Operation, the rate of flow may fluctuate on an hourly basis based on dispatch schedules derived from predicted inflow or in real-time schedule adjustments made in an effort to match discharge with actual inflow. Adjustment to match inflow could potentially be made less frequently than hourly as long as the Wilder impoundment WSE is within a Target WSE Bandwidth between 385.0 ft and 384.0 ft (NVGD 29). In addition to IEO Operation, the Project will have restricted discretionary Flexible Operation capability to respond to elevated energy prices as well as unrestricted capability to respond to emergencies and ISO-NE transmission and power system requirements. Flexible, transition, or emergency and system operation as described in the MOU is also scheduled or performed on an hourly basis.

3.d. Duration

Great River Hydro proposes a modified project operation, as described in the Wilder FLA and MOU, that will be in effect during all times under a new license. The flows through the powerhouse or dam will be instantaneous, non-consumptive and will not divert out of stream (i.e. form a bypassed reach). Under the proposed operation, flow through in the impoundment will largely mirror inflow (upstream inflow into the project plus intermediate tributary inflow into the impoundment) except during periods of flexible operation or emergency and system operation. The requirements set forth in the proposed operation will be in effect at all times under a new license.

3.e. Temperature (°C)

Project water temperatures are primarily determined by ambient river and weather conditions with potential for modification by Project operations. Impoundments and hydroelectric operations have the potential to affect water temperature primarily through hydrologic modification of the natural river system, increasing storage volumes and residence times and decreasing turbulence which can lead to longitudinal temperature increases and development of thermal stratification (Friedl and Wüest, 2002).

Water temperatures were measured in the Wilder Project area as part of two water quality studies in 2012 and 2015 and included both continuous measurements and discrete readings, including vertical profiles in the Wilder forebay as described in Sections 3.5.1.2, 3.5.2.2, 3.5.3.2, and 3.5.4.2 of Exhibit E and ILP Study 6. Those studies demonstrated that overall, current Project operations effects on water temperatures were indistinguishable from daily water temperature fluctuations (Exhibit E Pages 3-233 to 3-235, 3-244). Temperature increases of more than 1 degree Fahrenheit (°F, 0.56°C) can occur within the project area, as was measured during the ILP Study 6, however the cause of the temperature rise

was equivocal and could be attributed to natural variations as well. Thermal stratification can occur in the Wilder forebay during an atypical warm year, such as 2012, but stratification documented during that study was intermittent, spatially limited, and short in duration. Downstream temperature effects are likely to be mitigated as tailrace temperatures were found to be slightly cooler than forebay surface temperatures due to entrainment and discharge of cooler hypolimnetic waters. Temperature effects from current Project operations were determined to support and maintain NH designated uses for Class B waters as any increase in temperature from upstream riverine areas to the Project dam will be gradual over the 46 river-mile Project area and variations caused by operations were indistinguishable from daily variations throughout the project area.

The Proposed Operation under the new license, which largely mirrors a natural flow regime through and below the project, will significantly reduce residency time in the impoundment and significantly increase instantaneous base flow in the riverine section below the project. Both of these attributes of the Proposed Operation will reduce the potential for water temperature increases caused by project operation.

3.f. Latitude and Longitude

The Wilder Powerhouse is located at approximately 43°40'4.25"N, 72°18'13.43"W. The intake structures are located immediately east of the powerhouse and the discharge is located immediately west of the powerhouse. The powerhouse area occupies approximately one quarter of the river cross section at the Wilder dam on the right bank (Vermont side) of the Connecticut River. The Tainter gates and stoplog bays are located south of the powerhouse spanning the center and left bank two thirds of the river.

4. The existing and designated use(s) that are potentially affected by the proposed activities. (Designated Uses are listed in the NHDES Consolidated Assessment and Listing Methodology).

Assessment Units are segments or portions of waterbodies used for reporting the results of all water quality assessments. Seven New Hampshire assessment units along the mainstem Connecticut River encompass the Wilder Hydroelectric Project:

- NHRIV801030703-04 (CT River from Bradford, VT to Woodsville, NH)
- NHRIV801040205-06 (CT River from Lyme-Orford NH town line to Waits River, Bradford, VT)
- NHLAK801040402-03 (CT River impoundment above Wilder Dam)
- NHRIV801040402-13 (CT River from Wilder Dam to White River, Hartford, VT)
- NHRIV801060302-01(CT River from White River Hartford, VT to Mascoma River Lebanon, NH)
- NHRIV801060302-05 (CT River from Mascoma River, Lebanon. NH to Blow-Me-Down Brook, Cornish, NH)
- NHRIV801060305-12 (CT River from Blow-Me-Down Brook, Cornish, NH to Sugar River, Claremont, NH)

Designated uses in these assessment units are described in the 2014 Section 305(b)/303(d) surface water quality list (NHDES, 2015). Drinking Water After Adequate Treatment is a listed use in all seven assessment units, while Aquatic Life, Primary and Secondary Contact Recreation are listed uses in only some. In the case of assessment units NHRIV801060302-01 and NHRIV801060302-05, primary contact

recreation is impaired because of E. coli bacteria from combined sewer overflows (CSO), but a statewide bacteria TMDL is in place (NHDES, 2010). Information is lacking to determine whether wildlife designated uses are supported in any of these assessment units. See Exhibit E Page 3-133 to Page 3-136 for detailed discussion of each assessment unit.

The entire portion of the Connecticut River encompassing the assessment units for the Wilder Project is impaired for fish consumption because of mercury from atmospheric deposition. A Northeast-wide TMDL was completed for mercury and approved by EPA in 2007 for the entire Northeastern United States, which includes these New Hampshire assessment units (NEIWPCC, 2007).

Additionally, six tributaries that flow into the Project waters were identified as impaired or threatened waters for which TMDL is needed:

- NHRIV801030703-02, “Clark Brook” (Tributary entering NHRIV801030703-04)
- NHRIV801040204-02, “Grant Brook” (Tributary entering NHLAK801040402-03)
- NHRIV801040402-04, “Hewes Brook” (Tributary entering NHLAK801040402-03)
- NHRIV801040401-05, “Mink Brook” (Tributary entering NHLAK801040402-03)
- NHRIV801060106-20, “Mascoma River” (Tributary entering NHRIV801060302-05) and
- NHRIV801060303-11, “Blow-Me-Down Brook” (Tributary entering NHRIV801060305-12)

These tributaries are listed as unable to support Aquatic Life due to impairments including aluminum, fishes bioassessments, and benthic macroinvertebrates (Exhibit E Table 3.5-10)

Of the designated uses discussed above, Aquatic Life is an existing use within the Project waters that has the greatest potentially to be impacted by Project operations. The reaches of the Connecticut River within the Wilder Project area provide aquatic habitat for a variety of fish, freshwater mussels, and macroinvertebrates which depend on suitable habitat for migration, reproduction, and rearing. Numerous relicensing studies were conducted to evaluate fisheries resources and survey freshwater mussel populations within the Project area and are discussed in detail in Exhibit E, Sections 3.6.1.3, 3.6.1.4, and 3.6.1.5. No fish species present in the Project area are listed as threatened or endangered under the federal ESA, though several NH listed, species of concern (American Eel, Brook Trout, Finescale Dace and Sea Lamprey) and one threatened species (Bridle Shiner) were found during field work for ILP Study 10 conducted in 2015 (Exhibit E Table 3.6-1). Collectively, these sensitive species constituted only 2.1 percent of the total catch in that study. Mussel surveys in 2011 and 2013 found seven of the nine freshwater mussel species supported in the Connecticut River watershed in New Hampshire and Vermont within the mainstem and near the mouth of mainstem tributaries, including the federally endangered DWM. DWM were found in the Wilder impoundment (Exhibit E Section 3.6.1.5).

In general, the proposed operational changes would provide environmental protection through an Inflow equals Outflow (IEO) operation most of the time and discretionary generation for a limited number of hours each mouth (1.4 to 9 percent of the total hours in a month), with fewer hours in April-October period and more in the late fall to early spring months and even fewer instances where operations will address emergency and system needs. This operating protocol will protect critical aquatic resources during the most sensitive period between April and mid-November while allowing for more operational flexibility during less sensitive winter months when many aquatic resources are

dormant (Exhibit E Section 3.3). Under the proposed operation, WSEs in the Project impoundment will exhibit much greater stability and remain at or near the impoundment's Target WSE for 60 percent to over 90 percent of the time in most months (Exhibit E Table 3.3-1, Figure 3.3-1). The proposed operation will also reduce the frequency of WSE fluctuations by 58 to 100 percent (average 79 percent) (Exhibit E Table 3.3-4), and the magnitude of WSE changes during Flexible Operations flows is expected to be less than 0.4 ft in most months (average 0.23 ft), (Exhibit E Table 3.3-2, Figure 3.3-2). Additionally, the proposed operation will result in flows close to or equal to naturally occurring flow through the Project (Exhibit E Figure 3.3-4 and Figure 3.3-3).

The proposed operations will reduce the frequency and magnitude of WSE fluctuations in the impoundment backwater habitats, which will significantly support spawning and rearing environments. An increase in the base flow levels and reduction in frequency, occurrence, and amount of change in flow, will support wetted habitat protection of gravel and cobble-bars in the riverine reaches of the Project areas and provide a stable environment for riverine species. In particular, the proposed flow regime is expected to support spawning success and utilization of shallow shoal habitats. The higher base flow and Transitional Operation of up-ramping and down-ramping preceding and following Flexible Operation will provide consistent habitat for mussel recruitment and protect against stranding of mussels and other less mobile species, including small fish fry. Reduction in frequency, occurrence, and amount of change in flow, will also reduce the potential for nest scour or abandonment due to high velocities, reduce displacement of newly emerged fry of many species, and provide extended periods of more stable flow for nest construction (Exhibit E Section 3.6.2.1).

In the Wilder impoundment, specifically, pre-winter habitat operations will be implemented to reduce the likelihood of dewatering or freezing of DWM during their winter hibernation. This will be accomplished by maintaining WSEs near the lower limit of the proposed operational range for a period of time when water temperatures are dropping from 15 ^{o}C to 10 ^{o}C, a period when DWM are expected to be seeking overwintering habitat. Once water temperatures are consistently below 10 ^{o}C, the Project will return to normal operations and will not drop WSEs below the pre-winter elevation during the remainder of the winter period (unless required to by flood profile operation) to ensure hibernating DWM remain submerged (Exhibit E Section 2.2.1).

The proposed operations will not affect the capability to operate structures for fish passage (Exhibit E Sections 3.6.2.6 through 3.6.2.8). Additionally, Great River Hydro proposes to improve and enhance fish passage through the project. Under the terms of the SAFP, the ladder shall be opened on April 1 (if conditions allow), providing opportunities for spring spawners such as Walleye and White Sucker to utilize the fish ladder. Monitoring of fish ladder use by eels, an eel PIT study of in-ladder movement, fish ladder engineering assessment, and an eel survey below the powerhouse and spillway will lead to the design, installation and operation of permanent upstream eel passage at the Project. Studies will be conducted upstream of the dam to support development of downstream eel passage. Design, construction, operation and evaluation of downstream eel passage will be undertaken under the new License as stipulated in the SAFP. The proposed operation will reduce water residency time within reservoir, which should generally improve conditions for migratory species including American eel and Sea lamprey with a higher base flow, far fewer instances of high peak flow and a significantly reduced range and pace of flow fluctuation. Water residency time will be reduced, allowing for improved

downstream migration in terms of reduced transit times through the reservoir and subsequent improved fitness.

Despite the absence of supporting data to support Primary and Secondary Contact Recreation, existing in-stream recreational use, particularly, power boating, paddle boating (including local, through-paddlers, competitive flat-water canoeing and rowing and whitewater boating), and fishing is prevalent throughout the Connecticut River within or affected by the Wilder Project. Under the GRH proposal, current access to the river within the Project Boundary will be maintained or enhanced through the capital improvements to the boat launches, improved portage and general recreation area access and parking. The proposed operation will result in higher base flow conditions in the river that will more closely resemble natural flows, enhancing river paddling conditions while at the same time providing for stable impoundment water surface elevations that support power boating, flat water canoeing and rowing.

The proposed operation is anticipated to have an overall positive effect on whitewater boating at Sumner Falls, a quarter mile long rapid at a rocky complex that drops about 7 vertical feet over its course. Sumner Falls is about 9 miles downstream of the Project and as such is affected by the discharge from the station or dam, and significant tributaries such as the White River, Mascoma River, and Ottaquechee River. Under the proposed operation a base flow significantly higher than the current 700 cfs minimum flow will be maintained below the station. This combined with the contributions of downstream tributary inflow above the rapids will provide a continuous opportunity for whitewater boating at varying levels throughout the entire boating season. While there may be slightly fewer high peak discharges below Wilder station, the proposed operation does not exclude them. In general, greater than inflow flex hour related discharge from the Project (including up-ramping, flex hour and down-ramping flow) will occur when energy demand is high and when there is available natural flow (both inflow to the Project and downstream tributary flow) to support both discharge and the refill aspects of Flex Operation. These events will largely correspond with the type of high flow conditions that occur presently at Sumner Falls. Thus, as a result of the constant base flow, continuation of episodic higher-than-inflow conditions due to Flex Operation, and contributing inflow from downstream tributaries, a positive improvement for whitewater boating at Sumner Falls is anticipated.

Current in-stream wading angling will be the most affected change in current recreation use due to the proposed operation eliminating the 700 cfs minimum flow, in lieu of a higher, more naturalized flow below the station and dam. There are several locations where anglers are known to wade into the river to fish, or to reach exposed sandbars from which to fish. Safe opportunity for in-stream wading will likely be restricted to the riverbank unless assisted by flotation or boat. Combined with the anticipated improved aquatic resources, fishing conditions and opportunities should continue or improve under the proposed operation.

For all recreation in-stream users, anticipated and actual flow and discharge information below the Wilder Project will continue to be made available to the general public.

5. The provision(s) of surface water quality standards (Env-Wq 1700) that are applicable to the designated uses affected by the proposed activities.

It is anticipated that the provisions of the surface water quality standards that are applicable to the designated uses that could potentially be affected (Aquatic Life) are Env-Wq 1703.13 Temperature, Env-Wq 1703.07 Dissolved oxygen (DO), 1703.18 pH, 1703.11 Turbidity, and 1703.14 Nutrients. Given that the Project is an existing project and there is no proposed new or increased discharge, or other change in operations that would reasonably be expected to result in increased loading of any pollutant, the NH antidegradation rules (Env-Wq 1708) do not apply to this activity.

ILP Study 6, *Water Quality Study*, was conducted to assess water quality within the Project waters under current operational conditions (Exhibit E Section 3.5.1.2) and the potential water quality effects due to the Project are discussed in Exhibit E Section 3.5.2.1, 3.5.2.2, 3.5.3.2, and 3.5.4.2. In general, it was found that any adverse effects caused by current normal operational flows and impoundment fluctuations on water quality appear to be minimal to no effects in most cases.

WSE fluctuations were found to have negligible effect on water temperatures, with water temperature patterns driven by factors other than project operations such as weather and longitudinal effects. Therefore, any effects of Project operations on water temperatures would be indistinguishable from daily water temperature fluctuations (Exhibit E Pages 3-233 to 3-235, 3-244).

The water quality data collected in 2012 suggest that low-flow, warm-weather conditions, as observed in 2012, can lead to thermal stratification resulting in potential low-DO levels in the hypolimnetic waters of the forebay. However, this condition was not persistent in either the 2012 or 2015 water quality studies and was spatially limited to the forebay area with no documented exceedances of dissolved oxygen standards in the Wilder tailrace area in either study. As water is passed through the Project powerhouse it enters the shallower and more turbulent tailrace area below the dam, which supports re-oxygenation, and state water quality standards are expected to be maintained in downstream reaches of the Connecticut River under a variety of flow and temperature conditions (Exhibit E Pages 3-244 to 3-245). Operations under the inflow equals outflow conditions proposed maintains a continuous passing of water through the powerhouse, thus reducing the potential for low-DO conditions downstream.

Data from ILP Study 6 showed 2012 pH exceedances of state water quality standards in the impoundments was related to atmospheric deposition and increased rates of photosynthesis of algae and aquatic vegetation, not to Project operations effects (Exhibit E Pages 3-247 to 3-248). ILP Study 6 also demonstrated that turbidity levels within the mainstem Project waters were very low (less than 5 NTU) for the majority of the time, though did increase in response to precipitation events that often result in high flows and spill conditions (Exhibit E Page 3-250). Nutrients and chlorophyll-a analysis in 2012 and 2015 indicate that Project-affected waters meet state water quality standards and that designated uses were maintained and supported and continued project operations will not alter these conditions (Exhibit E Page 3-252).

6. Pollutant loading analysis

NHDES requires as part of the 401 WQC application a pollutant loading analysis to show the difference between predevelopment and post-development pollutant loads for a typical year. The objective of the loading analysis is to show post-development pollutant loads do not exceed pre-development pollutant loads. Loading analysis guidance and a simple spreadsheet model will be provided by NHDES. The loading analysis will be used to determine appropriate stormwater management measures, which must be effectively designed, installed, and maintained to ensure compliance with surface water quality standards.

A pollutant loading analysis was not considered necessary for the Wilder FERC relicensing as the Project is an existing project and no new development or construction is proposed. Water quality considerations are discussed in Sections 3 and 5 of this additional information summary and are detailed in Sections 3.5.1.2, 3.5.2.2, 3.5.3.2, and 3.5.4.2 of the Exhibit E and ILP Study 6.

7. A description of any other aspect associated with construction and operation of the activity that would affect the chemical composition, temperature, flow, or physical aquatic habitat of the surface water.

Wilder Project is an existing project that has been in continuous operation for decades and no new development or construction associated with the Project is proposed other than the yet-to-be-designed fish passage improvements under the terms of the SAFP. Fish passage enhancement construction and operation will not affect chemical composition, temperature, flow, or aquatic habitat. The licensee proposes a modified project operation that significantly reduces both the frequency, amplitude, and rate of change in project-related discharge and impoundment water surface fluctuation in comparison to Existing Project Operation. The proposed operations are expected to result in a more stable aquatic environment that will support existing and designated uses in the Project-affected areas while remaining flexible and responsive to energy demand and system needs. Operation of the Project and associated effects on the chemical composition, temperature, flow, and physical aquatic habitat have been addressed in in Sections 3.5.1.2, 3.5.2.2, 3.5.3.2, and 3.5.4.2 of Exhibit E.

8. An original or color copy/reproduction of a United States Geological Survey Quadrangle Map that clearly shows the location of the activity and all potential discharge points.

A USGS-based topographic map showing the location of the activity and all potential discharge points is included as Appendix A.

9. A copy of the final complete federal permit application or federal license application, including the federal permit, license, or project number.

Copies of Wilder FLA, Exhibit E, MOU, SAFP, ILP Study 6 Report and ILP Study 10 Report are referenced by endnotes. A list of these Supporting Documents, and hyperlinks to the documents in both FERC's eLibrary and the GRH Public Information Document Library is included as Appendix B.

10. A copy of the NHDES wetlands permit (RSA 482-A:3), if necessary.

No wetlands permit is necessary for this Project.

11. A copy of the NHDES alteration of terrain permit (RSA 485-A:17), if necessary.

No AoT permit is necessary for this Project.

12. The name(s) and address(es) of adjoining riparian or littoral abutters.

This list is not included with the application package due to the large area abutting the Project impoundment. NHDES was consulted and concurred the abutter list is not necessary.

13. For projects that involve a new surface water withdrawal

There is no new surface water withdrawal associated with this Project and therefore no WCP or waiver is required.

14. Rivers Management and Protection Act

The Connecticut River is a Designated River under the NH Rivers Management and Protection Program. The LAC under RSA 483 is represented by the Upper Valley Lake Sunapee Local River Subcommittee to the Connecticut River Joint Commission. The LAC has been provided access to a complete digital copy of this application.

References

Friedl, G. and A. Wüest. 2002. Disrupting biogeochemical cycles-Consequences of damming. J Aquatic Sciences. 64(1): p. 55-65.

NEIWPCC (New England Interstate Water Pollution Control Commission). 2007. Northeast Regional Mercury Total Maximum Daily Load. New England Interstate Water Pollution Control Commission. Lowell, Mass. Available at: https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/final-mercury-tmdl-report.pdf.

New Hampshire Department of Environmental Services (NHDES). 2010. Final Report New Hampshire Statewide Total Maximum Daily Load (TMDL) for Bacteria Impaired Waters. New Hampshire Department of Environmental Services. Available at: https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/final-bacteria-tmdl-report-statewide-379.pdf.

NHDES. 2015. New Hampshire 2012 Section 305(b) and 303(d) Surface Water Quality Report and RSA 485-A:4.XIV Report to the Governor and General Court. New Hampshire Department of Environmental Services. Available at: https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-12-4.pdf.

NHDES. 2020. 2020 Draft Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology. October 16, 2020.

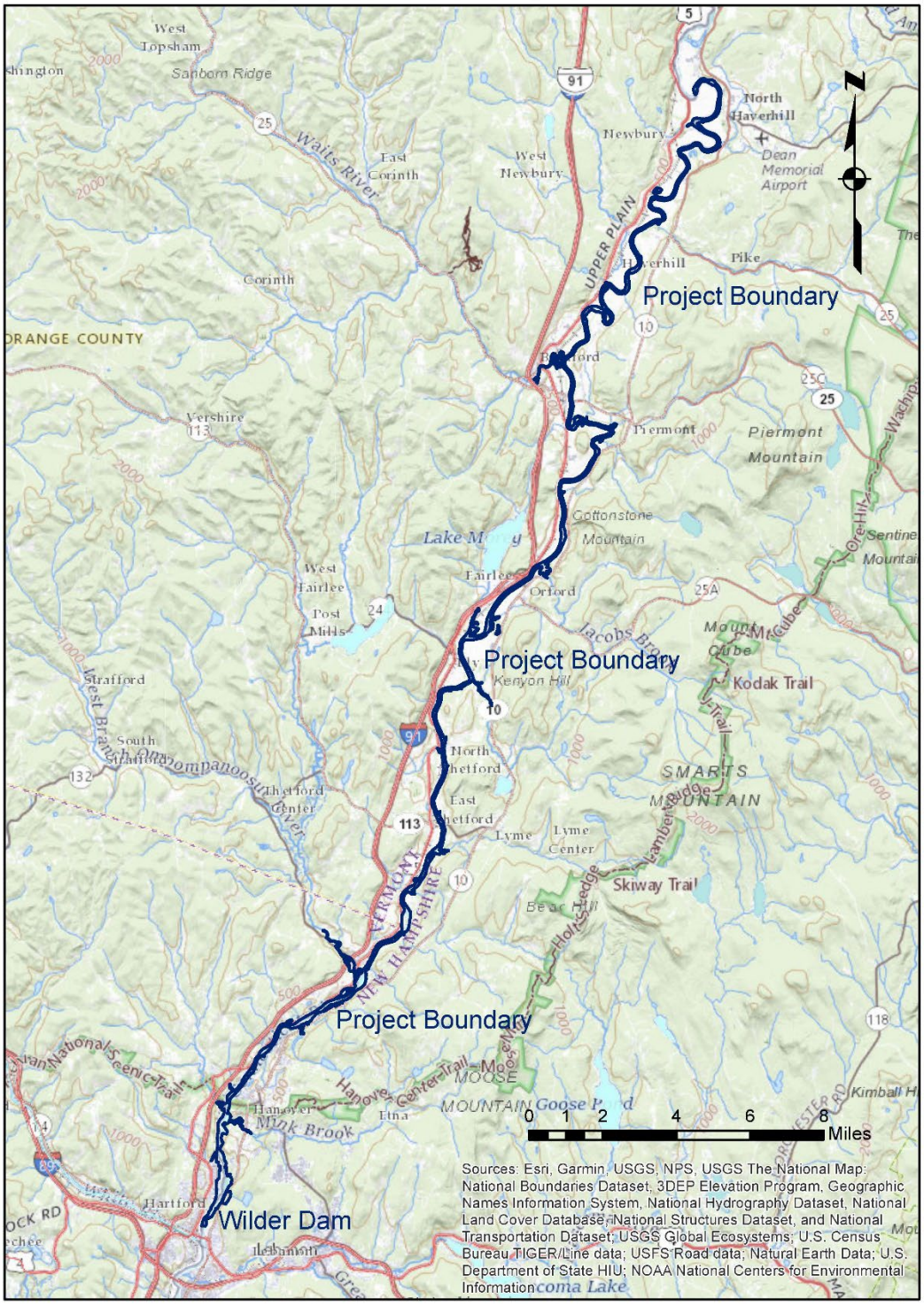
Appendices

Appendix A - USGS Map of Project Area

Appendix B – List of Supporting Documents to this Application

Appendix A – USGS Map of Project Area

Wilder Hydroelectric Project No. 1892



Appendix B – List of Supporting Documents to this Application NH 401 Water Quality Certification Wilder Hydroelectric Project

Amended Wilder FLA 12-7-2020 (Including Initial Statement and Exhibits A, B, C, D, F, G, and H):

Accession Nos. 20201207-5219 (Public), - 5220 (Privileged);-5221 (CEII); Amended Final License Applications of Great River Hydro, LLC for Project, et. al. under P-1855 et. al.

GRH Website:
https://relicensing.greatriverhydro.com/overview/documents/?eeFront=1&ee=1&eeFolder=Documents%2F80-Amended-Final-License-Applications-AFLA%2F10-Wilder&eeListID=1

Revised Amended Exhibit E for Wilder, Bellows Falls and Vernon Projects; Revised 06-07-2023:

Accession No. 20230608-5103 Great River Hydro, LLC submits Revised Final License Application and Exhibits for the Bellows Falls Hydroelectric Project et. al. under P-1855 et. al

GRH Website: http://relicensing.greatriverhydro.com/wp-content/uploads/simple-file-list/Documents/85-Revised-Final-License-Application-BF-Min-Flow-Unit/2023-06-07-WLDR-BF-VERN-RFLA-Exhibit-E.pdf

Memorandum of Understanding executed December 1, 2020:

Included in 12-7-2020 FLA Exbibit B, Accession Nos. 20201207-5219 (Public) (see above). MOU between Great River Hydro and the United States Fish and Wildlife Service, the New Hampshire Department of Environmental Services, the New Hampshire Fish and Game Department, the Vermont Department of Environmental Conservation, the Vermont Department of Fish and Wildlife, The Nature Conservancy, and the Connecticut River Conservancy.

GRH Website: http://relicensing.greatriverhydro.com/wp-content/uploads/simple-file-list/Documents/80-Amended-Final-License-Applications-AFLA/10-Wilder/2020-12-07_WLDR_Amend_FLA_ExABCDFGH.pdf

Settlement Agreement on Fish Passage (SAFP) 08-02-2022:

Accession No. 20220803-5124. Settlement Agreement on Fish Passage (SAFP) executed by New Hampshire Fish and Game Department among other state and federal agencies and filed with the Commission on August 2, 2022.

GRH Website: http://relicensing.greatriverhydro.com/wp-content/uploads/simple-file-list/Documents/80-Amended-Final-License-Applications-AFLA/70-AFLA-Settlement-Agreement-Fish-Passage/2022-08-02-GRH-AFLA-Fish-Passage-Settlement-Agreement.pdf

ILP Study 6 Water Quality Updated Study Report:

Accession No. 20161215-5280 ILP Study Reports 6, 25 and 30, final reports and supplements, TransCanada Hydro Northeast Inc. under P-1892, et al filed December 15, 2016

GRH Website:
https://relicensing.greatriverhydro.com/overview/documents/?eeFront=1&ee=1&eeFolder=Documents%2F50-Study-Reports%2F130-Study-Reports-1-33%2FStudy-06-Water-Quality-Monitoring&eeListID=1

ILP Study 10 Fish Assemblage Study Report:

Accession No. 20160801-5232 TransCanada Hydro Northeast Inc. August 1, 2016 Updated Study Report under P-1855, et. al.

GRH Website:
https://relicensing.greatriverhydro.com/overview/documents/?eeFront=1&ee=1&eeFolder=Documents%2F50-Study-Reports%2F130-Study-Reports-1-33%2FStudy-10-Fish-Assemblage&eeListID=1