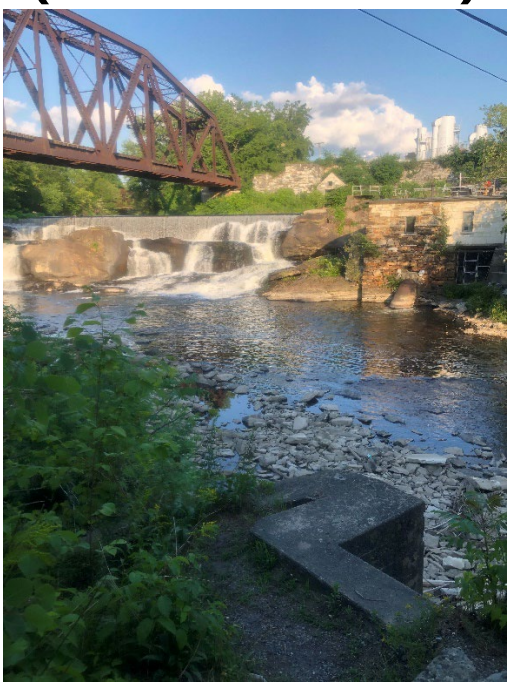
LOW IMPACT HYDROPOWER INSTITUTE APPLICATION

Center Rutland Hydroelectric Project (FERC NO. 2445)



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May 2025

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Attachment A Agency Consultation [To be included in the Stage II Application]
Attachment B 2025 USFWS Information for Planning and Consultations (IPAC)
Attachment C Reference Documents [To be included in the Stage II Application]
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1.0 FACILITY DESCRIPTION

1.1 Project Overview

The Center Rutland Hydroelectric Project (FERC No. 2445) (Project or Center Rutland Project) is an existing, licensed hydroelectric project operated by Green Mountain Power Corporation (GMP or Licensee). The 0.275-megawatt (MW) Center Rutland Project is located on Otter Creek at river mile (RM) 71 in the Town of Rutland, Rutland County, Vermont (Figure 1-1).

The Center Rutland Project (Figure 1-2, Photo 1-1) consists of (1) a 190-foot-long concrete and stone masonry gravity dam, composed of a 16-foot-long non-overflow section and a 174-foot-long spillway, and a 16-foot-long non overflow section; (2) an impoundment with a surface area of 10.97 acres and with no usable storage capacity at the normal water surface elevation (El.) of 505.05 feet National Geodetic Vertical Datum of 1929 (NGVD 29)[1] (3) a small forebay; (4) an approximately 17-foot-2-inch-long, 39-foot-7-inch-wide concrete and marble masonry intake structure; (4) a 6-foot-diameter, 75-foot-long steel penstock; (5) a 40-foot-long, 33-foot-wide stone and marble masonry powerhouse containing a single horizontal-shaft turbine driving a 0.275 MW generator; (6) a substation; (7) an approximate 80-foot-long, 12.47-kilovolt transmission line; (8) a 0.35-mile-long fiber-optic cable to provide smart grid communications to the Project; and (9) appurtenant equipment and facilities. Although sockets for flashboard pins exist along the crest of the concrete spillway, the wooden flashboards are not currently installed and have not been in place since before GMP purchased the Center Rutland Project in 2012.

A Water Quality Certification was issued for the project on March 29, 2024[2] by the Vermont Agency of Natural Resources (VANR) and a 40-year license was issued by the Federal Energy Regulatory Commission (FERC) on December 26, 2024[3].

[1] All elevations are based in the National Geodetic Vertical Datum of 1929 (NGVD 29)

[2] Accession No. 20240329-5138

[3] Accession No. 20241226-3014

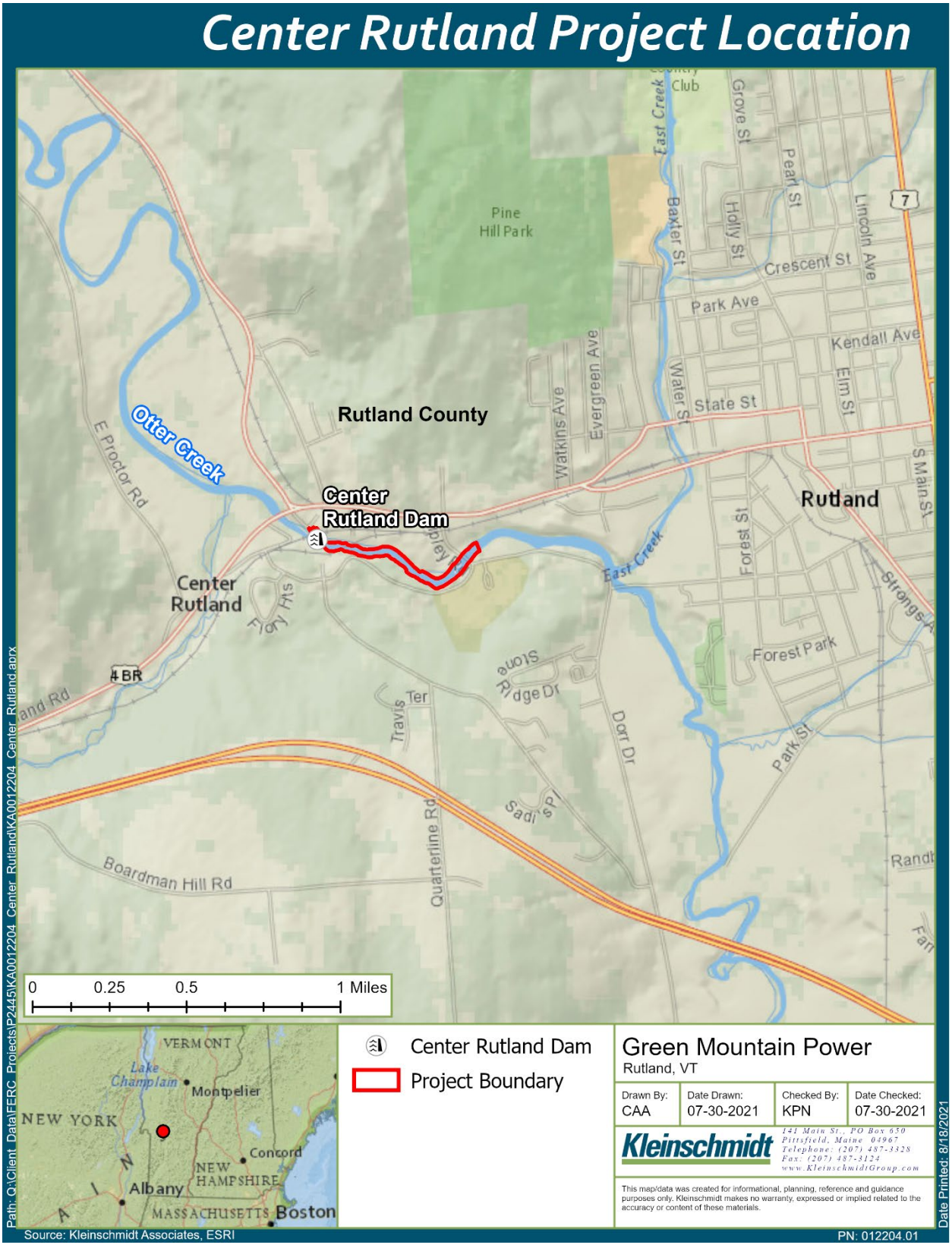

Figure 1-1 Center Rutland Project Location Map

Figure 1-2 Center Rutland Project Facilities

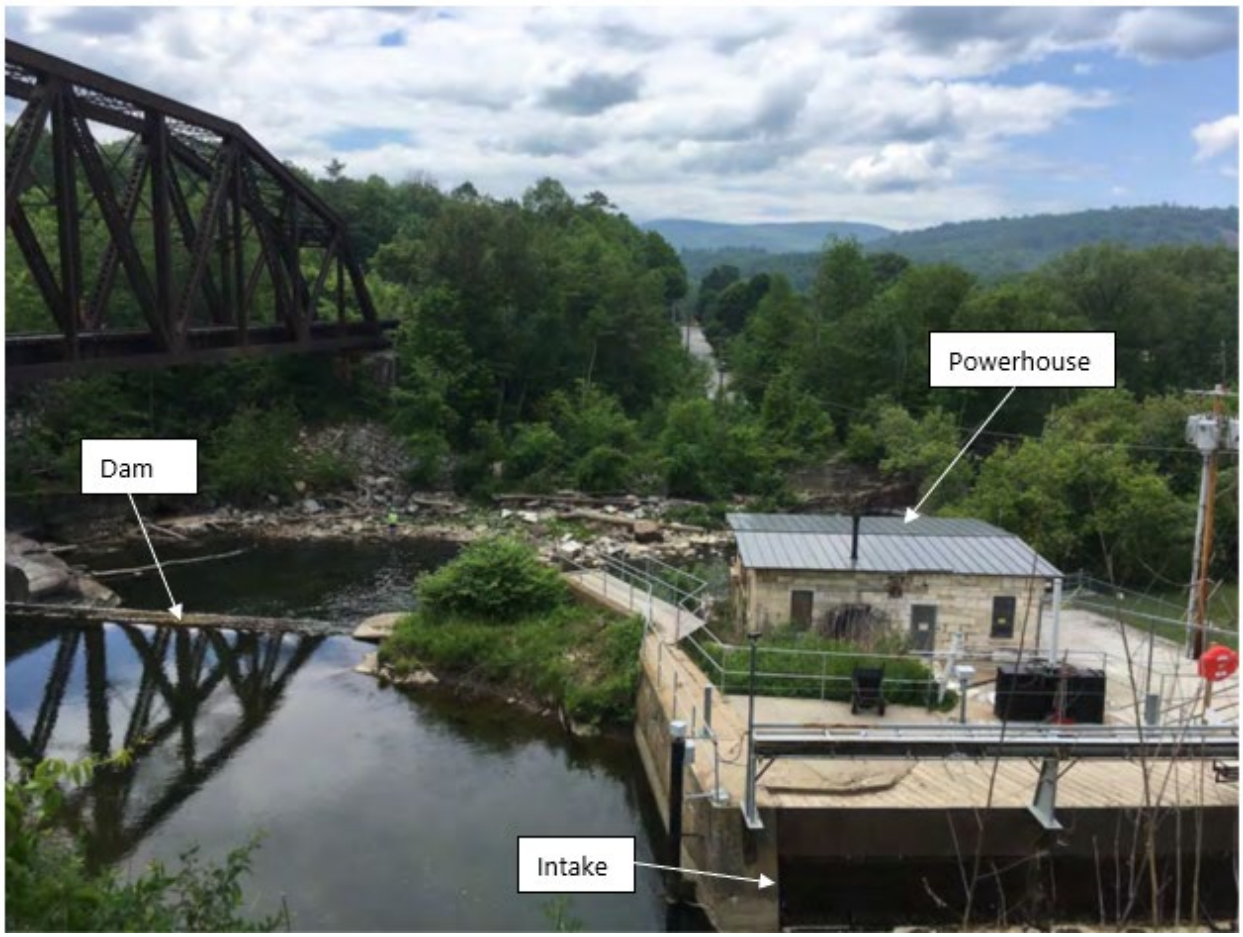

Photo 1-1 Project Facility Structures

1.2 Facility Information – Center Rutland Project

Table 1-1 Facility Information

Item	Information Requested	Response (include references to further details)
Name of the Facility	Facility name (use FERC project name or other legal name)	Center Rutland Hydroelectric Project (FERC No. 2445)
Reason for applying for LIHI Certification	1. To participate in state Renewable Portfolio Standard (RPS) program 2. To participate in voluntary Renewable Energy Credit (REC) market (e.g., Green-e) 3. To satisfy a direct energy buyer's purchasing requirement 4. To satisfy the facility's own corporate sustainability goals 5. For the facility's corporate marketing purposes 6. Other (describe)	To participate in the voluntary REC market.
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	The Project would expect to receive RECs for 100% of generation.
Location	River name (USGS proper name)	Otter Creek
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	HUC-8 04150402
	Nearest town(s), county(ies), and state(s) to dam	Town of Rutland, Rutland County, Vermont
	River mile of dam above mouth	RM 71 upstream of Lake Champlain
	Geographic latitude and longitude of dam	43.603094, -73.012177

Item	Information Requested	Response (include references to further details)
Facility Owner	Application contact names	John Tedesco
	Facility owner company and authorized owner representative name.	Green Mountain Power Corporation
	For recertifications: If ownership has changed since last certification, provide the effective date of the change.	N/A
	FERC licensee company name (if different from owner)	Same as owner
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	P-2445, Issued December 26, 2024; Expires November 30, 2064.
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	Minor
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	Water Quality Certification: March 29, 2024; Issued by Vermont Agency of Natural Resources.
	Hyperlinks to key electronic records on FERC e-Library website or other publicly accessible data repositories[4]	Order Issuing License Final License Application Clean Water Act Section 401 Water Quality Certification Response to February 18, 2022 AIR

[4] For example, the FERC license or exemption, recent FERC Orders, Water Quality Certificates, Endangered Species Act documents, Special Use Permits from the U.S. Forest Service or other agency, U.S. Army Corps of Engineers permits, and other regulatory documents, or permits or authorizations issued by a Tribal Nation, other 3rd-party agreements including Memorandums of Agreement or Understanding about water or land management, grants of right-of-way, water rights, and the like. If extensive, the list of hyperlinks can be provided separately in the application.

Item	Information Requested	Response (include references to further details)
		Response to September 2, 2022 AIR Response to October 24, 2022 AIR FERC Environmental Assessment 2024 Final Programmatic Agreement
Powerhouse	Date of initial operation (past or future for pre-operational applications)	Powerhouse was initially built in 1878 for a hydromechanical system. The hydroelectric generating equipment was originally installed in 1914 and partly rebuilt in 1940 but retains the original casings.
	Total installed capacity (MW)	0.275 MW
	For recertifications: Indicate if installed capacity has changed since last certification	N/A
	Average annual generation (MWh) and period of record used	541 MWh (Average from 2014-2020)
	For recertifications: Indicate if average annual generation has changed since last certification	N/A
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.)	Run-of-river
	For recertifications: Indicate if mode of operation has changed since last certification	N/A

Item	Information Requested	Response (include references to further details)
	Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit	One 275-kilowatt horizontal-shaft turbine generator unit. Hydraulic Capacity: • Minimum 60 cfs. • Maximum 190 cfs. Output: • Minimum 2 kw • Maximum 275 kw (Minimum based on 2021 ISO New England Seasonal Claimed Capability ratings)
	Trashrack clear spacing (inches) for each trashrack	9/16-inch clear bar spacing
	Approach water velocity (ft/s) at each intake if known	Less than 1 foot per second (fps) during full generation (0.70 fps)
	Dates and types of major equipment upgrades	2019 – intake headwall repairs 2018 – intake wall and penstock repair 2005 – generator stator and rotor repair
	For recertifications: Indicate only those since last certification	N/A

Item	Information Requested	Response (include references to further details)
	Dates, purpose, and type of any recent operational changes	As part of the new License: • Providing a minimum flow of 60 cfs (or inflow, whichever is less) over the spillway and into the bypassed reach from October 16 to May 31 for the protection of aquatic and aesthetic resources. ○ This is in addition to the 80 cfs provided June 1 to October 15. • Revised the normal high-water mark of the impoundment to be maintained at El. 505.05 feet, instead of the previously El. 507.4 feet, due to no longer using the flashboards • Subsequently, the Project Boundary was revised to the contour line of El. 505.05 feet.
	For recertifications: Indicate only those since last certification	N/A

Item	Information Requested	Response (include references to further details)
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	As part of the new License: Article 401 and WQC - Flow Management and Monitoring Plan required by June 30, 2025. Article 401 and WQC - Plan to develop American Eel Passage within 1 year of passage installation at the Otter Creek Project (P-2558). Article 403 - Operation Compliance Monitoring Plan by June 2025 Article 405 - Protection of Northern Long-eared and Tricolored Bats – limit tree removal from Project lands from April 1 to October 31. Article 406 – Construction of a cultural heritage information kiosk Article 407 – Recreation Monitoring Plan Article 409 - Programmatic Agreement and Historic Properties Management Plan
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	The original dam was built in circa 1850 and then reconstructed in 1928.

Item	Information Requested	Response (include references to further details)
	Dam or diversion structure length, height including separately the height of any flashboards, inflatable dams, etc. and describe seasonal operation of flashboards	A concrete and stone masonry gravity dam 190-foot-long spillway section comprised of a 174-foot-long and a 16-foot-long non-overflow section. The dam height varies from 12 to 14 feet. There is also a 3-foot-long masonry abutment, and a 56-foot-long retaining wall.
	Spillway maximum hydraulic capacity	21,100 cfs
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	The length of the intake structure varies, but the maximum length is 17 feet 2 inches. The width of the intake structure is approximately 39 feet 7 inches. The intake is approximately 18 feet high. The depth of the intake is representative of the height of the trashracks, which are 12 feet high. There is one 6-foot-diameter, 75-foot-long steel penstock.
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Hydroelectric power generation
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	N/A
	Source water	N/A
	Receiving water and location of discharge	N/A

Item	Information Requested	Response (include references to further details)
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations	Run-of-river project, target of El. 505.05 feet (i.e., 0.25 feet above the dam spillway crest El. of 504.8 feet)
	For recertifications: Indicate if these values have changed since last certification	N/A
	Normal operating elevations and normal fluctuation range	Run-of-river project, the normal high-water mark of the impoundment is maintained at El. 505.05 feet NGVD 29 (i.e., 0.25 feet above the dam spillway crest at El. 504.8 feet NGVD 29)
	For recertifications: Indicate if these values have changed since last certification	N/A
	Gross storage volume and surface area at full pool	Surface area of 11 acres at El. 504.8 feet. The project has no storage.
	For recertifications: Indicate if these values have changed since last certification	N/A
	Usable storage volume and surface area	No useable storage, project is operated as run-of-river.
	For recertifications: Indicate if these values have changed since last certification	N/A

Item	Information Requested	Response (include references to further details)
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	Operated in instantaneous run-of-river mode. Minimum flow of 80 cfs or inflow, whichever is less, over the spillway into the bypassed reach from June 1 through October 15 and a minimum flow of 60 cfs of inflow, whichever is less, from October 16 through May 31.
	Upstream dams by name, ownership (including if owned by an affiliate of the applicant's company) and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	Emerald Lake Dam, owned by state of Vermont, located at RM 100 Ripley Mills Dam, owned by Rutland Plywood Corporation, RM 72 No downstream passage is provided at these dams.
	Downstream dams by name, ownership (including if owned by an affiliate of the applicant's company), river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage.	Proctor Development – Otter Creek Hydroelectric (FERC No. P-2558), owned by GMP, RM 64 Middlebury Lower Hydroelectric Project (FERC No. P-2737), owned by GMP, RM 27 Beldens Development– Otter Creek Hydroelectric (FERC No. P-2558), owned by GMP, RM 23 Huntington Falls Development– Otter Creek Hydroelectric (FERC No. P-2558), owned by GMP, RM 21

Item	Information Requested	Response (include references to further details)
		Weybridge Dam (FERC No. P-2731), owned by GMP, located at RM 20 Vergennes Dam (FERC No. P-2674), owned by GMP, located at RM 8 No upstream passage is provided at these dams at this time.
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	N/A
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control. Indicate locations and acres of flowage rights versus fee-owned property.	The Project Boundary has 11.21 aces, 10.97 of those acres are the impoundment. GMP is the owner and operator of the Center Rutland Project. GMP has all flowage rights to operate the Project.
Hydrologic Setting	Average annual flow at the dam, and period of record used	606 cfs for the period of January 1991 to December 2020 based on the USGS Gage No. 04282000 which is located 350 feet downstream of the Project.

<table>
<tr><th>Item</th><th>Information Requested</th><th>Response (include references to further details)</th></tr>
<tr><td></td><td>Average monthly flows and period of record used</td><td><table><tr><th>Month</th><th>Average cfs</th></tr><tr><td>January</td><td>727</td></tr><tr><td>February</td><td>720</td></tr><tr><td>March</td><td>881</td></tr><tr><td>April</td><td>1,305</td></tr><tr><td>May</td><td>764</td></tr><tr><td>June</td><td>422</td></tr><tr><td>July</td><td>433</td></tr><tr><td>August</td><td>293</td></tr><tr><td>September</td><td>197</td></tr><tr><td>October</td><td>384</td></tr><tr><td>November</td><td>546</td></tr><tr><td>December</td><td>864</td></tr></table>Data from USGS Gage No. 04282000 from January 2015 to January 2025</td></tr>
<tr><td></td><td>Location and name of closest stream gaging stations above and below the facility</td><td>USGS Gage No. 04282000 – 350 feet downstream of the Project

No USGS gages upstream of the Project</td></tr>
<tr><td></td><td>Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.</td><td>Drainage area of approximately 307 square miles (Final License Application) – USGS gage located approximately 350 feet downstream of the dam – no proration needed.</td></tr>
<tr><td></td><td>Other facility specific hydrologic information (e.g., average hydrograph)</td><td>N/A</td></tr>
<tr><td>Designated Zones of Effect</td><td>Numbers and names of each zone of effect (e.g., “Zone 1: Impoundment”)</td><td>ZOE 1: Impoundment
ZOE 2: Bypassed Reach
ZOE 3: Tailrace</td></tr>
<tr><td></td><td>River mile of upstream and downstream limits of each zone of effect
(e.g., “Zone 1 Impoundment: RM 6.3 - 5.1”)</td><td><table><tr><th>Segment</th><th>River Mile</th></tr><tr><td>ZOE 3</td><td>70.75 to 70.86</td></tr><tr><td>ZOE 2</td><td>70.86 to 70.88</td></tr><tr><td>ZOE 1</td><td>70.88 to 71.47</td></tr></table></td></tr>
</table>

2.0 STANDARDS MATRICES

2.1 Zones of Effect

There are three zones of effect (ZOE) at the Center Rutland Hydroelectric Project. ZOE 1 is the impoundment, extending from the dam upstream 3,000 feet and encompasses the upstream portion of the Project Boundary which follows the contour line at El. 505.05 feet NGVD 29. ZOE 2 is the bypassed reach, approximately 250 feet in length, and ZOE 3 is the tailrace, extending approximately 550 feet downstream from the powerhouse to the Route 4 bridge.

Figure 2-1 Center Rutland Hydroelectric Project's ZOE map. Green = ZOE 1 Impoundment, Pink = ZOE 2 Bypass, Blue = ZOE 3 Tailrace.

Table 2-1 Center Rutland Project Standards Matrix

Zone		ZOE 1: Impoundment	ZOE 2: Bypassed Reach	ZOE 3: Tailrace
Approximate River Mile (RM) at upper and lower extent of Zone		70.88 to 71.47	70.86 to 70.88	70.75 to 70.86
Criterion		**Standard Selected**		
A	**Ecological Flows**	1	2	1
B	**Water Quality**	2	2	2
C	**Upstream Fish Passage**	1	1	1
D	**Downstream Fish Passage**	1	1	1
E	**Shoreline and Watershed Protection**	1	1	1
F	**Threatened and Endangered Species**	2	2	2
G	**Cultural and Historic Resources**	2	2	2
H	**Recreational Resources**	1	2	2

3.0 SUPPORTING INFORMATION

3.1 Ecological Flows Regimes

The Center Rutland Project is operated in a run-of-river mode, where inflow approximates outflow, with no utilization of reservoir storage for power generation. Within the past 10 years, there have been no flow violations or deviations that have occurred. The Project monitors flow via the USGS Gage located just 350 feet downstream of the Project.

As required by WQC Condition C, a Flow Management and Monitoring Plan (FMMP) is being developed detailing how the Project will operate in instantaneous run-of-river mode and comply with the conservation flow requirements. The FMMP is required to include:

- A method for continuous monitoring and reporting of flow releases at the Project, impoundment levels, and inflow. This would include conservation flows, spillage, and turbine discharge. The plan will include provisions for providing real-time flow data and allow for records to be furnished upon request;
- The plan will include procedures for reporting deviations from prescribed operating conditions to the VDNR within 15 days of the deviation. Reports will include, if possible, the cause, severity, and duration of the deviation, observed or reported adverse environmental impacts from the incident, pertinent data, and measures to be taken to avoid recurrences

The FMMP is expected to be available in June 2025.

3.1.1 ZOE 1 – Impoundment

Criterion	***Standard***	***Instructions***
A	1	**<u>Not Applicable / De Minimis Effect:</u>** • Confirm the location of the powerhouse relative to any dam/diversion structures and demonstrate that there are no bypassed reaches in the designated Zone of Effect. • For run-of-river facilities, provide details on operations and describe how flows, water levels, and operations are monitored to ensure such an operational mode is maintained. In a conduit

		facility, identify the source waters, location of discharge points, and receiving waters for the conduit system within which the hydropower facility is located. This standard cannot be used for conduits which discharge to a natural waterbody. • Describe the target fish and wildlife resources that were considered and how the resultant flow regime supports their habitats over their life cycles. • For impoundment zones, explain water management (e.g., fluctuations, ramping, refill rates, restrictions) and how those requirements support fish and wildlife habitat within the ZOE.

The 10.97-acre reservoir extends approximately 4,000 feet upstream from the dam and is maintained at El. 505.05 feet NGVD 29, with no peaking or store-and-release operations. If a drawdown is required for project maintenance or repair, GMP consults with the relevant resource agencies regarding the timing and duration to avoid adverse effects to aquatic resources. However, the Project is hydraulically limited in its ability to actually draw down the impoundment.

3.1.2 ZOE 2 – Bypassed Reach

Criterion	***Standard***	***Instructions***
A	2	**<u>Resource Agency and Tribal Government Recommendations:</u>** • Identify the proceeding and source, date, and specifics of the agency and any tribal government recommendations applied in the designated ZOE (Note: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific, technical, or indigenous knowledge basis for the recommendation, including the methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.

		• Explain how the recommendation relates to formal agency and tribal management goals and objectives for fish and wildlife and provides fish and wildlife protection, mitigation, and enhancement (including instream flows, ramping, and peaking rate conditions, and seasonal and episodic instream flow variations).

The bypassed ZOE is approximately 250 feet long before joining with the tailrace ZOE. This includes a bedrock falls with little aquatic habitat value and a deep pool at the downstream end of the bedrock falls (FERC 2024). This pool is backwatered and hydraulically connected to the tailrace at all flows at and above 40 cfs.

During the relicensing process, GMP proposed continuing to provide 80 cfs or inflow, whichever is less, from June 1 to October 15 into the bypassed reach for the protection of aquatic and aesthetic resources and also proposed providing 40 cfs throughout the rest of the year. The VANR recommend providing 60 cfs year-round into the bypassed reach under the WQC. FERC disagreed with the VANR on the 60 cfs prescription, stating that reducing the June 1 to October 15 flows from 80 cfs to 60 cfs would reduce benefits to aquatic, aesthetic, and recreation resources (FERC 2024). As such, GMP provides the 80 cfs or inflow, whichever is less, into the bypassed reach from June 1 to October 15, and 60 cfs or inflow, whichever is less, from October 16 to May 31. This provides maximum habitat protection and satisfies both agency prescriptions.

3.1.3 ZOE 3 - Tailrace

Criterion	***Standard***	***Instructions***
A	1	**<u>Not Applicable / De Minimis Effect:</u>** • Confirm the location of the powerhouse relative to any dam/diversion structures and demonstrate that there are no bypassed reaches in the designated Zone of Effect. • For run-of-river facilities, provide details on operations and describe how flows, water levels, and operations are monitored to ensure such an operational mode is maintained. In a conduit facility, identify the source waters, location of discharge points, and receiving waters for the

		conduit system within which the hydropower facility is located. This standard cannot be used for conduits which discharge to a natural waterbody. • Describe the target fish and wildlife resources that were considered and how the resultant flow regime supports their habitats over their life cycles. • For impoundment zones, explain water management (e.g., fluctuations, ramping, refill rates, restrictions) and how those requirements support fish and wildlife habitat within the ZOE.

Due to the run-of-river mode of operation, the tailrace is completely dependent upon inflow to the Project and does not have flow requirements in place outside of the Project operating requirements. While in operation the tailrace can receive up to 190 cfs from turbine discharge, and no less than 60 cfs, due to the operating limitations of the single turbine-generator unit within the powerhouse. All inflow from the impoundment is ultimately routed to either the powerhouse or the bypassed reach, which is located essentially adjacent to the powerhouse.

3.2 Water Quality Standard

3.2.1 All ZOES

Criterion	*Standard*	*Instructions*
B	2	**Resource Agency and Tribal Government Recommendations:** • Provide a copy of the most recent state and, if applicable, Tribal Water Quality Certificate and any subsequent amendments, including the date(s) of issuance. If more than 10 years old, provide documentation that the certification terms and conditions remain valid and in effect for the facility (e.g., a confirmation letter or email from the resource agency or Tribal Nation). • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Identify any tribal government recommendations and explain their scientific or indigenous knowledge basis. • Describe all compliance requirements and activities related to water quality including on-going monitoring, and how those are integrated into facility operations and reported to resource agencies, tribal governments, and FERC, as applicable.

Otter Creek in the Center Rutland Project area is classified as Class B(2) cold water fish habitat (VANR 2017). Class B waters are managed to support the designated uses of aquatic biota, wildlife, and aquatic habitat; aesthetics; public water supply; irrigation of crops and other agricultural uses; swimming and other primary contact recreation; and boating, fishing, and other recreational uses (VANR 2017).

The water quality criteria for Class B(2) cold water fish habitat is listed below:

- Temperature:

  - Total increase in water temperature due to all discharges and activities shall not exceed 1°F.

- Biological:
  - Change from natural condition for aquatic macroinvertebrate and fish assemblages not exceeding moderate changes in the relative proportions of taxonomic, functional, tolerant, and intolerant organisms.
- Turbidity:
  - ≤ 10 NTU as an annual average under dry weather baseflow conditions.
- Dissolved Oxygen:
  - ≥ 6 mg/L or 70 percent saturation; ≥ 7 mg/L and 75 percent saturation at all times (instantaneous minimum) in designated salmonid spawning or nursery areas.
- pH:
  - 6.5 to 8.5 standard units.
- Nitrate nitrogen:
  - ≤ 5.0 mg/L at flows exceeding low median monthly flows.
- Phosphorus:
  - <12-27 microgram per liter (µg/L) at low median monthly flow during June to October.
- *Escherichia coli*:
  - Not to exceed a geometric mean of 126 organisms/100 ml obtained over a representative period of 60 days, and no more than 10 percent of samples above 235 organisms/100 ml. In waters receiving combined sewer overflows, the representative period shall be 30 days.

The Vermont Department of Environmental Conservation (DEC) periodically conducts water quality and benthic macroinvertebrate sampling at several sites near the Center Rutland Project. Water quality samples collected at three stations in the river between 1988 and 2020 demonstrated that Otter Creek attained the standards for Class B(2) waters except for two instances (Table 3-1 and Figure 3-1) (VANR 2025). Total phosphorus did not meet Class B standards in August 2016 and pH did not meet standards in October 2001. However, considering both measurements were close to their respective thresholds and a continued trend lacks, it can be argued that Otter Creek is meeting water quality standards for Class B. The project does not have any impacts to the pH or phosphorus levels within Otter Creek.

DEC evaluates the biological integrity of the macroinvertebrate community by comparing specific metrics to the values expected for a naturally occurring macroinvertebrate populations. Assessments completed between 1988 and 2020 in Otter Creek found the macroinvertebrate community to be Good to Very Good (Table 3-2) (VANR 2025). To meet Class B(2) water quality standards, and to fully support aquatic life standards; an assessment of Good, Very Good, and Excellent are acceptable assessments. Project waters have received either Good or Very Good assessments in the past 25 years. This indicates that water quality meets Class B standards and has improved since past poor assessments in the 1980s.

The Project waters are in compliance with the conditions set within the Water Quality Certificate, including minimum flows within the bypassed reach which assures that the pool downstream of the dam is oxygenated. In the WQC, the VDNR states that it does not anticipate that the continued operation of the Project would have adverse effects on water chemistries.

Based on the available information, and the fact that the state of Vermont issued a new WQC for the Center Rutland Project in 2024, Project operations do not adversely impact water quality in Otter Creek. The Center Rutland Project operates as a run-of-river facility which provides a stable flow suitable for fish and wildlife habitat as required by the cold water fish habitat and Class B(2) classification prescribed to Otter Creek. In addition, the Project provides minimum flows to the bypassed reach which assures that the pool downstream of the dam remains oxygenated.

Table 3-1 Water Quality Measurements Completed by VANR DEC in Otter Creek near the Center Rutland Project

Site Number	Distance from Center Rutland	Date	Temp. (°C)	Conductivity (µS/cm)	DO (mg/L)	DO (% Satu-ration)	pH	Total Nitrogen (mg/L)	Total Phosphorus (µg/L)	Turbidity (NTU)
500923	1.1 mile upstream	10/4/1988	15	230	-	-	7.8	-	-	-
		8/8/2016	22.1	259	8.1	94.1	7.7	0.35	16.2	2.3
		9/28/2016	14.1	201	-	-	8			2.8
		7/8/2020	23.9	271	7.6	95.2	7.9	0.36	13.7	
502230	0.75 mile upstream	10/8/1985	15	165	-	-	7.8	-	-	-
		10/4/1988	15	230	-	-	7.8	-	-	-
		9/5/1991	19.5	256	-	-	7.9	-	-	-
		9/25/1996	12	218	-	-	7.7	-	-	-
		9/28/2006	14.6	164	10.2	101.5	8.0	-	-	-
		8/8/2016	22.5	251	8.3	97	7.9	0.98	31.3	3.2
		9/27/2016	15.1	245			8.2	1.61	29.6	2.5
		7/8/2020	24	292	7.7	96.1	7.8			
		9/21/2020	11.7	343	9.8	97.9	8.3	1.8	26	1.5
502229	1,000 ft downstream	10/10/1985	15	167			7.8	-	-	-
		10/3/2001	12.5	255			8.7	-	-	-
		10/6/2004	11.3	330	10.6	98.5	8.1	0.72	16	0.85

Source: VANR 2025

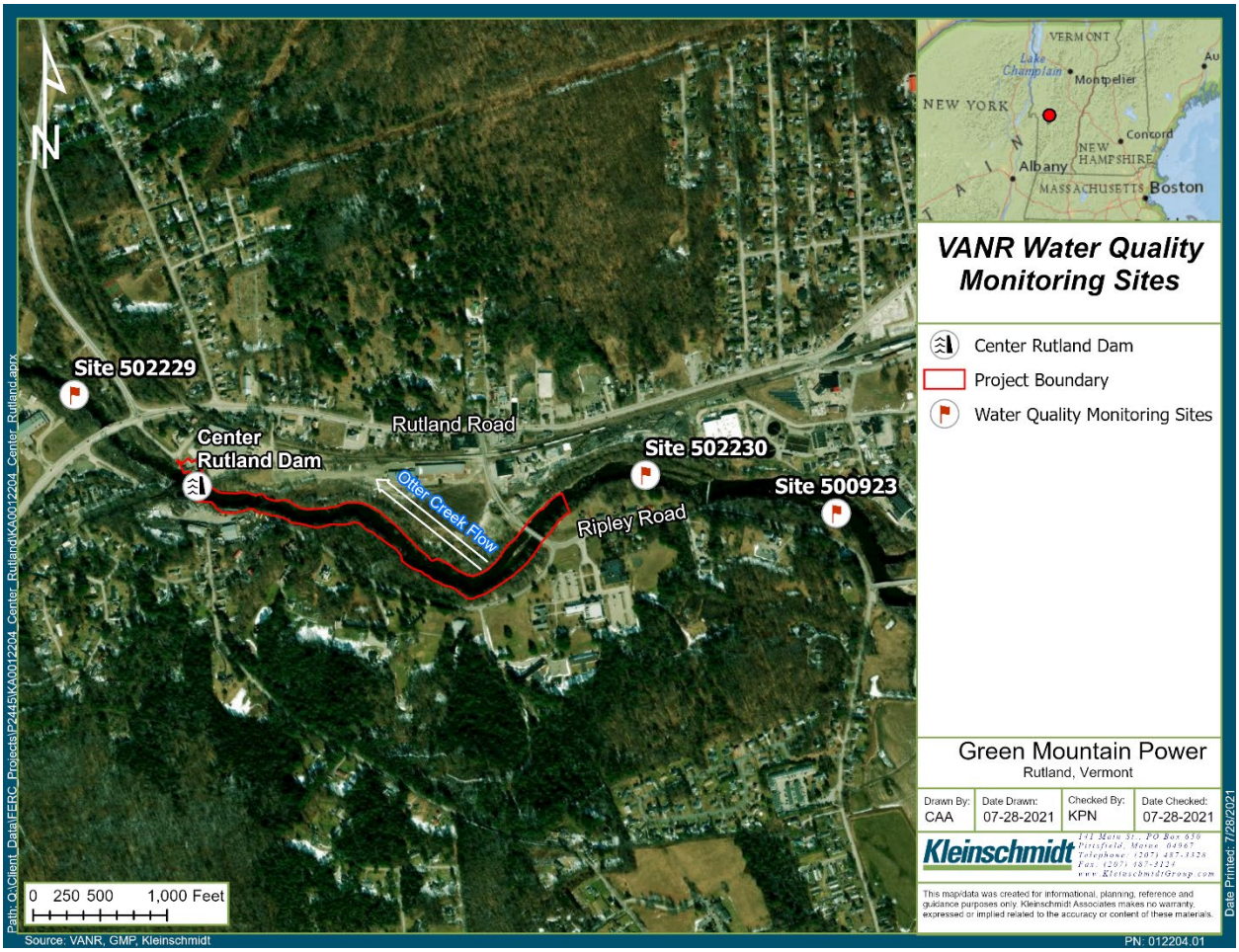

Figure 3-1 VANR Water Quality Monitoring Sites Near the Center Rutland Project.

Table 3-2 Macroinvertebrate Community Assessments Conducted by VANR DEC in Otter Creek near the Center Rutland Project

Site Number	Approximate Distance from Center Rutland Dam	Date	Macroinvertebrate Assessment	Density	Richness	EPT[a] Richness	HBI[b]
500923	1.1 RM upstream	10/4/1988	Good	1,658	41.0	17.5	4.36
502230	0.75 RM upstream	10/10/1985	Poor	1,125	22.5	7.0	7.26
		10/4/1988	Fair	3,236	39.0	15.0	5.50
		9/5/1991	Good-Fair	2,472	45.0	17.0	5.54
		9/25/1996	Very Good-Good	2,472	58.0	26.0	4.96
		9/28/2006	Very Good	5,028	66.0	32.0	4.81
		9/27/2016	Good	4,024	49.0	25.0	5.17
		9/21/2020	Good	6,156	53.0	28.0	5.16
502229	1,000 ft downstream	10/10/1985	Poor	1,002	25.5	6.0	7.35
		10/3/2001	Very Good-Good	2,292	39.5	21.0	4.21
Guidelines for Class B(2) water			Full Support	≥300	≥30	≥16	≤5.4
			Intermediate	≥250	≥28	≥15	≤5.65
			Non-Support	<250	<28	<15	≤5.65

Source: VANR 2025

3.3 Upstream Fish Passage

3.3.1 All ZOEs

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 ZOE. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no additional facility barrier to further upstream movement. • Provide available fish distribution data showing the absence of migratory fish species in each ZOE. • If migratory fish species have been extirpated from the facility area, explain why the facility is not or was not the cause of the extirpation.

Otter Creek supports cold and warm water fish species and currently does not have any diadromous fish species present within Project waters. Resident species include Bluegill (*Lepomis macrochirus*), Bluntnose Minnow (*Pimephales notatus*), Brown Trout (*Salmo trutta*), Brown Bullhead (*Ameiurus spp*.), Burbot (*Lota lota*), Common Shiner (*Luxilus cornutus*), Creek Chub (*Semotilus atromaculatus*), Cutlips Minnow (*Exoglossum maxillingua*), Fallfish (*Semotilus corporalis*), Largemouth Bass (*Micropterus salmoides*), Longnose Dace (*Rhinichthys cataractae*), Northern Pike (*Exos lucius*), Pumpkinseed (*Lepomis gibbosus),* Rainbow Trout (*Oncorhynchus mykiss*), Rock Bass (*Ambloplites rupestris*), Smallmouth Bass (*Micropterus dolomieu*), Tessellated Darter (*Etheostoma olmstedi*), Yellow Perch (*Perca flavescens*), and White Sucker (*Catostomus commersoni*) (GMP 2021). Vermont Fish and Wildlife Department (VTFWD) also stocks Brook, Brown, and Rainbow trout annually in Otter Creek (VTFWD 2025). Stockings occur throughout the Rutland and Addison counties. Approximately 1,000 to 2,200 Brown Trout are stocked annually upstream and downstream of the Project (Clarendon to Proctor) in Otter Creek (VTFWD 2025). None of the resident or stocked fishes require upstream passage.

Currently, there are no upstream fish passage facilities at the Project due to lack of diadromous species presence; however, the Project is within the historic range of American Eel (*Anguilla rostrata*), a catadromous species. As such, Condition D of the 2024 WQC includes provisions for American Eel passage plans within 1 year of upstream American Eel passage measures being implemented at the Otter Creek Hydroelectric Project (FERC No. 2558) located immediately downstream.

GMP is required to consult with the VANR and the U.S. Fish and Wildlife Service (USFWS) to initiate development of an upstream passage plan for American Eels. The plan would develop the method of passage, and an implementation schedule which can include monitoring studies, a trap and truck program, American Eel ramp installation, or other appropriate measures upon installation of American Eel passage at downstream facilities. Currently, none of the six projects downstream have any eel passage requirements under the FERC licenses, including the Otter Creek Project directly downstream of Center Rutland, which has a license expiration in 2054.

Due to lack of presence and passage at downstream projects, upstream passage for American Eels at Center Rutland is not necessary at this time or in the immediate future. GMP will continue to monitor the progression of upstream passage of American Eels on Otter Creek. Since GMP owns and operates all six downstream projects on Otter Creek, implementation of passage would be swift when and if determined necessary. There are no other agency recommendations for upstream fish passage aside from American Eel due to the lack of diadromous species at the Project.

3.4 Downstream Fish Passage

3.4.1 All ZOEs

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 ZoE, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no additional facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective, and timely downstream migration. • For riverine fish populations that are known to move downstream, explain why the facility in the designated ZoE does not contribute adversely to the species populations or to their access to

Criterion	*Standard*	*Instructions*
		habitat necessary for successful completion of their life cycles; or • Document available fish distribution data and the lack of fish species requiring passage in the ZOE; or • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

Due to the lack of diadromous fish species present near the Project (see Section 3.3.1 for list of fish species present), no downstream passage prescriptions have been prescribed. The Project is within the historic range of American Eels; however American Eels are not present at the Project due to passage barriers downstream. Since American Eels are not located upstream of the Project, there are no requirements for downstream passage at this time. If upstream passage for American Eels at the Project occurs (see Section 3.3.1 for upstream passage), GMP would consult with state and federal agencies regarding downstream passage. Though not yet specifically defined by the WQC or Article 401 of the FERC license, it is assumed that downstream passage measures for American Eel would be included in the overall plan and schedule within the required American Eel Passage Plan. Since no upstream passage has occurred at any of the downstream projects to date, and given the long lifespan of American Eels, downstream passage at the Project is unlikely to be necessary for numerous years. GMP will work with state and federal agencies to allow for downstream passage when timing is appropriate.

The Center Rutland Project intake has full depth trashracks at the end of an s-bend shaped forebay. The 30-foot-wide by 9[5]-foot-high trashracks have 9/16-inch clear bar spacing, which protect fish from becoming entrained. GMP calculated the approach velocity at the intake to be less than 1 foot per second (fps) (0.70 fps) during full generation,[6] which substantially reduces the risk of impingement and entrainment because fish can swim away from the intake.

In the absence of migratory fish in the Otter Creek at present, the Project has no adverse effect on migratory fish passage. Including a plan and schedule for addressing future need

[5] Note that although the Project trashrack is 12 feet in height as described in Exhibit A, only 9 feet of the trashrack is underwater (or submerged). Therefore, a 9-foot height was utilized in evaluating the trashrack in terms of impingement and entrainment potential for fish.
[6] Approach velocity calculated as 190 cfs/270 square feet (gross, submerged trashrack area).

of upstream and downstream American Eel passage at the Project, should American Eel become present at the Project, will ensure protective measures limit potential adverse effects on upstream and downstream migrants.

3.5 Shoreline and Watershed Protection

3.5.1 All ZOES

Criterion	*Standard*	*Instructions*
E	1	Not Applicable / De Minimis Effect: • If there are no lands with significant ecological value associated with the designated ZOE, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary, and absence of critical habitat for listed and Tribal trust species). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

The Center Rutland Project is in an industrialized portion of the Otter Creek watershed and has limited shoreline within the Project Boundary and impoundment since it follows the normal water surface El. of 505.05 feet. The littoral zone is limited to a very narrow band given the run-of-river operations and no submerged aquatic vegetation has been identified. Outside of the Project Boundary, a narrow zone of primarily deciduous trees and shrubbery exists adjacent to the impoundment and tailrace area. Forested floodplains are fairly limited, and much of the northern shoreline beyond the immediate riparian area is dominated by commercially developed land. The southern shore of the impoundment has a small area of mixed forest but is limited by residential and commercial development. The area surrounding the Center Rutland Project is primarily zoned for industrial and commercial development (Town of Rutland 2004).

Most of the Otter Creek watershed is forested (e.g., deciduous, evergreen, and mixed forest) (61 percent) followed by agricultural land (e.g., pasture, hay, cultivated crops) (22 percent), wetlands (9 percent), and developed lands (7 percent) (USGS 2024). The remaining areas consist of open water, shrub/scrub wetlands, and grassland. Residential, commercial, and industrial areas are primarily in the lower section of the watershed (RRD 2009). The Project is located within the Town of Rutland, Vermont, which is located

adjacent to the City of Rutland which is the most populated and developed area of Rutland County and the third largest city in Vermont (VMC 1991, RRPC 2018). In the Town of Rutland and the adjacent City of Rutland, the dominant land cover type is developed (51 percent), followed by deciduous forest (25 percent), pasture/hay (21 percent), mixed forest (18 percent), woody wetlands (10 percent), and evergreen forest (9 percent) (USGS 2024) (Figure 3-2).

GMP owns the immediate area lands surrounding the Center Rutland dam and powerhouse. Project operations and maintenance are the primary activities that occur on Center Rutland Project lands. GMP occasionally weed whacks and mows the minimal vegetation surrounding the dam, intake, and powerhouse area. GMP also periodically weed whacks the informal tailwater access trail that leads from an informal parking area down to the shoreline below the powerhouse (north bank). GMP maintains the area to ensure dam safety and makes a point to trim vegetation growth back from Project structures one to two times per year to ensure there is no growth within 15-feet of structures. VANR noted that there are no concerns with plant species at the Center Rutland Project as long as no changes are proposed to run-of-river operations (personal communication, Robert Popp, July 20, 2018).

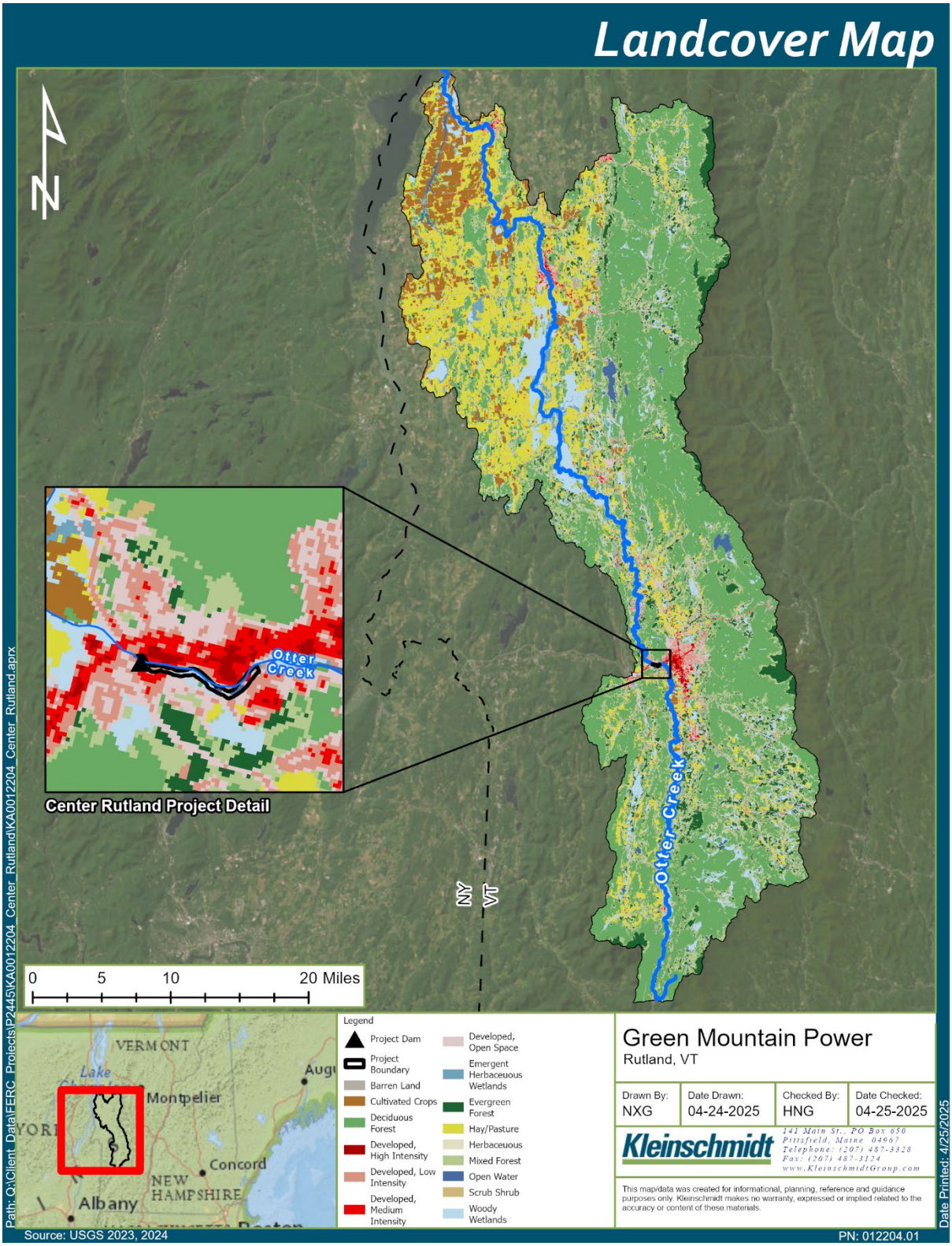

Figure 3-2 Land Cover in Otter Creek's Watershed and around the Center Ruland Project

Current uses of Otter Creek water include hydroelectric power generation, wastewater assimilation, and recreation. The most frequent use of Otter Creek is for hydroelectric generation. There are two non-FERC dams upstream of the Center Rutland Project: Emerald Lake Dam, and the Ripley Mills Dam (GMP 2021). The Chittenden Reservoir Dam is located upstream of the Center Rutland Project on the East Creek tributary.

Table 3-3 Dams Located on Otter Creek in Vermont

Name	Owner/Operator	FERC Project Number	River Mile	Town
Emerald Lake	State of Vermont	N/A	100	Dorset
Ripley Mills	N/A	N/A	72	Rutland
Center Rutland	GMP	P-2445	71	Rutland
Proctor*	GMP	P-2558	64	Proctor
Middlebury Lower	GMP	P-2737	27	Middlebury
Beldens Falls*	GMP	P-2558	23	New Haven
Huntington Falls*	GMP	P-2558	21	New Haven
Weybridge	GMP	P-2731	20	Weybridge
Vergennes	GMP	P-2674	8	Vergennes

Two wastewater treatment facilities (Wallingford and Rutland) discharge into Otter Creek upstream of the Center Rutland Project; the Rutland Wastewater Treatment Facility discharges approximately 1 RM upstream of the Center Rutland dam (FERC 1998, VANR 1998, VANR 2012). The Proctor, Middlebury, and Vergennes wastewater treatment facilities discharge into Otter Creek several miles downstream of the Center Rutland Project.

There are no current or proposed water withdrawals in the vicinity of the Project. GMP holds all of the flowage easements required for the operation of the Center Rutland Project. Further, there is no formally required shoreline management program at the Project. The Center Rutland Project operates as a run-of-river facility and therefore has little impacts on the surrounding lands. There are no sensitive shoreland habitats present at the Project.

3.6 Threatened and Endangered Species

3.6.1 All ZOEs

Criterion	*Standard*	*Instructions*
F	2	<u>Finding of No Negative Effects:</u> • Identify all federal and state listed species and any tribal trust species that are or may be in the immediate area of the designated ZOE based on current data from the appropriate natural resource management agencies and Tribal Nations. • Provide documentation that there is no demonstrable negative effect of the facility on any listed or trust species in the area from appropriate federal, state, and tribal natural resource management authorities; or • Provide documentation that habitat for the species does not exist within the designated ZOE or is not impacted by facility operations.

Federal Species

Federally listed endangered and threatened species that could potentially occur within the Project's ZOEs were identified using the USFWS Information for Planning and Consultation (IPaC) website on April 25, 2025 (Attachment B; USFWS 2025).

Mammals

Two species on USFWS list could be in the ZOEs, the northern long-eared bat (*Myotis septentrionalis*) which is federally endangered and tricolored bat (*Perimyotis subflavus*) which is proposed as federally endangered (USFWS 2025).

Northern long-eared and tricolored bats in the Center Rutland Project area could be utilizing the riparian and impoundment areas for feeding purposes or as a travel pathway. It is possible these bats feed near the Project, though no critical habitat is located in the Project vicinity. The run-of-river operation of the Project is not anticipated to negatively impact bats that may transiently utilize the area. As part of relicensing, a Biological

Assessment was done for both species and resulted in a "may affect but is not likely to adversely affect" the northern long-eared bat and "not likely to jeopardize the continued existence of the tricolored bat" (FERC 2024).

Article 405 of the FERC license requires that GMP must avoid removing trees on Project lands from April 15 through October 31 to protect northern long-eared bats and tricolored bats. Tree removal to ensure public or project safety during this period is not prohibited by this requirement. GMP would notify VANR and USFWS if any emergency tree cutting was conducted.

Insects

The monarch butterfly (*Danaus plexippus*) was identified as a proposed threatened species within the Project ZOEs via USFWS IPaC (USFWS 2025). The Center Rutland Project is located within the summer breeding range of the eastern North American migratory monarch butterfly population (Xerces 2022). No critical habitat has been designated for the monarch butterfly; however, this species relies on common milkweed (*Asclepias syriaca*) for survival and reproduction (USFWS 2025). Project operations are not expected to impact the monarch butterfly.

The construction of the pocket park could have impacts on habitat that monarch butterfly requires. The park construction would result in periodic vegetation management that may temporarily affect milkweed or nectar-bearing plants and affect monarch butterfly eggs, larvae, and chrysalides. As part of relicensing, a Biological Assessment was conducted which considered the monarch butterfly, it was determined any effects of the construction and maintenance of the park would be "localized and insignificant" (FERC 2024).

State Species

The creek heelsplitter (*Lasmigona compressa*) and creeper (*Strophitus undulatus*) are two state rare species identified as occurring within the Center Rutland Project impoundment (VTFWD 2017). The creek heelsplitter is an S(2) species. An S(2) species is considered a rare species that is at high risk of extinction or extirpation due to very restricted range, very few populations, steep declines, or other factors (VTFWD 2017). The creeper is an S(3) species. An S(3) species is considered an uncommon species with moderate risk of extinction/extirpation due to restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors (VTFWD 2017). Since the Project operates in run-of-river mode, normal operations are not likely expected to impact mussel species. If the impoundment needs to be drawn down, GMP would consult with VANR prior to any planned drawdowns. Additionally, the Project is hydraulically limited in its ability to

actually draw down the impoundment. No provisions were made for either mussels under the WQC or FERC license, but presence was noted.

American Eel is a species of greatest conservation need in Vermont. While this species is not currently in Project waters, GMP will provide upstream passage following the implementation of upstream passage at the downstream projects. At this time, the Vergennes Project, the first project located on Otter Creek, is conducting upstream passage studies for American Eel.

The Project has been operating in accordance with the prior and current FERC license and no incidental take of any state or federally threatened or endangered species has occurred. It is not anticipated that the continued operation of the project would negatively impact federal, or state listed wildlife species.

3.7 Cultural and Historic Resources

3.7.1 All ZOES

Criterion	***Standard***	***Instructions***
G	2	<u>Approved Plan:</u> • Provide documentation of all approved local, state, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to tribal, cultural and historic resources affected by the facility. • Document that the facility is in compliance with all such plans.

During relicensing, the Center Rutland Project developed an Area of Potential Effect (APE) under consultation with Vermont Department of Historic Preservation (VDHP). The APE includes (1) land enclosed by the Project Boundary; and (2) land outside the Project Boundary where the authorized Project uses may cause changes in the character or use of historic properties, if historic properties exist, to include land around the Project impoundment up to a contour El. of 507.4 feet, the entirety of archaeological site VT-RU-266, two existing informal tailwater access trails, and a proposed cultural heritage kiosk.

The entire Center Rutland hydroelectric complex has been previously documented in a National Register of Historic Places registration form for the Center Rutland Hydroelectric Station Historic District (District) (Henry 1988). The nomination was never submitted to the National Register, but was kept on file with at the VDHP. The District encompasses

the entirety of the generating station, Mead Falls, and surrounding buildings. The surrounding buildings are other early 20th century buildings and structures relating to the marble industry, and more specifically Vermont Marble Company. These include a massive marble retaining wall that marks the perimeter of the site of a demolished wood-framed marble mill (Photo 3-1) and a 1928 steel railroad bridge with a long Camelback main span that crosses the river at the falls (Photo 3-2) (Henry 1988).

Photo 3-1 Marble Retaining Wall

Photo 3-2 Marble Powerhouse and 1928 Steel Railroad Bridge

GMP's consultant, Northeast Archaeology Research Center (NE ARC) completed an updated Archaeological Resource Assessment (ARA) to re-evaluate Center Rutland Project cultural resources within the revised Project APE. NE ARC conducted a field inspection on June 15, 2020 to groundtruth a desktop review of the APE. The assessment identified six Archaeologically Sensitive Areas (ASA) within and adjacent to the Project APE. Four ASAs contained portions of previously defined archaeological sites: VT-RU-0265, the 19th century Clement Mills; VT-RU-0267, the 19th century Ripley Mill complex; VT-RU-0674, Revolutionary War era Fort Granger; and VT-RU-0266, the potential Native American expedient lithic quarry. Two ASAs were not associated with any previously identified archaeological sites. Additionally, two ASAs are sensitive for post-contact Euroamerican resources, one is sensitive for pre-contact Native American resources, and three are sensitive for both pre- and post-contact archaeology (NE ARC 2020a). NE ARC's report recommended a Phase I survey for three ASAs determined sensitive for Native American archaeology given their location along alluvial riverside terraces.

NE ARC completed Phase IB survey work in November 2020 and found nine pre-contact Native American artifacts and 664 late 19th and early 20th century Euroamerican artifacts were identified within the APE at the previously recorded potential Native American expedient lithic quarry (VT-RU-0266), thus confirming its location. Desktop archival research was also performed to gain context for the early 19th and 20th century artifacts found at VT-RU-0266. Based on this research, VT-RU-0266 appears to be the site of a historic dump.

Historic Euroamerican artifacts were recovered, however, the artifacts are from largely disturbed contexts and were not determined to constitute archeological sites. Euroamerican artifacts found include ceramics, glass, metal, and coal (NE ARC 2021a). Euroamerican artifacts are potentially related to the nearby Clement Wood estate located approximately 50 meters to the south of the Center Rutland Project. The estate was built in the 1850s by Charles Clement, the owner of the nearby Clement Mills (VT-RU-0265). Clement Wood was listed on the NRHP in 1980.

NE ARC's Phase IB Survey Report (Attachment D – Privileged Cultural Information) recommended a Phase II evaluation for VT-RU-0266 which is identified as threatened by erosion and extends within the Project APE. The Phase II is recommended to determine the site's eligibility for inclusion in the NRHP, as well as provide information necessary for both short and long-term management of archaeological resources, as appropriate. No additional archaeological field work was recommended for areas outside of VT-RU-0266; however, it is recommended that any future Project-related activities that might result in ground surface disturbance should be evaluated prior to construction to ensure no significant historic resources will be affected. In such circumstances. Phase II evaluation is recommended for the Vermont Marble Works at Fort Granger (VT-RU-0674), the Ripley Mills (VT-RU-0267), and the Clement Mills (VT-RU-0265) in order to determine if the sites meet eligibility criteria for inclusion in the NRHP and thus represent historic properties. VDHP concurred with this Phase IB Report and follow-on recommendations on March 3, 2021.

A Phase II Evaluation was completed during the 2021 field season in the Native American expedient lithic quarry area known as VT-RU-0266. The goal of the Phase II Evaluation is to determine the eligibility of site VT-RU-0266 for inclusion in the State and National Registers of Historic Places. Additionally, this evaluation intends to determine potential project effects to the site and provide information for the long- and short-term management of the archaeological resources as appropriate. A Phase II End of Field Report for VT-RU-0266 was filed on November 19, 2021 for VDHP review (Attachment D – Privileged Cultural Information).

GMPs consultant, VHB, submitted documentation of the Center Rutland Hydroelectric facility (Vermont Architectural Resource Inventory Form) and a recommended determination of National Register Eligibility to VDHP on May 6, 2021. VDHP provided verbal comments on the Center Rutland Historic District documentation on June 11, 2021 and VHB submitted a revised Vermont Architectural Resource Inventory Survey Form and Documentation on September 3, 2021. On November 19, 2021, a second revised iteration of the Vermont Architectural Resource Inventory Survey Form and Documentation inclusive of a revised historic district boundary for the Center Rutland Hydro Historic District was submitted per request from the VDHP. On December 17, 2021, GMP received VDHP's concurrence with the revised Vermont Architectural Resource Inventory Survey Form including concurrence with the Archaeology Phase IB Report.

There are no federally recognized Indian tribes in Vermont, but the state of Vermont recognizes four tribes all of Abenaki heritage: Abenaki Nation at Missisquoi, the Elnu Abenaki Tribe, the Koasek Traditional Band of the Koas Abenaki Nation, and the Nulhegan Abenaki Tribe (GMP 2021). During relicensing, the Saint Regis Mohawk Tribe was also invited to participate but no response was received. Feedback and participation during relicensing was received from Chief Don Stevens of the Nulhegan Band of the Coosuk. Chief Stevens expressed interest in establishing an agreement with GMP for protection of access and gathering rights on GMP property surrounding the Center Rutland Project.

Article 406 of the FERC license requires GMP to design, construct, and install a cultural heritage information kiosk for the Town of Rutland (Town), to be located at the Town's non-project pocket park.

Article 409 of the FERC license requires GMP to implement a Programmatic Agreement and Historic Properties Management Plan which was filed on September 30, 2024[7]. Included in the Programmatic Agreement is provisions for developing a Historic Properties Management Plan (HPMP) within 1-year of receiving the license. GMP is currently developing the HPMP in consultation with the State Historic Preservation Officer (SHPO). The HPMP will define measures for protection of historic resources under the new license.

Although there are a number of significant cultural sites at or near the Center Rutland Project, the run-of-river operations is anticipated to have limited effect on cultural resources. Infrequent maintenance activities (e.g., dam or intake repairs), inclusive of impoundment drawdowns beyond normal operating levels, may result in short-term modifications to impoundment levels or stream flows and have the potential to impact

[7] Accession Number 20240930-3027

cultural resources.[8] However, these maintenance activities are limited in occurrence and scale and GMP will consult with Vermont SHPO and Tribes prior to the conduct of such activities to minimize potential effects on cultural and tribal resources.

3.8 Recreational Resources

3.8.1 ZOE 1 Impoundment

Criterion	*Standard*	*Instructions*
H	1	**Not Applicable / De Minimis Effect:** • Document that the facility does not occupy lands or waters in the designated ZOE to which public or Tribal member access can be safely granted, and that the facility does not otherwise impact recreational or access opportunities in the facility area.

The Project does not have any formal recreation sites located within the ZOE 1 impoundment. The Project does not restrict the public access to the impoundment; however, the area surrounding the impoundment is dominated by commercially developed land. Since the Project Boundary only occupies up to the normal water surface elevation, no land is available within the Project Boundary for recreational development. More suitable recreation areas are located downstream of the Project dam, which GMP provides access to and is discussed below. No formal recreation areas are required for the impoundment based on the new FERC license acquired in 2024.

3.8.2 ZOE 2 and 3 Bypassed Reach and Tailrace

Criterion	*Standard*	*Instructions*
H	2	**Resource Agency and Tribal Government Recommendations:** • Document all resource agency and tribal government recommendations and any enforceable plans or agreements in place for recreational, public, and traditional cultural access or accommodations.

[8] The Center Rutland Project is hydraulically limited in its ability to actually draw down the impoundment. The Project can only pass water via operating the turbine generator unit (maximum hydraulic capacity of 190 cfs) and via spillage over the dam. With an annual mean flow of 606 cfs (USGS 2021) from 1991 to 2020 at the Center Rutland Project, there are very few instances where GMP would have the ability to draw the impoundment down.

Criterion	*Standard*	*Instructions*
		• Document that the facility in the designated ZOE is in compliance with all such recommendations, plans, and agreements.

GMP provides informal public access to Otter Creek just below the Project tailwater on the north bank. This informal access point consists of a dirt footpath wide enough for canoe transport with informal parking adjacent to the foot path (Photo 3-3, Photo 3-4, and Photo 3-5).

Anglers utilize the informal access point on the north bank and access the south bank downstream of the dam, off of Simons Avenue (GMP 2021). Due to the historic use of this area, the Town of Rutland began working with GMP since 2018 to discuss collaborative development of a "pocket park" that would be located within this informally utilized area. A pocket park is a small recreational space, usually in an urban area, that is accessible to the public. The proposed pocket park area was planned to be located on both GMP and Town of Rutland property located between Simons Avenue and Otter Creek (Figure 3-2). However, because FERC determined that the lands associated with the proposed pocket park are outside of the Center Rutland Project Boundary and Area of Potential Effect (APE) associated with historic resources and managed by the Town of Rutland, FERC concluded the pocket park would not be part of the FERC license. Since the pocket park would not be part of the Project license, GMP sold the property needed for the park to the Town of Rutland.

As required under Article 406, GMP will design, construct, and install a cultural heritage information kiosk for the town of Rutland Town, to be located at the Town's non-project pocket park, should it be constructed. GMP will continue to communicate with the Town of Rutland annually regarding the pocket park and timing for development of the kiosk. GMP will also coordinate the development of the kiosk with the town of Rutland, SHPO, and tribes, as appropriate.

Under Article 408 of the FERC license, if the pocket park is not constructed or ceases operation, GMP must notify the commission and may be required to implement additional recreational measures within the Project in the public's interest. Within one year of the license issuance, GMP is required to provide a Recreational Monitoring Plan as required under Article 407. The Recreational Monitoring Plan is currently under development and will be submitted to LIHI upon approval by FERC.

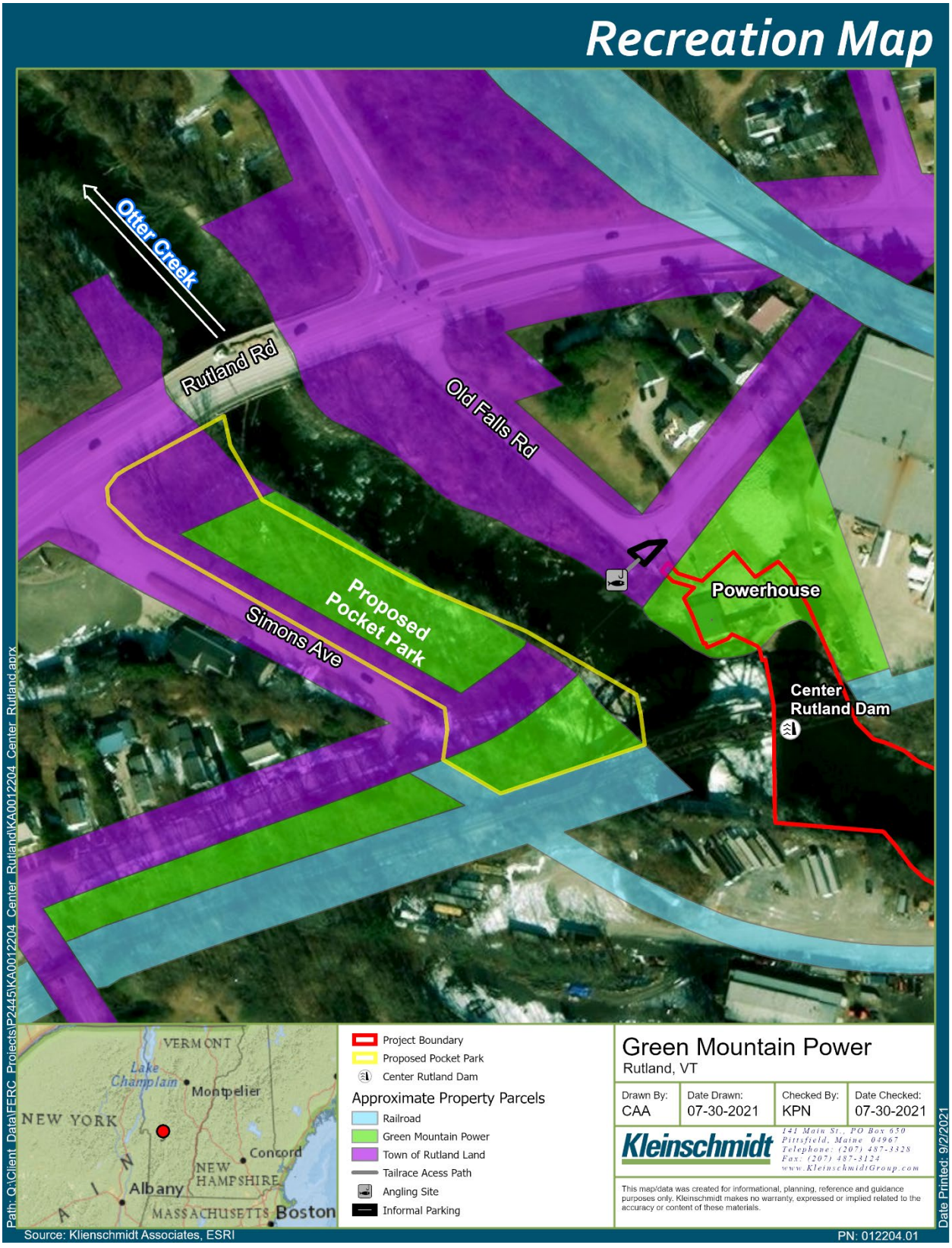

Figure 3-3 Center Rutland Recreation Sites

Photo 3-3 View Looking Towards Tailwater Access Footpath to the River (Source: Google 2021)

Photo 3-4 View Looking Upstream from Shoreline of Tailwater Access Footpath

Photo 3-5 View of Informal Parking Area Adjacent to Tailwater Access Footpath (Source: Google 2021)

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5.0 CONTACTS FORMS

5.1 Applicant Contact Information

Project Owner:	
Name and Title	John Tedesco, Generation Project Coordinator
Company	Green Mountain Power Corporation
Phone	802-655-8753
Email Address	John.Tedesco@greenmountainpower.com
Mailing Address	163 Acorn Lane, Colchester, Vermont 05446
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	Karen Bishop, Licensing Coordinator
Company	Kleinschmidt Associates
Phone	860-581-5877
Email Address	Karen.Bishop@kleinschmidtgroup.com
Mailing Address	35 Pratt Street, Suite 201, Essex CT, 06426
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	John Tedesco, Generation Project Coordinator
Company	Green Mountain Power Corporation
Phone	802-655-8753
Email Address	John.Tedesco@greenmountainpower.com
Mailing Address	163 Acorn Lane, Colchester, Vermont 05446
Party responsible for accounts payable:	
Name and Title	John Tedesco, Generation Project Coordinator
Company	Green Mountain Power Corporation
Phone	802-655-8753
Email Address	John.Tedesco@greenmountainpower.com
Mailing Address	163 Acorn Lane, Colchester, Vermont 05446

5.2 State, Federal, Provincial, and Tribal Resource Agency Contacts

Agency Contact		***Area of Responsibility***
Agency Name	Vermont Agency of Natural Resources	☒ Flows
Name and Title	Eric Davis, River Ecologist	☒ Water Quality
Phone	802-490-6180	☒ Fish/Wildlife
Email address	Eric.Davis@vermont.gov	☒ Watershed
Mailing Address	Watershed Management Division, Main Building – 2nd Floor, One National Life Drive, Montpelier, VT 05620	☐ T & E Species ☐ Cultural/Historic ☒ Recreation

Agency Contact		***Area of Responsibility***
Agency Name	Vermont Department of Fish and Wildlife	☐ Flows
Name and Title	Jud Kratzer, Fisheries Biologist	☐ Water Quality
Phone	802-751-0486	☒ Fish/Wildlife
Email address	jud.kratzer@vermont.gov	☐ Watershed
Mailing Address	Vermont Fish & Wildlife Department 374 Emerson Falls Road Suite 4 St. Johnsbury, VT 05819	☐ T & E Species ☐ Cultural/Historic ☐ Recreation

Agency Contact		***Area of Responsibility***
Agency Name	Vermont Agency of Natural Resources	☒ Flows
Name and Title	Jeff Crocker, Environmental Analyst	☒ Water Quality
Phone	802-490-6151	☒ Fish/Wildlife
Email address	jeff.crocker@vermont.gov	☒ Watershed
Mailing Address	Watershed Management Division, Main Building – 2nd Floor, One National Life Drive, Montpelier, VT 05620	☒ T & E Species ☐ Cultural/Historic ☒ Recreation

Agency Contact		***Area of Responsibility***
Agency Name	Vermont Division for Historic Preservation	☐ Flows
Name and Title	R. Scott Dillon, Senior Historic Preservation Review Coordinator	☐ Water Quality ☐ Fish/Wildlife
Phone	802-272-7358	☐ Watershed
Email address	scott.dillon@vermont.gov	☐ T & E Species
Mailing Address	One National Life Drive, Davis Bldg, 6th Floor Montpelier, VT 05620-0501	☒ Cultural/Historic ☐ Recreation

Agency Contact		***Area of Responsibility***
Agency Name	US Fish and Wildlife Service	☒ Flows
Name and Title	David Simmons, Supervisory Biologist - Endangered Species Program/Hydropower Program	☐ Water Quality ☒ Fish/Wildlife ☒ Watershed
Phone	603-333-5440	☒ T & E Species
Email address	david_simmons@fws.gov	☒ Cultural/Historic
Mailing Address	70 Commercial Street Suite 300 Concord, NH 03301-5094	☐ Recreation

Attestation

All applications for LIHI Certification must include the following statement before they can be reviewed by LIHI:

ATTESTATION

As an Authorized Representative of ___Green Mountain Power Corporation _*,*

the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's certification program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The Undersigned further acknowledges that if LIHI Certification of the applying facility is granted, the LIHI Certification Mark License Agreement must be executed prior to the final certification decision and prior to marketing the electricity product as LIHI Certified® (which includes selling RECs in a market that requires LIHI Certification).

The Undersigned further agrees to hold the Low Impact Hydropower Institute, the Governing Board, and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's certification program.

FOR PRE-OPERATIONAL CERTIFICATIONS:

The Undersigned acknowledges that LIHI may suspend or revoke the LIHI Certification should the impacts of the facility, once operational, fail to comply with the LIHI program requirements.

Authorized Representative:

Name: _____John Tedesco_____

Title: _____Generation Project Coordinator_____

Authorized Signature: _____

Date: _____

ATTACHMENT A

AGENCY CONSULTATION

[Refer to FERC relicensing docket]

ATTACHMENT B

2025 USFWS INFORMATION FOR PLANNING AND CONSULTATIONS (IPAC)

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

In Reply Refer To: 04/25/2025 15:10:14 UTC
Project code: 2025-0088439
Project Name: Center Rutland Hydroelectric Project (P-2445)

Federal Nexus: yes
Federal Action Agency (if applicable): Federal Energy Regulatory Commission

Subject: Record of project representative's no effect determination for 'Center Rutland Hydroelectric Project (P-2445)'

Dear Karen Bishop:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 25, 2025, for 'Center Rutland Hydroelectric Project (P-2445)' (here forward, Project). This project has been assigned Project Code 2025-0088439 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the **Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey)**, invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat and/or Tricolored Bat

Based upon your IPaC submission and a standing analysis, your project has reached the following effect determinations:

Species	Listing Status	Determination
Northern Long-eared Bat (*Myotis septentrionalis*)	Endangered	No effect

Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	No effect

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the species covered by this key. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions

occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the New England Ecological Services Field Office and reference Project Code 2025-0088439 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Center Rutland Hydroelectric Project (P-2445)

2. Description

The following description was provided for the project 'Center Rutland Hydroelectric Project (P-2445)':

> Center Rutland Hydroelectric Project - LIHI app 2025

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.602436850000004,-73.00838571478911,14z

DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the species covered by this determination key. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

   Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   No

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   Yes

10. Is FERC reviewing the proposed action under the Natural Gas Act, in whole or in part?

    No

11. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

12. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

    No

13. Does the action area contain (1) talus or (2) anthropogenic or naturally formed rock shelters or crevices in rocky outcrops, rock faces or cliffs?

    No

14. Will the action cause effects to a covered bridge?

    No

15. Are trees present within 1000 feet of the action area?

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

16. Does the action include the intentional exclusion of bats from a building or structure?

    Note: Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

    No

17. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

18. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

20. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

21. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

    Note: For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

    No

22. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

23. Will the action include drilling or blasting?

    No

24. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

    No

25. Will the proposed action involve the use of herbicides or other pesticides other than herbicides (e.g., fungicides, insecticides, or rodenticides)?

    No

26. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

    Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

27. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

28. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    No

29. Will the proposed action result in the use of prescribed fire?

    Note: If the prescribed fire action includes other activities than application of fire (e.g., tree cutting, fire line preparation) please consider impacts from those activities within the previous representative questions in the key. This set of questions only considers impacts from flame and smoke.

    No

30. Does the action area intersect the northern long-eared bat species list area?

    Automatically answered
    Yes

31. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

    Automatically answered
    No

32. [Semantic] Is the action area located within 150 feet of a documented northern long-eared bat roost site?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

33. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    If unsure, answer "Yes."

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

34. Has a presence/probable absence summer bat survey targeting the northern long-eared bat following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines been conducted within the project area?

    No

35. Does the action area intersect the tricolored bat species list area?

    Automatically answered
    Yes

36. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

37. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities?
    (If unsure, answer ""Yes."")

    Note: If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (Tillandsia usneoides), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see Appendix A in the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines.

    Yes

38. Do you have any documents that you want to include with this submission?

    No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Kleinschmidt Associates
Name: Karen Bishop
Address: 35 Pratt Street Suite 201
City: Essex
State: CT
Zip: 06246
Email karen.bishop@kleinschmidtgroup.com
Phone: 8605815877

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Energy Regulatory Commission

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

In Reply Refer To: 04/25/2025 15:11:04 UTC
Project Code: 2025-0088439
Project Name: Center Rutland Hydroelectric Project (P-2445)

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

To Whom It May Concern:

Updated 4/12/2023 **-** *Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.*

About Official Species Lists

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. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

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 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. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the "**New England Field Office Endangered Species Project Review and Consultation**" website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat - (**Updated 4/12/2023**) The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule went into effect on March 31, 2023. You may utilize the **Northern Long-eared Bat Rangewide Determination Key** available in IPaC. More information about this Determination Key and the Interim Consultation Framework are available on the northern long-eared bat species page:

https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis

For projects that previously utilized the 4(d) Determination Key, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project was not completed by March 31, 2023, and may result in incidental take of NLEB, please reach out to our office at newengland@fws.gov to see if reinitiation is necessary.

Additional Info About Section 7 of the Act
Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines 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 Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. 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:

https://www.fws.gov/service/section-7-consultations

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) 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. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to

consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

https://www.fws.gov/program/migratory-bird-permit

https://www.fws.gov/library/collections/bald-and-golden-eagle-management

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

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

PROJECT SUMMARY

Project Code: 2025-0088439
Project Name: Center Rutland Hydroelectric Project (P-2445)
Project Type: Power Gen - Hydropower - FERC
Project Description: Center Rutland Hydroelectric Project - LIHI app 2025
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.602436850000004,-73.00838571478911,14z

Counties: Rutland County, Vermont

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Kleinschmidt Associates
Name: Karen Bishop
Address: 35 Pratt Street Suite 201
City: Essex
State: CT
Zip: 06246
Email karen.bishop@kleinschmidtgroup.com
Phone: 8605815877

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Energy Regulatory Commission

ATTACHMENT C REFERENCE

DOCUMENTS

[Refer to Application Supplement]

2152 Post Road
Rutland, Vermont 05701

May 20, 2022

VIA E-FILING

Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Center Rutland Hydroelectric Project (FERC No. 2445-028)
Deficiency of License Application and Additional Information Request Response

Dear Secretary Bose:

On December 23, 2021, Green Mountain Power (GMP) filed a Final License Application for the relicensing of the Center Rutland Project, FERC No. 2445 (Project). On February 18, 2022, the Federal Energy Regulatory Commission (FERC or Commission) issued an Additional Information Request (AIR) pertaining to the license application. The FERC AIR requests additional information associated with Exhibits A, E, F, G, and the Supporting Design Report (SDR).

Attached for the Commission's review, please find:

- Attachment A – Additional Information Request Responses
- Attachment B – Revised Initial Statement and Exhibit A
- Attachment C – Revised Exhibit E
- Attachment D – Revised Exhibit F and Updated Stability Analysis Calculation Package
- Attachment E – Revised Exhibit G
- Attachment F – Agency Consultation

Please note that GMP is updating proposed project operations to exclude the installation of flashboards.

Should you have any questions regarding this filing, please contact John Greenan at john.greenan@greenmountainpower.com or at 802-770-2195.

Sincerely,

John C. Greenan

Digitally signed by John C. Greenan
DN: cn=John C. Greenan, o, ou, email=john.greenan@greenmountainpower.com, c=US
Date: 2022.05.20 14:10:51 -04'00'

John C. Greenan, P.E.
Engineer

ATTACHMENT A

ADDITIONAL INFORMATION REQUEST RESPONSES

FERC AIR Responses

On February 18, 2022, the Federal Energy Regulatory Division (FERC or Commission) Division of Hydropower Licensing commented on the Center Rutland Final License Application[1] requesting additional Information. Please find responses to specific information needs included below.

1. **Section 4.6.1(c)(1)(viii) of the Commission's regulations requires that Exhibit A include the sizes, capacities, and construction materials of pipelines, ditches, flumes, canals, intake facilities, powerhouses, dams, transmission lines, and other appurtenances. Exhibit A of the license application does not provide the dimensions of the intake structure and forebay. Exhibit A must be revised to provide this information.**

The length of the intake structure varies, but at the longest point, it is 17-feet 2-inches long. The width of the intake structure is approximately 39-feet 7-inches. The intake is approximately 18-feet-high. The depth of the intake is representative of the height of the trashracks, which are 12-feet-high. The forebay structure is approximately 18-feet-high. The width of the forebay varies but is approximately 30-feet-wide at the widest portion and approximately 7-feet-wide at the narrowest section. The length of the forebay is approximately 13-feet-long. These dimensions are included in Section 2.1 Existing Project Facilities of Exhibit A. Please see Attachment B for the revised Exhibit A.

2. **Section 4.41(g)(3)(v) of the Commission's regulations requires that the Supporting Design Report (SDR) in Exhibit F include the basis for determination of the Spillway Design Flood in sufficient detail to permit independent staff evaluation. The SDR filed as part of Exhibit F of the license application does not demonstrate how the Flood of Record, nor its resultant headwater and tailwater elevations, were derived. Please revise the SDR to include a basis of determination for the Flood of Record and its resultant headwater and tailwater elevations that were used in the sensitivity analysis that was conducted for the stability and stress analysis.**

The Flood of Record used for analysis was the 100-year peak streamflow of 15,700 cfs that occurred during Hurricane Irene in 2011. Based on these flows, the resulting headwater elevation would be 512.3 feet NAVD88 and the tailwater elevation would be 484.36 feet NAVD88. An updated SDR that includes further information regarding how the Flood of Record, and its resultant headwater and tailwater elevations were derived and the basis for determination, can be found in Attachment D.

[1] The Center Rutland FLA was Filed with the Commission on December 23, 2021 and can be accessed via eLibrary at: https://elibrary.ferc.gov/eLibrary/docinfo?accession_number=20211223-5017

3. **Section 4.41(h)(1) of the Commission's regulations requires that Exhibit G maps show the relative locations and physical interrelationships of the principal project works and other features. The Exhibit G map does not show the project recreation features within the project boundary, including the off-street parking area, signage, landscaping, marked footpath to the river, and picnic area[2]. The Exhibit G map must be revised to show the project facilities.**

Exhibit G has been revised to address this request. No specific landscaping details are identified on Exhibit G because GMP only maintains the footpath itself within the project boundary but does not implement any specific landscaping measures other than occasionally weed whacking and mowing the minimal vegetation surrounding the dam, intake, and powerhouse area or periodically weed whacking the informal tailwater access trail that leads from an informal parking area down to the shoreline below the powerhouse. Please see Attachment E for the revised Exhibit G map.

4. **Section 4.41(h)(4) of the Commission's regulations requires that Exhibit G maps identify lands that are owned or planned to be acquired in fee by the applicant, and lands over which the applicant has acquired or plans to acquire rights to occupancy and use (e.g., easement, lease). The Exhibit G map does not identify land by legal subdivision as required by section 4.41(h)(4), and must be revised to include this information.**

The Exhibit G map has been revised to address this request. No additional lands need to be acquired to support project operations. Please see Attachment E for the revised Exhibit G map.

5. **In the Initial Statement on page 4 and in section 2 of Exhibit A, the license application includes several measurements and dimensions of some of the project facilities that are inconsistent with the measurements and dimensions in the March 31, 1993, license order,[2] including: the gross storage capacity of the impoundment, the length and height of the dam, and the length and width of the powerhouse. Please revise the Initial Statement and Exhibit A to correct the inconsistencies or explain the basis for the revised measurements.**

The 190-foot-long dam described in the 1993 license order included the 174-foot overflow spillway section plus the 16-foot non-overflow section. In the FLA, the dam was described as consisting of the 174-foot-long overflow spillway section, the 16-foot-long

[2] 1 Article 407 of the 1993 license required the development of a recreation plan that included provisions for an off-street parking area, signage, landscaping, and a marked footpath to the river. Omya, Inc., 62 FERC ¶ 62,224 (1993). The Commission approved the recreation plan on April 15, 2004. Omya, Inc., 107 FERC ¶ 62,042 (2004). The Commission amended the recreation plan on April 10, 2007. The amended recreation plan includes the facilities required by the 1993 license and a picnic area. Omya, Inc., 119 FERC ¶ 62,021 (2007).

non-overflow section, the 3-foot-long masonry abutment, and the 56-foot-long retaining wall. To remain consistent, the language in Exhibit A and the Initial statement has been revised to match the 1993 license order with the dam being described as 190-feet-long. The dam varies in height from 12-feet to 14-feet. Exhibit A and the Initial Statement have been revised to state that the maximum height of the dam is 14-feet.

The discrepancy in the measurements of the powerhouse came from where the measurements were taken. To remain consistent, Exhibit A and the Initial statement have been revised to describe the powerhouse as 33-feet by 40-feet.

Based on the impoundment acreage of 10.97, see AIR response #16, the 2-foot 3-inch-high flashboards would create a storage capacity of 27.43 acre-feet. Because the Project is operated in run-of-river mode, and GMP has revised its proposal to not reinstall flashboards, the Project has no usable storage. The Initial Statement and Section 2.1 Existing Project Facilities in Exhibit A have been revised to reflect this. Please see Attachment B.

6. **Exhibit A, section 2.1 on page A-4 of the license application indicates that GMP proposes to reinstall the 2-foot, 3-inch-high wooden flashboards. Page A-10 states that, "the flashboards have not been installed on the dam since before GMP's purchase of the Center Rutland Project in 2012." Please describe the proposed project operation with the flashboards, including the impoundment elevation at which the flashboards would be expected fail, the frequency of failure, and the procedures for replacing the flashboards after they fail.**

As stated in Exhibit A, the flashboards have not been installed on the dam since before GMP's purchase of the Center Rutland Project in 2012. GMP is updating proposed project operations to not include the installation of the flashboards. Without the flashboards, the normal full pond elevation is maintained at 505.05 feet NGVD 29 when providing the seasonal minimum flow and 504.8 feet NGVD 29 when minimum flows are not required. In the Final License Application, GMP proposed to provide a minimum flow of 80 cfs, or inflow, whichever is less from June 1st to October 15th and a minimum flow of 40 cfs, or inflow, whichever is less, from October 16th to May 31st. Therefore, without the flashboards, normal pond elevation would be 505.05 feet NGVD 29. Section 2.1 in Exhibit A has been revised to reflect that GMP is no longer proposing to reinstall the flashboards and can be found in Attachment B. This update can also be found in Exhibit E Section 3.2 Proposed Action, which can be found in Attachment C.

7. **Exhibit E, section 1.3.2 on page E-1-12 of the application states that "[re]installation of a flashboard system is contingent upon construction of a lifeline across the dam which will require permission from multiple landowners." Please describe the purpose of the lifeline in the context of the**

flashboard system, and revise Exhibit A to provide a detailed description of the lifeline, including the size, capacity, and construction material.

GMP is updating proposed project operations to not include the installation of the flashboards. Therefore, the construction of the lifeline would no longer be applicable to Project operations. Revisions have been made to Section 3.2 Proposed Operations, Section 4.6.2 Environmental Measures, and Section 4.7.2 Environmental Measures of Exhibit E reflecting the changes of this proposal can be found in Attachment C.

8. **Exhibit A, section 6, Table 6.1 on page A-23 of the license application appears to reference estimated costs for protection, mitigation, and environmental measures proposed for Newbury Hydroelectric Project No. 5261, instead of measures for the Center Rutland Hydroelectric Project. Please revise Exhibit A to provide estimated costs for protection, mitigation, and environmental measures proposed for the Center Rutland Hydroelectric Project.**

The costs for protection, mitigation, and environmental measures proposed for the Center Rutland Hydroelectric Project are accurately reflected in Exhibit A, section 6, Table 6.1, however, the table header incorrectly identified the information as "Estimated Costs for Protection, Mitigation, or Environmental Measured Proposed for Newbury Project Relicensing". The costs, listed in the table below are representative of the Estimated Costs for Protection, Mitigation, or Enhancement Measures Proposed for the Center Rutland Project Relicensing. Note that water quality monitoring and flow testing associated with the reinstallation of flashboards are no longer relevant because GMP is no longer proposing to reinstall the flashboards. The table header has been updated in Section 6.0 Estimated Capital and Annual Costs of Proposed Environmental Measures of the revised Exhibit A in Attachment B.

Proposed Protection, Mitigation, or Enhancement Measure	Estimated Capital Cost (2021 Dollars)	Annual Operations & Maintenance Costs (2021 Dollars)
Flow Management and Monitoring Plan (Inclusive of Agency Consultation)	$10,000	$0
Water Quality Monitoring Study Plan and Study Implementation Upon Reinstallation of Wooden Flashboards (Inclusive of Agency consultation)	$40,000	$0

Proposed Protection, Mitigation, or Enhancement Measure	Estimated Capital Cost (2021 Dollars)	Annual Operations & Maintenance Costs (2021 Dollars)
Minimum Flow Testing Upon Reinstallation of Wooden Flashboards (Inclusive of Agency Consultation)	$8,000	$0
Historic Properties Management Plan (Inclusive of Agency Consultation)	$20,000	$0

9. **Exhibits A and E of the license application list several elevations in mean sea level (msl). If available, please provide a datum conversion factor from msl to current state-of-practice datums, such as the National Geodetic Vertical Datum of 1929 or the North American Vertical Datum of 1988.**

All elevation references should be in NGVD29 rather than mean sea level. Therefore, no conversion is necessary. All elevation references have been modified to be consistent and a revised Exhibit A can be found in Attachment B and a revised Exhibit E can be found in Attachment C.

10. **GMP's minimum flow proposal in Exhibit E, section 4.6.1.1, of the license application is based on a flow demonstration study conducted in the early 1990s, in addition to consultation with the agencies in 2021. In section 4.7.2.1, GMP states that it will conduct a flow demonstration study in early 2022 to support and/or refine its minimum flow proposal for the bypassed reach. Please provide a schedule for filing the results of the 2022 flow demonstration study with the Commission.**

GMP is currently working on scheduling a flow demonstration with the Vermont Agency of Natural Resources. The generating unit has a minimum hydraulic capacity of 60 cfs and a maximum hydraulic capacity of 190 cfs. To accurately demonstrate spill flows of 20 cfs, 40 cfs, 60 cfs, 80 cfs, and 100 cfs, total river flows will need to be within the range of 160 cfs to 210 cfs. With spring runoff and rain, flows have remained higher than the necessary range for a flow study to be complete. Once flows are within the appropriate range, GMP will coordinate with VANR to set up a flow demonstration. GMP has begun initial consultation with VANR and GMP anticipates that the flow demonstration study will likely occur in May or June. Upon completion of the flow demonstration, GMP will file the results of this study and any updates, if necessary, to the proposed minimum flows to the bypassed reach.

11. **Exhibit E, section 4.7.1.2 of the license application summarizes the fish community from a study conducted in 1989, six miles upstream of the project, and another study from the early 2000's, that was conducted fifty miles downstream of the project. GMP states that the Vermont Fish and Wildlife Department (Vermont FWD) planned to conduct a fish survey immediately downstream of the project in 2021. Please provide any updated information regarding the dates of Vermont FWD's study and file a copy of the study results when they are available.**

GMP has contacted VTFWD regarding the 2021 fish survey and received a response on May 9, 2022 that the electrofishing survey to characterize the fish community below the Center Rutland falls on Otter Creek did not happen in 2021 due to lack of staffing. Please see Attachment F for the agency consultation.

12. **Section 4.8.1.2.1, Upland Habitat Communities and Species, of Exhibit E does not describe the acreage of upland vegetation types within the project boundary. Please provide an estimate of the acreage of each major upland vegetation type (e.g., forest, grass) present within the existing project boundary.**

Based on the 2019 National Land Cover Database information, there is no upland vegetation present within the project boundary. This data has a spatial resolution of 100 feet. There are 2.54 acres of vegetated areas within the project boundary, with acreage per landcover type provided below. Please see Attachment C for a revised Exhibit E.

Landcover Type	Acreage
Emergent Herbaceous Wetlands	0.36
Woody Wetlands	2.18
Total	**2.54**

SOURCE: NLCD 2019

13. **As discussed in Schedule A of this letter, the existing project includes the following recreation facilities: an off-street parking area, signage, landscaping, a marked footpath to the river, and a picnic area. 3 Section 4.10.1.2.3 of Exhibit E refers to an "informal" parking area and an "informal" tailwater access footpath. The license application does not clearly identify these facilities as project recreation facilities, including whether these facilities are the same parking area and footpath facilities described in the 1993 license. In addition, the application does not describe the project signage or picnic area that are required by the current license. Please provide a complete description of all project recreation facilities.**

At the Center Rutland Project, there are no formal project recreation facilities, but GMP provides informal public access to the Otter Creek just below the Project tailwater on the north bank. This access is described in the FLA as the informal tailwater access footpath. The informal parking area described is also located on the north bank of the river, close to the informal tailwater. These facilities are labeled on the revised Exhibit G map as "Non-Project Tailwater Access" and "Non-Project Parking Lot," which can be found in Attachment E. These sites are different than what are described in the 1993 license. The facilities described in the 1993 license were proposed to be located on the south bank of the river. These facilities appear to not have been developed by the prior licensee due to subsequent landowner issues. However, GMP is currently proposing to work with the Town of Rutland to provide enhanced recreation access on the south side of the river through the development of the pocket park. Further description of the proposal related to the pocket park can be found in Exhibit E Section 4.10.1.2.3 Project Recreation Facilities and Opportunities, Attachment C.

14. **Section 4.41(g)(1) of the Commission's regulations requires that drawings show all major project structures in sufficient detail to provide a full understanding of the project. Exhibit F, Sheet F-2 and the stability and stress analyses in Exhibit F of the 3 Omya, Inc., 119 FERC ¶ 62,021 (2007). B-3 Supporting Design Report (SDR) show a spillway with a rectangular-shaped cross section (Section A). However, the cross-sectional drawing approved in the March 31, 1993 license order, 4 and shown in GMP's Center Rutland Penstock Inspection Report filed March 13, 2016, show a spillway with a trapezoidal-shaped cross section. Please confirm the correct shape of the cross-section of the spillway, and update Exhibit F and the SDR analysis, as needed.**

The correct shape of the cross-section spillway is the rectangular base. Page 8 of the Revised Stability Analysis discusses why this shape was used for the stability analysis and the Exhibit F drawings have been updated to reflect this. Please see Attachment D to view these documents.

15. **The stability analysis results presented in the SDR indicate that the spillway is unstable with the flashboards installed (see Tables 2 and 3 in the SDR, which is Appendix B of Exhibit F). Please describe any proposed measures for ensuring the stability of the spillway following the proposed reinstallation of the flashboards.**

GMP is not proposing any measures related to stability for reinstallation of the flashboards at the Project. GMP is removing the reinstallation of flashboards from its licensing proposal. Please see Attachment D for a memo further discussing stability at the Project.

16. **The electronic Exhibit G data shows a project boundary that encloses 11 acres, including the project dam and impoundment. However, Exhibit A indicates that the surface area of the impoundment is 13 acres. In addition, Table 4.3 of Exhibit E, on page E-4-14 of the license application indicates that the project boundary includes a total of 16.1 acres. Please provide the correct acreage for land and water enclosed by the current and proposed project boundary, and revise Exhibits A, E, and G as needed, to rectify this inconsistency. To the extent that GMP is proposing to revise the current project boundary, please provide an itemized list of the proposed changes, including: (1) the acreage and location of the proposed change; and (2) an accompanying statement explaining the basis for the proposed change, including why land proposed to be removed is not needed for project purposes, and vice versa.**

The project boundary encompasses 11.21 acres, with the impoundment having a surface area of 10.97 acres. An updated Project boundary was filed with FERC on February 20, 2014, and based off of this submittal, GMP is not proposing any changes to the project boundary. The proposed project boundary in the Final License Application accurately reflects the land that is needed for project purposes. Exhibit A Section 2.0 Project Facilities has been updated to reflect the correct acreage for both the project impoundment, and the revised version can be found in Attachment B. Table 4.3 of Exhibit E has been updated with correct acreage of soils within the Project boundary and can be found in Attachment C.

ATTACHMENT B

REVISED INITIAL STATEMENT AND EXHIBIT A

CENTER RUTLAND HYDROELECTRIC PROJECT

FERC NO. 2445

INITIAL STATEMENT

BEFORE THE
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

CENTER RUTLAND HYDROELECTRIC PROJECT **FERC PROJECT NO. 2445**

APPLICATION FOR SUBSEQUENT LICENSE
FOR MINOR WATER POWER PROJECT UNDER 5 MW

INITIAL STATEMENT

(Pursuant to 18 CFR §4.61 and 4.32)

(1) Green Mountain Power Corporation (GMP or Licensee) applies to the Federal Energy Regulatory Commission (FERC or Commission) for a subsequent license for the Center Rutland Hydroelectric Project (Center Rutland Project), as described in the attached exhibits.

The current license for the Center Rutland Project was issued by the FERC on March 31, 1993 to the OMYA, Inc. for a term of 30 years and went into effect on January 1, 1994. The license was transferred from Vermont Marble Power, division of OMYA, Inc to Central Vermont on November 23, 2010 (133 FERC ¶ 62,171). The license was again transferred from Central Vermont Public Service Corporation to Green Mountain Power Corporation per FERC Order Approving Transfer of Licenses and Substitution of Applicant issued September 13, 2012 (140 FERC ¶ 62,191). The current license for the Center Rutland Project expires on December 31, 2023.

(2) The Location of the Project is:

State: Vermont
County: Rutland County
Town: Town of Rutland
Body of Water: Otter Creek

(3) The exact name, address, and telephone number of the applicant are:

Green Mountain Power Corporation
2152 Post Road
Rutland, Vermont 05701
(802) 770-2195

(4) The exact name, address, and telephone number of each person authorized to act as agent for the applicant in this application are:

John Greenan, P.E.
Green Mountain Power Corporation
2152 Post Road
Rutland, Vermont 05701
(802) 770-2195
John.Greenan@greenmountainpower.com

Jason Lisai
Green Mountain Power Corporation
163 Acorn Lane
Colchester, Vermont 05446
(802) 655-8723
Jason.Lisai@greenmountainpower.com

John Tedesco
Green Mountain Power Corporation
163 Acorn Lane
Colchester, Vermont 05446
(802) 324-7318
John.Tedesco@greenmountainpower.com

The Applicant requests that copies of all correspondence pertaining to this application be provided to:

Andy Qua
Kleinschmidt Associates
141 Main Street
Pittsfield, Maine 04967
(207) 416-1246
Andy.Qua@KleinschmidtGroup.com

(5) GMP is a public utility corporation incorporated in the State of Vermont and is not claiming preference under Section 7(a) of the Federal Power Act, 16 U.S.C. §800.

(6) The statutory or regulatory requirements of the State of Vermont, the state in which the Project is located, which would, assuming jurisdiction and applicability, affect the Project with respect to bed and banks, and to the appropriation, diversion and use of water for power purposes, and with respect to the right to engage in the

business of developing, transmitting and distributing power, and in any other business necessary to accomplish the purposes of the license under the Federal Power Act are:

a) 10 V.S.A. § 901, et. seq. Wetlands Protection and Water Resources Management. Established that the water resources of the State shall be protected, regulated, and where necessary, controlled under authority of the state in the public interest and to promote the general welfare.

b) 10 V.S.A. § 1251, et. seq. Water Pollution Control. Establishes water pollution control and water quality standards.

c) 22 V.S.A. § 723, et. seq. Historic Preservation. Provides protections for any building, structure, object, district, area, or site that is significant in the history, architecture, archaeology or culture of this state, its communities, or the nation.

d) 11A V.S.A. §3.01 et. seq. Business Corporations. Domestic business corporations organized under the laws of the State of Vermont and with corporate offices located in Vermont are subject to the applicable provisions of Title 11A.

e) 30 V.S.A. § 3, et. seq. Public Utility Commission regulates the generation, purchase, transmission and distribution of electric power and energy in the state of Vermont. Therefore, as an enterprise engaged in the business of an electric utility of Vermont, the Applicant is subject to the applicable provisions contained in Title 30.

The steps which the applicant has taken or plans to take to comply with each of the laws cited above are:

a) 10 V.S.A. § 901, et. seq. Wetlands Protection and Water Resources Management. GMP has and will continue to operate the Project pursuant to the laws of the State of Vermont which is committed to making careful use of the waters of Vermont.

b) 10 V.S.A. § 1251, et. seq. Water Pollution Control. GMP has and will continue to operate the Project pursuant to the regulations of the Department of Environmental Conservation. Likewise, GMP has been and

remains committed to the prevention of pollution in the surface and groundwaters of the State.

c) 22 V.S.A. § 723, et. seq. Historic Preservation. GMP continues to keep the Vermont Division of Historic Preservation informed on Project progress.

d) 11A V.S.A. §3.01 et. seq. Business Corporations. The Applicant has complied with all state laws necessary for its corporate existence.

e) 30 V.S.A. § 3, et. seq. Public Utility Commission. GMP generates, purchases, transmits, and distributes electric power and energy. The Applicant has complied with all state laws necessary for engaging in the business of an electric utility.

(7) Project Description:

The Center Rutland Project is located on the Otter Creek at river mile (RM) 71 and in the Town of Rutland, Rutland County, Vermont. The Center Rutland Project works, as licensed, consist of (1) a concrete and stone masonry gravity dam, approximately190-feet-long comprised of a 174-foot-long spillway section topped with 2-foot 3-inch-high wooden flashboards and a 16-foot-long non overflow section; (2) an impoundment with a surface area of 10.97 acres and no usable storage capacity at the normal water surface elevation of 505.05 feet NGVD (without flashboards installed) (3) a small forebay; (4) a concrete and marble masonry intake structure; (4) a 6-foot-diameter, 75-foot-long steel penstock; (5) a stone and marble masonry powerhouse measuring approximately 33 feet by 40 feet, containing a single horizontal-shaft turbine driving a 275 kilowatt (kW) generator; (6) a substation; (7) an approximate 80-foot-long, 12.47 kilovolt transmission line; (8) a 0.35-mile-long fiber-optic cable to provide smart grid communications to the Project; and (9) appurtenant equipment and facilities. The Project boundary extends approximately 4,000 feet upstream of the dam, and approximately 100 feet downstream of the dam. The Project is operated in run-of-river mode and provides a seasonal minimum flow of 80 cfs, or inflow, whichever is less, from June 1st through October 15th.

(8) All existing hydroelectric Project facilities and Project lands are owned by or has flowage rights:

Green Mountain Power Corporation
2152 Post Road
Rutland, Vermont 05701
(802) 770-2195

(9) No lands of the United States are affected by the Project.

(10) This is an existing Project and no new construction is proposed in association with this relicensing.

Additional General Information Pursuant to 4.32

General Information

(1) GMP is the owner and operator of the Center Rutland Project. GMP has all flowage rights to operate the Project.

(2) The name and mailing address of the counties in which any part of the Project and any Federal facilities that would be used by the Project are located:

Center Rutland Project is located entirely in Rutland County, Vermont.

Rutland County Clerk
83 Center Street
Rutland, VT 05701

There are no federal facilities used by the Center Rutland Project.

(3) The name and mailing address of every city, town, or similar local political subdivision in which any part of the Project and any Federal facilities that would be used by the project are located:

The Center Rutland Project is located entirely within the Town of Rutland.

Town Clerk
181 US-4 BUS
Center Rutland, VT 05736

There are no Federal facilities used by the Center Rutland Project.

(4) The name and mailing address of every city, town, or similar local political subdivision that has a population of 5,000 or more people and is located within 15 miles of the Project dam:

The neighboring City of Rutland has a population of approximately 15,074 people according to 2019 U.S. Census estimates.

City of Rutland
52 Washington Street
PO Box 969
Rutland City, Vermont 05702

(5) There are no irrigation districts, drainage districts, or similar special purpose political subdivisions in which any part of the project is located or affected as outlined in 18 CFR §4.32l(a)(2)(iii)(A) and (B).

(6) There are no other political subdivisions in the general area of the Project that GMP has reason to believe would likely be interested in or affected by the Application.

(7) All Indian tribes that may be affected by the Project:

There are no federally recognized Indian tribes in the State of Vermont. Vermont state-recognized Indian tribes include:

ELNU Tribe of the Abenaki
Tribal Headquarters
5243 VT Route 30
Jamaica, Vermont 05343

Nulhegan Bank of the Coosuk Abenaki Nation
156 Bacon Drive
Shelburne, Vermont 05482

Traditional Koasek Abenaki Nation of the Koas
P. O. Box 272
Newbury, Vermont 05051

Abenaki Nation at Mississquoi
100 Grand Avenue
Swanton, Vermont 05488

Stockbridge-Munsee Mohican Tribe
86 Spring Street
Williamstown, MA 01267

By letter dated December 20, 2017, FERC invited the Saint Regis Mohawk Tribe to participate in the relicensing process. No response from the Saint Regis Mohawk Tribe has been included in FERC's administrative record.

(8) GMP is applying for a subsequent license for an existing project under Section 15 of the FPA; therefore, the requirement to provide notification by certified mail of the filing of the application does not apply.

(9) GMP will not seek benefits under Section 210 of PURPA (18 CFR §4.32(c)(1) and 18 CFR §4.38(b)(2)(vi)).

(10) In accordance with Section 4.61 of the Commission's regulations, the following Exhibits are attached to and made a part of this application:

Exhibit A – Project Description and Operations
Exhibit E – Environmental Report
Exhibit F – General Design Drawings (*provided under separate cover for security purposes*)
Exhibit G – Project Map

Not Applicable in this AIR
SUBSCRIPTION

This Application for Subsequent License for the Center Rutland Hydroelectric Project, FERC Project No. 2445, is executed in the State of Vermont, County of Rutland, by Mr. John Greenan, P.E., Green Mountain Power Corporation, 2152 Post Road, Rutland, Vermont 05701, who, being duly sworn, deposes and says that the contents of this application are true to the best of his knowledge or belief and that he is authorized to execute this application on behalf of Green Mountain Power Corporation. The undersigned has signed this application this ____day of _____, 2021.

GREEN MOUNTAIN POWER CORPORATION

By: _____
John Greenan, P.E.
Green Mountain Power Corporation

VERIFICATION

Subscribed and sworn to before me, a Notary Public of the State of Vermont this ____ day of _____, 2021.

_____
(Notary Public)

My Commission expires _____.

SEAL

CENTER RUTLAND HYDROELECTRIC PROJECT

FERC NO. 2445

EXHIBIT A

PROJECT DESCRIPTION AND OPERATIONS

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Appendix A Single Line Diagram

DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS

cfs	cubic feet per second
FLA	Final License Application
GMP or Licensee	Green Mountain Power Corporation
MW	megawatt
MWh	megawatt hours
NGVD 29	National Geodetic Vertical Datum of 1929
PME	protection, mitigation, or enhancement measures
Project or Center Rutland Project	Center Rutland Hydroelectric Project (FERC No. 2445)
SCADA	Supervisory Control and Data Acquisition
V	Volt

1.0 INTRODUCTION

The Center Rutland Hydroelectric Project (FERC No. 2445) (Center Rutland Project or Project) is an existing, licensed hydroelectric project owned and operated by Green Mountain Power Corporation (GMP or Licensee). The 0.275-megawatt (MW) Center Rutland Project is located on the Otter Creek at river mile 71 and in the Town of Rutland, Rutland County, Vermont. Figure 1.1 provides the general location of the Center Rutland Project and Figure 1.2 provides an overview of the Project boundary. A map of the Project boundary is provided in Exhibit G.

Figure 1.1 Project Location

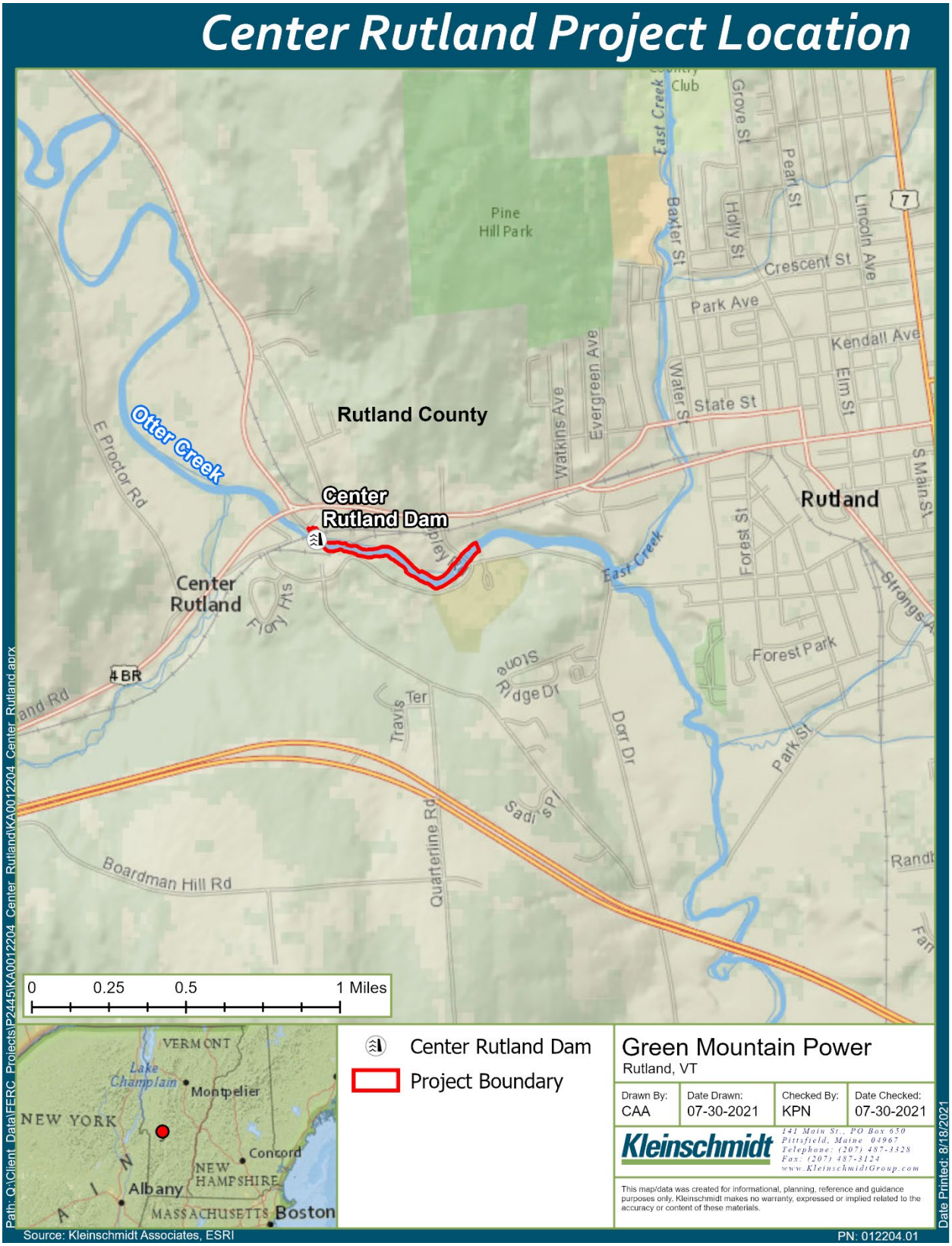
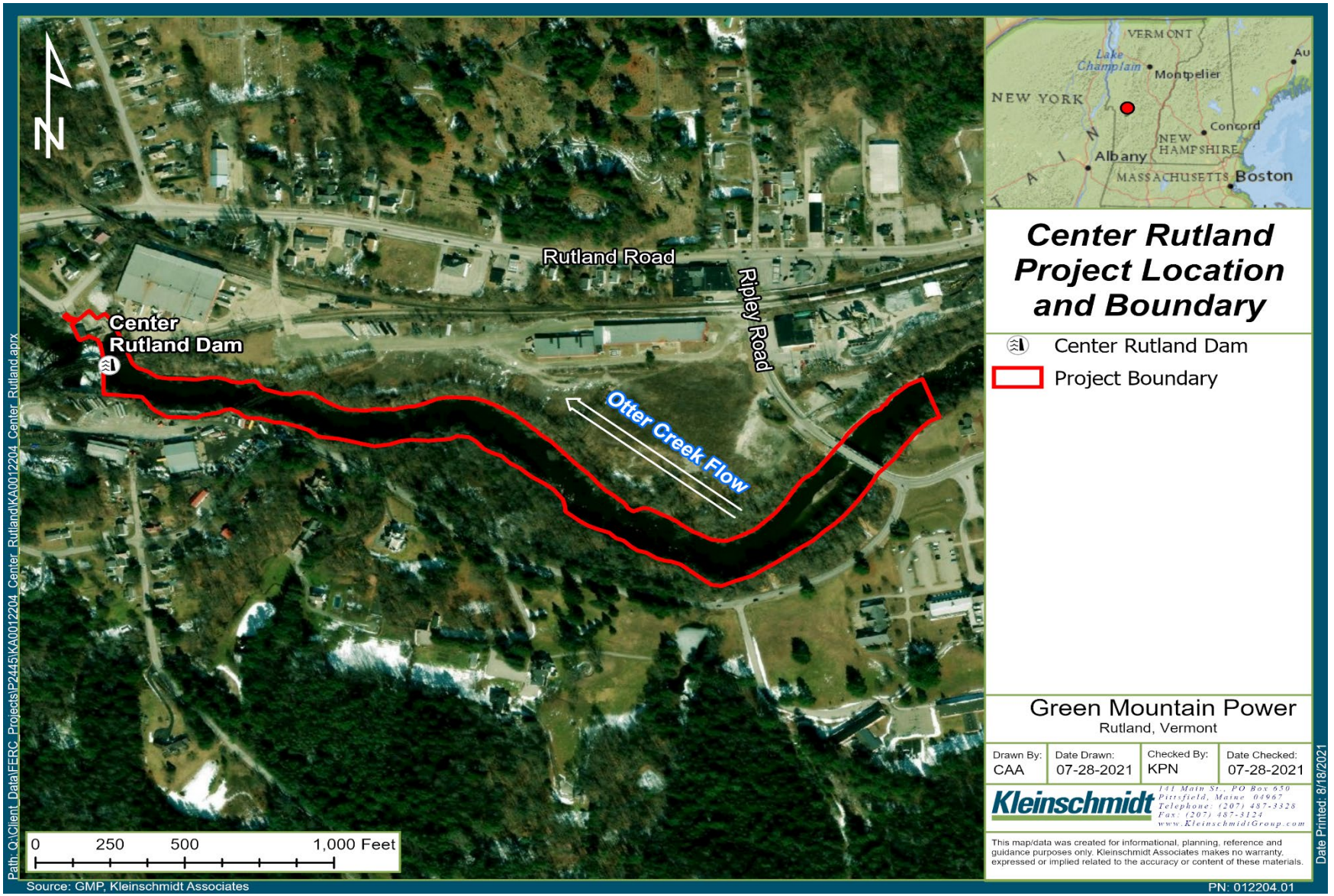


Figure 1.2 Project Location and Boundary



2.0 PROJECT FACILITIES

2.1 Existing Project Facilities

The Center Rutland Project works, as licensed, consist of (1) a concrete and stone masonry gravity dam, totaling about 190-feet-long composed of a 16-foot-long non-overflow section and a 174-foot-long spillway topped with 2-foot 3-inch-high wooden flashboards and a 16-foot-long non overflow section; (2) an impoundment with a surface area of 10.97 acres and with no usable storage capacity at the normal water surface elevation of 505.05 feet NGVD 29 (3) a small forebay; (4) an approximately 17-foot 2-inch-long, 39-foot 7-inches-wide concrete and marble masonry intake structure; (4) a 6-foot-diameter, 75-foot-long steel penstock; (5) a stone and marble masonry powerhouse measuring approximately 33 feet by 40 feet, containing a single horizontal-shaft turbine driving a 0.275 MW generator; (6) a substation; (7) an approximate 80-foot-long, 12.47 kilovolt transmission line; (8) a 0.35-mile-long fiber-optic cable to provide smart grid communications to the Project; and (9) appurtenant equipment and facilities. Although sockets for flashboard pins exist along the crest of the concrete spillway, the wooden flashboards are not currently installed and have not been in place since before GMP purchased the Center Rutland Project in 2012.

Table 2.1 provides a summary of the existing Project facilities. Photo 2.1 provides an overview photo of the Center Rutland Project and Figure 2.1 denotes the location of Project facilities.

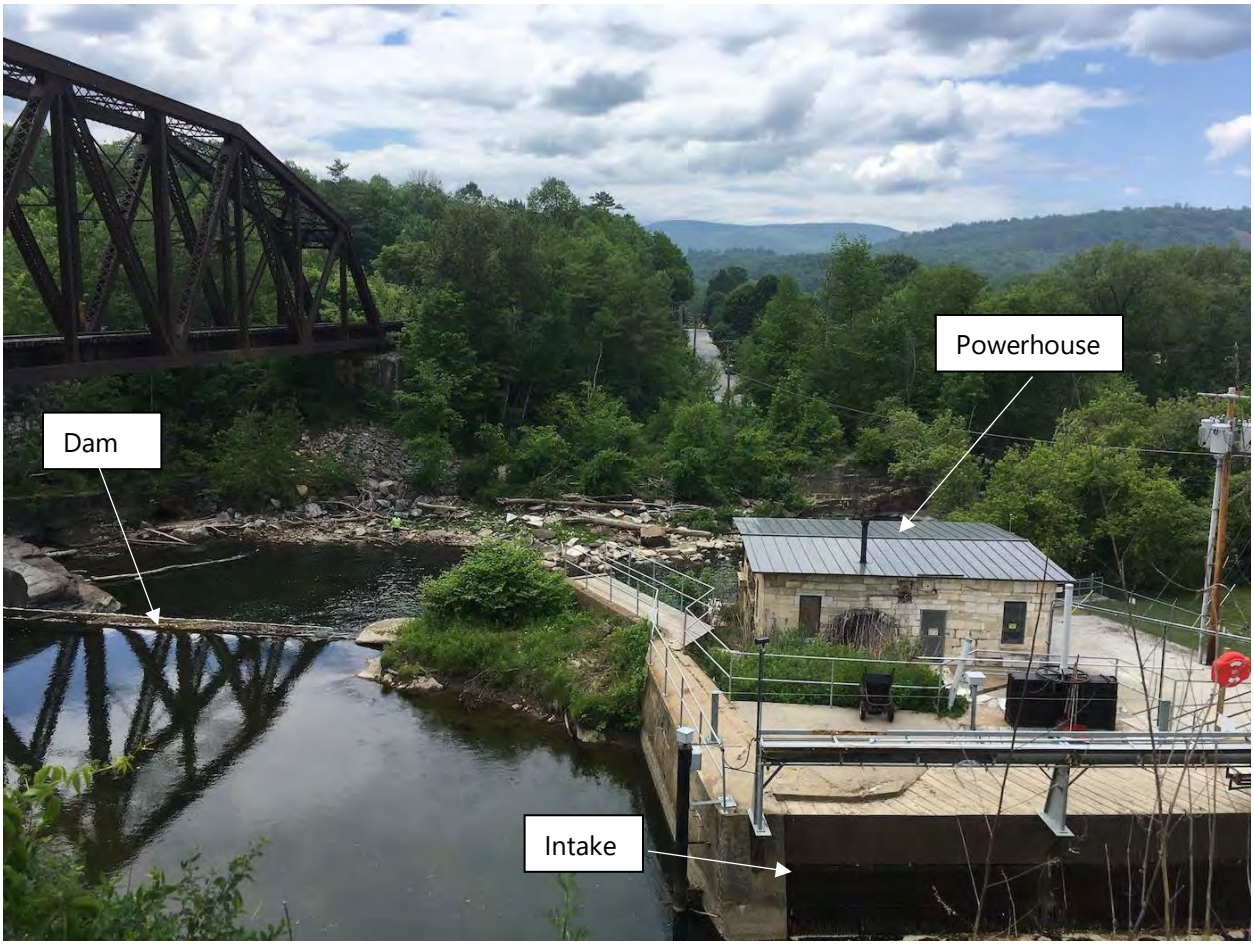


Photo 2.1 Center Rutland Project Overview

Table 2.1 Center Rutland Project Facilities

Description	Number or Fact
General Information	
FERC Project Number	2445
Owner	Green Mountain Power Corporation
Current License Term	January 1, 1994 - December 31, 2023 (30 years)
Licensed Capacity	0.275 MW
Nearest County	Rutland
Nearest City	City of Rutland
Nearest Town	Town of Rutland
Nearest Village	Center Rutland
River	Otter Creek
Drainage Area at the Dam	Approximately 307 square miles
River Mile	71
Impoundment	
Normal Full Pond Elevation	505.05 feet NGVD 29 (without flashboards)
Normal Tailwater Elevation	477 feet NGVD 29
Average Gross Head	30.4 feet
Impoundment Length	4,000 feet
Gross Storage	No usable storage
Net Storage	Negligible
Surface Area at Normal Full Pond	10.97 acres
Dam	
Construction Type	Concrete and stone masonry gravity dam
Dam Construction Date	Prior to 1898
Dimensions	Approximately190-foot-long spillway section comprised of a 174-foot-long section topped with 2-foot 3-inch-high flashboards and a 16-foot-long non overflow section with a maximum height of 14-feet
Spillway Length	190-foot-long spillway section comprised of a 174-foot-long section topped with 2-foot 3-inch-high flashboards and a 16-foot-long non overflow section.

Description	Number or Fact
Crest Elevation	504.8 feet NGVD 29 without flashboards 507.1 feet NGVD 29top of flashboards Approximately 505.5 feet NGVD 29 top of non-overflow section Approximately 510.3 feet NGVD 29 river left abutment
Forebay Retaining Wall Length	Approximately 56-feet-long
Stone Masonry Abutment	3-foot-long located on river left
Water Conveyance Structures	
Forebay	Small forebay that makes an s-bend from the impoundment to the intake. The forebay walls are made of concrete and marble masonry. Approximately 18-feet-high, 13-feet-long and with a variable width of approximately 30-feet at the widest portion and approximately 7-feet-wide at the narrowest section.
Intake	Approximately 17-feet 2-inches long at the longest portion, approximately 39-feet 7-inches-wide, and approximately 18-feet-high. Made of concrete and marble masonry and contains a steel trashrack and steel headgate in steel frame. The trashrack is approximately 30-feet-wide by 12-feet-high with 9/16-inch clear bar spacing. The steel headgate is 6.7-feet-wide by 6.5-feet-high and is operated manually with a handwheel.
Penstock	6-foot-diameter, 75-foot-long above ground steel penstock
Powerhouse	
Construction Type	Stone and marble masonry
Location	Located directly downstream of the Center Rutland dam on river right
Dimensions	Approximately 33 feet by 40 feet
Turbines	
Number of Turbine/Generator Units	1
Turbine Manufacturer/Type	Holyoke Machine Company, horizontal shaft, open type, synchronous unit
Turbine Capacities	0.275 MW
Generator Manufacturer	General Electric
Generator Capacities	0.275 MW

Description	Number or Fact
Hydraulic Capacity	Maximum Capacity: 190 cfs Minimum Capacity: 60 cfs
Switchyard/Transmission Lines	
	An approximate 80-foot-long 12.47 kilovolt transmission line and a 0.35-mile-long fiber-optic cable to provide smart grid communications to the Project.

Figure 2.1 Center Rutland Project Features Overview

2.1.1 Dam

The Center Rutland Dam was built prior to 1898 and is a concrete and stone masonry structure approximately 190-feet-long by approximately 14-feet-high (Photo 2.2). The dam is located on a ledge outcropping known as Mead Falls (or Gookin Falls or Center Rutland Falls) and crosses the river in a generally north-south direction. The spillway is 190-feet-long and contains a 174-foot-long overflow section and has a crest elevation of 504.8 feet NGVD 29. The remaining portion of the spillway located on the river right is a 16-foot-long, non-overflow section with a crest elevation of approximately 505.5 feet NGVD 29. The river right non-overflow section connects to a 56-foot-long forebay retaining wall with a crest elevation of approximately 505.5 feet NGVD 29. The river left abutment is approximately 3-feet-long at its top at 6-feet-long at its base and has a crest elevation of approximately 510.3 feet NGVD 29.

The Center Rutland Project is licensed to have 2-foot 3-inch-high wooden flashboards. The flashboards have not been installed on the dam since before GMP's purchase of the Center Rutland Project in 2012. The dam's spillway is still fitted with sockets to accommodate the flashboards and the top elevation of the 2-foot 3-inch-high wooden flashboards would be located at 507.1 feet. Upon evaluation, GMP is no longer proposing to install the 2-foot 3-inch-high wooden flashboards due to potential concerns with stability.

Photo 2.2 Center Rutland Dam

2.1.2 Headworks

Center Rutland Project headworks consist of a forebay and intake structure located at the north end of the dam (Photo 2.3; Photo 2.4). The forebay makes an s-bend coming from the impoundment to the intake. The forebay is approximately 18-feet-high and approximately 13-feet-long. The width of the forebay varies, but is approximately 30-feet-wide at the widest portion and 7-feet-wide at the narrowest section. The intake structure consists of a steel trashrack and a steel headgate mounted in a steel frame. The trashrack is approximately 30-feet-wide by 12-feet-high with 9/16-inch clear bar spacing and is cleaned by a mechanical rack raker. The steel headgate is 6.7-feet-wide by 6.5-feet-high and is operated manually by a handwheel. The length of the intake structure varies, but at the longest point, it is approximately 17-feet 2-inches-long. The width of the intake is approximately 39-feet 7-inches-wide. The intake structure is approximately 18-feet-high.

The Center Rutland Project trashracks are cleaned by a mechanical rack raker. The trashracks are cleaned a minimum of once per week during nice weather conditions. During adverse weather or high-water events, the trashracks could be cleaned every few hours as needed a day to keep the generating unit running.

Debris from the trashrack is sorted manually to separate organic materials from inorganic material. Organic material is placed back into the river below the dam while inorganic material is disposed of in accordance with state laws and regulations.

Photo 2.3 Center Rutland Forebay Area

Photo 2.4 Center Rutland Intake

2.1.3 Water Conveyance

Water flows from the headworks to the powerhouse via an above ground 75-foot-long, 6-foot-diamater welded steel penstock situated on marble block saddles (Photo 2.5). Approximately 15-feet of the penstock is located in the powerhouse. The resulting bypassed reach of the Otter Creek between the dam and the powerhouse tailrace is approximately 100-feet-long.

Photo 2.5 Center Rutland Penstock

2.1.4 Powerhouse

The powerhouse is a one-story stone and marble masonry structure measuring approximately 33 feet by 40 feet (Photo 2.6; Photo 2.7; Photo 2.8). It contains a single turbine and generator. The turbine is a 0.275 MW horizontal Francis type unit manufactured by Holyoke Machine Company. The turbine has a minimum hydraulic capacity of 60 cubic feet per second (cfs) and a maximum hydraulic capacity of 190 cfs. The generator is a General Electric horizontal-shaft, open-type, synchronous generator and is rated at 0.275 MW.

Photo 2.6 Center Rutland Penstock and Powerhouse

Photo 2.7 View Inside Center Rutland Powerhouse. View from Left to Right Shows Turbine, Governor, DC Generator, and AC Generator

Photo 2.8 Center Rutland Powerhouse Tailrace

2.1.5 Impoundment

The Center Rutland impoundment is 10.97 acres at a normal full pond elevation of 507.4 feet NGVD 29 with the 2 foot 3-inch-high wooden flashboards installed. Without the flashboards the normal full pond elevation is 505.05 feet NGVD 29 when providing the seasonal minimum flow and 504.8 feet NGVD 29 when minimum flows are not required. The impoundment extends approximately 4,000-feet upstream from the dam. At normal full pond, the impoundment has negligible net storage capacity. The average gross head for the Project with a full impoundment is 30.4 feet. Operated as a run-of-river facility, the Center Rutland Project impoundment experiences little fluctuation during normal operations (Photo 2.9).

Photo 2.9 Center Rutland Project Impoundment

2.1.6 Transmission Lines

Electrical power generated by the Project is transferred from the Project substation to an approximate 80-foot-long, 12.47 kV transmission line interconnection to GMPs distribution system (Photo 2.10). The transmission line then meets an incoming 0.35-mile-long fiber optic cable that provides smart grid communications to the Center Rutland Project. Section 13.0 contains the single-line diagram for the Center Rutland Project.

Photo 2.10 Center Rutland Substation and Connection to the 12.47 kV Transmission Line

2.2 Proposed Project Facilities

GMP is proposing no modifications to the existing Center Rutland Project facilities at this time.

3.0 EXISTING AND PROPOSED PROJECT OPERATIONS

3.1 Existing Project Operations

GMP operates the Center Rutland Project as a run-of-river facility, which maintains a stable impoundment water surface elevation and returns river flow at the powerhouse that matches inflow. Approximately 100 feet of the Otter Creek between the dam and powerhouse tailrace is bypassed during normal operations.

GMP provides a minimum flow of 80 cfs, or inflow, whichever is less, from June 1st through October 15th. Minimum flows are provided over the spillway. There are no minimum flow requirements from October 16th – May 31st.

The maximum hydraulic capacity of the plant is 190 cfs. Flows that exceed the turbine's hydraulic capacity and the seasonal minimum flow requirement are spilled over the dam. The minimum hydraulic capacity of the plant is 60 cfs. Plant operation is suspended when inflows are less than 140 cfs from June 1st to October 15th or less then 60 cfs the remainder of the year.

The Center Rutland Project is primarily operated as a manual station. During normal operations, an operator visits the site on weekdays to ensure facility compliance and overall site safety. A pressure sensing water level transducer is used to measure impoundment elevation upstream of the dam. A transducer is located in the forebay at the intake trashracks and a heating element is used to prevent the forebay from freezing during the winter months. A second transducer is located behind the trashracks and before the headgate. A sight gage is also located in the forebay for calibrating the system. GMP utilizes the water level transducer in conjunction with Project generation to maintain the programmed headpond setpoint values. GMP's Control Center monitors headpond elevation, generation data, and trashrack differential[1] data for the Center Rutland Project continuously. The control center has the ability to raise and lower the wicket gates to further adjust generation. The headpond level remains at a stable level plus or minus less than 1-inch within the minimum level calculated for the required spillage. The headpond water level is consistently monitored by the GMP Control Center. If the pond level drops below the setpoint, Power Production Workers are sent to the site to investigate and repair any issues. Without the flashboards, the normal full pond elevation is maintained at 505.05 feet NGVD 29 when providing the seasonal minimum flow and 504.8 feet NGVD 29 when minimum flows are not required.

Though drawdowns do not occur often at the Center Rutland Project, GMP consults with pertinent resource agencies regarding the timing, extent, and duration of periodic maintenance drawdowns. The Center Rutland Project is hydraulically limited in its ability to actually draw down the impoundment. The Project can only pass water via operating the turbine generator unit (maximum hydraulic capacity of 190 cfs) and via spillage over the dam. With an annual mean flow of 606 cfs (USGS 2021) from 1991 to 2020 at the Center Rutland Project, there are very few instances where GMP would have the ability to draw the impoundment down.

[1] Trashrack differential describes how clogged the trashracks are.

3.2 Proposed Project Operations

GMP proposes modified minimum flows for continued operation of the Center Rutland Project under a subsequent license. GMP provides proposed measures, including those related to Project operations, in Exhibit E, Section 3.2, *Proposed Action*.

4.0 AVERAGE ANNUAL ENERGY AND DEPENDABLE CAPACITY

The Center Rutland Project generated an average annual energy output of 541.7 megawatt hours (MWh) for the period 2014 – 2020. Center Rutland monthly average energy generation for the period 2014 – 2020 is provided in Table 4.1. The ISO New England Seasonal Claimed Capability ratings for the Center Rutland Project as listed in the May 2021 CELT Report are 0.019 MW for the summer period and 0.243 MW for the winter period (ISO New England 2021).

Operation of the Center Rutland Project has been limited since GMP's purchase of the facility in 2012 for several electrical and mechanical reasons. GMP shut the Project down for mechanical maintenance at the end of 2016 and the Project resumed operation in 2019. GMP expects more consistent plant operation going forward.

The estimated mean flow of the Otter Creek at the Center Rutland dam is 606 cfs based on USGS Gage No. 04282000 (Otter Creek at Center Rutland, VT) for the period January 1991 to December 2020 (USGS 2021). The USGS gage is located approximately 350 feet downstream of the Center Rutland dam and was assumed to be representative of river flow at the dam.

Table 4.1 Center Rutland Project Net Generation by Month (MWh), 2014-2020

Year	January	February	March	April	May	June	July	August	September	October	November	December	TOTAL
2014	7.6	33.5	77.6	80.0	93.2	103.1	72.7	52.0	11.1	20.3	102.9	86.0	**740.0**
2015	0.0	0.0	91.6	100.5	101.5	119.0	80.5	1.7	0.0	0.0	0.0	0.0	**494.8**
2016	34.9	43.8	109.9	108.2	70.8	64.5	11.3	1.0	0.0	0.0	0.0	0.0	**444.4**
2017	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2019	3.3	55.4	81.8	72.5	138.0	11.2	84.0	0.0	4.9	17.9	37.1	39.0	**545.1**
2020	156.9	146.4	186.9	185.7	186.0	80.4	7.4	11.2	0	62.0	422.5	122.1	**1,567.5**
Average	**29.0**	**39.9**	**78.3**	**78.1**	**84.2**	**54.0**	**36.6**	**9.4**	**2.3**	**14.3**	**80.4**	**35.3**	**541.7**

5.0 ESTIMATED COST OF THE PROJECT

The Center Rutland Project is an existing, licensed facility. GMP is not proposing any capacity related developments for the Project.

6.0 ESTIMATED CAPITAL AND ANNUAL COSTS OF PROPOSED ENVIRONMENTAL MEASURES

Table 6.1 includes an estimate of costs associated with GMP's protection, mitigation, and enhancement measures as proposed within Exhibit E, Section 3.2, *Proposed Action* for the Center Rutland Project. As discussed below in section 10.0, *Estimated Change in Project Generation*, GMP's proposed flow regime will have no appreciable change in Project generation when compared to the existing, licensed flow regime.

GMP's proposal to aid the Town of Rutland with development of their proposed pocket park is an off-license measure located outside of the Center Rutland Project boundary. As such, GMP has not included estimated costs associated with this proposal.

Table 6.1 Estimated Costs for Protection, Mitigation, or Enhancement Measures Proposed for the Center Rutland Project Relicensing

Proposed Protection, Mitigation, or Enhancement Measure	Estimated Capital Cost (2021 Dollars)	Annual Operations & Maintenance Costs (2021 Dollars)
Flow Management and Monitoring Plan (Inclusive of Agency Consultation)	$10,000	$0
Water Quality Monitoring Study Plan and Study Implementation Upon Reinstallation of Wooden Flashboards (Inclusive of Agency consultation)	$40,000	$0
Minimum Flow Testing Upon Reinstallation of Wooden Flashboards (Inclusive of Agency Consultation)	$8,000	$0

Proposed Protection, Mitigation, or Enhancement Measure	Estimated Capital Cost (2021 Dollars)	Annual Operations & Maintenance Costs (2021 Dollars)
Historic Properties Management Plan (Inclusive of Agency Consultation)	$20,000	$0

7.0 PURPOSE OF THE PROJECT

The primary purpose of the Center Rutland Project is for hydroelectric generation. GMP is the regional electric utility and power producer and currently delivers power generated at the Center Rutland Project directly into GMP's distribution system.

8.0 ESTIMATED COST OF RELICENSING

Pursuant to the Commission's regulations at 18 C.F.R. § 4.61 (c)(3), the total estimated cost of relicensing for the Center Rutland Project is approximately $185,000. This includes consultation, studies, administrative and legal costs.

9.0 VALUE OF PROJECT POWER

The Center Rutland Project is operated in run-of-river mode. GMP delivers all power generation directly into the GMP distribution system. The average on-peak and off-peak values of Project power for 2020 are $24/MWh and $19/MWh, respectively.

10.0 ESTIMATED CHANGE IN PROJECT GENERATION

Historic average generation from 2010 - 2020 was utilized to calibrate modeled historic generation, which was in-turn used to model effects of proposed minimum flows on Center Rutland Project generation (Exhibit E, Section 3.2, *Proposed Action*). The proposed minimum flow regime is anticipated to have a decrease in generation of approximately 6.93 MWh per year without the flashboards (Table 10.1) installed and approximately 4.4 MWh per year with the flashboards installed (Table 10.2). Based upon the peak and non-peak generation values provided in Section 9.0, *Value of Project Power*, this represents an

annual loss of approximately $166.32 and $131.67, respectively without flashboards and $105.60 and $83.60 with flashboards.

Table 10.1 Effects of Proposed Minimum Flows On Center Rutland Project Generation: Monthly Average 2010 - 2020 Without Flashboards

2010 - 2020			
Month	**Historical Average Monthly (MWh)**	**Modeled Historical Average Monthly (MWh) Without Flashboards**	**Modeled Proposed Minimum Flow Condition Average (MWh) Without Flashboards**
1	54.6	85.3	84.93
2	73.2	77.5	77.08
3	111.8	87.4	86.66
4	111.3	90.3	89.81
5	118.2	87.4	86.77
6	75.7	71.9	71.85
7	43.4	57.1	57.05
8	32.5	36.7	36.75
9	8.6	27.2	27.20
10	35.0	65.8	63.07
11	112.4	81.7	80.86
12	87.7	86.6	85.92
Sum	**864.4**	**854.9**	**848.0**

Table 10.2 Effects of Proposed Minimum Flows On Center Rutland Project Generation: Monthly Average 2010 - 2020 With Flashboards

2010 - 2020			
Month	**Historical Average Monthly (MWh)**	**Modeled Historical Average Monthly (MWh) With Flashboards**	**Modeled Proposed Minimum Flow Condition Average (MWh) With Flashboards**
1	54.6	95.25	94.95
2	73.2	83.25	83.25
3	111.8	91.61	91.34
4	111.3	93.41	93.40
5	118.2	89.37	89.13
6	75.7	81.91	81.91

2010 - 2020			
Month	**Historical Average Monthly (MWh)**	**Modeled Historical Average Monthly (MWh) With Flashboards**	**Modeled Proposed Minimum Flow Condition Average (MWh) With Flashboards**
7	43.4	68.54	68.54
8	32.5	47.28	47.28
9	8.6	33.07	33.07
10	35.0	78.18	75.15
11	112.4	93.57	93.27
12	87.7	99.35	99.15
Sum	**864.4**	**954.78**	**950.43**

11.0 CURRENT NET INVESTMENT (BOOK VALUE) OF THE PROJECT

The current net investment in the Center Rutland Project as of April 2021 is $1,244,474. This should not be interpreted as the fair market value of the Center Rutland Project.

12.0 ESTIMATED ANNUAL OPERATION AND MAINTENANCE EXPENSE OF THE PROJECT

The average annual operations and maintenance costs inclusive of administration and insurance expenses for the period 2018 - 2020 is approximately $49,587. The average tax fee for this time period is $5,030.70. The total average annual operation and maintenance cost is approximately $54,617.7.

13.0 SINGLE LINE DIAGRAM

A single-line diagram for the Center Rutland Project is provided in Appendix A.

14.0 PROJECT SAFETY PROGRAM

Since GMP has owned the Center Rutland Project, GMP has safely managed, operated, and maintained the facility. GMP's Rutland Control Center continuously monitors the Project. These same practices will be continued under a subsequent license, subject to

any new terms and conditions contained therein. GMP maintains fences, locked gates, handrails, and signs to warn and protect the public from hazards associated with Project operations and to restrict the public from Project structures (dam, intake, and powerhouse area). All buildings, gates, and instrumentation devices located on or near the dam are kept locked at all times when they are not in use by the plant operator. A boat barrier is installed seasonally on the upstream side of the dam for public safety reasons.

On April 4, 2019, GMP filed a Public Safety Plan, which details public safety measures at the Center Rutland Project. A component of this plan is annual monitoring and reporting, which GMP is up to date with, filing their 2020 Dam Safety Surveillance Monitoring Report (DSSMR) for the Center Rutland Project on March 16, 2021. GMP's 2020 DSSMR was accepted by FERC per letter dated May 25, 2021 (FERC 2021).

15.0 LANDS OF THE UNITED STATES

There are no federal lands within the Center Rutland Project boundary.

16.0 REFERENCES

Federal Energy Regulatory Commission (FERC). 2021. Letter: RE: 2020 Dam Safety Surveillance and Monitoring Report. May 25, 2021. Available online: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=020DAB75-66E2-5005-8110-C31FAFC91712. Accessed August 18, 2021.

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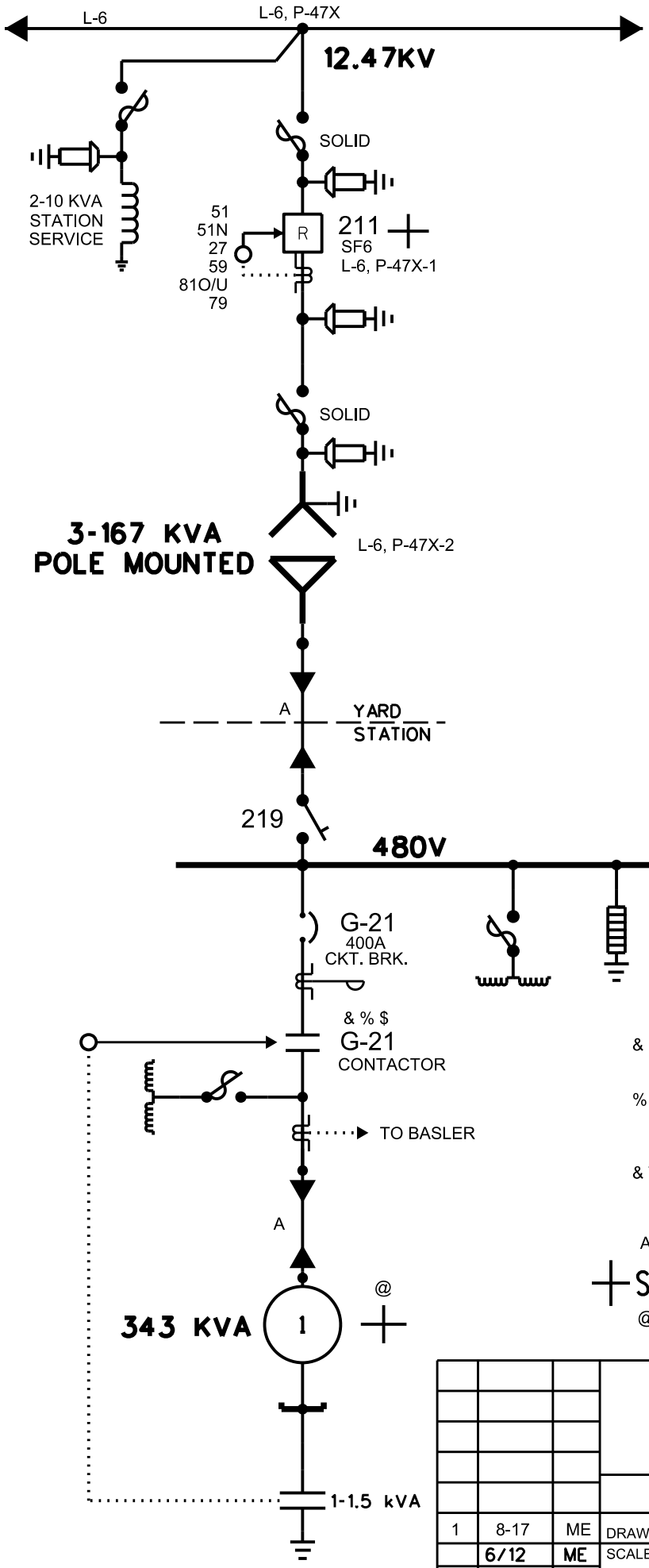
United States Geological Survey (USGS). 2021. USGS 04282000 Otter Creek at Center Rutland, VT. Available online: https://waterdata.usgs.gov/vt/nwis/uv/?site_no=04282000&PARAmeter_cd=00065,00060. Accessed July 6, 2021.

APPENDIX A

SINGLE LINE DIAGRAM



& GT #49 WILL TRANSFER TRIP AND BLOCK CLOSE G-21 CONTACTOR VIA 86TT/GT L.O.

% TRIPS AND BLOCKS CLOSE G-21 CONTACTOR VIA 86G/LO FOR: 32, 40, 59, 64F, 64G

& TRIPS G-21 CONTACTOR FOR: 27, 46, 51V, 81O/U

A - 500 MCM, w/ #4 GND.

+ SUPERVISORY CONTROLLED

@ EMERGENCY STOP ONLY

REV.	DATE	CH'K
1	8-17	ME
	6/12	ME

CENTER RUTLAND STATION
SINGLE LINE CONNECTIONS
OPERATING DIAGRAM
GREEN MOUNTAIN POWER

DRAWN BY	CHECKED BY	DATE
KHT		5/11

SCALE	APPROVED BY	DWG#
NONE	DB	20-16

ATTACHMENT C

REVISED EXHIBIT E

CENTER RUTLAND HYDROELECTRIC PROJECT

FERC NO. 2445

EXHIBIT E

ENVIRONMENTAL REPORT

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Not Applicable in this AIR

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	microgram/Liter
µS/cm	microsiemens/centimeter
APE	Area of Potential Effect
ARA	Archaeological Resource Assessment
ASA	Archaeologically Sensitive Area
Center Rutland Project	Center Rutland Hydroelectric Project (FERC No. 2445)
CFR	Code of Federal Regulations
cfs	cubic feet per second
CRMP	Cultural Resource Management Plan
CVPS	Central Vermont Public Service Corporation
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DEC	Department of Environmental Conservation
District	Center Rutland Hydroelectric Station Historic District
DLA	Draft License Application
DO	dissolved oxygen
DSSMR	Dam Safety Surveillance and Monitoring Report
EFH	Essential Fish Habitat
EPT	Ephemeroptera, Plecoptera and Trichoptera
ESA	Endangered Species Act
FERC or Commission	Federal Energy Regulatory Commission
FLA	Final License Application
FMMP	Flow Management and Monitoring Plan
FPA	Federal Power Act
FPS	Feet Per Second
GMNF	Green Mountain National Forest
GMP or Licensee	Green Mountain Power
HPMP	Historic Properties Management Plan
HWA	Hemlock wooly adelgid
IPaC	Information for Planning and Conservation
Joint Meeting	Joint Agency and Public Meeting
K	Erosion factor
Ksat	Saturated hydraulic conductivity of soil

kV	kilovolt
mg/L	milligram per liter
MW	megawatts
NE ARC	Northeast Archaeology Research Center Inc.
NGVD 29	National Geodetic Vertical Datum of 1929
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
PAD	Pre-Application Document
PME	protection, mitigation, and enhancement
REA Notice	Ready for Environmental Analysis Notice
RM	river mile
RTE	Rare, Threatened, and Endangered
THPO	Tribal Historic Preservation Officer
TLP	Traditional Licensing Process
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
VANR	Vermont Agency or Natural Resources
VARI	Vermont Architectural Resource Inventory
VDHP	Vermont Division for Historic Preservation
VTFWD	Vermont Fish and Wildlife Department
WQC	Water Quality Certification

1.0 INTRODUCTION

1.1 Project Overview

Green Mountain Power Corporation (GMP or Licensee) is the owner and operator of the existing 0.275 megawatts (MW) Center Rutland Hydroelectric Project (FERC No. 2445) (Center Rutland Project). The current license for the Center Rutland Project was issued by the Federal Energy Regulatory Commission (FERC or Commission) on March 31, 1993, to OMYA, Inc., for a term of 30-years. The license went into effect on January 1, 1994 and expires on December 31, 2023 (Appendix A).

The Center Rutland Project license was amended on March 29, 1996, to make the license consistent with conditions included within a revised Water Quality Certification issued in on April 13, 1995 (Appendix A). On November 23, 2010, FERC issued an Order Approving Transfer of ownership from Vermont Marble Power, a division of OMYA, Inc. to Central Vermont Public Service Corporation (CVPS) (Appendix A). The license was then transferred from CVPS to GMP per FERC Order Approving Transfer of Licenses and Substation on September 13, 2012 (Appendix A). FERC additionally issued an Order Amending License on October 12, 2012, to incorporate a design change in the physical features of the Project and to accommodate a new interconnection point located closer to the powerhouse (Appendix A).

1.2 Description of Existing Project Facilities and Operations

1.2.1 Existing Project Facilities

The Center Rutland Project is located on the Otter Creek at river mile (RM) 71 and in the Town of Rutland, Rutland County, Vermont (Photo 1.1; Figure 1.1; Figure 1.2). As licensed, the Center Rutland Project consists of (1) a concrete and stone masonry gravity dam, about 249-feet-long, with a 190-foot-long spillway section comprised of a 174-foot-long section topped with 2 foot 3-inch-high flashboards, and a 16-foot-long non-overflow section; (2) an impoundment with a surface area of about 10.97 acres and no usable storage capacity at the normal water surface elevation of 505.05 feet NGVD 29 (without flashboards installed); (3) a small forebay; (4) a concrete and marble masonry intake structure; (5) a 6-foot-diameter, 75-foot-long steel penstock; (5) a stone and marble masonry powerhouse measuring approximately 32-feet by 37-feet, containing a single

horizontal-shaft turbine driving a 0.275 MW generator; (6) a substation; (7) an approximate 80-foot-long, 12.47 kilovolt (kV) transmission line; (8) a 0.35-mile-long fiberoptic cable to provide smart grid communications to the Project; and (9) appurtenant equipment and facilities. Although sockets for flashboard pins exist along the crest of the concrete spillway, the wooden flashboards are not currently installed and have not been in place since before GMP purchased the Center Rutland Project in 2012.

Additional Project description and operations information is included in Exhibit A, Project Description and Operations.

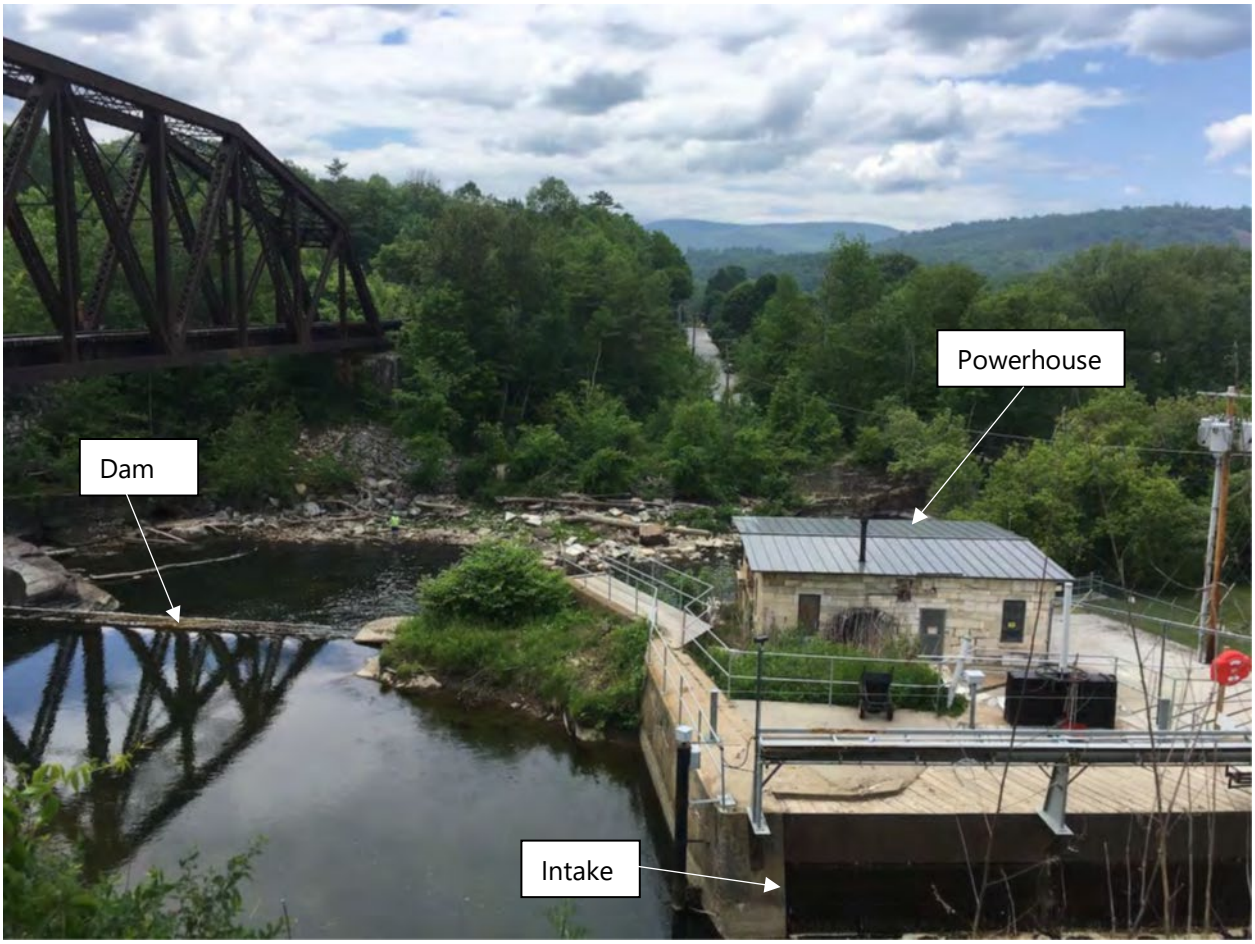


Photo 1.1 Center Rutland Project Overview

Figure 1.1 Center Rutland Project Location

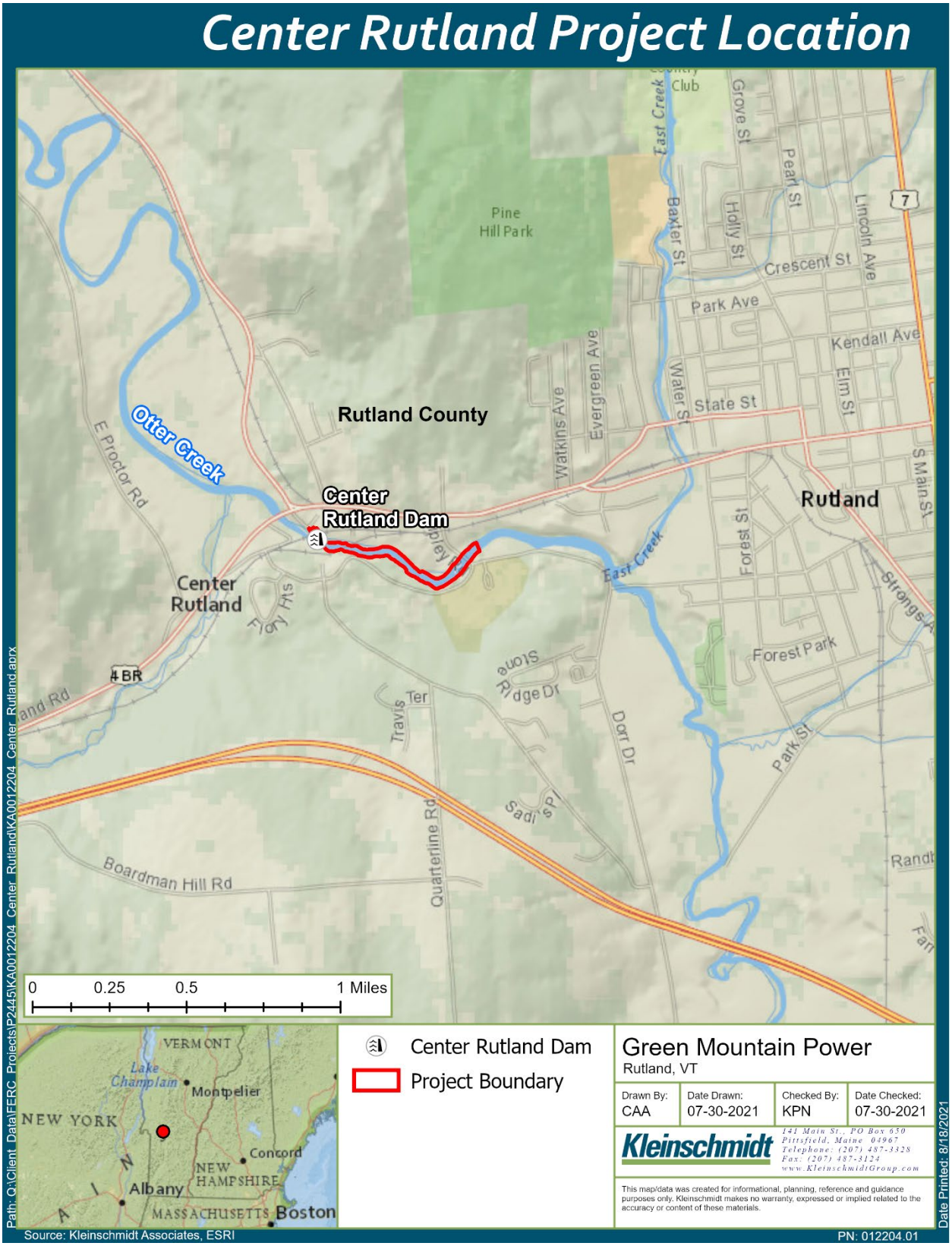


Figure 1.2 Center Rutland Project Features

1.2.2 Existing Project Operations

GMP operates the Center Rutland Project as a run-of-river facility, which maintains a stable impoundment water surface elevation and returns river flow at the powerhouse that matches inflow. Approximately 100 feet of the Otter Creek between the dam and powerhouse tailrace is bypassed during normal operations.

GMP provides a minimum flow of 80 cubic feet per second (cfs), or inflow, whichever is less, from June 1st through October 15th. Minimum flows are provided over the spillway. There are no minimum flow requirements from October 16th – May 31st.

The maximum hydraulic capacity of the plant is 190 cfs. Flows that exceed the turbine's hydraulic capacity and the seasonal minimum flow requirement are spilled over the dam. The minimum hydraulic capacity of the plant is 60 cfs. Plant operation is suspended when inflows are less than 140 cfs from June 1st to October 15th or less than 60 cfs the remainder of the year.

The Center Rutland Project is primarily operated as a manual station. During normal operations, an operator visits the site on weekdays to ensure facility compliance and overall site safety. A pressure sensing water level transducer is used to measure impoundment elevation upstream of the dam. A transducer is located in the forebay at the intake trashracks and a heating element is used to prevent the forebay from freezing during the winter months. A second transducer is located behind the trashracks and before the headgate. A sight gage is also located in the forebay for calibrating the system. GMP utilizes the water level transducer in conjunction with Project generation to maintain the programmed headpond setpoint values. GMP's Control Center monitors headpond elevation, generation data, and trashrack differential[1] data for the Center Rutland Project continuously. The Control Center has the ability to raise and lower the wicket gates to further adjust generation. The headpond level remains at a stable level plus or minus less than 1-inch within the minimum level calculated for the required spillage. The headpond water level is consistently monitored by the GMP Control Center. If the pond level drops below the setpoint, Power Production Workers are sent to the site to investigate and repair any issues. Without the flashboards, the normal full pond elevation is maintained

[1] Trashrack differential describes how clogged the trashracks are.

at 505.05 feet NGVD 29when providing the seasonal minimum flow and 504.8 feet NGVD 29 when minimum flows are not required.

Though drawdowns do not occur often at the Center Rutland Project, GMP consults with pertinent resource agencies regarding the timing, extent, and duration of periodic maintenance drawdowns beyond normal operating levels. The Center Rutland Project is hydraulically limited in its ability to actually draw down the impoundment. The Project can only pass water via operating the turbine generator unit (maximum hydraulic capacity of 190 cfs) and via spillage over the dam. With an annual mean flow of 606 cfs (USGS 2021) from 1991 to 2020 at the Center Rutland Project, there are very few instances where GMP would have the ability to draw the impoundment down.

1.2.3 Existing Environmental Measures

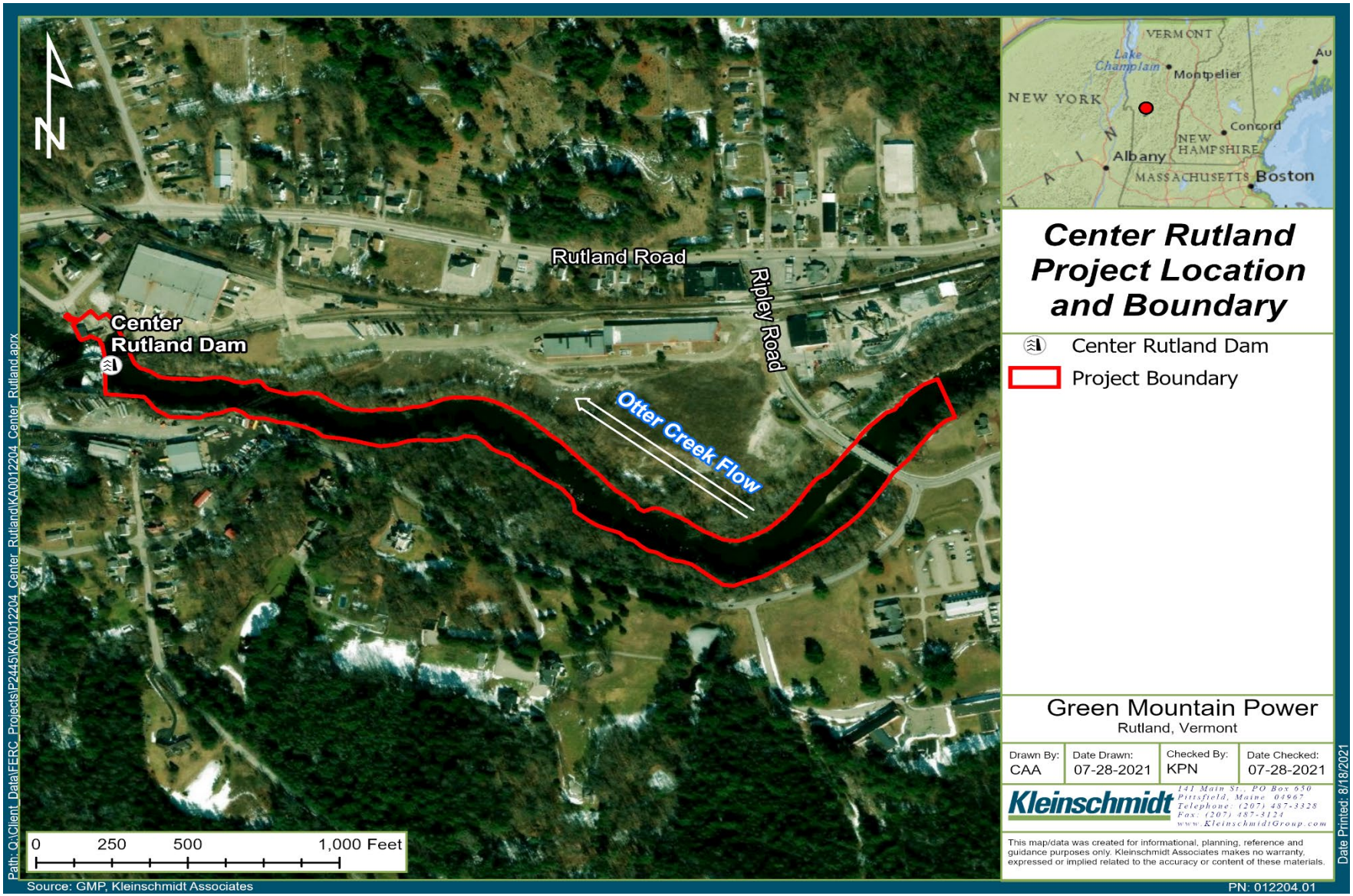
GMP currently implements the following environmental measures at the Center Rutland Project:

- Operates the Project in a run-of-river mode, such that inflow to the dam matches outflow from the powerhouse and water is not stored to enhance generation.
- Provides a minimum flow of 80 cfs (or inflow, whichever is less) from June 1st through October 15th in the 100-foot-long bypassed reach of Otter Creek between the dam and powerhouse tailrace.
- Provides public access and use of Project lands and waters; and provides an informal hand carry put-in/fishing access area located downstream of the powerhouse.

1.2.4 Project Lands and Waters

There are no federal lands within or adjacent to the Center Rutland Project. The Center Rutland Project boundary extends approximately 4,000 feet upstream of the dam, and approximately 100 feet downstream of the dam. Above the dam, the Project boundary follows the impoundment at the normal water surface elevation of 507.4 feet NGVD 29 (elevation with the 2-foot 3-inch-high wooden flashboards installed). The existing Project boundary is shown in Figure 1.3 and in Exhibit G, Project Maps.

Figure 1.3 Project Location and Boundary



1.2.5 Project Safety

Since GMP has owned the Center Rutland Project, GMP has safely managed, operated, and maintained the facility. GMP's Rutland Control Center continuously monitors the Project. These same practices will be continued under a subsequent license, subject to any new terms and conditions contained therein. GMP maintains fences, locked gates, handrails, and signs to warn and protect the public from hazards associated with Project operations and to restrict the public from Project structures (dam, intake, and powerhouse area). All buildings, gates, and instrumentation devices located on or near the dam are kept locked at all times when they are not in use by the plant operator. A boat barrier is installed seasonally on the upstream side of the dam for public safety reasons.

On April 4, 2019, GMP filed a Public Safety Plan, which details public safety measures at the Center Rutland Project. A component of this plan is annual monitoring and reporting, which GMP is up to date with, filing their 2020 Dam Safety Surveillance Monitoring Report (DSSMR) for the Center Rutland Project on March 16, 2021. GMP's 2020 DSSMR was accepted by FERC per letter dated May 25, 2021 (FERC 2021).

1.3 Pre-Filing Consultation Summary

In accordance with FERC approval dated February 19, 2019, GMP is using the Traditional Licensing Process (TLP) for relicensing the Center Rutland Project (FERC 2019). The TLP is split into three stages of pre-filing consultation. Stage I consultation involves the applicant's request to use the TLP and filing of a Notice of Intent (NOI) and Pre-Application Document (PAD), FERC's approval to use the TLP, holding a joint agency/public meeting and site visit, and provision of written comments and study requests from resource agencies, tribes, and interested stakeholders. Stage II consultation involves the applicant's completion of necessary and reasonable studies, the applicant's provision of a Draft License Application (DLA) and study results to resource agencies, tribes, and interested stakeholders, and the provision of comments from resource agencies, tribes, and interested stakeholders on the DLA. Stage III then includes the applicant's filing of a Final License Application (FLA) with the Commission and provision of copies of the FLA to agencies, tribes, and interested stakeholders.

1.3.1 Stage 1 Consultation

By letter dated December 20, 2017, FERC invited the Saint Regis Mohawk Tribe to participate in the relicensing process. No response from the Saint Regis Tribe has been filed in FERC's administrative record.

GMP filed a NOI to File a License Application, PAD, and request to use the TLP with FERC on December 21, 2018. On February 19, 2019, FERC granted approval for GMP to use the TLP for the Center Rutland Project and Notice of GMP's Intent to File License Application (Appendix B).

On March 6, 2019, pursuant to 18 Code of Federal Regulations (CFR) § 16.8(b)(3)(i)(B), GMP provided written notice to FERC and the stakeholders (see the Distribution List) of the Joint Agency and Public Meeting (Joint Meeting) and site visit for the Center Rutland Project. In accordance with 18 CFR § 16.8(i), GMP published notice of the Joint Meeting and site visit in the Rutland Herald on March 5, 2019. This newspaper is distributed in the southern part of Vermont, including Rutland County. GMP filed proof of newspaper publication with FERC on March 6, 2019 (Appendix B).

GMP held a Joint Meeting and site visit at the Center Rutland Project on Thursday, March 21, 2019. The purpose of the meeting was to: 1) provide information about the Center Rutland Project and relicensing process; 2) solicit information regarding the existing environmental resources associated with the Center Rutland Project and data that may need to be obtained; and 3) obtain agency and stakeholder opinions regarding the Center Rutland Project and its potential effects on existing resources. GMP filed a summary and audio recording of the Joint Meeting with FERC on April 5, 2019 (Appendix B).

During this timeframe, GMP received feedback through personal communication from Chief Don Stevens of the Nulhegan Band of the Coosuk – Abenaki Nation dated March 5, 2019 (Appendix B). Chief Stevens expressed interest in establishing an agreement with GMP for protection of access and gathering rights on GMP property surrounding the Center Rutland Project.

The Vermont Agency of Natural Resources (VANR), Department of Environmental Conservation (DEC) and the Vermont Division for Historic Preservation (VDHP) filed comment letters on the PAD and study requests on May 15, 2019, and May 20, 2019, respectively (Appendix B). The VANR DEC requested a Bypass Flow Study, a Freshwater

Mussel Survey, a Recreational Resources Inventory, Use, and Needs Assessment; and an Aesthetic Flow Study. The VDHP requested that GMP engage qualified consultants to complete cultural resource studies within the entire Area of Potential Effect (APE), including the impoundment margins. The study request included an Archaeological Resource Assessment (Phase 1), a Historic Resource Assessment for above ground structures, and development of a project specific Cultural Resource Management Plan (CRMP).

The VDHP also recommended that GMP consult with the Stockbridge Munsee Band of the Mohicans. GMP contacted the Stockbridge Munsee Band of the Mohicans on July 24, 2019, to inform them about the relicensing of the Center Rutland Project. Bonney Hartley, Tribal Historic Preservation Officer (THPO) of the Stockbridge-Munsee Mohican Tribal Historic Reservation, responded on July 25, 2019, stating that the Tribe does not anticipate concerns related to cultural resource because no ground disturbance is proposed (Appendix B).

1.3.2 Stage 2 Consultation

During the 2019 field season, GMP contracted with Biodrawversity LLC to complete a freshwater mussel survey at the Center Rutland Project. The survey was completed on July 14, 2019 (Appendix B). The results of the study are described in Section 4.7, *Fish and Aquatic Resources*.

Prior to initiating the relicensing effort, GMP entered into discussions with the Town of Rutland to develop a collaborative "pocket park" on GMP and Town of Rutland land to enhance the informal access occurring on Otter Creek's south bank downstream of the powerhouse. Over the course of 2019 and 2020, the Town of Rutland applied for and obtained a municipal planning grant from the state of Vermont to develop plans for the pocket park. GMP and the Town of Rutland have been in close communication between 2019 – 2021 regarding development of park plans and GMP continues to participate in discussions to finalize park plans. On July 9, 2020, GMP attended a pocket park site visit hosted by the Rutland Planning Commission (Appendix B). The intent of the site visit was to explore the site and develop ideas for the proposed pocket park. Preliminary designs for the pocket park were a product of this meeting (Appendix B). The Town of Rutland held a pocket park planning conference call with GMP and recreation stakeholders on May 10, 2021, to continue gathering information and inputs on park designs (Appendix

B). On September 17, 2021, the Town of Rutland held a cultural resource stakeholder conference call meeting with other pertinent stakeholders inclusive of the VDHP, Abenaki Tribe, and GMP. The Stockbridge-Munsee Mohican Tribe were invited to this meeting after they had expressed interest in and provided initial questions on the park project but were unable to attend. GMP continues to support the Town's efforts with the park and anticipates that consultation with the town will be ongoing for some time as the Town works towards incorporating stakeholder feedback into designs, finalizing park designs, and acquiring necessary funding and permitting needs. Preliminary park designs and an outline of next steps are further described in Section 4.10, Land Use, *Recreation, and Aesthetic Resources*.

GMP consulted with the VDHP to finalize an updated APE and received VDHP concurrence on the APE on September 24, 2020 (Appendix B). GMP's consultants conducted field work in 2020 for the Archeological Resource Assessment and Phase IB work. GMP received VDHP's concurrence with the Archaeological Resource Assessment and Phase IB reports (Appendix B). Per VDHP's concurrence with the Phase IB report, GMP's consultants completed an Archaeological Phase II Survey field work during the 2021 field season after receiving approval from VDHP for the provided March 31, 2021 Phase II scope of work. A Phase II End of Field Report was submitted on November 19, 2021 for VDHP review. GMP's consultant is finalizing the Phase II Technical Report and anticipates that this report will be submitted to the VDHP during the first quarter of 2022.

GMP additionally submitted documentation of the facility (Vermont Architectural Resource Inventory (VARI) form) and a recommended determination of National Register Eligibility to VDHP on May 6, 2021 (Appendix B). VDHP provided verbal comments on the Center Rutland Historic District documentation on June 11, 2021 and GMP submitted a revised VARI form and documentation on September 3, 2021. On November 19, 2021, a second revised iteration of the VARI form and documentation inclusive of a revised historic district boundary for the Center Rutland Hydro Historic District was submitted per request from the VDHP. On December 17, 2021, GMP received VDHP's concurrence with the revised VARI form including written concurrence with the Archaeology Phase IB Report.

GMP's consultant is finalizing the Section 106 memo in accordance with Phase II Technical Report details and pans to provide the VDHP with the Section 106 memo during the first quarter of 2022. The Section 106 memo will evaluate the effects of the general operation

of the Center Rutland Project on historic resources. This effects evaluation will touch on the proposed pocket park plans that have been shared and discussed with in consultation with VDHP.

On January 13, 2021, the VANR DEC requested additional information regarding the status of GMP's study plan and study reports for the Center Rutland Project (Appendix B). In response to the VANR DEC's letter, GMP distributed a Study Report, Study Statuses, and Study Plans document to the distribution list on May 17, 2021 (Appendix B). GMP provided the freshwater mussel survey report for review and comment, a summary of progress on pocket park discussions, summary of cultural resource work and consultation completed to date, as well as a combined Bypass Reach Habitat Evaluation and Aesthetic Flow Study Plan for review and commentary. Within this document GMP noted that it continues to consider future installation/use of the currently licensed 2-foot 3-inch-high wooden flashboards during the next license term. Reinstallation of a flashboard system is contingent upon construction of a lifeline across the dam which will require permission from multiple landowners. GMP does not currently have a timeline for flashboard re-installation, however, GMP proposes that a provision for reinstallation of the licensed 2-foot 3-inch-high wooden flashboards be included within its subsequent license. GMP noted within this letter that it commits to ongoing coordination and consultation with VANR DEC regarding a flashboard installation schedule and development of a water quality study after flashboard installation. If flashboard installation does not occur prior to filing the Final License Application, GMP proposed inclusion of a Water Quality Study as a license condition.

The VANR DEC provided comments on the Study Report, Study Statuses, and Study Plans document on June 16, 2021 (Appendix B). The VANR DEC agreed with GMP's proposal to use video and existing information to evaluate minimum instream flows for aquatic habitat and aesthetics in the bypassed reach. The VANR DEC noted that field verification may be required, and requested information about leakage flows through the flashboards if the flashboards are reinstalled. The VANR DEC also noted that spillage flows should be adequate to support aquatic habitat and aesthetic uses year-round. The VANR agreed that the proposed future water quality study was acceptable should flashboards be reinstalled at the site. The VANR DEC noted that they are pleased that GMP is working with the Town of Rutland to develop a pocket park to increase recreational access to Otter

Creek. No other comments on the Study Report, Study Statuses, and Study Plans document were received.

On December 8, 2021, GMP hosted a conference call with VANR and the U.S. Fish and Wildlife Service (USFWS) to discuss next steps regarding the Project minimum flow proposal. GMP, VANR, and the USFWS agreed during the call to complete a flow demonstration to view flow releases of 20, 40, 60, 80, and 100 cfs over the Center Rutland dam and into the bypassed reach. GMP will implement the flow demonstration when river conditions allow, but it may need to be performed in the spring of 2022 given that winter conditions at the site will prevail for the next several months. The parties agreed that an in-person demonstration would be preferable but, if necessary, updated video footage could be collected with a drone. Notes from the December 8, 2021 meeting are included within Appendix B2. GMP will provide updates to FERC and consulting parties on continued consultation surrounding minimum flow testing.

Appendix B provides a consultation summary table as well as documentation of consultation.

Draft License Application

The Center Rutland Project DLA was distributed to FERC, resource agencies, tribes, and interested stakeholders for review and commentary on September 3, 2021. The DLA included descriptions of (1) the existing and proposed Project facilities, Project lands, and waters; (2) existing and proposed Project operations and maintenance, including protection, mitigation, and enhancement (PME) measures for each resource area potentially affected by the relicensing; and (3) a draft analysis of the effects of the proposed relicensing on each environmental resource. In accordance with 18 CFR§16.8 (c)(4)(5), stakeholders interested in providing comments on the DLA had 90 days to submit their comments (or by December 2, 2021). The VDHP and VANR provided comments on the Center Rutland Project DLA on November 30, 2021 and December 3, 2021, respectively (Appendix B). GMP has reviewed provided DLA comments and has incorporated responses to comments, as appropriate, within this FLA document. Responses to comments are included throughout the document text as well as specifically addressed within Table 1.1.

[2] Meeting notes have not been reviewed by the VANR or USFWS.

Table 1.1 Draft License Application Comments and Responses

Commenting Entity	Comment Letter Date	Applicable Draft License Application Section	Comment	Response
VDHP	12/1/2021	Section 4.12.1.1.1General Native American Pre-Contact Context	General Native American Pre-Contact Context of the DLA should be updated in the FLA to reflect the more recent regional research that is available as well as use currently accepted dating terminology.	This language has been updated to reflect more recent regional research. See Section 4.12.1.1.1.
VDHP	12/1/2021	Section 4.10.1.2.3 Project Recreation Facilities and Opportunities	This section stated that proposed Pocket Park plans are still in development. GMP will need to engage in further Section 106 of consultation when project plans are ready for review. Additional archaeological review may be required.	Noted. See Section 4.10.1.2 and Section 4.12.2.1.
VDHP	12/1/2021	Section 4.12.2.1 Effects of Proposed Action	Execution of a Programmatic Agreement and completion of a new Historic Resource Management Plan as proposed in this section will provide the basis to address any potential adverse effects to historic properties during the continued operation of the Project and the term of the license.	Noted and GMP continues to include this proposal in the FLA. See Section 4.12.2.2.
VANR	12/2/2021	Exhibit E 1-11	The Agency is looking forward to seeing the finalized design and plans for implementation of the pocket park.	Noted. GMP will continue consultation with VANR as pocket park designs become more final and as timing for

Commenting Entity	Comment Letter Date	Applicable Draft License Application Section	Comment	Response
				the park becomes more established. See Section 4.10.1.2.3 for the latest update on the park status.
VANR	12/2/2021	Exhibit E 1-12	The Agency reviewed the footage to evaluate minimum instream flows for aquatic habitat and aesthetics in the bypassed reach, and given the quality of video found it difficult to assess aquatic habitat. The Agency requests a limited number of flows for review either in person or with updated video footage. The Agency is happy to schedule a meeting with the Applicant to discuss flows and viewing options.	GMP hosted a conference call with VANR and USFWS on December 8, 2021 to discuss next steps regarding minimum flow evaluation. As agreed during the call, GMP will test a set of minimum flows likely during the spring months after high river flows recede. December 8, 2021 meeting notes are included in Appendix B of this Exhibit. See Section 4.7.1.1 for additional detail.
VANR	12/2/2021	Exhibit E 3-1	The Agency appreciates the inclusion of Northern long-eared bat mitigation measures and development a Flow Management and Monitoring Plan within the DLA.	Noted. These proposals continue to be included within this FLA.
VANR	12/2/2021	Exhibit E 4-1	The Applicant notes that the trashracks are cleaned at a minimum once per week but during high water events up to twice daily. In the FLA, please note how the debris from the	See Section 4.7.1.3 for further description of GMP's protocol for trashrack debris sorting and disposal.

Commenting Entity	Comment Letter Date	Applicable Draft License Application Section	Comment	Response
			trashracks is disposed. All debris should be disposed in accordance with state laws and regulations.	
VANR	12/2/2021	Exhibit E 4-35	The Applicant notes that during the freshwater mussel survey in 2019 rare mussel species were found in the impoundment. Additionally, it was noted that the Applicant intends to consult with the Agency should there be a need for maintenance drawdown. Any proposal for project maintenance or repair work, including a drawdown outside the normal operating level should be filed with the Agency for review and approval, as this could negatively affect mussels within the impoundment.	Noted. GMP continues to propose consulting with VANR prior to maintenance and repair work that would require an impoundment drawdown outside of the normal operating level. However, it should be noted that the Center Rutland Project is hydraulically limited in its ability to actually draw down the impoundment. The Project can only pass water via operating the turbine generator unit (maximum hydraulic capacity of 190 cfs) and via spillage over the dam. With an annual mean flow of 606 cfs (USGS 2021) from 1991 to 2020 at the Center Rutland Project, there are very few instances where GMP would have the ability to draw the impoundment down.

1.4 References

Federal Energy Regulatory Commission (FERC). 2021. Letter: RE: 2020 Dam Safety Surveillance and Monitoring Report. May 25, 2021. Available online: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=020DAB75-66E2-5005-8110-C31FAFC91712. Accessed August 18, 2021.

Federal Energy Regulatory Commission (FERC). 2019. Authorization to Use the Traditional Licensing Process. February 19, 2019. Available online: *https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15163828*. Accessed July 24, 2021.

Green Mountain Power Corporation (GMP). 2021. 2020 Dam Safety Surveillance Monitoring Report for the Center Rutland Project (P-2445). CEII. Available online: *https://elibrary.ferc.gov/eLibrary/docfamily?document_id=14936778&accessionnumber=20210316-5134&optimized=false***.** Accessed July 27, 2021.

2.0 STATUTORY AND REGULATORY REQUIREMENTS

Issuance of a subsequent license for the Center Rutland Project is subject to requirements of the Federal Power Act (FPA) and other federal statutes. Requirements applicable to this FLA are summarized below.

2.1 Section 18 Fishway Prescriptions

Under Section 18 of the FPA, the USFWS and the National Marine Fisheries Service (NMFS) have the authority to prescribe fishways at federally regulated hydropower projects. Currently, there is not a downstream fishway present at the Center Rutland Project. Following the filing of the FLA, fishway prescriptions, if any, will be filed within 60 days after FERC's Notice for Acceptance and Ready for Environmental Analysis (REA Notice) per FERC's TLP regulations, 18 CFR §4.34(b).

2.2 Section 4(e) Conditions

Section 4(e) of the FPA provides that any license issued by FERC for a hydropower project within a U.S. Forest Service reservation shall be subject to and contain such conditions as the Secretary of the responsible federal land management agency deems necessary for the adequate protection and use of National Forest System lands. The Center Rutland Project does not encompass any federal lands; therefore, these conditions do not apply.

2.3 Section 10(j) Recommendations

Under Section 10(j) of the FPA and prior to issuing a new license, FERC must consider PMEs recommended by federal and state fish and wildlife agencies for the protection of fish and wildlife resources at the Center Rutland Project. FERC will include these conditions in a license order unless it determines that they are inconsistent with the purposes and requirements of the FPA or other applicable laws.

2.4 Section 401 of the Clean Water Act

Section 401 of the Clean Water Act (CWA) requires GMP to obtain certification from the appropriate state pollution control agency verifying compliance with the CWA or to obtain a waiver of certification. The VANR DEC is the state agency responsible for issuing a Water Quality Certification (WQC) for the Center Rutland Project. The Center Rutland Project is

subject to a current WQC which was issued on November 20, 1992, and then reissued on April 13, 1995.

GMP will file an application for WQC with the VANR DEC in accordance with 18 CFR §4.34(b)(5)(i) within 60 days of FERC's issuance of notice of acceptance of the FLA and REA notice (or sooner, pending consultation with DEC).

2.5 Endangered Species Act

The Endangered Species Act (ESA) (19 United States Code [U.S.C.] § 1536(c), as amended), provides a program for the conservation of threatened and endangered plants and animals and their habitats. The lead federal agencies for implementing ESA are the USFWS and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). Section 7 of the ESA requires federal agencies, in consultation with the USFWS or NMFS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. On February 19, 2019, FERC designated GMP as the non-federal representative for carrying out consultation pursuant to Section 7 of the ESA. The northern long-eared bat (*Myotis septentrionalis*) is the only federally listed species known to potentially occur within the Center Rutland Project area[3]. The monarch butterfly is additionally a federal candidate species that may occur within the Project area. See additional discussion in Section 4.9, *Rare, Threatened, Endangered, and Special Status Species*.

2.6 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act requires federal agencies to consult with NMFS on actions that may adversely affect Essential Fish Habitat (EFH). EFH is applicable to federally managed commercial fish species that live at least one component of their lifecycle in marine waters. All fish in Otter Creek are freshwater species that are not managed commercially; therefore, there is no EFH in the Center Rutland Project area.

3 Project area is equal to the Center Rutland FERC Project boundary. These terms are used interchangeably within this document.

2.7 Coastal Zone Management Act

Under Section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), FERC cannot issue a license for a hydroelectric project within or affecting a coastal zone unless the state concurs with an applicant's certification of consistency with the CZMA program, or the states' concurrence is conclusively presumed if it fails to act within 180 days of receipt of the applicant's certification. The state of Vermont does not border any coastal environments; therefore, the Center Rutland Project is not subject to a CZMA review.

2.8 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA), as amended, requires FERC to consider the effect of its activities on historic properties. Historic properties are any prehistoric or historic districts, sites, buildings, structures, Traditional Cultural Properties, and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places (NRHP). Section 106 of the NHPA is implemented through the Advisory Council on Historic Preservation (Council regulations "Protection of Historic Properties" 36 CFR Part 800). On December 20, 2017, FERC initiated consultation under Section 106 with federally recognized Indian tribes, specifically the Saint Regis Mohawk Tribe.

On February 19, 2019, FERC designated GMP as the Commission's non-federal representative for carrying out informal consultation pursuant to Section 106 of the NHPA. GMP consulted with the VDHP throughout the relicensing process and conducted several archaeological and historic investigations of resources within and adjacent to the Project area including Pre-contact and Post-contact archaeological surveys and an historic architectural survey. Additional information is provided in Section 4.12*, Cultural and Tribal Resources*.

2.9 Wild and Scenic Rivers and Wilderness Acts

Section 7(a) of the Wild and Scenic Rivers Act requires federal agencies to decide whether the operation of a hydroelectric project under a new license would unreasonably diminish the scenic, recreational, and fish or wildlife values in the designated area. The Wilderness Act of 1964 established a National Wilderness Preservation System. No nationally designated wild and scenic rivers or wilderness areas are located within the Center Rutland Project boundary or within the Otter Creek watershed (NWSRS 2021).

2.10 References

National Wild and Scenic Rivers System (NWSRS). 2021. National Wild and Scenic River Segments - Vermont. Available online: *https://www.rivers.gov/vermont.php***.** Accessed July 27, 2021.

3.0 PROPOSED ACTION AND ALTERNATIVES

3.1 No-Action Alternative

The no action alternative is the continued operation of the Center Rutland Project as authorized by the current FERC license. Existing facilities would remain in place and existing PME measures would continue, but there would be no additional PME measures. If GMP were to operate the Center Rutland Project as in the past, GMP would continue to produce energy in the present manner and the environmental effects of its operation would remain unchanged. FERC uses this alternative to establish baseline environmental conditions for comparison with other alternatives.

3.2 Proposed Action

GMP's proposed action for the term of a new license includes:

- Operating the Center Rutland Project as a run-of-river facility to maintain stable impoundment levels and downstream flows.
- Providing a minimum flow of 80 cfs (or inflow, whichever is less) over the spillway and into the bypassed reach from June 1st to October 15th for the protection of aquatic and aesthetic resources.
- Providing a minimum flow of 40 cfs (or inflow, whichever is less) over the spillway and into the bypassed reach from October 16th to May 31st for the protection of aquatic and aesthetic resources.
- Project operations will occur without the installation of the 2-foot 3-inch wooden flashboards.
- No modifications to licensed Project facilities and no changes to the Project boundary.
- Additional PME Measures or Environmental Plans, including:
    - Develop a Flow Management and Monitoring Plan (FMMP) in consultation with VANR DEC that will be filed with FERC within 6-months of receipt of a subsequent license. The FMMP will define run-of-river operations, operations data monitored to maintain compliance, operational protocols under normal and adverse conditions, consultation requirements, and record keeping.
    - For activities requiring clearing of trees 4-inches diameter base height or greater, GMP will abide by seasonal tree clearing restrictions and clear trees for protection of the northern long-eared bat between November 1st and April 14th.

Should tree clearing be required during the restricted time period (April 15th – October 31st), GMP will consult with the USFWS, VANR, and Vermont Fish and Wildlife Department (VTFWD) regarding removal needs.

- Execute a Programmatic Agreement and finalize a Historic Properties Management Plan (HPMP) in consultation with the VDHP. The HPMP will be filed with the Commission within 1-year of receipt of a subsequent license and will define measures to protect cultural resources within the Project boundary.
- Consult with VANR DEC prior to conducting maintenance and repair work that may impact water quality.
- Establish a land transfer or similar agreement with the Town of Rutland for the Town's development of an off-license pocket park on GMP property located outside of the Project boundary.
- Collaborate on the development and installation of a cultural heritage information kiosk for the Town of Rutland's off-license pocket park.

4.0 ENVIRONMENTAL ANALYSIS

In accordance with 18 CFR 5.18, this section of Exhibit E provides:

1) a general description of the Otter Creek Basin,
2) identification of the resources that have the potential to be cumulatively affected and the geographic and temporal scope of the cumulative effects' analysis,
3) a description of the environmental and social resources that have the potential to be affected by the proposed action,
4) an environmental analysis of the positive or negative effects of the proposed action and PME measures, and
5) a discussion of any unavoidable adverse effects that may still remain after implementation of PME measures; the Commission defines unavoidable adverse effects as "any adverse environmental effects that cannot be avoided should the proposal be implemented, including effects of protection, mitigation, and enhancement measures" (FERC 2008).

4.1 Geographic Scope

The geographic scope of the analysis defines the physical limits or boundaries of the proposed action's effect on the resources. Because the proposed action has the potential to affect the resources differently, the geographic scope for each resource varies. Generally, for upland based resources such as wildlife and land use, the geographic scope is limited to those lands within the Project boundary. For aquatic resources and those affected by flow discharges and water levels, the geographic scope generally includes the impoundment, bypassed reaches, and tailwaters for a distance downstream to a point where flow effects are attenuated.

4.2 Temporal Scope

Based on the potential term of a new license, the temporal scope analyzed is up to 40 years into the future, with focus on how reasonably foreseeable future actions affect resources. The discussion of historical information is limited to available information for the resource areas.

4.3 Cumulative Effects

According to the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (Section 1508.7), a cumulative effect results from the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions.

GMP has not identified resources which have the potential to be cumulatively affected by the proposed action at the Center Rutland Project.

4.4 General Description of the River Basin

4.4.1 Overview

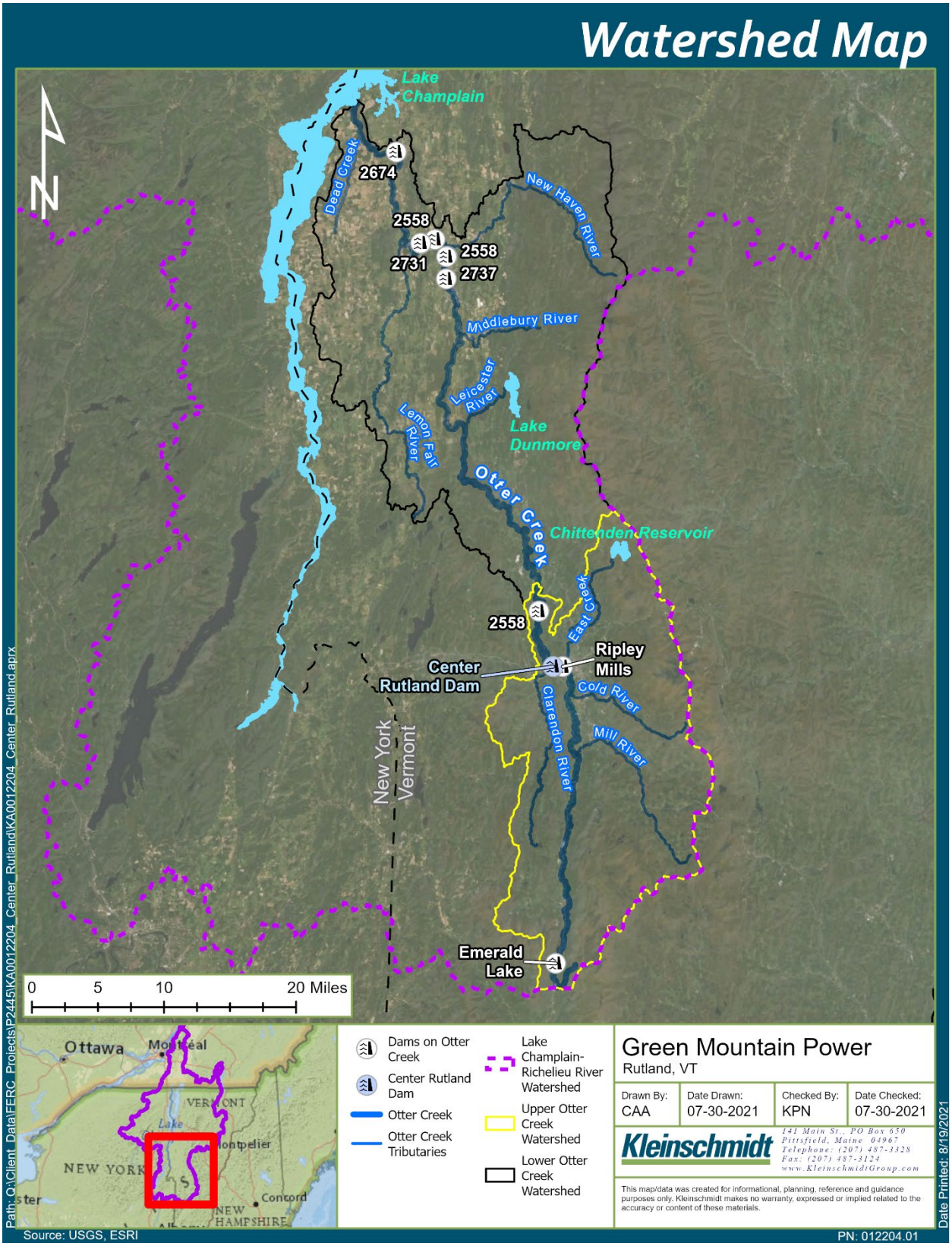
The Center Rutland Project is on Otter Creek in the Town of Rutland, Rutland County, Vermont (Figure 4.2). Otter Creek is within the Otter Creek watershed (HUC-8 04150402)[4] in west-central Vermont; the Otter Creek watershed is within the Lake Champlain-Richelieu River Basin (HUC-6 041504) (Figure 4.2). The Otter Creek watershed has a drainage area of 936 square miles (VMC 1991). Otter Creek is approximately 100-miles long, and it is the longest river entirely within the state of Vermont (VMC 1991). Otter Creek originates at Emerald Lake and wetlands south of the lake in the town of Dorset, Vermont, in northern Bennington County (Figure 4.2). Otter Creek meanders north through the towns of Wallingford, Clarendon, Rutland, Proctor, Middlebury, and Vergennes, which are in the Vermont Valley between the Green Mountain Range to the east and the Taconic Mountain Range to the west in Rutland and Addison Counties (VWRB 1995, RRD 2009). Otter Creek empties into Lake Champlain in Ferrisburgh, Vermont. The Center Rutland Project is approximately 71 RMs upstream of Lake Champlain (VMC 1991). The drainage area at the Center Rutland Project is approximately 307 square miles (VMC 1991).

The Otter Creek watershed is characterized by two sections (Figure 4.2). The upper section, which begins at Emerald Lake and continues to Proctor, Vermont, is characterized by moderately steep gradients and rapid flows (FERC 1998); the Center Rutland Project is in this upper portion of the watershed. The lower section extends from Proctor to Vergennes, and consists of slow, meandering reaches with elevation drops that occur over a series of

4 Hydrologic Unit Code.

dams; the lower reach becomes generally flat from Vergennes to Lake Champlain in Ferrisburgh (FERC 1998).

Figure 4.1 Watershed Location Map



4.4.2 Major Land Uses and Industries

Most of the Otter Creek watershed is forested (60 percent) followed by agricultural land (e.g., pasture, hay, cultivated crops) (24 percent), wetlands (9 percent), and developed lands (5 percent) (MRLC 2019). The remaining areas consists of open water, shrub/scrub wetlands, and grassland. Residential, commercial, and industrial areas are primarily in the lower section of the watershed (RRD 2009). The Center Rutland Project is located within the Town of Rutland, Vermont, which is located adjacent to the City of Rutland which is the most populated and developed area of Rutland County and the third largest city in Vermont (VMC 1991, RRPC 2018).

4.4.3 Major Water Uses

Current uses of Otter Creek water include hydroelectric power generation, wastewater assimilation, and recreation. The most frequent use of Otter Creek is for hydroelectric generation. A list of Otter Creek dams and hydropower projects is provided in Table 4.1. There are two non-FERC dams upstream of the Center Rutland Project: Emerald Lake Dam, and the Ripley Mills Dam, located approximately 0.8 RM upstream of the Center Rutland Project (FERC 1998). The Chittenden Reservoir Dam is located upstream of the Center Rutland Project on the East Creek tributary.

Table 4.1 Dams Located on Otter Creek in Vermont

Name	Owner/Operator	FERC Project Number	River Mile	Town
Emerald Lake	State of Vermont	N/A	100	Dorset
Ripley Mills	N/A	N/A	72	Rutland
Center Rutland	GMP	P-2445	71	Rutland
Proctor*	GMP	P-2558	64	Proctor
Middlebury Lower	GMP	P-2737	27	Middlebury
Beldens Falls*	GMP	P-2558	23	New Haven
Huntington Falls*	GMP	P-2558	21	New Haven
Weybridge	GMP	P-2731	20	Weybridge
Vergennes	GMP	P-2674	8	Vergennes

* Hydro developments that are part of GMP's Otter Creek Project (FERC No. 2558).

Two wastewater treatment facilities (Wallingford and Rutland) discharge into Otter Creek upstream of the Center Rutland Project; the Rutland Wastewater Treatment Facility discharges approximately 1 RM upstream of the Center Rutland dam (FERC 1998, VANR 1998, VANR 2012). The Proctor, Middlebury, and Vergennes wastewater treatment facilities discharge into Otter Creek several miles downstream of the Center Rutland Project.

Otter Creek is a popular destination for recreation activities such as canoeing, kayaking, scenic viewing, and fishing. Additional information about recreational resources near the Center Rutland Project is provided in Section 4.10, *Recreational Resources and Land Use*.

4.4.4 Tributary Streams and Lakes

Tributaries upstream of the Center Rutland Project include East Creek, Mill River, and Cold River (Figure 4.1). Tributaries downstream of the Center Rutland Project include the Clarendon River, Leicester River, Middlebury River, New Haven River, Lemon Fair River, and Dead Creek (Figure 4.1). East Creek joins Otter Creek approximately 1 RM upstream and the Clarendon River enters Otter Creek approximately 0.3 RM downstream of the Center Rutland Project. The largest lakes in the Otter Creek watershed are Lake Dunmore (downstream of the Center Rutland Project) and the Chittenden Reservoir (just upstream at the head of East Creek) (Figure 4.1) (FERC 2000).

4.4.5 Climate

Temperature, precipitation, and snowfall data from 1981 to 2010 and 2011 to 2020 from the National Weather Service monitoring station in Rutland, Vermont, are shown in Table 4.2 (NRCC 2021). Monthly mean precipitation amounts ranged from a minimum of 2.16 inches in February to a maximum of 4.76 inches in July from 1980 to 2010. From 2011 to 2020, the monthly mean precipitation amounts ranged from 2.12 inches in November to 4.21 inches in June. January is typically the coldest month of the year with a mean temperature of 18.5°F from 1980 to 2010 and 19.9°F from 2011 to 2020. The warmest temperatures typically occur in July with a mean temperature of 68.5°F from 1980 to 2010 and 69.7°F from 2011 to 2020. Total mean monthly snowfall was highest in December (17.3 inches) and January (18.6 inches) from 1980 to 2010 and was highest in February (18.9 inches) from 2011 to 2020 (Table 4.2).

Table 4.2 Temperature, Precipitation, and Snowfall in Rutland, Vermont

Month	1981 to 2010 Climate Normal			2011 to 2020		
	Mean Total Precipitation (Inches)	Mean Temperature (°F)	Mean Total Snowfall (Inches)	Mean Total Precipitation (Inches)	Mean Temperature (°F)	Mean Total Snowfall (inches)
January	2.54	18.5	18.6	2.58	19.9	15.9
February	2.16	20.7	15.0	2.32	21.7	18.9
March	2.77	30.6	13.8	2.20	29.5	12.8
April	2.88	44.0	3.2	3.31	42.3	2.0
May	3.70	55.4	0.0	3.88	56.3	0.1
June	3.97	64.2	0.0	4.33	63.1	0.0
July	4.76	68.5	0.0	3.67	69.7	0.0
August	4.07	66.5	0.0	3.91	66.9	0.0
September	3.71	57.9	0.0	3.06	60.0	0.0
October	3.83	46.5	0.5	3.79	48.9	0.0
November	3.27	36.6	4.5	2.12	35.9	4.7
December	2.80	24.9	17.3	3.30	27.7	15.9

Source: NRCC 2021

4.4.6 References

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4.5 Geology and Soils

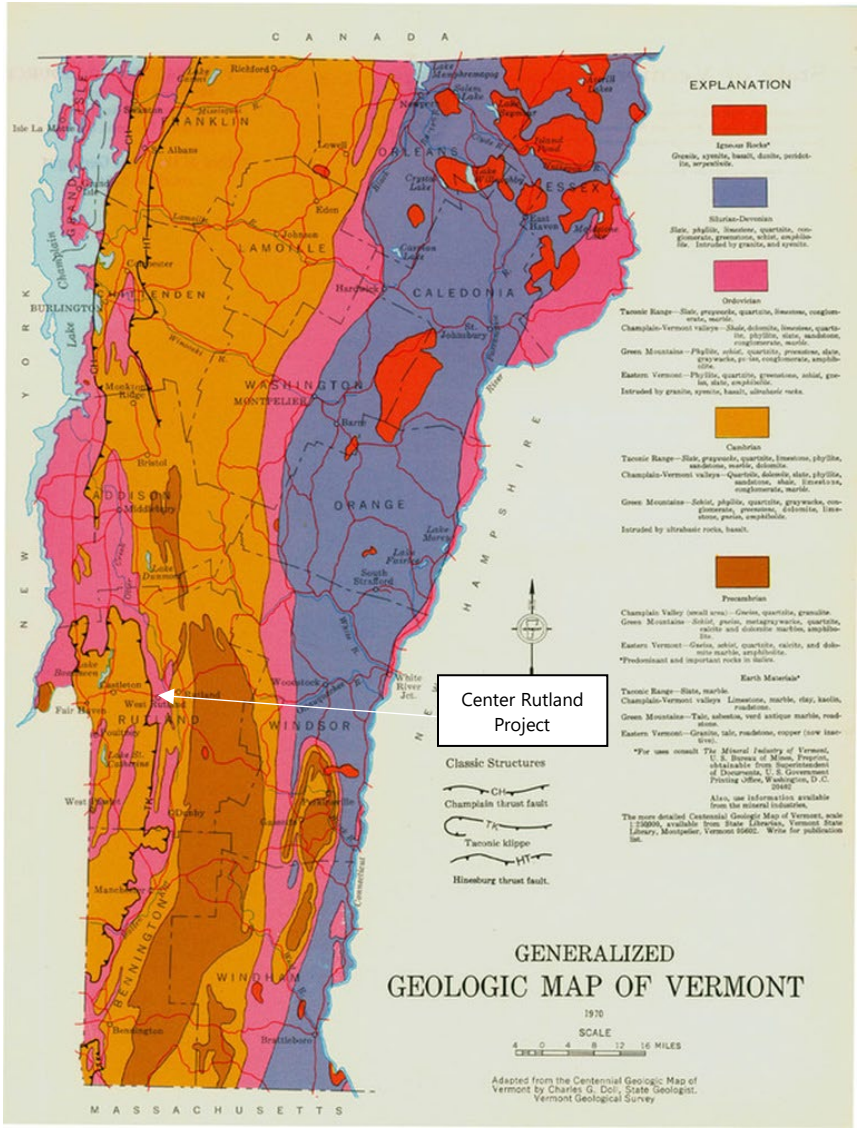
4.5.1 Affected Environment

4.5.1.1 Bedrock Geology

The Rutland area is in the Vermont Valley geomorphic subdivision that lies between the Green and Taconic mountains (Stewart 1972). The Vermont Valley is a continuation of the Champlain Valley, which is a deep depression between these mountain ranges (bedrock and structure are the same in both) that includes Otter Creek, the Castleton River, and the Clarendon River valleys (Stewart 1972). The Vermont Valley was formed by glacial retreat about 13,500 years ago. The streams and rivers that resulted carried large loads of sediment, gravels, sands, fine silts, and clays that were left behind in the newly formed lakes, floodplains, and valley floor. These raw materials provided high quality agricultural soils that have characterized the area since it was settled (Thompson and Sorenson 2005). Figure 4.2 provides a copy of the Geologic Map of Vermont (from VGS 1970).

The Project area is associated with two fault lines. The primary fault line is the Taconic Klippe. It borders Otter Creek to the west near the Center Rutland Project. The Taconic Klippe is composed of a hard, erosion-resistant rock layer that was stacked with additional rock layers to form the Taconic Mountain Range. Included in the stacked soils of the klippe are limestone layers that have metamorphosed into harder marble, the materials of the famous Vermont Valley marble industry (Thompson and Sorenson 2005, VGS 2012). Further to the north and west is the Champlain Thrust Fault. It runs north from Middlebury, Vermont, to Canada and borders the eastern edge of Lake Champlain. The Champlain Thrust Fault is a Middle Ordovician, east-dipping fault along which older Cambrian rocks have been placed on top of younger Ordovician rocks (VGS 2012).

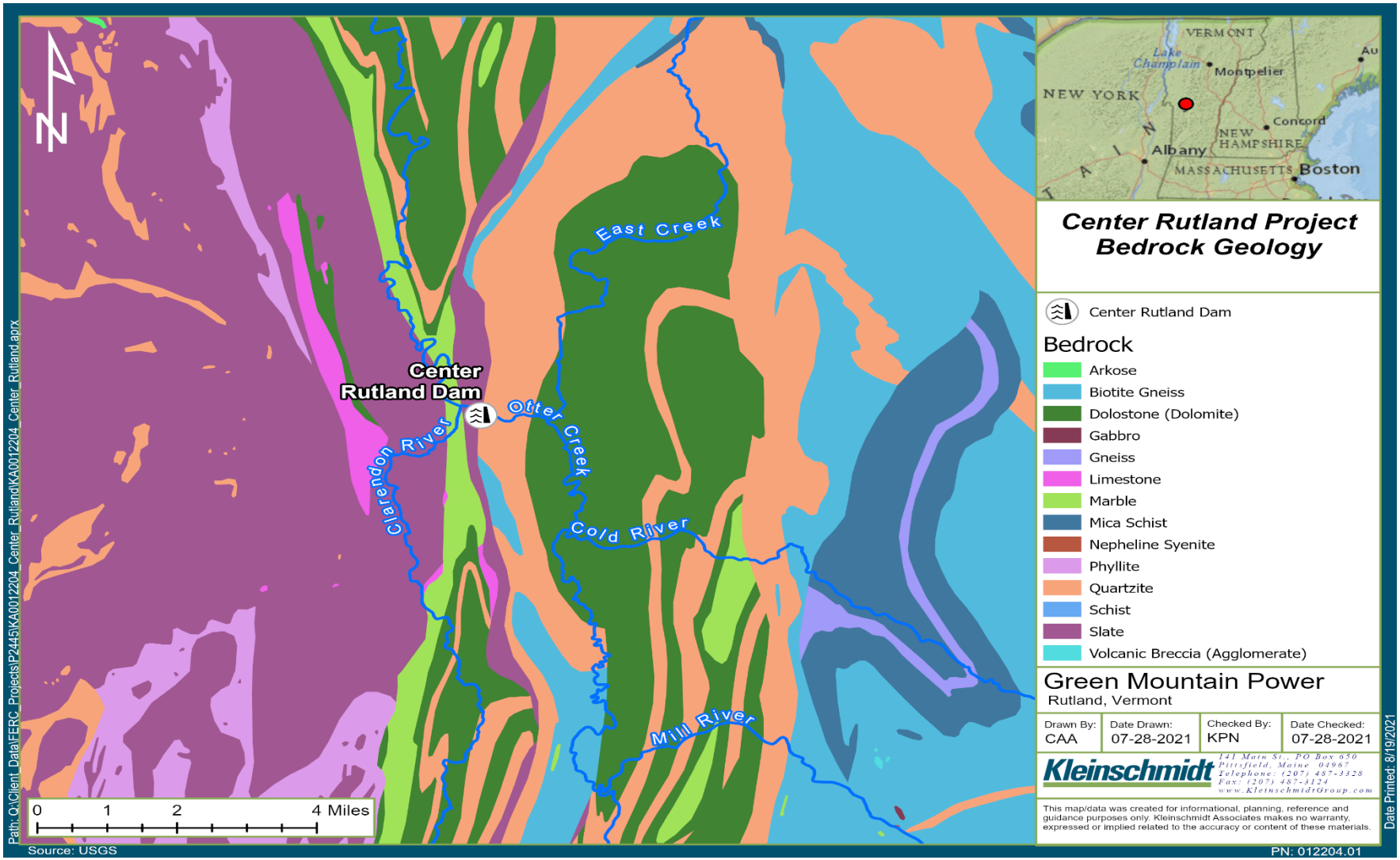
Figure 4.2 Geologic Map of Vermont



Source: VGS 1970

The bedrock associated with the Center Rutland Project is composed of quartzose metasandstone (Figure 4.3). The rocks of the Rutland-Brandon region include three distinctly different sequences of the Precambrian, Cambrian, and Ordovician systems (Stewart 1972). The stratigraphy is complicated by the mountain building episodes that have deformed, faulted, fractured, and metamorphosed originally sedimentary strata (Stewart 1972).

Figure 4.3 Center Rutland Project Bedrock Geology



4.5.1.2 Surficial Geology

Sand and gravel deposits exist within and around the Center Rutland Project. The surficial geology in the Project area consists of post-glacial fluvial deposit in the area downstream of the powerhouse and a mix of post-glacial fluvial deposits, geofluvial deposits, and glacial deposits in the impoundment area (VANR 2018). The lithology is composed of alluvium, terminal moraine, and kame moraine (VANR 2018).

4.5.1.3 Impoundment Shoreline and Streambank Conditions

Otter Creek near the Center Rutland Project is characterized by moderate topography with slow, flat water and meandering stream sections. There is one small section of rapids found just upstream of the impoundment and to the east beyond Ripley Road (approximately 0.6 RM upstream from the dam).

The impoundment shoreline is relatively steep and forested with a narrow buffer of deciduous overstory and understory species (VMC 1991). Beyond the forested buffer, the Center Rutland Project area is bordered by U.S. Route 4 and several railways which run parallel to Otter Creek about one-half mile north. The shoreline adjacent to the Project area is characterized by these transportation routes and numerous manufacturing operations. The College of St. Joseph campus occupies a large tract to the south of the upstream end of the impoundment, and a few small residential neighborhoods occur in the Project vicinity.

4.5.1.4 Erosion

Erosion factor (K) indicates the susceptibility of a soil to sheet and rill erosion by water. The K estimates are based primarily on the percentage of silt, sand, and organic matter, soil structure, and saturated hydraulic conductivity (Ksat). K values range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Table 4.3 includes estimates of the erosion factor for soils identified within the Center Rutland Project boundary. Generally, the soils within the Project boundary (with an identified erosion factor) have a moderate to low susceptibility to sheet and rill erosion (NRCS 2018).

4.5.1.5 Soils

Soils in the Project boundary are composed of upland till, lake and sea sands, and valley floor clays that were left behind following the glacial retreat (Thompson and Sorenson 2005). Most of the Otter Creek shoreline is forested, and large portions of the are armored with bedrock (Thompson and Sorenson 2005).

Soils within the Project boundary are dominated by Windsor loamy sand (18B) (Figure 4.4). This soil series consists of outwash from glacial fluvial deposits derived from schist and gneiss. The Windsor series consists of very deep, excessively drained soils formed in sandy outwash or eolian deposits. Soil gradients range from nearly level to very steep on glaciofluvial landforms. Other soil types within the Center Rutland Project boundary include Paxton soils (e.g., 30D, 30B, and 30C) (Figure 4.4). The Paxton series consists of well drained, loamy soils formed in lodgment till. The soils are very deep to bedrock and moderately deep to a densic[5] contact. They are nearly level to steep soils on hills, drumlins, till plains, and ground moraines (NRCS 2021). These soils have a depth to water table between 20 inches to greater than 80 inches. Bedrock is at a depth of 24 inches to greater than 80 inches, and slope ranges between 2 and 25 percent (NRCS 2021). Table 4.3 provides the slope ranges for all soil types found within the Project area.

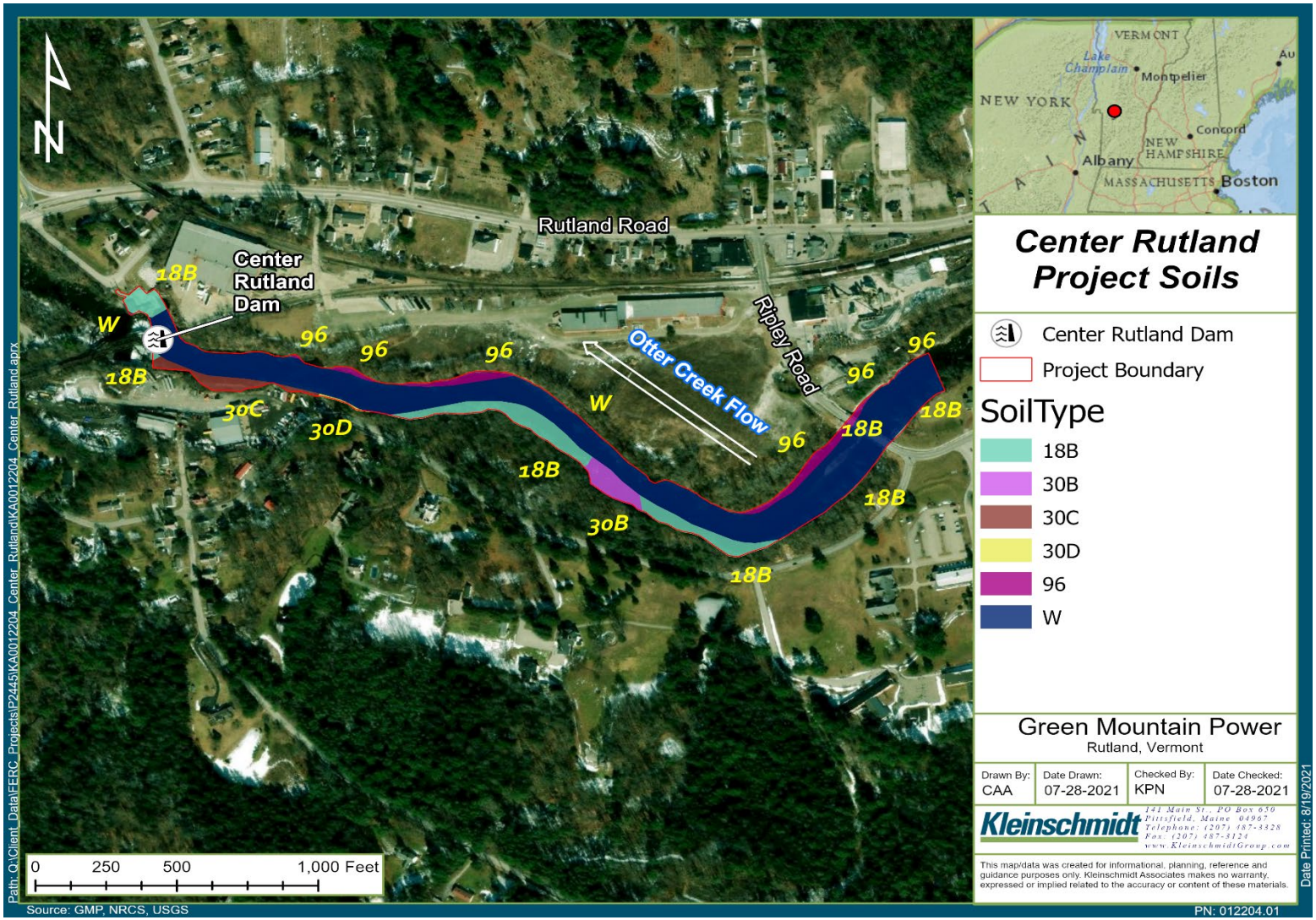
5 "Densic" means relatively unaltered material that have a non-cemented rupture resistance class.

Table 4.3 Mapped Soils Series within the Center Rutland Project Boundary

Soil Symbol	Map Unit Name	Parent Material	Ksat	Acres
30D	Paxton fine sandy loam, 15 to 25 percent slopes	Coarse-loamy basal till	0.24	0.01
30B	Paxton fine sandy loam, 2 to 8 percent slopes	Coarse-loamy basal till	0.24	0.4
30C	Paxton fine sandy loam, 8 to 15 percent slopes	Coarse-loamy basal till	0.24	0.4
96	Udipsamments, nearly level	Outwash-sandy	0.5	0.6
18B	Windsor loamy sand, 3 to 8 percent slopes	Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss	Not Listed	1.7
W	Water	N/A	Not Rated	8.1
Total				**11.2**

Source: NRCS 2021

Figure 4.4 Center Rutland Project Soils Map



4.5.2 Environmental Effects

4.5.2.1 Effects of the Proposed Action

GMP proposes to operate the Center Rutland Project in a run-of-river mode and provide continued minimum flows over the dam to the 100-foot-long bypassed reach. Run-of-river operations will limit the potential for erosion in the Project impoundment and in downstream reaches because operations will closely follow the natural hydrologic regime. Erosion will be limited because the majority of the shoreline is forested, and large portions are armored with bedrock. Natural flood flows through a run-of-river dam exert a stronger influence on bank stability and channel morphology than regular operational pond level fluctuations. It is anticipated that continued run-of-river Project operations will not adversely affect geological resources or cause significant shoreline erosion.

Required, infrequent maintenance activities (e.g., dam or intake repairs), inclusive of impoundment drawdowns beyond normal operating levels, have the potential to affect shoreline stability and erosion within the Project area. However, these will be minimized by obtaining proper permits and following resource agency recommended drawdown timing, extent, and rate protocols and erosion control protocols when necessary.

During the development of the proposed pocket park with the Town of Rutland, GMP and the Town of Rutland will obtain required permits and will use best practices for erosion control (e.g., silt fences, laydown buffers) during construction to limit the effects of this activity on bank stability and erosion within the Project area.

4.5.2.2 Proposed Environmental Measures

GMP is proposing to develop an FMMP as a new license compliance requirement to ensure compliance with continued run-of-river operations. An FMMP will ensure compliance with run-of-river operations, which will limit erosion along the impoundment to naturally occurring ice scour and high flow events. Unavoidable Adverse Effects

Continued operation and relicensing of the Center Rutland Project as proposed is not expected to have unavoidable adverse effects on geologic or soil resources.

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4.6 Water Resources

4.6.1 Affected Environment

4.6.1.1 Water Quantity

GMP operates the Center Rutland Project in run-of-river mode where outflow from the powerhouse is approximately equal to inflow. GMP generates electricity when river flows are between 60 and 190 cfs (i.e., the hydraulic capacity of the turbine). River flows below 60 cfs and above 190 cfs are passed over the dam (VMC 1991). Operation of the Center Rutland Project results in the diversion of water from an approximately 100-foot-long bypassed reach. GMP currently provides a minimum flow of 80 cfs or inflow, whichever is less, from June 1 through October 15 into the bypassed reach for the protection of water quality, fish and wildlife resources, and aesthetic resources (VWRB 1995). The minimum flow was determined based on a 1992 flow demonstration study to identify a suitable flow for maintaining fish habitat in the deep pool below the dam and aesthetic resources (VWRB 1995). Based on results of the 1992 bypassed reach flow study and comments from VANR DEC on GMP's May 17, 2021, study plan, GMP is proposing to provide a year-round minimum flow to the bypassed reach of 80 cfs from June 1st through October 15th and 40 cfs for the remainder of the year.

Daily average river flow data for the Center Rutland Project was generated from USGS Gage No. 04282000 (Otter Creek at Center Rutland, VT) for the period January 1991 to December 2020 (USGS 2021). The USGS gage is located approximately 350 feet downstream of the Center Rutland dam and was assumed to be representative of river flow at the dam. The drainage area at the gage is 307 square miles (USGS 2021).

The mean, minimum, and maximum annual river flows of the Otter Creek at the Center Rutland Project are estimated to be 606 cfs; 38 cfs; and 13,500 cfs, respectively (Table 4.4). The maximum monthly average flow typically occurs in April, and the minimum monthly average flow is typically in August and September (Table 4.4). The peak flow of 13,500 cfs occurred following Tropical Storm Irene on August 29, 2011, and the minimum daily average flow of 38 cfs occurred August 3, 1999 (Table 4.4). Annual and monthly flow duration curves for the Center Rutland Project are presented in Appendix C.

Table 4.4 Mean, Minimum, and Maximum River Flows by Month for the Center Rutland Project (January 1991 to December 2020)

Month	Mean flow (cfs)	Minimum flow (cfs)	Maximum flow (cfs)
January	616	62	6,200
February	520	90	4,490
March	828	119	5,630
April	1,417	225	7,020
May	765	167	4,440
June	500	72	2,700
July	369	57	3,980
August	306	38	13,500
September	223	39	2,890
October	469	55	3,960
November	579	110	2,750
December	676	84	4,640
Annual	**606**	**38**	**13,500**

Source: USGS 2021

4.6.1.2 Water Withdrawals and Discharges

Wastewater treatment facilities that discharge to Otter Creek are upstream (Wallingford and Rutland) and downstream (Proctor, Middlebury, Vergennes) of the Center Rutland dam (VANR 2019). The Rutland wastewater treatment facility discharge is located less than one RM upstream of the Center Rutland dam and just upstream of the FERC project boundary. GMP is not aware of any existing or proposed water withdrawals for irrigation, water supply, or other industrial uses within the Center Rutland Project boundary.

4.6.1.3 Water Quality

4.6.1.3.1 Federally Approved Water Quality Standards

Otter Creek in the Center Rutland Project area is classified as Class B(2) cold water fish habitat (VANR 2017). Class B waters are managed to support the designated uses of aquatic biota, wildlife, and aquatic habitat; aesthetics; public water supply; irrigation of crops and other agricultural uses; swimming and other primary contact recreation; and boating, fishing, and other recreational uses (VANR 2017). In cold water fish habitat, the total increase in water temperature due to all discharges and activities shall not exceed 1°F. Additional criteria for Class B(2) cold water fish habitat waters are listed in Table 4.5:

Table 4.5 Water Quality Criteria for Class B(2) Cold Water Fish Habitat Waters

Parameter	Criteria
Biological	Change from natural condition for aquatic macroinvertebrate and fish assemblages not exceeding moderate changes in the relative proportions of taxonomic, functional, tolerant, and intolerant organisms.
Turbidity	≤ 10 NTU as an annual average under dry weather baseflow conditions
Dissolved Oxygen	≥ 6 mg/L or 70 percent saturation; ≥ 7 mg/L and 75 percent saturation at all times (instantaneous minimum) in designated salmonid spawning or nursery areas.
pH	6.5 to 8.5 standard units
Nitrate nitrogen	≤ 5.0 mg/L at flows exceeding low median monthly flows
Phosphorus	<12-27 microgram per liter (µg/L) at low median monthly flow during June to October
Escherichia coli	Not to exceed a geometric mean of 126 organisms/100 ml obtained over a representative period of 60 days, and no more than 10% of samples above 235 organisms/100 ml. In waters receiving combined sewer overflows, the representative period shall be 30 days.

Source: VANR 2017

4.6.1.3.2 Existing Water Quality Data

The Vermont Marble Company collected dissolved oxygen (DO) and water temperature data along a 9.7-mile reach of Otter Creek from just upstream of the Center Rutland dam to downstream of the Proctor Hydroelectric Development from July 10-15, 1988 (VMC 1991). Otter Creek at the Center Rutland Project was classified as Class C at the time (DO standard of greater than 6 milligram per liter (mg/L) or 70 percent saturation) (VMC 1991). Samples were collected approximately every 4 hours (e.g., 02:00, 06:00, 10:00, 14:00, 18:00, 22:00). DO in the immediate vicinity of the Center Rutland dam ranged from 5.4 mg/L to

10.1 mg/L (Table 4.6). DO below 6 mg/L was recorded just upstream of the Center Rutland dam; these readings were collected in the morning (between 01:15 and 08:30) indicating an influence from algal activity and respiration (VMC 1991). Measurements made downstream of the dam were above the DO standard and demonstrated that water was aerated as it passed over the dam (Table 4.6) (VMC 1991). Water temperature ranged from 21.3 to 27.0 ºC (70.4 to 80.6 ºF) (Table 4.6).

Table 4.6 Range of Water Temperature and DO, July 10 to July 15, 1988, near the Center Rutland Dam

Site Number	Location	Water Temperature (ºF)	Water Temperature (ºC)	DO (mg/L)	DO (% Saturation)
6A	North bank just upstream of dam	70.7-80.5	21.5-26.9	5.4-10.1	62.8-130.5
6B	North bank downstream tailrace	70.7-80.5	21.5-26.9	6.8-8.5	84.5-101.3
6C	South bank approx. 150 ft downstream of dam	70.7-80.6	21.5-27.0	6.9-8.5	85.4-103.3
6D	North bank approx. 150 ft downstream of dam	70.6-72.5	21.4-22.5	7.9-8.7	92.4-102.5
6	North bank approx. 800 ft downstream of dam	70.4-80.3	21.3-26.8	7.0-8.5	86.5-102.0

Source: VMC 1991

The Upper Otter Creek Watershed Council measured several water quality parameters at 24 sites throughout the watershed on seven days between June 6 to August 29, 2007, including two sites near the Center Rutland Project (UOCWC 2007). Site "Otter18" was upstream of Ripley Bridge, approximately 0.6 RM upstream of the Center Rutland Dam; site "Otter19" was approximately 800 feet downstream of the dam. Turbidity and total nitrogen met the state standards at both sites (Table 4.7). The state of Vermont did not have a phosphorus standard at the time of these measurements.

Table 4.7 Water Quality Measurements Completed by the Upper Otter Creek Watershed Council Between June 6 and August 29, 2007, near the Center Rutland Project*

Site	Approximate Distance from Center Rutland Dam	Turbidity (NTU)	Total Phosphorus (µg/L)	E. coli (colonies per 100 mL)	Total Nitrogen (mg-N/L)
Otter18	0.6 RM upstream	0.8-4.3	15-28	200-2,400	0.35-0.5
Otter19	800 feet downstream	0.7-3.7	17-35	100-2,400	0.45-1.2

Source: UOCWC 2007
*Ranges were read from figures and are thus approximate.

The VANR DEC periodically conducts water quality and benthic macroinvertebrate sampling at several sites within Otter Creek (Figure 4.5). Measurements of DO, pH, total nitrogen, and turbidity taken periodically from 1985 through 2020 demonstrated that Otter Creek attained the standards for Class B waters (VANR 2021) (Table 4.8). Total phosphorus measurements from Site 502230, located approximately 1.1 RMs upstream of the Center Rutland dam, were slightly above the state standard (<12-27 µg/L) in 2016. This particular site is located approximately 300 feet downstream of the Rutland wastewater treatment facility.

Table 4.8 Water Quality Measurements Completed by VANR DEC in Otter Creek near the Center Rutland Project

Site Number	Distance from Center Rutland	Date	Temp. (°C)	Conductivity (µS/cm)	DO (mg/L)	DO (% Satu-ration)	pH	Total Nitrogen (mg/L)	Total Phosphorus (µg/L)	Turbidity (NTU)
500923	1.1 mile upstream	10/4/1988	15	230	-	-	7.8	-	-	-
		8/8/2016	22.1	259	8.1	94.1	7.7	0.35	16.2	2.3
		9/28/2016	14.1	201	-	-	8			2.8
		7/8/2020	23.9	271	7.6	95.2	7.9	0.36	13.7	
502230	0.75 mile upstream	10/8/1985	15	165	-	-	7.8	-	-	-
		10/4/1988	15	230	-	-	7.8	-	-	-
		9/5/1991	19.5	256	-	-	7.9	-	-	-
		9/25/1996	12	218	-	-	7.7	-	-	-
		9/28/2006	14.6	164	10.2	101.5	8.0	-	-	-
		8/8/2016	22.5	251	8.3	97	7.9	0.98	31.3	3.2
		9/27/2016	15.1	245			8.2	1.61	29.6	2.5
		7/8/2020	24	292	7.7	96.1	7.8			
		9/21/2020	11.7	343	9.8	97.9	8.3	1.8	26	1.5
502229	1000 ft downstream	10/10/1985	15	167			7.8	-	-	-
		10/3/2001	12.5	255			8.7	-	-	-
		10/6/2004	11.3	330	10.6	98.5	8.1	0.72	16	0.85

Source: VANR 2021

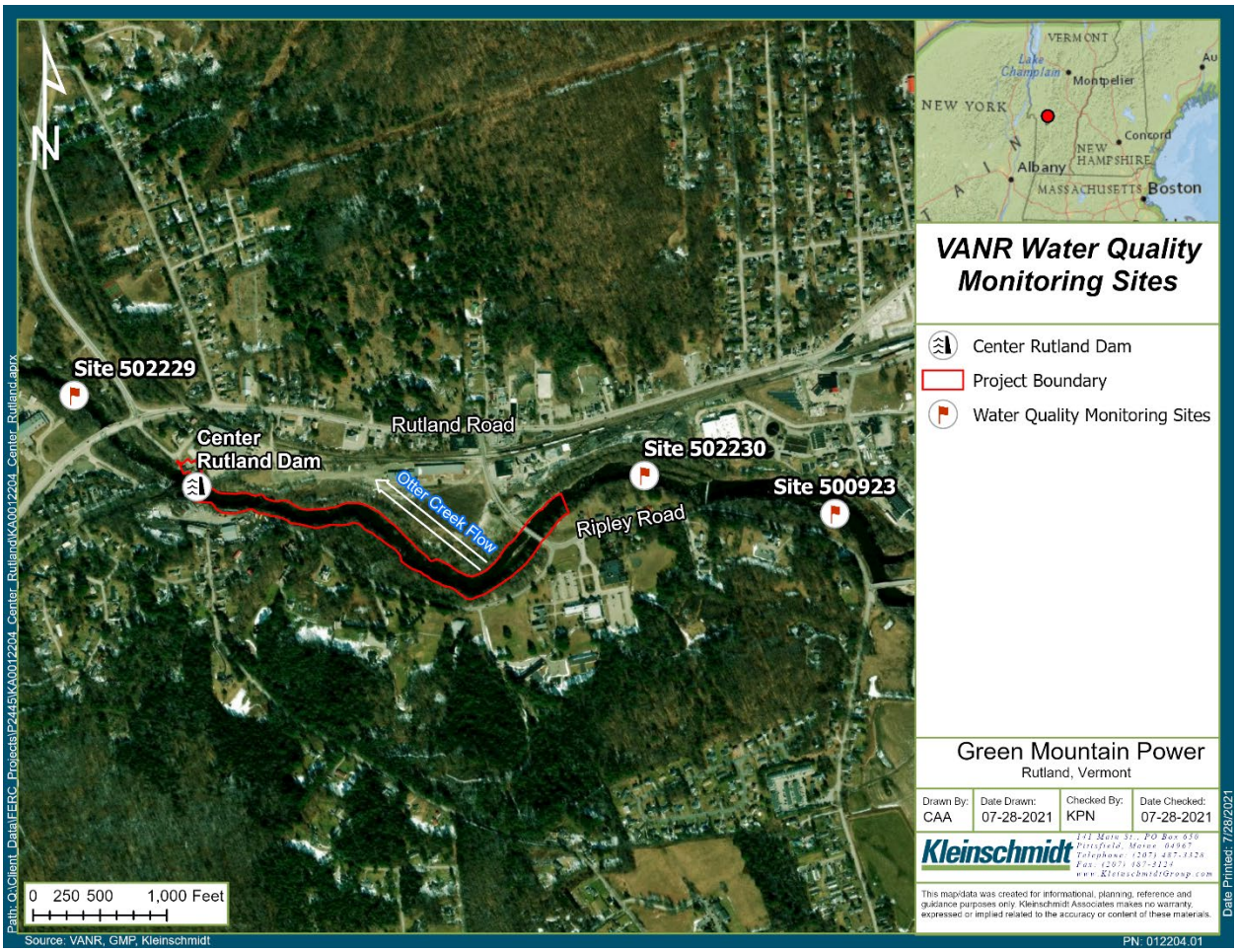
VANR DEC evaluates the biological integrity of the macroinvertebrate community by comparing specific metrics to the values expected for a naturally occurring macroinvertebrate population. Assessments completed in 1985 near the Center Rutland Project found the macroinvertebrate community to be in "poor" condition (Table 4.9; Figure 4.5). Assessments completed from 1991 to 2020 have found the macroinvertebrate community to be "good" to "very good" and to meet Class B water quality standards (VANR 2021).

Table 4.9 Macroinvertebrate Community Assessments Conducted by VANR DEC in Otter Creek near the Center Rutland Project

Site #	Approximate Distance from Center Rutland Dam	Date	Macroinvertebrate Assessment	Density	Richness	EPT[a] Richness	HBI[b]
500923	1.1 RM upstream	10/4/1988	Good	1,658	41.0	17.5	4.36
502230	0.75 RM upstream	10/10/1985	Poor	1,125	22.5	7.0	7.26
		10/4/1988	Fair	3,236	39.0	15.0	5.50
		9/5/1991	Good-Fair	2,472	45.0	17.0	5.54
		9/25/1996	Very Good-Good	2,472	58.0	26.0	4.96
		9/28/2006	Very Good	5,028	66.0	32.0	4.81
		9/27/2016	Good	4,024	49.0	25.0	5.17
		9/21/2020	Good	6,156	53.0	28.0	5.16
502229	1,000 ft downstream	10/10/1985	Poor	1,002	25.5	6.0	7.35
		10/3/2001	Very Good-Good	2,292	39.5	21.0	4.21
Guidelines for Class B(2) water			Full Support	≥300	≥30	≥16	≤5.4
			Intermediate	≥250	≥28	≥15	≤5.65
			Non-Support	<250	<28	<15	≤5.65

Source: VANR 2021
[a]Ephemeroptera, Plecoptera, and Trichoptera (EPT)
[b]Hilsenhoff Biotic Index

Figure 4.5 VANR Water Quality Monitoring Sites Near the Center Rutland Project.



4.6.2 Environmental Effects

4.6.2.1 Effects of the Proposed Action

GMP proposes to operate the Center Rutland Project in a run-of-river mode and provide minimum flows over the dam to the 100-foot-long bypassed reach. Run-of-river operations eliminate fluctuations in impoundment levels and maintain stable river flow downstream of the powerhouse during normal operations.

GMP is proposing to provide a year-round flow to the bypassed reach of 80 cfs from June 1st to October 15th and 40 cfs for the remainder of the year. Provision of a year-round minimum flow will maintain water quality for aquatic life during the fall, winter, and spring

months (e.g., dissolved oxygen). GMP will continue to consult with VANR DEC, USFWS, and other interested stakeholders to refine the flow proposal as necessary.

Required, infrequent maintenance activities (e.g., dam or intake repairs), inclusive of impoundment drawdowns beyond normal operating levels, have the potential to affect water quality within the Project area. However, these events will be minimized by obtaining proper permits and following resource agency recommended drawdown timing, extent, and rate protocols and erosion control protocols when necessary[6].

The proposed action is not expected to adversely affect water quality, waste assimilation, or water supply. Management of flow regimes from proposed run-of-river operations accommodates several functions at downstream facilities including flood management, power generation, recreational use, and the maintenance of aquatic habitat.

4.6.2.2 Proposed Environmental Measures

GMP proposes to develop a FMMP in consultation with VANR DEC and to file it with the Commission within 6-months of receipt of subsequent license. An FMMP will provide a mechanism to protect existing water resources and continue to maintain water quantity and quality conditions through run-of-river operations. GMP proposes to consult with VANR DEC prior to conducting maintenance and repair work that may impact water quality.

Per VANR DEC's comment letter dated August 3, 2021, GMP proposed to work in consultation with VANR DEC to develop a water quality monitoring study plan and implement the study upon re-installation of the 2-foot 3-inch-high wooden flashboards. GMP also proposed to work in consultation with VANR DEC to test and verify the minimum flow provision upon reinstallation of the 2-foot 3-inch-high flashboards. GMP is no longer proposing the re-installation of the 2-foot 3-inch wooden flashboards, but proposes to work in consultation with VANR DEC in the future should this proposal change.

[6] As described within Exhibit A, the Center Rutland Project is hydraulically limited in its ability to actually draw down the impoundment. The Project can only pass water via operating the turbine generator unit (maximum hydraulic capacity of 190 cfs) and via spillage over the dam. With an annual mean flow of 606 cfs (USGS 2021) from 1991 to 2020 at the Center Rutland Project, there are very few instances where GMP would have the ability to draw the impoundment down.

4.6.3 Unavoidable Adverse Effects

Continued operation and relicensing of the Center Rutland Project as proposed is not expected to have unavoidable adverse effects on water quantity or water quality resources.

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4.7 Fish and Aquatic Resources

4.7.1 Affected Environment

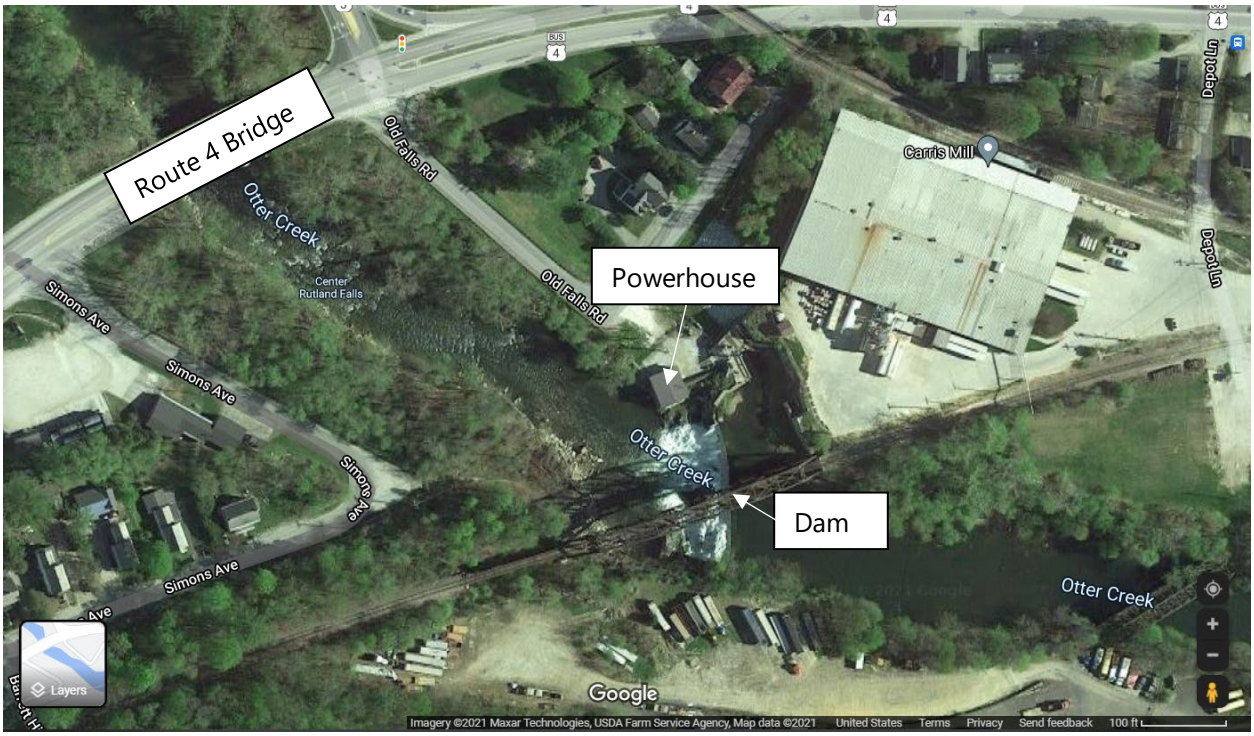
4.7.1.1 Aquatic Habitat

The Center Rutland Project impoundment is narrow and shallow (i.e., riverine) with an average depth of approximately 2.3 feet (VMC 1991). The impoundment extends upstream approximately 4,000 feet with an average width of approximately 140 feet and a maximum width of approximately 180 feet. Its surface area is 10.97 acres at a normal water surface elevation of 507.4 feet NGVD 29 (VMC 1991). The shorelines are characterized by sloped wooded banks and riparian habitat. The southern shoreline has a narrow, wooded strip of riverbank that is bordered by Clement Road. The northern shoreline also has a narrow, wooded strip of riverbank that is bordered by commercial and industrial areas. Impounded waters provide rearing, spawning, and nursery habitat for fish and other freshwater aquatic organisms. There is a small island in the middle of the impoundment that provides shoreline habitat and cover for juvenile fish and other aquatic organisms.

The dam sits on top of a 24-foot-high ledge outcrop and bedrock falls that are approximately 60-feet-long (State of Vermont Water Resources Board 1995) (Photo 4.1). There is a deep pool at the base of the falls with a water surface elevation similar to the tailrace (Photo 4.1). Water passed through the turbine during generation discharges about 100-feet downstream of the dam, and in combination with the existing minimum bypassed reach flow or spill, maintains water depth in the pool. Aquatic habitat between the dam and powerhouse is limited, consisting of mostly rock ledge (State of Vermont Water Resources Board 1995). There is a 700-foot-long riffle immediately downstream of the tailwater that extends downstream to the U.S. Route 4 bridge (Photo 4.2, Photo 4.3). The pool and the riffle below the pool is a popular location for shore-based fishing in the spring (late April-early June) for yellow perch, white sucker, brown trout, and smallmouth bass (State of Vermont Water Resources Board 1991).

Photo 4.1 Bedrock and Pool Habitat

Photo 4.2 Downstream Riffle Habitat (Below Powerhouse)



Source: Google Earth 2021

Photo 4.3 Riffle Habitat Extending from Tailwaters to U.S. Route 4 Bridge

Downstream of the riffle, Otter Creek is lower gradient and slower moving with numerous oxbows and meanders as it cuts through low lying agricultural valleys (State of Vermont Water Resources Board 1995). Run-of-river operations maintain aquatic habitat by providing stable impoundment levels and stable river flows downstream of the tailwater.

GMP's existing minimum flow release of 80 cfs (or inflow, whichever is less) over the dam and into the bypassed reach from June 1st through October 15th was determined based on the results of a flow demonstration study completed by the relicensing stakeholders in the early 1990s. An 80 cfs flow was selected because it was protective of aquatic resources, maintained interconnected aquatic habitat, and provided good aeration to promote water quality. As described in the 2021 Proposed Study Plan, GMP reviewed the previous flow demonstration videos to reassess the existing flow regime for the bypassed reach. Staff from VANR were provided with copies of videos from the 1992 flow demonstration study that evaluated releases ranging from 0 cfs to 100 cfs. Based on review of the 1992 flow demonstration videos and study report, GMP is proposing to continue releasing 80 cfs from June 1st to October 15th and to release 40 cfs for the rest

of the year. The proposed flow release schedule is expected to maintain deep, pool habitat in the bypassed reach throughout the year for fish that may be seeking cover or foraging.

VANR noted in their comments on the DLA that the video footage from the 1992 study was difficult to use to assess aquatic habitat due to its low quality. VANR requested that GMP release a limited number of test flows to review in person or to obtain updated video footage to aid in the aquatic habitat assessment. GMP hosted a conference call with VANR and the USFWS on December 8, 2021, to discuss the flow proposal. GMP, VANR, and the USFWS agreed during the call to complete a flow demonstration to view flow releases of 20, 40, 60, 80, and 100 cfs over the dam and in to the bypassed reach. GMP notes that they will implement flow demonstration when conditions materialize, but it may need to be performed in the spring of 2022 given that winter conditions at the site will prevail for the next several months. The parties agreed that an in-person demonstration would be preferable but that, if necessary, updated video footage could be collected with a drone. Notes from the December 8, 2021 meeting are included in Appendix B[7]. GMP will provide updates to FERC and consulting parties on continued consultation surrounding minimum flow testing.

4.7.1.2 Existing Fisheries Assemblage

Otter Creek supports cold and warm water native and non-native fish species, including brown trout, rainbow trout, brook trout, smallmouth bass, rock bass, northern pike, and yellow perch (VMC 1991). No migratory (i.e., diadromous) fish species occur within Otter Creek. The Vermont Natural Resource Atlas and VTFWD have indicated there are no endangered fish species in the Project area (personal communication, Peter McHugh, Fisheries Scientist, VTFWD, July 16, 2018).

The VANR DEC conducted backpack electrofishing surveys approximately 6 miles upstream of the Center Rutland Dam in 1989 near Clarendon, Vermont. The results of VANR DEC's survey indicated that the fish community is composed of at least 11 species. A fisheries assessment conducted during the early 2000s at the Weybridge Hydroelectric Project (FERC No. 2731; approximately 50 miles downstream of the Center Rutland dam) documented at least 11 species in Otter Creek (FERC 2000). Table 4.10 lists the 19 fish species identified in Otter Creek upstream and downstream of the Center Rutland dam.

[7] Meeting notes have not been reviewed by the VANR or USFWS.

Table 4.10 Fish Species Identified within Otter Creek

Common Name	Scientific Name	Native?	Location
Bluegill	*Lepomis macrochirus*	Yes	Weybridge
Bluntnose minnow	*Pimephales notatus*	Yes	Claredon
Brown trout	*Salmo trutta*	No	Weybridge
Brown bullhead	*Ameiurus spp.*	Yes	Weybridge
Burbot	*Lota*	Yes	Claredon
Common shiner	*Luxilus cornutus*	Yes	Claredon, Weybridge
Creek Chub	*Semotilus atromaculatus*	Yes	Claredon
Cutlips minnow	*Exoglossum maxillingua*	Yes	Claredon
Fallfish	*Semotilus corporalis*	Yes	Claredon, Weybridge
Largemouth bass	*Micropterus salmoides*	Yes	Weybridge
Longnose dace	*Rhinichthys cataractae*	Yes	Claredon
Northern pike	*Exos lucius*	Yes	Weybridge
Pumpkinseed	*Lepomis gibbosus*	Yes	Weybridge
Rainbow trout	*Oncorhynchus mykiss*	No	Weybridge
Rock bass	*Ambloplites rupestris*	Yes	Claredon, Weybridge
Smallmouth Bass	*Micrpterus dolomieu*	Yes	Weybridge
Tessellated Darter	*Etheostoma olmstedi*	Yes	Claredon
Yellow Perch	*Perca flavescens*	Yes	Claredon, Weybridge
White Sucker	*Catostomus commersoni*	Yes	Claredon

Source: 1989 DEC Survey Results; FERC 2000

VTFWD had planned to conduct a fisheries survey immediately downstream of Center Rutland dam in 2019; however, the survey was not completed because of high flow conditions. This study is planned for 2021 (Jeff Crocker, Personal Communication December 24, 2020); data, if available, will be included in the FLA.

Stocking and Angling Opportunities

Brook, brown, and rainbow trout are among Vermont's most sought-after species, comprising three of the top five fish species preferred by open-water anglers (VTFWD 2018a). VTFWD stocked between 2,250 and 3,000 rainbow trout annually in Otter Creek from 2016 to 2020 (VTFWD 2020). Fish ranged in age from yearlings to 2-year-olds (10.2

to 16.25 inches) and were stocked from Danby/Mt. Tabor area (upstream of Center Rutland dam) to the Middlebury area (downstream of Center Rutland dam). VTFWD also stocks rainbow trout in Otter Creek's tributaries including the New Haven River (downstream of the Center Rutland dam); Middlebury River (downstream of the Center Rutland dam); East Creek (upstream of the Center Rutland dam); and Mill River (upstream of the Center Rutland dam) (VTFWD 2020).

Angling for rainbow trout on Otter Creek is open from the second Saturday in April to October 31 (VTFWD 2021). Off season catch and release trout fishing (November 1 – early April) using artificial flies and lures is allowed from the bridge in Mt. Tabor to below Vergennes Falls (VTFWD 2021). Stocked rainbow trout inhabit fast water (e.g., riffles and runs) and pool habitats and seek out cold water tributaries during the summer.

The VTFWD stocked between 4,000 and 4,300 brown trout annually in Otter Creek from 2016 to 2020 (VTFWD 2020). Fish ranged in age from yearlings to 2-year-olds (8.8 to 17.0 inches) and were stocked from Danby/Mt. Tabor area (upstream of the Center Rutland dam) to the Middlebury area (downstream of Center Rutland dam). According to 2020 stocking records, brown trout are also stocked in the New Haven River and Middlebury River, downstream of the Center Rutland dam (VTFWD 2020). Angling for brown trout on Otter Creek is open from the second Saturday in April to October 31 (VTFWD 2021). Off season catch and release trout fishing (November 1 – early April) using artificial flies and lures is allowed from the bridge in Mt. Tabor to below Vergennes Falls. Like rainbow trout, brown trout likely inhabit riverine portions of the Otter Creek, although prefer slower moving waters.

The upper section of Otter Creek supports wild and stocked brook trout populations (VTFWD 2017a; Perfect Fly 2016). VTFWD stocked between 500 and 915 brook trout annually in Otter Creek from 2016 to 2020 (VTFWD 2020). Stocked brook trout are released as yearlings in the Danby/Mt. Tabor area. According to 2020 stocking records, brook trout are also stocked in the New Haven River; Middlebury River; Neshobe River; Furnace Brook; East Creek; Mill River; and Mill Brook (VTFWD 2020). As with rainbow and brown trout, angling for brook trout on the Otter Creek is open from the second Saturday in April to October 31 (VTFWD 2021). Off season catch and release trout fishing (November 1 – early April) using artificial flies and lures is allowed from the bridge in Mt. Tabor to below Vergennes Falls.

Table 4.11 shows stocking records in the main stem of Otter Creek in 2020.

Table 4.11 Trout Stocked in Otter Creek in 2020

Location-Town	Distance From Center Rutland Dam	Species	#Stocked	Average Length (inches)
Danby / Mount Tabor	26 miles upstream	Brook	915	8.5
Danby / Mount Tabor	26 miles upstream	Rainbow	250	16.25
Wallingford	15 miles upstream	Rainbow	2000	11.1
Danby	26 miles upstream	Brown	250	15.0
Center Rutland / Proctor	0 to 6 miles upstream	Brown	2000	10.3
Center Rutland / Clarendon	0 to 12 miles upstream	Brown	1000	10.3
Danby / Mount Tabor	26 miles upstream	Brown	250	15.0
Middlebury	46 miles downstream	Brown	550	10.2
Middlebury	46 miles downstream	Rainbow	500	11.3
Danby / Mount Tabor	26 miles upstream	Rainbow	250	16.25

Source: VTFWD 2020

The VTFWD and USFWS stock landlocked Atlantic salmon within Lake Champlain, but not in Otter Creek (VTFWD 2020).

Warm and cool water fish known to occur in Otter Creek (e.g., smallmouth bass, largemouth bass, yellow perch) and other non-game resident species are likely to occur in the Center Rutland impoundment or riverine habitats year-round (VMC 1991).

4.7.1.3 Fish Passage

Otter Creek supports resident fish species only so there is no upstream or downstream fish passage at the site. Landlocked Atlantic salmon are not stocked in Otter Creek. The Center Rutland Project intake has full depth trashracks at the end of an s-bend shaped forebay. The 30-foot-wide by 9[8]-foot-high trashracks have 9/16-inch clear bar spacing,

[8] Note that although the Project trashrack is 12 feet in height as described in Exhibit A, only 9 feet of the trashrack is underwater (or submerged). Therefore, a 9-foot height was utilized in evaluating the trashrack in terms of impingement and entrainment potential for fish.

which protect fish from becoming entrained. GMP calculated the approach velocity at the intake to be less than 1 foot per second (fps) (0.70 fps) during full generation,[9] which substantially reduces the risk of impingement and entrainment because fish can swim away from the intake.

The Center Rutland Project trashracks are cleaned by a mechanical rack raker. The trashracks are cleaned a minimum of once per week during nice weather conditions. During adverse weather or high-water events, the trashracks could be cleaned every few hours as needed a day to keep the generating unit running. The mechanical rack raker is cleaned of debris immediately after the trashracks are cleaned.

Debris from the mechanical rack raker are placed on a deck near the dam where it is then sorted through. Natural materials are placed in a wheelbarrow and are returned into the river downstream of the dam. Any trash or debris are placed in the garbage and properly disposed of. Trash can include construction materials, bottles, and other trash in the river. There is a wide range of how much debris is captured in the rack raker. During particularly windy weather, the trashrack can have 25-30 wheelbarrow loads removed daily. In the summertime there are long periods of time where the rack raker does not run as the water is clear of debris.

4.7.1.4 Benthic Macroinvertebrates

The benthic macroinvertebrate community in upper Otter Creek is characterized by freshwater mussel species, aquatic insects, and aquatic worms (U.S. Department of Transportation and Vermont Agency of Transportation 1997). As discussed in Section 4.6, *Water Resources*, VANR DEC has sampled benthic macroinvertebrate communities over the past 30 years at several sites near the Center Rutland Project. Results since 2001 demonstrated that the macroinvertebrate community is rated as "good" to "very good" and meets Vermont Class B water quality standards (VANR 2018).

4.7.1.4.1 Freshwater Mussels

There are 17 native freshwater mussel species that inhabit Vermont waters (Fichtel and Smith 1995). Seven of Vermont's mussel species only occur within the Lake Champlain drainage basin: black sandshell, pink heel splitter, fragile papershell, fluted-shell,

[9] Approach velocity calculated as 190 cfs/270 square feet (gross, submerged trashrack area).

pocketbook, giant floater, and cylindrical papershell. The creek heelsplitter is only found in the Lake Champlain and St. Francis River drainages, both of which are part of the St. Lawrence River system (Fichtel and Smith 1995). The Vermont Natural Resource Atlas identified creek heelsplitter and creeper within the Project area. The creek heelsplitter is classified as a State Rare (S2) in Vermont (VTFWD 2017b; Vermont Center for Ecostudies 2018). Creeper is classified as a State Uncommon (S3) in Vermont (VTFWD 2017b; Vermont Center for Ecostudies 2018). Section 4.9, *Rare, Threatened, Endangered, and Special Status Species*, provides more information on the creek heelsplitter and creeper.

GMP contracted Biodrawversity LLC, a professional consulting firm specializing in malacology, to conduct a mussel survey in 2019 in the Project area. Researchers surveyed the bypassed reach and tailwater area and five sites in the impoundment. Timed, qualitative surveys were completed at each site using a combination of snorkeling, SCUBA, and wading depending upon water depths. Seven individuals representing three species were found in the impoundment: Eastern elliptio (5), creeper (1), and creek heelsplitter (1). No mussels were found in the bypassed reach or tailwater area as a result of low-quality mussel habitat (i.e., strong, complex flows and coarse or bedrock substrate).

Table 4.12 lists the mussel species documented within Otter Creek, their observed locations relative to the Center Rutland dam, and their corresponding state conservation status. The three species found during 2019 field work are identified in bold font.

Table 4.12 Mussel Species Documented within Otter Creek

Common Name	Scientific Name	Approximate Location within Otter Creek	Approximate Distance from Center Rutland Dam (RM)	State Status
Eastern lampmussel	*Lampsilis radiata*	Brandon/Pittsford	11 RM Downstream	Not Listed
Pocketbook	*Lampsilis ovata*	Ferrisburgh and Vergennes	63 RM Downstream	Endangered
Creeper	***Strophitus undulatus***	**Below Salisbury**	**Project impoundment (2019)**	**State Rare (S3) ***
Giant floater	*Pyganodon grandis*	Below Weybridge	1.5 RM Downstream	Threatened
Fluted shell	*Lasmigona costata*	As far as Cornwall	40 RM Downstream	Endangered
Creek heelsplitter	***Lasmigona compressa***	**Mt. Tabor to headwaters**	**Project impoundment (2019)**	**State Rare (S2) ^**

Common Name	Scientific Name	Approximate Location within Otter Creek	Approximate Distance from Center Rutland Dam (RM)	State Status
Fragile papershell	*Leptodea fragilis*	Ferrisburgh and Vergennes	63 RM Downstream	Endangered
Pink heelsplitter	*Potamilus alatus*	Ferrisburgh and Vergennes	63 RM Downstream	Endangered
Black sandshell	*Ligumia recta*	Ferrisburgh and Vergennes	63 RM Downstream	Endangered
Triangle floater	*Alasmidonta undulata*	Proctor	7.3 RM Downstream	State Rare (S3) *
Eastern elliptio	***Elliptio complanata***	**Proctor**	**Project impoundment (2019)**	**Not Listed**

Sources: Fichtel and Smith 1995; VTFWD 2015b; Vermont Center for Ecostudies 2018a; 2018b; 2018c; Biodrawversity 2012

*S(3)= State Rank Uncommon: Moderate risk of extinction/extirpation due to restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors.
^S(2) = State Rank Rare: At high risk of extinction or extirpation due to very restricted range, very few populations, steel declines or other factors.

4.7.1.4.2 Aquatic Insects

Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies) (EPT) are important forage for trout species and are an indicator of good quality water. One of VANR's criteria in evaluating the condition of macroinvertebrate community health is with an EPT Index. The EPT Index is a measure of the number of distinct taxa from the more environmentally sensitive mayflies, stoneflies, and caddisflies orders. In 2006 and 2016, 32 and 25 EPT taxa were documented by VANR DEC 0.75 RM upstream of the Center Rutland dam (DEC Water Quality Station # 502230) (DEC 2018) (Figure 4.5). In 2001, an EPT richness of 21 taxa was measured at VANR DEC Water Quality Station # 502229 (1,000 feet downstream of the dam) (Figure 4.5). The EPT Index threshold for Warm Water Moderate Gradient Streams and Rivers Class A waters is greater than 21 (VDEC 2004). The high number of EPT taxa reflects a healthy aquatic ecosystem.

4.7.1.5 Aquatic Invasive Species

Within the Lake Champlain Basin, at least four dozen non-native plant and animal species threaten the diversity or abundance of native species (DEC and Lake Champlain Basin Program 2005). The Lake Champlain Basin Aquatic Nuisance Species Management Plan was created in 2000 to facilitate the coordination of aquatic nuisance species

management efforts throughout the Lake Champlain Basin. The zebra mussel, sea lamprey, and alewife are identified within the plan as three priority aquatic nuisance species that are presently within the Lake Champlain Basin (DEC and Lake Champlain Basin Program 2005). Zebra mussels and sea lampreys have been found within Otter Creek (DEC and Lake Champlain Basin Program 2005, Bouffard 2008); however, it is unlikely that they occur as far upstream as the Center Rutland Project.

4.7.2 Environmental Effects

4.7.2.1 Effects of the Proposed Action

GMP proposes to operate the Center Rutland Project in a run-of-river mode and provide a continuous minimum flow over the dam to the 100-foot-long bypassed reach. Run-of-river operations eliminate fluctuations in impoundment levels and maintain stable river flow downstream of the powerhouse during normal operations. Stable river flows will provide spawning, rearing, and nursery habitat for fish and other aquatic organisms (e.g., freshwater mussels, benthic macroinvertebrates) in the impoundment and in downstream reaches. Infrequent maintenance activities (e.g., dam or intake repairs) inclusive of impoundment drawdowns beyond normal operating levels may result in short-term modifications to impoundment levels or stream flows and have the potential to impact mussels located within the impoundment. However, these effects will be minimized by obtaining proper permits and GMP will follow agency recommended drawdown, refill, and timing protocols when necessary[10]. Based upon the small size of the Center Rutland Project, and run-of-river operations, and rare need for an impoundment drawdown (that would be permitted with pertinent agencies), it is unlikely that proposed operations will adversely affect mussel populations in this section of Otter Creek (Biodrawversity 2019).

GMP is proposing to provide a year-round bypassed reach of 80 cfs from June 1st to October 15th and 40 cfs for the remainder of the year. However, in accordance with consultation with VANR and USFWS, GMP plans to host a flow demonstration in early 2022 to view the proposed flows, as well as other flows, and consult with VANR and the USFWS on an appropriate flow regime to maintain aquatic habitat. Provision of a

[10] The Center Rutland Project is hydraulically limited in its ability to actually draw down the impoundment. The Project can only pass water via the operating the turbine generator unit (maximum hydraulic capacity of 190 cfs) and via spillage over the dam. With an annual mean flow of 606 cfs (USGS 2021) from 1991 to 2020 at the Center Rutland Project, there are very few instances where GMP would have the ability to draw the impoundment down.

minimum flow throughout the year will enhance aquatic habitat during the fall, winter, and spring months by maintaining and oxygenating pool habitat in the reach during periods of non-spill. GMP will provide updates to FERC and consulting parties on continued consultation surrounding minimum flow testing.

Given the low approach velocities at the intake, narrowly spaced trashrack bars (9/16-inch), and because fish species in the Project area are not migratory, GMP anticipates that the risk of entrainment and impingement is very low. Fish species (e.g., stocked trout, bass, sucker) that reside in the impoundment all have burst or prolonged swim speeds that are higher than the expected approach velocities (~0.70 fps) during full generation.

4.7.2.2 Proposed Environmental Measures

GMP proposes to develop a FMMP in consultation with VANR DEC and to file it with the Commission within 6-months of receipt of subsequent license. An FMMP will provide a mechanism to protect existing aquatic resources through run-of-river operations. GMP proposes to consult with VANR DEC prior to conducting maintenance and repair work that may impact water quality.

Per VANR DEC's comment letter dated August 3, 2021, GMP proposed to work in consultation with VANR DEC to develop a water quality monitoring study plan and implement the study upon reinstallation of the 2-foot 3-inch-high wooden flashboards. GMP also proposed to work in consultation with VANR DEC to test and verify the minimum flow provision upon reinstallation of the 2 foot 3-inch-high flashboards. GMP is no longer proposing the re-installation of the 2-foot 3-inch wooden flashboards, but proposes to work in consultation with VANR DEC in the future should this proposal change.

4.7.3 Unavoidable Adverse Effects

Continued operation and relicensing of the Center Rutland Project as proposed is not expected to have unavoidable adverse effects on fish and aquatic resources.

4.7.4 References

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4.8 Terrestrial Resources

4.8.1 Affected Environment

4.8.1.1 Wildlife Resources

The Center Rutland Project is within the Vermont and Champlain Valley biophysical regions of west central Vermont. The Vermont Valley, a continuation of the Champlain Valley, consists of a narrow break that runs north-south located between the steep Taconic and Southern Green Mountains. Champlain Valley, which is north of the Vermont Valley, is characterized by flatlands and rolling hills interspersed with occasional cliffs and steep slopes (Thompson and Sorenson 2005).

The Center Rutland Project is within an industrialized portion of the Otter Creek watershed. A narrow zone of primarily deciduous trees and shrubbery exists adjacent to the impoundment and tailrace area. Wildlife communities in the area are therefore typical of a moderately urban environment and mainly consist of small animals tolerant to human activity (VMC 1991). The Center Rutland Project is not within a designated habitat block[11], but there is a higher priority habitat block (Level 8 of 10) inland and over 1,000 feet to the north of the Center Rutland Project shoreline (VANR 2021). Lower priority habitat blocks (Levels 3 or 4 of 10) can be found inland and over 200 feet to the south of the Center Rutland Project area (VANR 2021).

Approximately 58 mammal species are known from Vermont (VTFWD 2017a). Of these, 54 have ranges that extend through or near the Project area. Small mammals are typical of the area, including eastern gray squirrels, racoons, porcupines, and skunks (VMC 1991). Occasional white-tailed deer may use the Project area as well (VMC 1991). Table 1 in Appendix D lists the mammal species that have the potential to occur in the Project vicinity (VTFWD 2017a; DeGraaf and Yamasaki 2001).

Bird species expected in the Project area include American robins, sparrows, blue jays, finches, and European starling, with occasional migratory species occurring as transients (VMC 1991). Migratory and non-migratory birds are anticipated to use habitats within the Project area at least in part for feeding, nesting, mating, or as a travel corridor. The

11 Habitat blocks are area of contiguous forest or other natural habitats that are unfragmented by roads, development, or agriculture (VTFWD 2014a). Each block is scored based on biological and physical landscape diversity factors.

Breeding Bird Atlas of Vermont cites 160 bird species that occur in Rutland County (BBAE 2018). Table 2 in Appendix D lists the avian species identified within Rutland County (BBAE 2018).

Various non-venomous snake and turtle species may occur within the Project area, as well as several species of frogs, toads, and salamanders (Vermont Marble 1991). Tables 3 and 4 in Appendix D list the 21 known reptile and amphibian species in Vermont (VTFWD 2017b).

4.8.1.1.1 Temporal and Spatial Distribution of Wildlife Resources

Species considered important because of their commercial, recreational, or cultural value are not likely to use the Project area and immediate surrounding lands for permanent habitat as the area is fragmented by commercial and residential development and the Route 4 road corridor. Most terrestrial species common to the area are likely habitat generalists, and therefore would be found in a variety of habitats throughout the Project vicinity. Larger species may cross through the Project area due to its location along a river corridor. Migratory waterfowl species, such as the mallard and American black duck, would be expected to occupy the Project area during breeding season. Similarly, neotropical avian species such as various flycatchers may occupy the lands surrounding the Project during the spring, summer, and fall before returning to the tropics of Central and South America during the winter season. Passerine species may inhabit the forested, shrubland areas, roadsides, and residential areas of the Project area. Additionally, many avian species may make their homes in the littoral zones of the Project area.

4.8.1.1.2 Invasive Wildlife Species

Invasive wildlife that have the potential to occur within the Project area include several invertebrate pests. The emerald ash borer, which is an invasive insect that infests and kills native ash trees, is a significant threat to northern forests (Vermont Invasives 2021). The emerald ash borer has been documented within Rutland County, although the relative infestation severity index is classified as "Low" (Vermont Invasives 2021). Hemlock woolly adelgid (HWA) is a small, aphid-like insect that feeds exclusively on hemlock species. The HWA is not widespread in Vermont and was not documented in Rutland County, but it has been identified in Bennington and Windham Counties located in southern Vermont (Vermont Department of Forests, Parks, & Recreation 2019).

4.8.1.2 Upland Botanical Resources

4.8.1.2.1 Upland Habitat Communities and Species

Dominant tree species occurring in southwestern Vermont include red maple, sugar maple, paper birch, white pine, hemlock, aspen, American beech, silver maple, and American elm (VMC 1991). Plant species typical of Vermont river basins and stream buffer areas are listed in Table 5 in Appendix D (VDEC 1994).

The Center Rutland Project area is located in an urban area, with only a narrow zone of primarily deciduous trees and shrubby vegetation adjacent to the Project impoundment. Dominant overstory species include red and sugar maple, elm, birch, eastern hemlock, aspen, beech, silver maple, and white pine (VMC 1991). Shrub species include alder and saplings of overstory species. Ground cover is sparse and primarily limited to upland grasses associated with urban development (VMC 1991). Natural vegetative cover surrounding the Project area was largely displaced during industrialization of the area, resulting in a high percentage of cultivated areas, parking lots, and roadways (VMC 1991).

Based on the 2019 National Land Cover Database information, there is no vegetation present within the Project boundary. This data has a spatial resolution of 100 feet. There are 2.54 acres of vegetated areas within the Project boundary, with 0.36 acres of emergent herbaceous wetlands and 2.18 acres of woody wetlands (NLCD 2019).

The Town of Rutland classifies the north side of the Project boundary as a commercial/industrial zone. The south side is also classified as a commercial/industrial zone but is a little more residential in character (Town of Rutland 2004).

There are no agricultural lands located within or directly adjacent to the Center Rutland Project boundary. Agricultural fields are located downstream of the Center Rutland Project. The Town of Rutland's Future Land Use Map classifies this downstream area as an agricultural zone (Town of Rutland 2004).

GMP owns the immediate area lands surrounding the Center Rutland dam and powerhouse. Project operations and maintenance are the primary activities that occur on Center Rutland Project lands. GMP occasionally weed whacks and mows the minimal vegetation surrounding the dam, intake, and powerhouse area (Photo 4.4). GMP also periodically weed whacks the informal tailwater access trail that leads from an informal

parking area down to the shoreline below the powerhouse (north bank). GMP maintains the area to ensure dam safety and makes a point to trim vegetation growth back from Project structures one to two times per year to ensure there is no growth within 15-feet of structures.

Source: Google 2021

Photo 4.4 Limited Vegetation Surrounding Center Rutland Project Facilities

VANR noted that there are no concerns with plant species at the Center Rutland Project as long as no changes are proposed to run-of-river operations (personal communication, Robert Popp, July 20, 2018).

4.8.1.3 Riparian, Wetland, and Littoral Habitat

4.8.1.3.1 Riparian Habitat

Riparian habitat is the zone of vegetation that serves as a cushion of protection between the upland vegetation community and the riverine environment. This zone provides streambank stability and sediment filtration. Riparian habitat within Vermont is typically dominated by forested floodplains, wetlands, and uplands (Cowardin et al. 1979). Floodplain forests may be dominated by silver maple or occasionally sugar maple, with abundant ostrich fern or sensitive fern. These areas are often used as travel corridors for terrestrial animal species as well as migratory birds. Invasive plant species often found

within riparian habitats in Vermont include garlic mustard, Japanese knotweed, and oriental bittersweet (VTFWD 2005).

Within the Center Rutland Project area, forested floodplains are fairly limited. Much of the northern shoreline beyond the immediate riparian area is dominated by commercially developed land outside of the Center Rutland Project boundary. The southern shore has a small area of mixed forest but is limited by residential and commercial development.

4.8.1.3.2 Wetlands

The USFWS National Wetland Inventory (NWI) identifies approximately eight acres of freshwater, riverine wetlands within the Center Rutland Project boundary (Figure 4.6) (USFWS 2021). Riverine wetlands are wetlands or deep-water habitats which occur within a channel (Cowardin 1979). No mapped terrestrial wetlands (i.e., forested, scrub-shrub, or emergent) are known to occur within the Center Rutland Project boundary. A freshwater forested/shrub wetland community is identified approximately 840 feet downstream of the Center Rutland Project area along the Otter Creek shoreline (USFWS 2021).

Figure 4.6 Wetlands Identified Near the Project Boundary

4.8.1.3.3 Littoral Habitat

The littoral zone is the transitional zone from the shoreline habitat to an entirely aquatic zone (Cowardin et al. 1979). The littoral zone includes emergent vegetation, floating vegetation, as well as submerged aquatic vegetation. The littoral zone in the Otter Creek Project area is limited to a very narrow band given run-of-river operations. Submerged aquatic vegetation had not been identified within the Center Rutland Project area.

4.8.1.4 Invasive Plant Species

About one-third of the plant species found in Vermont are non-native (VTFWD 2005). Approximately eight percent of Vermont's non-native species have the potential to create environmental and economic harm due to their ability to grow rapidly, profusely, and widely. Often invasive species occur along rivers and waterbodies due to the use of these locations for recreation (which may introduce species) as well as the ability for many species to infest shorelines through transportation of vegetation fragments (VTFWD 2005).

Vermont has a noxious weed quarantine that was created to regulate the importation, movement, sale, possession, cultivation and/or distribution of certain invasive plants. Table 6 in Appendix D lists the species included on Vermont's noxious plant list that may occur within the Center Rutland Project area (VTFWD 2005). These listed species either pose a threat to the Vermont environment or are already negatively impacting waterways and natural areas in the state. The Vermont Natural Resources Atlas does not identify any invasive land or aquatic species presence within the Center Rutland Project area (VANR 2021). Investigation of the Vermont Aquatic Invasive Species Map, also indicates that there are no known infestations of aquatic invasive species within the Center Rutland Project area (VDEC 2021).

4.8.2 Environmental Effects

4.8.2.1 Effects of Proposed Action

The proposed action (i.e., continued run-of-river operations and a year-round minimum flow release to the bypassed reach) will have limited to no effect on wildlife resources, terrestrial habitats, or wetlands. Wildlife species considered important because of their commercial, recreational, or cultural value are not likely to use the Project area and immediate surrounding lands for permanent habitat as the area is fragmented by

commercial and residential development and the U.S. Route 4 corridor. The proposed flow regime will adequately protect wildlife habitat upstream and downstream of the Center Rutland dam. Stable impoundment and river water surface elevations upstream and downstream of the dam will maintain habitat for wildlife. Required maintenance activities, inclusive of impoundment drawdowns beyond normal operating levels, have the potential to affect wildlife resources and shoreline habitat upstream of the Center Rutland dam. In the case of a drawdown, GMP consults with pertinent resource agencies regarding required approvals and follows agency recommended drawdown, refill, and timing protocols when necessary. Any effects from infrequent maintenance activity would be short-term and minimal. Additionally, continued maintenance of Project lands (e.g., weed whacking and mowing) is not anticipated to negatively affect terrestrial resources.

4.8.2.2 Proposed Environmental Measures

GMP proposes to develop a FMMP in consultation with VANR DEC and to file it with the Commission within 6-months of receipt of subsequent license. Development of an FMMP will ensure that existing wildlife and botanical resources along the impoundment are maintained through run-of-river operations and stable impoundment elevations. GMP proposes to consult with VANR DEC prior to conducting maintenance and repair work that may impact water quality.

4.8.3 Unavoidable Adverse Effects

Continued operation and relicensing of the Center Rutland Project as proposed is not expected to result in unavoidable adverse effects to wildlife and botanical resources.

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4.9 Rare, Threatened, Endangered, and Special Status Species

4.9.1 Affected Environment

4.9.1.1 Wildlife Species

The federal ESA was passed in 1973 to protect and recover imperiled animals and plants and their associated habitats (USFWS 2017). Endangered species are at risk of extinction throughout all or a considerable part of their range; threatened species are prone to becoming endangered in the near future (USFWS 2017). Plant and animal species in Vermont are also protected under Vermont's Endangered Species Law (10 V.S.A. Chap. 123) (VTFWD 20154a). Depending on their level of vulnerability to extinction, species may be listed as endangered or threatened in Vermont. There are 36 endangered animals, 16 threatened animals, 69 endangered plants, and 94 threatened plants in Vermont (VTFWD 2015a, VTFWD 2015b).

The USFWS Information for Planning and Conservation (IPaC) database was reviewed on to identify those species listed as threatened or endangered under the federal ESA. According to the IPaC Species Report, the Northern long-eared bat (*Myotis septentrionalis*), may occur within the Center Rutland Project area (USFWS 2021) (Appendix E). The Northern long-eared bat is also listed as an endangered species in Vermont (VTFWD 2015a).

The IPaC report also lists several migratory birds protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act that may occur within the Center Rutland Project area. The bald eagle (*Haliaeetus leucocephalus*) and rusty blackbird (*Euphagus carolinus*) are included on this list and are listed as endangered species in Vermont (VTFWD 2015a). Migratory bird species identified by the IPaC database are listed in Table 4.13.

The 2021 IPaC Species Report for the Center Rutland Project area also identifies the monarch butterfly as a candidate species. Analysis of project impacts on this candidate species have been incorporated herein.

Table 4.13 Migratory Birds that May Occur in the Project Area

Scientific Name	Common Name
Haliaeetus leucocephalus	Bald Eagle
Coccyzus erythropthalmus	Black-billed Cuckoo
Dolichonyx oryzivorus	Bobolink
Cardellina canadensis	Canada Warbler
Coccothraustes vespertinus	Evening Grosbeak
Aquila chrysaetos	Golden Eagle
Tringa flavipes	Lesser Yellowlegs
Contopus cooperi	Olive-sided Flycatcher
Euphagus carolinus	Rusty Blackbird
Hylocichla mustelina	Wood Thrush

Source: USFWS 2020

As described in Section 4.7 *Fish and Aquatic Resources*, GMP contracted Biodrawversity LLC, a professional consulting firm specializing in malacology, to conduct a mussel survey in 2019 in the Project area. Researchers surveyed the bypassed reach and tailwater area and five sites in the impoundment. Timed, qualitative surveys were completed at each site using a combination of snorkeling, SCUBA, and wading depending upon water depths. The creek heelsplitter (*Lasmigona compressa*) and creeper (*Strophitus undulatus*) are two state rare species identified as occurring within the Center Rutland Project impoundment (VTFWD 2017). The creek heelsplitter is an S(2) species. An S(2) species is considered a rare species that is at high risk of extinction or extirpation due to very restricted range, very few populations, steep declines or other factors (VTFWD 2017). The Creeper is an S(3) species. An S(3) species is considered an uncommon species with moderate risk of extinction/extirpation due to restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors (VTFWD 2017).

4.9.1.1.1 Northern-Long Eared Bat

The northern long-eared bat is one of many North American bat species which have experienced a significant population decline as a result of the white-nose syndrome (USFWS 2015). White-nose syndrome is a fungal disease affecting hibernating bats that was introduced to the east coast of North America in 2006. Named for the white fungus that appears on the muzzle and other parts of hibernating bats, white-nose syndrome has caused significant mortality of bats in eastern North America (USFWS 2015).

The northern long-eared bat range is extensive, spreading across the northeastern and northcentral U.S. and the Canadian provinces. Under the ESA, the bat is protected across its entire range of 37 states (USFWS 2015). Northern long-eared bats hibernate in caves and abandoned mine shafts in Vermont during the winter; during the summer, they often roost in crevices, cavities, or under exfoliating bark of trees in forested areas and, occasionally on bridges and other structures (USFWS 2015). In accordance with direct communications with the VTFWD, there are no known winter hibernacula or known summer maternity roost sites within the Center Rutland Project boundary or within at least 1-mile of the boundary, which is the typical threshold used by the USFWS when considering potential effects from construction or other projects (Alyssa Bennett, personal communication, July 16, 2018). Given there is not a known winter hibernaculum or summer maternity roost site within the Project boundary or buffer area, it is likely that any Northern long-eared bats occurring within the Project area would be temporarily using riparian areas along the shoreline to forage or to travel.

The 2016 USFWS "Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions" addresses the effects to the northern long-eared bat resulting from the USFWS's finalization of a special rule under the authority of section 4(d) of the ESA (USFWS 2016). The USFWS Threatened listing of the northern long-eared bat includes an ESA section 4(d) rule, for which due diligence measures have been defined which, if followed, allow tree cutting activities to proceed in the absence of known, occupied hibernacula or summer roost trees in the vicinity without requiring a Federal Takings Permit. As noted in Section 3.0, *Proposed Action*, GMP will abide by seasonal tree clearing restrictions and clear trees between November 1st and April 14th for activities requiring clearing of trees 4-inches diameter base height or greater. Should tree clearing be required during the restricted time period (April 15th – October

31st), GMP will consult with the USFWS and VTFWD regarding removal needs and appropriate mitigation or protection measures.

4.9.1.1.2 Bald Eagle

In Vermont, the bald eagle population has increased considerably over the past 20 years, and there are at least 21 known nesting pairs in the state (Audubon 2018a). Vermont completed a reintroduction program from 2004 to 2006, releasing 29 eagles. As a result of reintroduction efforts, Vermont is close to reaching established recovery goals (Audubon 2018a). Eagle habitat includes estuaries, large lakes, reservoirs, rivers, and some seacoasts (USFWS 2007). In the fall, adults migrate generally to the coast to open water sources once lakes and rivers freeze over (Cornell Lab of Ornithology 2018). During winter, the birds congregate near open water in tall trees for spotting prey and night roosts for sheltering. In the spring, eagles return to breeding grounds when weather and food permit, usually January-March. Eagles often select tops of large trees in forested areas adjacent to large bodies of water to build nests and typically return each year (Cornell Lab of Ornithology 2018).

The Northern States Bald Eagle Recovery Plan was published in 1983 (USFWS 1983). The primary recovery objective is to reestablish self-sustaining populations of bald eagles throughout the Northern States Region (hereafter Region). An initial, tentative goal was to have 1,200 occupied breeding areas distributed over a minimum of 16 states within the Region by the year 2000, with average annual productivity of at least 1.0 young per occupied nest. In 2007 the bald eagle was delisted from the federal ESA, after findings that populations had reached recovery goals. The bald eagle still is protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. While the bald eagle is still listed as an endangered species in Vermont, a motion to delist the bald eagle from state endangered species status was filed by the Scientific Advisory Group on Birds on October 13, 2020 (Scientific Advisory Group for Birds 2020). The motion indicates that the bald eagle has met the criteria for delisting outlined in the Vermont Bald Eagle Recovery Plan, both in Vermont and portions of New York and New Hampshire.

Within the Project area, bald eagles may occur temporarily, using trees for perching and the impoundment and shoreline for foraging.

4.9.1.1.3 Rusty Blackbird

The rusty blackbird was listed as endangered in Vermont in 2015, after the species declined regionally by more than 95 percent over 50 years (Vermont Business Magazine 2015). Vermont is on the southern edge of the species' boreal forest breeding habitat (IRBTG 2009). The rusty blackbird prefers forested wetlands, particularly wet coniferous forests. During the breeding season (April through June), the species is often found in spruce bogs. Nesting habitat is typically located within dense cover in coniferous trees or shrubs, typically above the water. The rusty blackbird forages by wading in shallow water or wetlands searching for prey. The diet consists of insects including caddisflies, mayflies, dragonflies, and water beetles (Audubon 2018b).

Within the Center Rutland Project area, the rusty blackbird would occur as a transient species during migration or for short periods of time. The Center Rutland Project area does not support any mapped forested wetlands or large areas of dense coniferous forests which are characteristic of rusty blackbird habitat. There is no designated critical habitat for this species (USFWS 2018). As such, it is unlikely that this species occurs in the Project area for extended amounts of time.

4.9.1.1.4 Creek Heelsplitter

The creek heelsplitter is usually found in creeks, smaller rivers, and upstream areas in large rivers and prefers finer gravel, sand, and mud habitats (Vermont Center for Ecostudies 2018). The species is a sedentary filter feeder that primarily feeds on plankton (zooplankton and phytoplankton) and detritus (dead organic material, especially plants) (Mulcrone 2006). There is no recovery plan currently in place for this species.

One creek heelsplitter was found in the Project impoundment during the 2019 mussel survey (Biodrawversity 2019). Survey results demonstrated a low density which was consistent with other mussel species in the area. The creek heelsplitter found during the 2019 survey was 3.3-inches-long with a slightly eroded shell and was found in sand and gravel at a depth of 4.0 feet.

4.9.1.1.5 Creeper

The creeper is a river generalist that is typically found in headwaters and deeper pools. The creeper is found in Lake Champlain (Vermont Center for Ecostudies 2018b). There is no recovery plan currently in place for this species.

One creeper was found in the Project impoundment during the 2019 mussel survey (Biodrawversity 2019). Survey results demonstrated a low population density which was consistent with other mussel species in the area. The creeper found during the 2019 survey was 2.0-inches-long and exhibited moderate shell erosion.

4.9.1.1.6 Monarch Butterfly

The monarch butterfly is a federally listed candidate species insect that has the potential to occur within the vicinity of the Center Rutland Project. The monarch is a large butterfly with bright orange wings surrounded by a black border with black veins. Monarch butterflies breed by laying eggs on milkweed plants and larvae emerge after two to five days. Larvae develop through 5 phases over nine to eighteen days feeding on milkweed. Larvae then pupate into a chrysalis before emerging into an adult butterfly. Adult butterflies live approximately two to five weeks, and overwintering adults will enter a reproductive diapause and live six to nine months. Many monarchs will undergo a long-distance generational migration of distances over 3,000 kilometers (USFWS 2021c).

4.9.1.2 Botanical Resources and Habitats

Based on the IPaC Report, a review of the Vermont Natural Resource Atlas, and communications with VANR staff, there are no Rare, Threatened, and Endangered (RTE) plant species or habitats within the Project area (VANR 2018; personal communication, Robert Popp, VTFWD, July 20, 2018; personal communication, Alyssa Bennett, VTFWD, July 16, 2018; personal communication, Peter McHugh, VTFWD, July 16, 2018). VANR confirmed that they have no concerns with the effects of project operations on RTE plant species at the Center Rutland Project as long as no changes are proposed to run-of-river operations (personal communication Robert Popp, VTFWD, July 20, 2018).

4.9.2 Environmental Effects

4.9.2.1 Effects of Proposed Action

The proposed action (i.e., continued run-of-river operations and a year-round minimum flow release to the bypassed reach) will have minimal to no effect on RTE species that may be found in the Project area. Periodic maintenance activities and associated drawdowns have the potential to affect RTE species, namely mussels; however, GMP would consult with pertinent resource agencies regarding potential mitigation or PME measures.[12] Additionally, should tree removal be required within the Project area, GMP would consult with pertinent resource agencies prior to removal[13].

Typical Project area maintenance activities such as weed whacking or mowing have potential to impact monarch habitat if milkweed is removed or cut during spring, when monarchs return from winter migration. GMP has and maintains limited Project lands around the Project dam, powerhouse, and tailrace fishing area. As such, impacts to milkweed growing within the Project area would be very minimal during the growing season.

4.9.2.2 Proposed Environmental Measures

GMP proposes to develop a FMMP in consultation with VANR DEC and to file it with the Commission within 6-months of receipt of subsequent license. An FMMP will provide a mechanism to protect existing water resources and continue to maintain shoreline and aquatic habitat conditions through run-of-river operations. GMP proposes to consult with VANR DEC prior to conducting maintenance and repair work that may impact water quality.

For the protection of northern long-eared bats, GMP proposes to abide by seasonal tree clearing restrictions and only clear trees between November 1st – April 14th for any activities requiring clearing of trees 4 inches diameter base height or greater. Should tree

[12] The Center Rutland Project is hydraulically limited in its ability to actually draw down the impoundment. The Project can only pass water via operating the turbine generator unit (maximum hydraulic capacity of 190 cfs) and via spillage over the dam. With an annual mean flow of 606 cfs (USGS 2021) from 1991 to 2020 at the Center Rutland Project, there are very few instances where GMP would have the ability to draw the impoundment down.

[13] It should be noted that limited trees exist around the dam and powerhouse infrastructure. Although tree removal could be required at some point, it would be a rare occasion.

clearing be required during the restricted time period (April 15th – October 31st), GMP will consult with the USFWS and VTFWD regarding removal needs.

Tree removal is not an anticipated need for construction of the off-license Town of Rutland pocket park. The Town of Rutland and GMP will consult with the USFWS and VTFWD should the final park designs require tree removal.

4.9.3 Unavoidable Adverse Effects

Continued operation and relicensing of the Center Rutland Project as proposed is not expected to have unavoidable adverse effects on identified RTE species.

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4.10 Land Use, Recreation, and Aesthetic Resources

4.10.1 Affected Environment

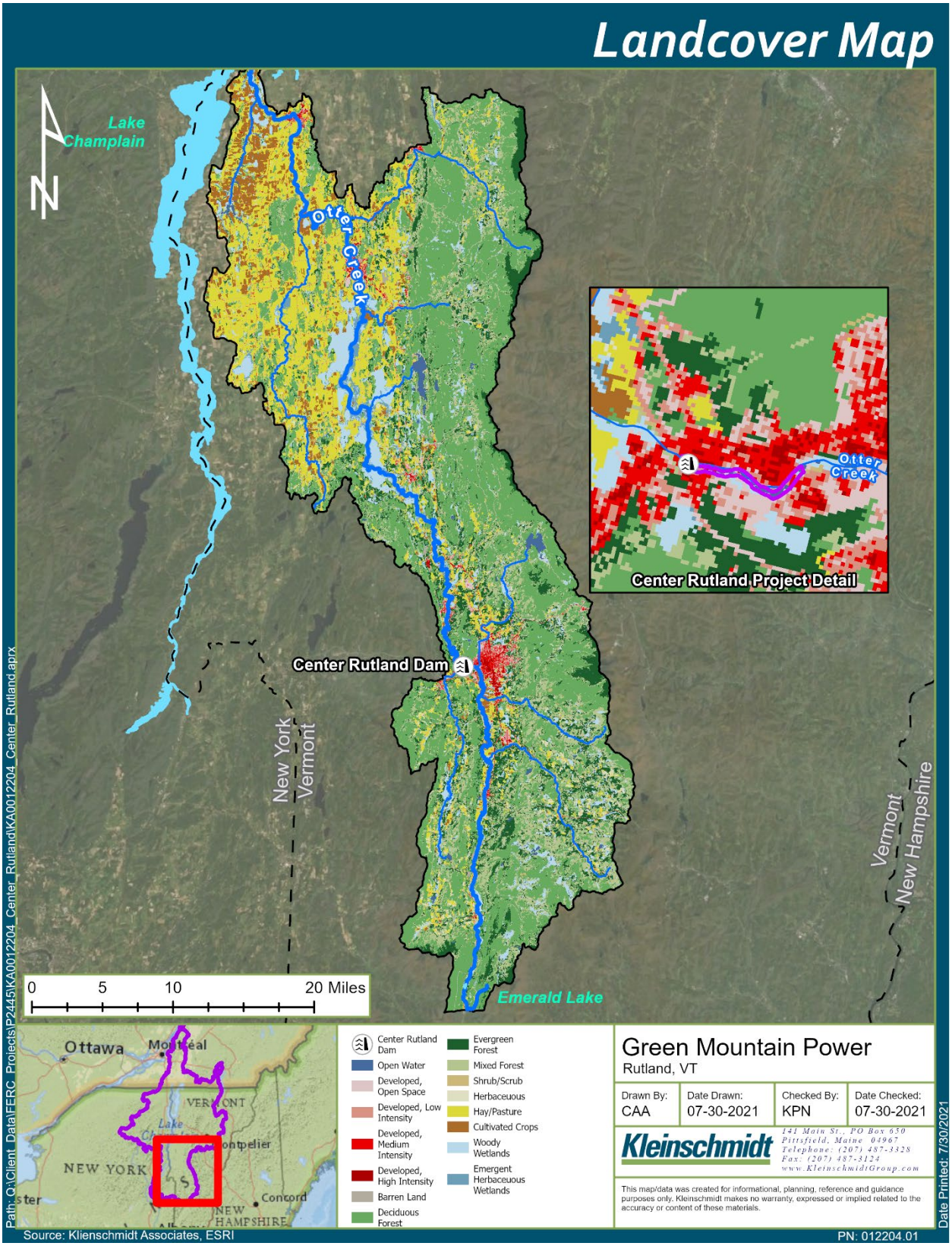
4.10.1.1 Land Use

The Center Rutland Project is within the most developed area of the Otter Creek watershed, within the Town of Rutland. Zoning near the Center Rutland Project is managed by the Town of Rutland. The area surrounding the Center Rutland Project is primarily zoned for industrial and commercial development (Town of Rutland 2004). Outside of the Town of Rutland and the adjacent City of Rutland, the dominant land cover type within the Otter Creek watershed is deciduous forest (37 percent), followed by pasture/hay (18 percent), mixed forest (12 percent), and evergreen forest (11 percent) (MRLC 2019) (Figure 4.7).

GMP owns the immediate area lands surrounding the Center Rutland dam and powerhouse. Project operations and maintenance are the primary activities that occur on Center Rutland Project lands. GMP occasionally weed whacks and mows the minimal vegetation surrounding the dam, intake, and powerhouse area. GMP also periodically weed whacks the informal tailwater access trail that leads from an informal parking area down to the shoreline below the powerhouse (north bank). GMP maintains the area to ensure dam safety and makes a point to trim vegetation growth back from Project structures one to two times per year to ensure there is no growth within 15-feet of structures.

For safety purposes, public access to the dam, intake, and powerhouse is restricted by a locked gate and fence. A boat barrier is additionally installed seasonally upstream of the dam for public safety.

Figure 4.7 Otter Creek Watershed Land Cover



4.10.1.2 Recreational Resources

4.10.1.2.1 Regional Recreation Opportunities

Numerous opportunities to pursue a wide variety of traditional recreation activities (e.g., boating, camping, hiking, biking, sightseeing) throughout the entire year exist near the Center Rutland Project. Recreation areas of state, regional, and national significance are found within the Project vicinity. There are currently no Project lands within or under study for inclusion in the National Trails System or as a Wilderness Area (NPS 2018a, Wilderness Connect 2021). Otter Creek is also not classified as a National Wild and Scenic River (USFWS 2015).

The Green Mountain National Forest (GMNF) is located east and northeast of the Center Rutland Project. The GMNF encompasses more than 400,000 acres and provides recreation opportunities during all four seasons (USDA Forest Service 2006). The GMNF contains approximately 900 miles of multi-use trails (e.g., for hiking, biking, snowmobiling, cross-country skiing), primitive and developed camping areas, three alpine ski areas, 55 picnic areas, scenic drives, and eight wilderness areas (USDA Forest Service 2006, VDFPR 2019). Approximately 300 miles of the Catamount Trail, the longest cross-country ski trail in the U.S., also passes through the GMNF (RRPC 2018).

The GMNF contains three nationally designated trails, the Appalachian Trail, Long Trail, and Robert Frost Interpretive Trail. The Appalachian Trail is a National Scenic Trail that passes through Rutland County (NPS 2018a). Approximately 150 miles of the 2,150-mile Appalachian Trail cross through Vermont with elevations ranging from 400 feet to over 4,000 feet (ATC 2018). The Long Trail and the Robert Frost Interpretive Trail are National Recreation Trails within the GMNF; these trails are recognized because of their local and regional significance and are a part of the National Trail System (AT 2021).

Two national recreation areas are within the GMNF. The White Rocks National Recreation Area is approximately 11 miles southwest of the Center Rutland Project and provides hiking, camping, biking, sightseeing, picnicking, snowmobiling, and skiing (USDA Forest Service 2006; 2018a). The area provides views of the Taconic and Adirondack mountains and access to the White Rocks Cliffs trail, the White Rocks Ice Beds Trail, the Appalachian Trail, and the Long Trail (USDAFS 2018a). The Moosalamoo National Recreation Area encompasses 16,000 acres north of the Center Rutland Project, and provides more than 70 miles of trails for biking, hiking, snowshoeing, cross-country skiing, horseback riding,

and snowmobiling (MA 2021, USDA Forest Service 2018b). This area provides opportunities for swimming, boating, camping, fishing, picnicking, sightseeing, and access to the Robert Frost Interpretive Trail (USDA Forest Service 2018b).

The Killington Valley is approximately 12 miles east of the Center Rutland Project and provides recreation opportunities throughout the year. The Killington Ski Resort has 22 ski lifts, 155 ski trails, and seven mountain peaks that provide downhill skiing, cross-country skiing, snowboarding, snowshoeing, and snowmobiling (Ski Vermont 2018). Recreation opportunities in the summer at the Killington Ski Resort include 30 miles of mountain biking trails, 15 miles of hiking trails, a golf course, rock climbing, gondola rides, and an adventure park (Killington Valley 2019, Ski Vermont 2018). Pico Mountain Resort is five miles west of the Killington Resort and contains 57 trails and seven ski lifts (Killington Valley 2019).

Otter Creek empties into Lake Champlain, which is one of the largest freshwater lakes in the U.S. Lake Champlain, with more than 70 islands, is a popular recreation destination (LCBP 2021a). The lake is approximately 120-miles-long, with 587 miles of shoreline and an average depth of 64 feet (LCBP 2021b). The Lake Champlain area provides opportunities for swimming, boating, fishing, ice fishing, paddling, canoeing, kayaking, biking, wildlife viewing, and hiking. There are about 54 beaches around the lake and over 50 boat launches (LCBP 2021a).

4.10.1.2.2 County and Municipal Recreation opportunities

There are four state parks in Rutland County within 15 miles of the Center Rutland Project. Bomoseen State Park and Half Moon Pond State Park are to the west in the Taconic Mountains and provide amenities for camping, swimming, picnicking, hiking, boating, canoeing, kayaking, sightseeing, wildlife viewing, and fishing (VDFPR 2017). Lake Saint Catherine State Park is southwest of the Center Rutland Project and provides camping, swimming, hiking, a playground, a nature center, fishing, motorized boating, and non-motorized boating (VDFPR 2017). Giffords Woods State Park is to the east in the Green Mountains and provides amenities for camping, picnicking, fishing, and hiking as well as access to the Appalachian Trail and the Long Trail (VDFPR 2017).

Several wildlife management areas and state forests are near the Center Rutland Project (VDFPR 2021). The Whipple Hollow, Blueberry Hill, Bird Mountain, Tinmouth Channel, Hubbardton Battlefield, Pomainville, and Plymbury wildlife management areas are all

within 15 miles of the Center Rutland Project. These areas provide opportunities for wildlife viewing, bird watching, hiking, walking, fishing, snowshoeing, and cross-country skiing (VDFPR 2021). The 344-acre West Rutland State Forest is six miles northwest of the Center Rutland Project and provides primitive camping, scenic and wildlife viewing, walking, and hiking. The 17,000-acre Coolidge State Forest is approximately 13 miles to the southeast and provides hiking, snowmobiling, cross-country skiing, snowshoeing, fishing, and scenic viewing. The 918-acre Aitken State Forest is 4 miles southeast and provides hiking, scenic viewing, bird watching, wildlife viewing, and primitive camping. The 74-acre Lower Clarendon Gorge State Forest is approximately 7 miles southeast and provides hiking trails and a swimming hole (VDFPR 2021).

The Town of Rutland maintains ten public parks with sport fields, tennis and basketball courts, hiking and biking trails, swimming facilities, a skateboard park, playgrounds, picnic areas, and ice skating (RRCP 2015). The Rutland Creek Path is a multi-use path with five segments for commuting and recreation activities; three of the five segments are complete (Rutland Herald 2019).

Additional recreation opportunities near the Center Rutland Project include the Delaware and Hudson Rail Trail which is a 20-mile-long, multi-use trail approximately ten miles west of the Center Rutland Project (VDFPR 2021). Pine Hill Park is approximately two miles north of the Center Rutland Project in the Town of Rutland. Pine Hill Park is approximately 325 acres and provides 16 miles of trails for hiking, walking, snowshoeing, biking, running, and cross-country skiing as well as scenic and nature viewing (PHP 2018).

4.10.1.2.3 Project Recreation Facilities and Opportunities

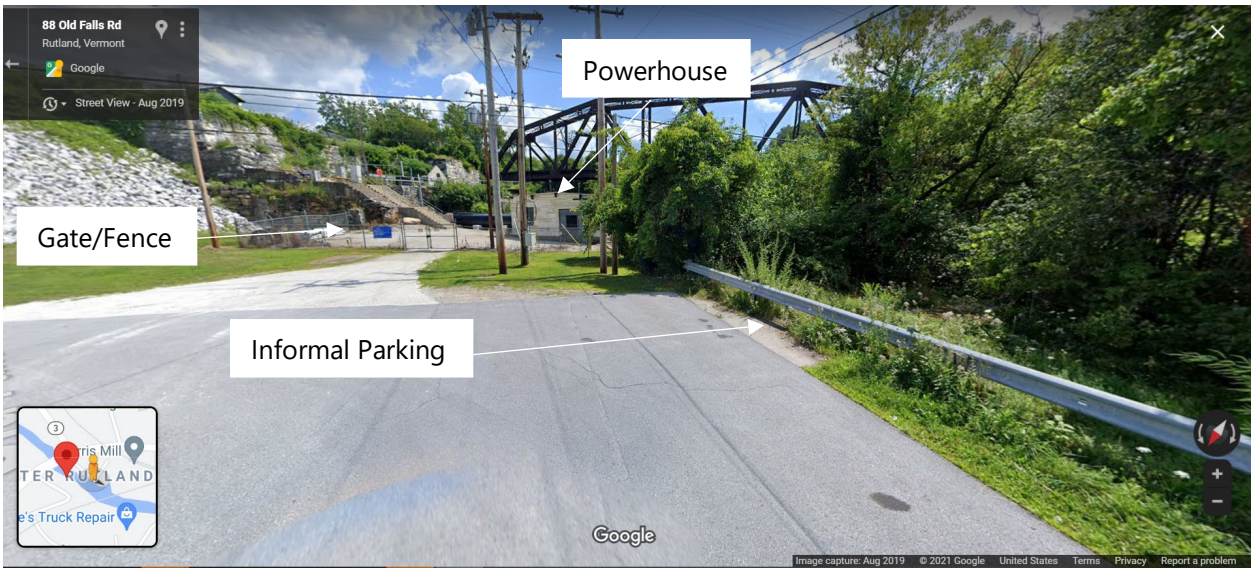
There are no formal project recreation facilities at the Center Rutland Project. GMP provides informal public access to Otter Creek just below the Project tailwater on the north bank (Figure 4.8). This informal access point consists of a dirt footpath wide enough for canoe transport; angling occurs at this location as well (Photo 4.5; Photo 4.6). GMP provides informal parking adjacent to the footpath (Figure 4.8) (Photo 4.7).

Annual total recreation use numbers from the FERC Form 80 Licensed Hydropower Development Recreation Report for the Center Rutland Project were 100 in 2002 and 299 in 2014 (OMYA 2003, GMP 2015). GMP reported the downstream access was at 50 percent capacity utilization in 2014 (GMP 2015).

Source: Google 2021

Photo 4.5 View Looking Towards Tailwater Access Footpath to the River

Photo 4.6 View Looking Upstream from Shoreline of Tailwater Access Footpath



Source: Google 2021

Photo 4.7 View of Informal Parking Area Adjacent to Tailwater Access Footpath

Anglers also informally access Otter Creek on the south bank downstream of the dam, off of Simons Avenue (FERC 1993). Due to the historic use of this area, the Town of Rutland began working with GMP in 2018 to discuss collaborative development of a "pocket park" that would be located within this informally utilized area. The proposed pocket park area would be located on both GMP and Town of Rutland property located between Simons Avenue and Otter Creek (Figure 4.8). However, because the proposed park will be outside of the Center Rutland Project boundary and managed by the Town of Rutland, GMP is not proposing to incorporate the facility into the FERC license as a Project recreation facility.

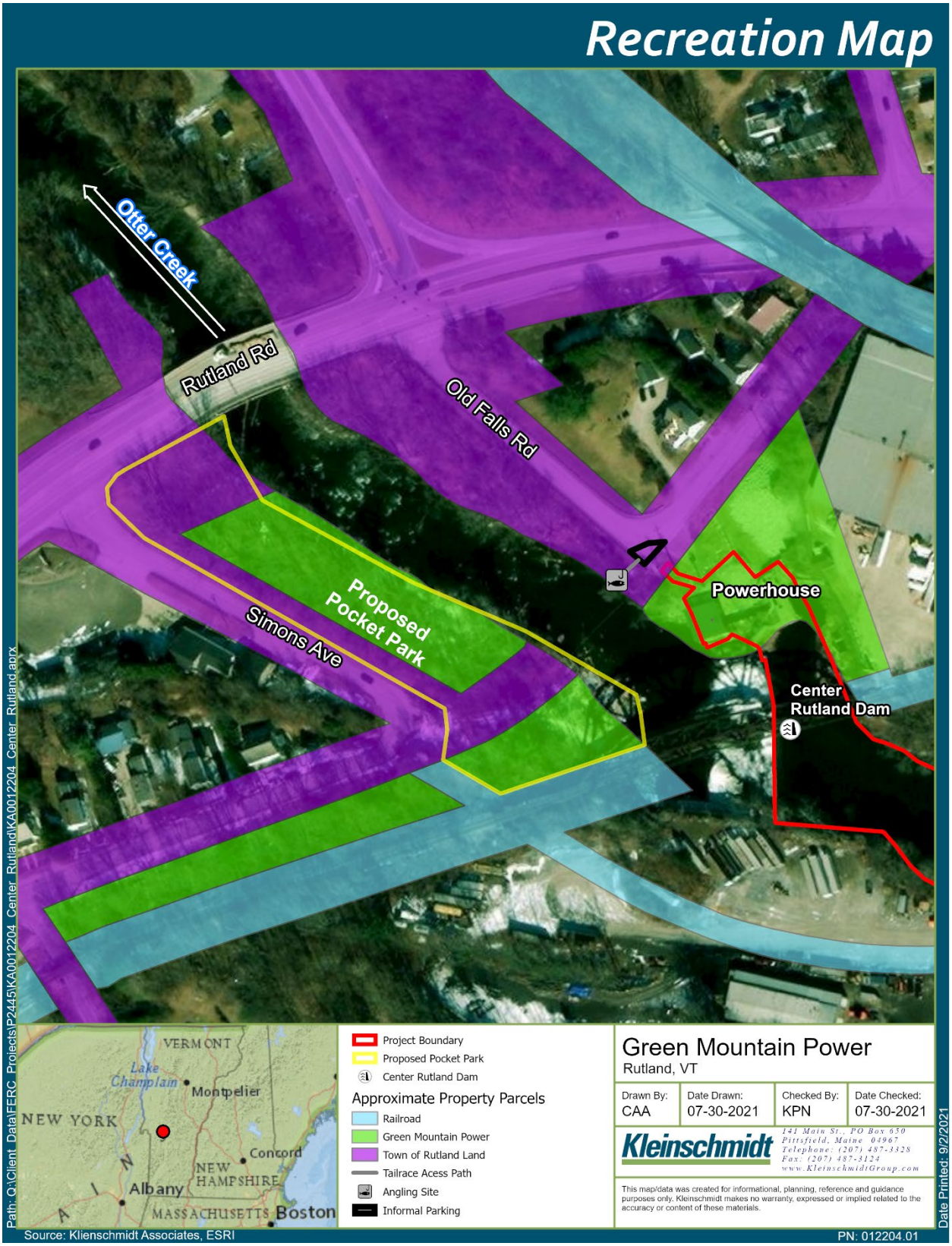
Over the course of 2019 and 2020, the Town of Rutland applied for and obtained a municipal planning grant from the state of Vermont to develop plans for the pocket park. GMP and the Town of Rutland have been in close communication between 2019 – 2021 regarding development of park plans and GMP continues to participate in discussions to assist the town with development of park plans. On July 9, 2020, GMP attended a pocket park site visit hosted by the Rutland Planning Commission. The intent of the site visit was to explore the site and develop ideas for the proposed pocket park. Preliminary designs for the pocket park were a product of this meeting.

Over the course of 2021, the Town of Rutland held two stakeholder conference call meetings to discuss recreation and cultural resource topics with area stakeholders and GMP. A recreation-based stakeholder conference call was held on May 10, 2021 and a cultural resources based conference call was held on September 17, 2021. These stakeholder conference calls were held to further refine ideas for the preliminary park designs. The Town of Rutland is in the process of reviewing ideas presented by area stakeholders and developing next steps needs for further refinement of pocket park designs. GMP will continue to be an active participant with the Town's refinement of the design.

Preliminary pocket park designs presently provide for two parking areas, hand carry boat put-in, walking trails, beach access, an observation area, a picnic area, and historic and informational signage (See Appendix B for preliminary concept). GMP will continue to collaborate with the Town regarding design finalization and with development of a land easement or land transfer agreement for use of GMP lands for an off-license recreation enhancement. GMP additionally commits to collaborating on the development and installation of a cultural heritage information kiosk (storyboard type sign) for the pocket park site.

Provided the Town of Rutland is working through stakeholder comments and inputs on the pocket park designs, will develop a next iteration of designs, develop a land easement or land transfer agreement with GMP for use of GMP lands, gain approval from the local planning board for further pursuit of the project as well as garner pertinent permits, approvals, and likely additional state grant funding, construction of this park is anticipated to likely occur after issuance of a new license for the Center Rutland Project.

Figure 4.8 Center Rutland Recreation Sites



4.10.1.3 Aesthetic Resources

Scenic resources near the Center Rutland Project include mountains, waterfalls, lakes, rivers, streams, wetlands, wilderness areas, forests, and grasslands. The state of Vermont has ten designated scenic byways; three of the byways pass through Rutland County (VDTM 2018). The Crossroad of Vermont Byway spans 50 miles from Hartford to West Rutland, Vermont, and passes by the Center Rutland Project on U.S. Route 4. The byway provides access to cultural attractions, historic villages, the Green Mountain National Forest, and the Killington area (VDTM 2018).

Five covered bridges cross Otter Creek downstream of the Center Rutland Project: The Gorham/Goodnough Bridge in Pittsford; the Depot Bridge in Pittsford; the Hammond Bridge in Pittsford; the Sanderson Bridge in Brandon; and the Pulp Mill Bridge in Middlebury and Weybridge (Visit New England 2018).

4.10.1.3.1 Visual Character of Project Lands and Waters

The Center Rutland Project is located in a suburb area and just south of U.S. Route 4 and Route 4's intersection with State Route 3; heavily travelled roads used for commuting in and out of the Rutland City (VWRB 1995). Limited views of the Center Rutland Project are available from the U.S. Route 4 bridge located approximately 700 feet downstream of the dam. The active Vermont Rail System railroad trestle crosses over the Center Rutland dam in a generally west to east direction.

The Center Rutland dam is situated atop a rock outcropping that was a natural, historic falls known as Mead Falls (or Gookin Falls or Center Rutland Falls) (Photo 4.8). The Center Rutland Project works make up a small footprint around the dam which includes the concrete and stone gravity dam, steel penstock, and the stone and marble masonry powerhouse (Photo 4.9). The Project discharges into a pool located at the base of the natural ledge outcrop (Photo 4.10; Photo 4.11). The northern shore of the impoundment is bordered by trees and commercial development. The southern shore is bordered by trees and an old mill (FERC 1993). The Center Rutland dam and powerhouse are visible from the proposed pocket park area (informally utilized fishing access area) (Photo 4.11).

GMP provides a minimum flow of 80 cfs, or inflow, whichever is less, from June 1st through October 15th as measured in the bypassed reach. Minimum flows are provided over the

spillway as a veiled flow. There are no minimum flow requirements from October 16th – May 31st.

The maximum hydraulic capacity of the plant is 190 cfs. Flows that exceed the turbine's hydraulic capacity and the seasonal minimum flow requirement are spilled over the dam. The minimum hydraulic capacity of the plant is 60 cfs. Plant operation is suspended when inflows are less than 140 cfs from June 1st to October 15th or less than 60 cfs the remainder of the year.

Photo 4.8 Center Rutland Dam and Rail Trestle. Approximately 417 cfs was spilled over the dam at the time of this picture on August 24, 2018; the plant was not in operation at that time and all flows were spilled over the dam.

Photo 4.9 Center Rutland Stone and Marble Masonry Powerhouse & Steel Penstock

Photo 4.10 Center Rutland Dam, Powerhouse, and Tailrace. View looking upstream from Tailrace Access Area.

Photo 4.11 View of Center Rutland Powerhouse and Dam from Proposed Pocket Park Site

GMP's existing minimum flow release of 80 cfs (or inflow, whichever is less) over the dam and into the bypassed reach from June 1st through October 15th was determined based on the results of a flow demonstration study completed by the relicensing stakeholders in the early 1990s. An 80 cfs flow was selected because it was protective of aquatic resources, maintained interconnected aquatic habitat, and provided good aeration to promote water quality. As described in the 2021 Proposed Study Plan, GMP reviewed the previous flow demonstration videos to reassess the existing flow regime for the bypassed reach mindful of both aquatic habitat quality and aesthetic quality. Based on review of the 1992 flow demonstration videos and corresponding study report, GMP is proposing to continue releasing 80 cfs from June 1st to October 15th and to release 40 cfs for the rest of the year. The proposed flow release schedule is expected to maintain deep pool habitat in the bypassed reach throughout the year for fish that may be seeking cover or foraging.

This flow regime proposal also provides for a year-round aesthetic flow (as all minimum flows are passed over the dam).

In accordance with consultation with VANR and USFWS, GMP plans to host a flow demonstration in likely spring 2022 to view the proposed flows, as well as other flows, and consult with VANR and the USFWS on an appropriate flow regime to maintain aquatic habitat as well as aesthetic resources. Provision of a minimum flow throughout the year will enhance aquatic and aesthetic resources during the fall, winter, and spring months by maintaining and oxygenating pool habitat in the reach during periods of non-spill. GMP will provide updates to FERC and consulting parties on continued consultation surrounding minimum flow testing.

4.10.2 Environmental Effects

4.10.2.1 Effects of Proposed Action

GMP is proposing to provide a year-round bypassed reach flow of 80 cfs from June 1st to October 15th and 40 cfs for the remainder of the year. Provision of a minimum flow over the spillway throughout the year is anticipated to enhance recreation and aesthetics at the Project year-round by maintaining a flow over the spillway. The proposed action will maintain stable impoundment levels and river flows which support aesthetics and recreation within the area (boating and angling opportunities). Stable downstream flows are anticipated to ensure sufficient water levels and aquatic habitat year-round to support boating and angling opportunities.

Maintenance activities have the potential to affect recreation and aesthetic resources through impoundment drawdowns or temporary restrictions to public access. Infrequent maintenance activities (e.g., dam or intake repairs) inclusive of impoundment drawdowns beyond normal operating levels may result in short-term impacts on recreation and aesthetics. [14] However, these effects will be minimized by obtaining proper permits and

[14] The Center Rutland Project is hydraulically limited in its ability to actually draw down the impoundment. The Project can only pass water via operating the turbine generator unit (maximum hydraulic capacity of 190 cfs) and via spillage over the dam. With an annual mean flow of 606 cfs (USGS 2021) from 1991 to 2020 at the Center Rutland Project, there are very few instances where GMP would have the ability to draw the impoundment down.

GMP will follow agency recommended drawdown, refill, and timing protocols when necessary.

GMP's off-license collaborative proposal with the Town of Rutland for a pocket park is not expected to have any negative long term environmental effects. Short term effects may include restriction of existing informal recreation access, noise pollution, and temporary impairment to aesthetics during construction of the park. Overall, the proposed park is intended to provide additional and enhanced recreation and aesthetic resources near the Center Rutland Project.

Construction of pocket park features necessitating ground disturbance do have the potential to impact archaeological resources within the area. Although the park is not included within the Center Rutland Project boundary, it is located within the Project APE. The VDHP will continue to be consulted with as the designs for the park are being finalized and when they are final. GMP will work with VDHP to determine if the pocket park area requires additional archaeological review.

4.10.2.2 Proposed Environmental Measures

GMP proposes to develop a FMMP in consultation with VANR DEC and to file it with the Commission within 6-months of receipt of subsequent license. An FMMP will provide a mechanism to protect existing water resources and continue to maintain water quantity and quality conditions through run-of-river operations and thereby benefit recreation and aesthetic resources. GMP proposes to consult with VANR DEC prior to conducting maintenance and repair work that may impact water quality.

4.10.3 Unavoidable Adverse Effects

Continued operation and relicensing of the Center Rutland Project as proposed is not expected to have unavoidable adverse effects on recreation or aesthetic resources.

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4.11 Socioeconomic Resources

4.11.1 Affected Environment

The Center Rutland Project lies in the Town of Rutland in Rutland County Vermont directly outside the City of Rutland. Rutland County has a population of approximately 58,191 people (U.S Census Bureau 2019a). The Town of Rutland encompasses 19.2 square miles and has a population of 4,088 based on 2019 estimates (Census Reporter 2021). Table 4.14 below shows population statistics for the Town of Rutland.

Table 4.14 Population Statistics for Town of Rutland

Description	Measure
Population	
Census 2010 Total Population	4,054
2019 Population Estimate (as of July 1, 2019)	4,088
Median Age (2019)	55
Number of Companies	2,023
Educational Attainment: Percent high school graduate or higher	95.6%
Total housing units	1,981
Median Household Income	$61,025
Foreign Born Population	2.6%
Individuals below poverty level	8.6%
Race and Hispanic Origin	
White alone	94.8%
Black or African American alone	2.1%
American Indian and Alaska Native alone	0.5%
Asian alone	2%
Native Hawaiian and Other Pacific Islander alone	0
Some Other Race alone	0
Two or More Races	0.5%

Source: U.S Census Bureau 2019b; Census Reporter 2021

Household Income and Employment

The U.S. Census Bureau estimates 1,981 households in the Town of Rutland and 25,338 in Rutland County in 2019 with 2.2 and 2.24 persons per household, respectively (U.S. Census Bureau 2019a; 2019b). In Rutland County 95.5 percent of households speak English, compared to the Town of Rutland where 94 percent of households speak English at home.

In the Town of Rutland 95.6 percent of people 25 years old or older have attained high school graduation or higher which is higher than the County's high school graduation attainment of 92.6 percent (U.S. Census Bureau 2019a; 2019b). For the same age group, the Town of Rutland has a 16.9 percent bachelor's degree attainment which is lower than the County's bachelor's degree attainment of 30.8 percent (U.S. Census Bureau 2019a; 2019b).

The median household income in Rutland County was estimated at $56,139 between 2015 and 2019 which is higher than the Town of Rutland's median household income of $53,112 (U.S. Census Bureau 2019a; 2019b). The Percent or persons estimated to be in poverty in the county is estimated to be 10.8 percent while the Town of Rutland is estimated to be approximately 8.6 percent (U.S. Census Bureau 2019a; 2019b; Census Reporter 2021).

Rutland County saw a decline in employment between 2018 and 2019 of about 1 percent moving from 30,200 employees in 2018 to 29,900 employees in 2019 (Data USA 2021). The most common job group in the county are Office & Administrative Support Occupations (3,487 people), Sales & Related Occupations (3,079 people), and Management Occupations (2,726 people) (Data USA 2021). Figure 4.9 illustrates the breakdown of primary occupations Rutland County.

Figure 4.9 Primary Occupations within Rutland County, VT

Source: Data USA 2021

4.11.2 Environmental Effects

4.11.2.1 Effects of Proposed Action

The proposed actions are not expected to affect the socioeconomic state of the Center Rutland Project area. The proposed off license pocket park is expected to provide an additional recreational opportunity within the area and allow for public viewing of the Center Rutland site. While not expected to be a primary tourism draw, this park has the potential to positively impact area tourism and provide visitors with another destination while in the area.

Continued operation of the Center Rutland Project is expected to have a minimal to no impact on area socioeconomics.

4.11.3 Unavoidable Adverse Effects

Continued operation and relicensing of the Center Rutland Project as proposed is not expected to have unavoidable adverse effects on land use and aesthetic resources.

4.11.4 References

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4.12 Cultural and Tribal Resources

4.12.1 Affected Environment

4.12.1.1 Cultural Resources

4.12.1.1.1 General Native American Pre-Contact Context

The history of human occupation in Vermont and the broader New England region is currently understood archaeologically as corresponding to four major periods of time (Haviland and Power 1994). These periods relate to cultural changes that occurred in response to a variety of environmental factors such as those described above, as well as social and political factors, and continue to be further defined as new evidence emerges concerning stylistic and functional changes in the artifacts people left behind as well as their shifting settlement patterns and presence across the landscape. The following outline broadly defines current archaeological understanding of human history in New England up until the contact era when Europeans arrived, and massive cultural shifts occurred across the present day northeastern United States (Haviland and Power 1994; Peterson 1995).

- Paleoindian period, ca. 9000-7000 B.C.
    - Early Paleoindian period, ca. 9000-8300 B.C.
    - Middle Paleoindian period, ca. 8300-8100 B.C.
    - Late Paleoindian period, ca. 8100-7000 B.C.
- Archaic period, ca. 7000-1000 B.C.
    - Early Archaic period, ca. 7000-5500 B.C.
    - Middle Archaic period, ca. 5500-4000 B.C.
    - Late Archaic period, ca. 4000-1000 B.C.
- Woodland period, ca. 1000 B.C.-A.D. 1550
    - Early Woodland period, ca. 1000-100 B.C.
    - Middle Woodland period, ca. 100 B.C.-A.D. 1000
    - Late Woodland period, ca., A.D. 1000-1550
- Contact period, ca. A.D. 1550-1750

People first entered the region during the Paleoindian period (ca. 9000-7000 B.C.), which is further divided into the Early Paleoindian period (ca 9,000-8,300 B.C.), mainly based on a dated sequence of projectile point types. Paleoindian populations are believed to have been small groups of semi-nomadic hunter-gatherers, who were adapted to residence and subsistence in tundra and tundra-woodland environments (NE ARC 2020b).

The transition to a closed forest across most of the region after ca. 8,000-7,000 B.C. roughly corresponded with the beginning of the subsequent Archaic period. Evidence of Archaic period occupations, ca. 7,000-1,000 B.C., is generally more common than that of the Paleoindian period; however, Archaic sites predating 4,000-3,000 B.C. are very rare in the region. Archaic populations are generally considered to have been hunter-gatherer groups who utilized a broad spectrum of resources found in evolving Holocene environments. Settlements were focused along rivers and streams, and a general trend toward larger populations became pronounced. The Archaic period is generally subdivided into three subperiods: Early Archaic, ca. 7,000-5,500 B.C.; Middle Archaic, ca. 5,500-4,000 B.C.; and Late Archaic, ca. 4,000-1,000 B.C. (NE ARC 2020b).

The final major pre-contact period, the Woodland period, is likewise divisible into three subperiods: Early, ca. 1,000-100 B.C.; Middle, ca. 100 B.C.-A.D. 1000; and Late, ca. A.D. 1000-1600. The introduction of ceramics into the Northeast is the primary criterion for the distinction between Archaic and Woodland culture eras (Petersen and Hamilton 1984). Evidence of all three subperiods is present in regional contexts, although the Middle Woodland period is the best understood of these, based primarily on excavations of stratified sites on the Winooski and Missisquoi Rivers (Haviland and Power 1994; Petersen 1980; Petersen and Power 1983).

The early post-contact era of present-day New England is often referred to as the Contact period (ca. A.D. 1600-1750) and refers to the time when Europeans began to migrate into and colonize the region, primarily the French and British. Archaeologically, this period is typified by material culture traits of both Native American and European origin and was a dynamic period wrought with violence and disease that led to the near collapse of traditional Native American lifeways. Within a few generations, Native people were rapidly dispossessed of much of their hunting and farming lands as European settlement increased and communities were destroyed through sweeping European diseases and warfare leading to massive social and political upheaval, including genocide among the Abenaki and Mohican in Vermont. As a result, many Native people were forced

northwards into Quebec, but their cultural ties and connections to the land remain strong. Today, contemporary tribes in Vermont include the Elnu Abenaki, Nulhegan Abenaki, Koasek Traditional Band of the Koas Abenaki Nation, and the Abenaki Nation at Missisquoi, among others (Vermont Commission of Native American Affairs 2021; Nulhegan~Memphremagog 2021).

The Project is located along the Otter Creek, a natural travel corridor and major tributary of Lake Champlain and is situated at the location of a rapids and falls (Mead's Falls) that offers a resource-rich environment, especially good for fishing. Additionally, the falls would have been historically portaged during canoe travel and thus was likely a good stopping-off point and possible campsite.

4.12.1.1.2 Historic Context

European Immigration to the Champlain Valley

Traveling south from Canada, French colonists were the earliest European immigrants to Vermont. The French explorer Samuel de Champlain, for whom Lake Champlain is named, became the first European to visit Vermont in 1609 (Alchin 2017). During Champlain's visit to the region, he encountered many of the Abenaki tribes and established fur trading links. With the arrival of Europeans in the seventeenth century, the Champlain Valley became "a cultural meeting ground where Algonquian and English, Iroquois, and French, contended and interacted" (The Middlebury Site Network No Date). During the later 17th and 18th centuries, hostilities between Europeans and Native Americans increased as competition for the Otter Creek (and other Champlain tributaries) and its resources elevated (The Valley Voice No Date).

History of Rutland

In 1770, the James Mead family became the first permanent family to settle in Rutland (Henry 1988). The family settled about one-half mile west of the Center Rutland falls. Within a few years James Mead built the first mills (both saw and grist) to take advantage of the water power at the falls (which were later named after Mead).

By the 1820s, many Rutland farmers were raising sheep for wool, and between 1830 and 1850 the town had the largest sheep population in the country (Vermont Division for

Historic Preservation 2018). Agriculture remained important in the second half of the 19th century as farmers gradually shifted their emphasis from raising sheep to dairying.

Marble quarrying on a large scale began in the area in the late 1830s and 1840s (Henry 1988). In the 1850s, Rutland became the railroad center of Vermont. Railroad lines from Rutland ran north and south and west and southeast. Arrival of the railroad aided in the growth of the marble industry and by 1870, Rutland was located at the center of the world's largest marble business. After 1880, the marble industry was overwhelmingly dominated by the Vermont Marble Company based out of the Town of Proctor, located just downstream of the Center Rutland Dam (Rutland Historical Society No Date).

History of the Project

After James Mead built the first grist and saw mills at Mead Falls, William and Richard Gookin acquired the land surrounding the falls and proceeded to develop other small water-powered industries, including a fulling mill on the south side of the falls and a paper mill as well as a grist mill on the north side (Henry 1988). Dr. James Porter subsequently acquired part of the Gookin property at the falls. Dr. Porter and William F. Barnes established the first marble mill situated on the north side of the dam near the present-day powerhouse. In about 1850 the first railroad reached Mead Falls (then referred to as Gookin Falls) and crossed the Otter Creek on a multi-span, wood-truss bridge constructed directly over the falls. The introduction of vastly improved transport likely induced Charles Clement and William Gilmore to purchase land on the south side of the river and construct a second marble mill at the falls (Henry 1988).

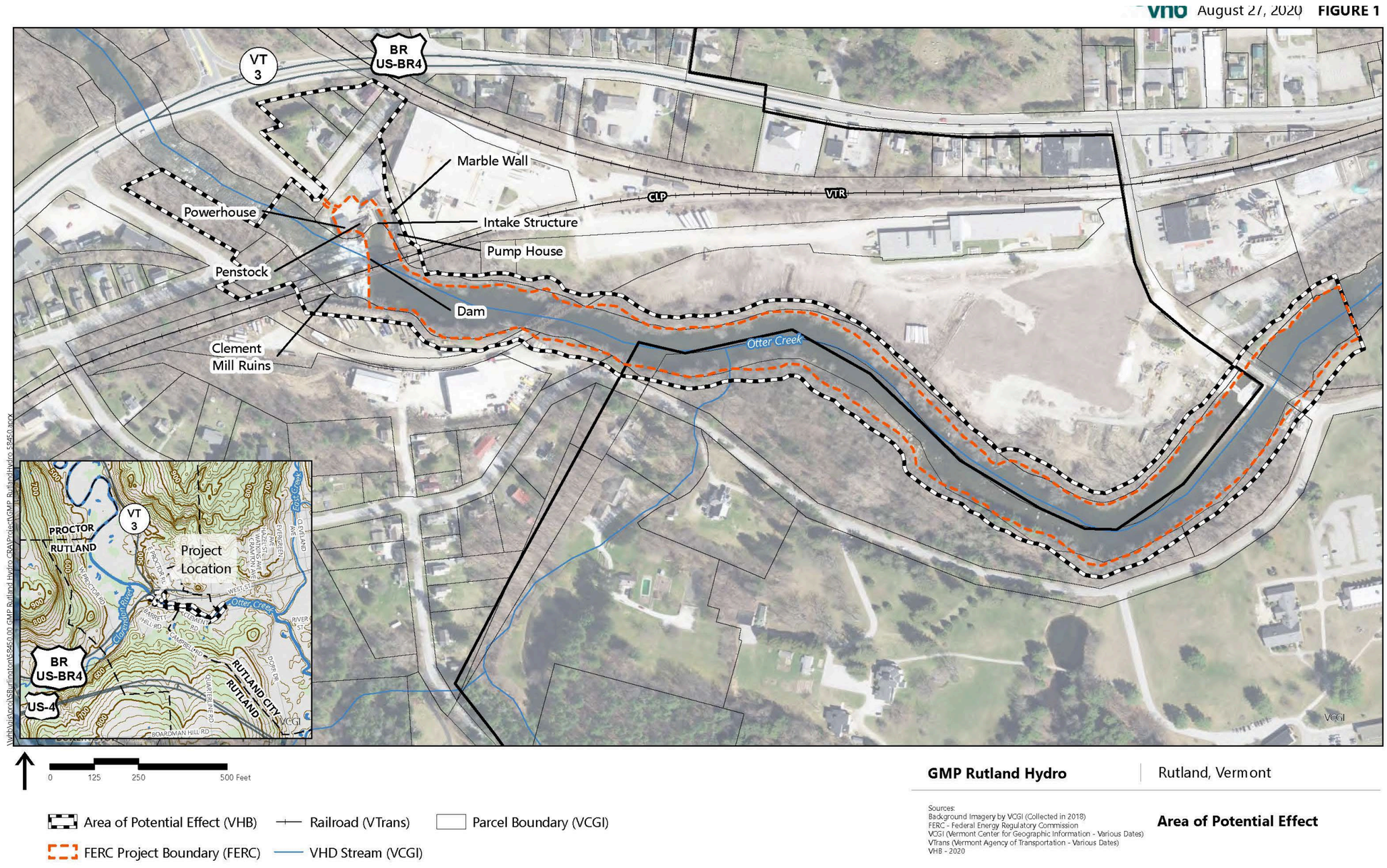
The 1870s brought enormous expansion of the Rutland marble industry accompanied by major corporate consolidation (Henry 1988). The many small firms that had emerged at the middle of the century were rapidly absorbed into an even smaller number of ever larger and more powerful companies. The Clement firm disappeared at beginning of 1877 and was bought by the Rutland Marble Company (Henry 1988). The corporate consolidation of the Rutland marble industry culminated in 1880 with the merging of the Rutland Marble Company and its principal competitor, the Sutherland Falls Marble Company, into Vermont Marble Company with headquarters located at Sutherland Falls in nearby Proctor. Through this merger, the Vermont Marble Company acquired both marble mills, the dam, and the related property at the Center Rutland falls (Henry 1988).

The Project's stone masonry dam was originally constructed by the Clement, Gilmore & Co. marble firm circa 1850 for the first marble mill (Henry 1988). The dam was later rebuilt in 1928. The existing marble block and rubble Project powerhouse was originally built circa 1878 by the Rutland Marble Company for a hydromechanical system. The powerhouse was enlarged circa 1900 by the Vermont Marble Company after a new turbine and penstock had been installed (Henry 1988). The powerhouse building was then reconstructed in 1914 to accommodate the installation of hydroelectric generating equipment. The generating equipment originally installed in 1914 was partly rebuilt in 1940, but retains the original casings and continues to represent early 20th century hydroelectric generating technology (Henry 1988). Project facilities remain virtually intact from 1914 when the Vermont Marble Company initiated electric generation at the site. Furthermore, it retains the layout and engineering design of the predecessor hydromechanical station dating from circa 1898, and incorporates some structural elements of the original development at this hydraulic setting from circa 1878 (Henry 2018).

4.12.1.1.3 Area of Potential Effect

The Center Rutland Project APE was developed in consultation with VDHP. The VDHP approved APE is equal to the Center Rutland Project boundary and/or lands located within 10-meters (32.8 feet) of the edge of the riverbank as measured at normal water surface elevation, whichever is greater of these two areas. The APE does differ from the 10-meter buffer in locations where either GMP's property parcel or other infrastructure associated with the Project may be affected by Project operations and therefore necessitate a larger buffer around the Project area. These areas include portions of two GMP-owned parcels at the northwestern portion of the APE, three houses located across Old Falls Road to the north of the Project, and all infrastructure associated with the Project itself (Figure 4.10). The downstream (northwestern limit) of the APE is the former Route 4 bridge abutment on the north bank of the river, where it is presumed that natural flow of the river is not influenced by the dam or the impoundment. On the south bank of the river, the downstream limit of the APE incorporates a GMP owned parcel where the proposed Town of Rutland pocket park is proposed to occur. The upstream (eastern) limit of the APE is the presumed upstream edge of the impoundment just east of the Ripley Road bridge. In this area, the APE includes a marble retaining wall and the remains of a former powerhouse located on the north bank of the river known as Ripley's Mill.

Figure 4.10 Center Rutland Project Area of Potential Effect



4.12.1.1.4 Prior Cultural Resource Investigations within the Project Area

The entire Center Rutland hydroelectric complex has been previously documented in a National Register of Historic Places registration form for the Center Rutland Hydroelectric Station Historic District (District) (Henry 1988). The nomination was never submitted to the National Register, but was kept on file with at the VDHP. The District encompasses the entirety of the generating station, Mead Falls, and surrounding buildings. The surrounding buildings are other early 20th century buildings and structures relating to the marble industry, and more specifically Vermont Marble Company. These include a massive marble retaining wall that marks the perimeter of the site of a demolished wood-framed marble mill (Photo 4.12) and a 1928 steel railroad bridge with a long Camelback main span that crosses the river at the falls (Photo 4.13) (Henry 1988).

Photo 4.12 Marble Retaining Wall

Photo 4.13 Marble Powerhouse and 1928 Steel Railroad Bridge

The Center Rutland Project holds significance because it encompasses industrial buildings and engineering structures that embody the distinctive characteristics of an early 20th century hydroelectric generating station (including the powerhouse, dam, headworks, and penstock) and a contemporary hydromechanical-powered marble sawing mill (Henry 1988). The station represents the early development of hydroelectric generation by the Vermont Marble Company (the largest marble producer in the world around the turn of the century) for powering its marble quarriers and mills in central Vermont.

In 1990 a Phase 1A archaeological site sensitivity study was conducted by the University of Maine at Farmington Archaeology Research Center (Peterson 1991). The study was conducted to determine areas of potential archaeological significance within the Project and provides general environmental contexts, describes two 19th century mill complexes, and one landform sensitive for early Native American sites that may contain significant archaeological information upstream from the dam. The field inspection concluded that historic disturbance had largely affected potential locations for the presence of archaeological sites of the prehistoric and historic periods, and that run-of-river Project operations do not seem likely to jeopardize potential archaeological site locations in the

foreseeable future (Peterson 1991). In 1991, a limited Phase 1B archaeological site identification study was also conducted by University of Maine at Farmington that includes additional background information and the results of limited Phase 1B-level subsurface testing (Peterson 1992).

4.12.1.2 Recent Cultural Resource Investigations within the Project Area

GMP's consultant, Northeast Archaeology Research Center (NE ARC) completed an updated Archaeological Resource Assessment (ARA) to re-evaluate Center Rutland Project cultural resources within the revised Project APE. NE ARC conducted a field inspection on June 15, 2020 to ground truth a desktop review of the APE. The ARA identified six Archaeologically Sensitive Areas (ASA) within and adjacent to the Project APE. Four ASAs contained portions of previously defined archaeological sites: VT-RU-0265, the 19th century Clement Mills; VT-RU-0267, the 19th century Ripley Mill complex; VT-RU-0674, Revolutionary War era Fort Granger; and VT-RU-0266, the potential Native American expedient lithic quarry. Two ASAs were not associated with any previously identified archaeological sites. Additionally, two ASAs are sensitive for post-contact Euroamerican resources, one is sensitive for pre-contact Native American resources, and three are sensitive for both pre- and post-contact archaeology (NE ARC 2020a). NE ARC's report recommended a Phase I survey for three ASAs determined sensitive for Native American archaeology given their location along alluvial riverside terraces (Appendix B). VDHP concurred with this report and recommendation on October 28, 2020 (Appendix B).

NE ARC completed Phase IB survey work between November 17th – 24th, 2020 which included the excavation of forty-four 0.5 meter by 0.5-meter shovel tests and six larger 0.5 meter by 1.5 meter units within the defined ASAs. Nine pre-contact Native American artifacts and 664 late 19th and early 20th century Euroamerican artifacts were identified within the APE at the previously recorded potential Native American expedient lithic quarry (VT-RU-0266), thus confirming its location. Identified artifacts include quartzite flakes, quartzite cores, and pieces of fire-cracked rock. No other Native American Artifacts were identified in any areas outside of VT-RU-0266. Desktop archival research was also performed to gain context for the early 19th and 20th century artifacts found at VT-RU-0266. Based on this research, VT-RU-0266 appears to be the site of a historic dump.

Historic Euroamerican artifacts were recovered, however, the artifacts are from largely disturbed contexts and were not determined to constitute archeological sites. Euroamerican artifacts found include ceramics, glass, metal, and coal (NE ARC 2021a). Euroamerican artifacts are potentially related to the nearby Clement Wood estate located approximately 50 meters to the south of the Center Rutland Project. The estate was built in the 1850s by Charles Clement, the owner of the nearby Clement Mills (VT-RU-0265). Clement Wood was listed on the NRHP in 1980.

NE ARC's Phase IB Survey Report (Appendix B – Privileged Information) recommended a Phase II evaluation for VT-RU-0266 which is identified as threatened by erosion and extends within the Project APE. The Phase II is recommended to determine the site's eligibility for inclusion in the NRHP, as well as provide information necessary for both short and long-term management of archaeological resources, as appropriate. No additional archaeological field work was recommended for areas outside of VT-RU-0266, however it is recommended that any future Project-related activities that might result in ground surface disturbance should be evaluated prior to construction to ensure no significant historic resources will be affected. In such circumstances, Phase II evaluation is recommended for the Vermont Marble Works at Fort Granger (VT-RU-0674), the Ripley Mills (VT-RU-0267), and the Clement Mills (VT-RU-0265) in order to determine if the sites meet eligibility criteria for inclusion in the NRHP and thus represent historic properties. VDHP concurred with this Phase IB Report and follow-on recommendations on March 3, 2021.

A Phase II Evaluation was completed during the 2021 field season in the Native American expedient lithic quarry area known as VT-RU-0266. The goal of the Phase II Evaluation is to determine the eligibility of site VT-RU-0266 for inclusion in the State and National Registers of Historic Places. Additionally, this evaluation intends to determine potential project effects to the site and provide information for the long- and short-term management of the archaeological resources as appropriate. A Phase II End of Field Report for VT-RU-0266 was filed on November 19, 2021 for VDHP review (Appendix B – Privileged Information). NE ARC is presently finalizing the Phase II Technical Report and anticipates that this report will be submitted to the VDHP during the first quarter of 2022.

GMPs consultant, VHB, submitted documentation of the Center Rutland Hydroelectric facility (Vermont Architectural Resource Inventory form) and a recommended determination of National Register Eligibility to VDHP on May 6, 2021. VDHP provided

verbal comments on the Center Rutland Historic District documentation on June 11, 2021 and VHB submitted a revised Vermont Architectural Resource Inventory Survey Form and Documentation on September 3, 2021. On November 19, 2021, a second revised iteration of the Vermont Architectural Resource Inventory Survey Form and Documentation inclusive of a revised historic district boundary for the Center Rutland Hydro Historic District was submitted per request from the VDHP. On December 17, 2021, GMP received VDHP's concurrence with the revised Vermont Architectural Resource Inventory Survey Form including concurrence with the Archaeology Phase IB Report.

GMP's consultant, VHB, is finalizing the Section 106 memo in accordance with Phase II Technical Report details and plans to provide the VDHP with the Section 106 memo during the first quarter of 2022. The Section 106 memo will evaluate the effects of the general operation of the Center Rutland Project on historic resources. This effects evaluation will touch on the current status of proposed pocket park plans that are being discussed with in consultation with VDHP.

4.12.1.3 Tribal Resources

4.12.1.3.1 Tribal Lands and Interests

The Project vicinity has been documented as being historically inhabited by the Abenaki Tribe and potentially the Mohawk. There are no American Indian lands, known traditional cultural or religious properties identified within the Project boundary (State of Vermont 2018).

The Project occupies a limited and developed reach of Otter Creek and is operated in run-of-river mode, which closely matches the natural hydrologic regime of the Creek.

4.12.1.3.2 Identification and Consultation with Tribes

There are no federally recognized Indian tribes in Vermont, but the State of Vermont recognizes four tribes all of Abenaki heritage: Abenaki Nation at Missisquoi, the Elnu Abenaki Tribe, the Koasek Traditional Band of the Koas Abenaki Nation, and the Nulhegan Abenaki Tribe (National Conference of State Legislatures 2018; State of Vermont 2018).

Although there are no federally recognized tribes or tribal lands in the State of Vermont, some tribes, including the Abenaki and Iroquois, may have a historic interest in the Project relicensing (NCSL 2018).

By letter dated December 20, 2017, FERC invited the Saint Regis Mohawk Tribe to participate in the relicensing process (Appendix B). No response from the St. Regis Tribe has been filed in FERC's administrative record.

GMP received feedback through personal communication from Chief Don Stevens of the Nulhegan Band of the Coosuk – Abenaki Nation dated March 5, 2019 (Appendix B). Chief Stevens expressed interest in establishing an agreement with GMP for protection of access and gathering rights on GMP property surrounding the Center Rutland Project. Chief Stevens has been included in Project consultation and participated in the Town of Rutland cultural resources stakeholder meeting intended to review and gain additional ideas and information for the purpose of finalizing pocket park designs. GMP will continue consulting with Chief Stevens.

Per recommendation from VDHP comment letter dated May 20, 2019, GMP separately contacted the Stockbridge Munsee Band of the Mohicans on July 24, 2019, to inform them about the relicensing of the Center Rutland Project. Bonney Hartley, THPO of the Stockbridge Munsee Mohican Tribal Historic Reservation, responded on July 25, 2019, stating that the Tribe does not anticipate concerns related to cultural resource because no ground disturbance was proposed at the time (Appendix B). GMP updated the Stockbridge Munsee Band of the Mohicans of proposed pocket park designs and invited the THPO to the Town of Rutland's September 17, 2021 cultural resource stakeholder conference call meeting for the pocket park. The Stockbridge-Munsee Mohican Tribe were invited to this meeting after they had expressed interest in and provided initial questions on the park project but were unable to attend.

Provided that development of the Town of Rutland pocket park is likely to have some ground disturbance associated with construction activities (e.g., digging of post holes for informational signs, post holes for potential stairway supports, etc.), GMP proposes to continue ensuring that consultation with the Stockbridge Munsee Band of the Mohicans and Chief Don Stevens of the Abenaki Nation on site designs occurs.

4.12.2 Environmental Effects

4.12.2.1 Effects of Proposed Action

Although there are a number of significant cultural sites at or near the Center Rutland Project, the proposed action (i.e., run-of-river operations that provide stable

impoundment elevations and river flows) is anticipated to have limited effect on cultural resources. Infrequent maintenance activities (e.g., dam or intake repairs), inclusive of impoundment drawdowns beyond normal operating levels, may result in short-term modifications to impoundment levels or stream flows and have the potential to impact cultural resources.[15] However, these maintenance activities are limited in occurrence and scale and GMP will consult with VDHP prior to the conduct of such activities to minimize potential effects on cultural resources.

Additionally, construction of pocket park features necessitating ground disturbance do have the potential to impact archaeological resources within the area. Although the park is not included within the Center Rutland Project boundary and is being developed as an off-license measure, it is located within the Project APE. The VDHP, Abenaki Nation, and the Stockbridge Munsee Band of the Mohicans will continue to be consulted with as the designs for the park are being finalized and when they are final. GMP will work with VDHP, Abenaki Nation, and the Stockbridge Munsee Band of the Mohicans to determine if the pocket park area requires additional archaeological review.

4.12.2.2 Proposed Environmental Measures

To avoid negatively affecting cultural resources and allow for continued preservation of these resources, GMP proposes to execute a Programmatic Agreement and develop a HPMP in consultation with VDHP. The HPMP will be filed with the Commission within 1 year of receipt of subsequent license. GMP plans to include consultation with the Abenaki Nation and the Stockbridge Munsee Band of the Mohicans prior to any ground disturbing activities within the HPMP. GMP additionally anticipates that the HPMP will incorporate protection measures surrounding future construction of the off-license Town of Rutland pocket park located within the Project APE.

GMP's proposal to develop a FMMP will additionally provide a mechanism to ensure maintenance of a stable impoundment elevation and to minimize potential effects relating to erosion along the Center Rutland Project shoreline.

[15] The Center Rutland Project is hydraulically limited in its ability to actually draw down the impoundment. The Project can only pass water via operating the turbine generator unit (maximum hydraulic capacity of 190 cfs) and via spillage over the dam. With an annual mean flow of 606 cfs (USGS 2021) from 1991 to 2020 at the Center Rutland Project, there are very few instances where GMP would have the ability to draw the impoundment down.

4.12.3 Unavoidable Adverse Effects

Continued operation and relicensing of the Center Rutland Project as proposed is not expected to have unavoidable adverse effects on cultural or tribal resources.

4.12.4 References

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Hydroelectric Project (FERC No. 2445), Rutland County, Vermont. Scope-of-Work. March 31, 2021

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5.0 CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA, 16 U.S.C. Section 803 (a)(2)(A), requires FERC to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the Project. On April 27, 1988, FERC issued Order No. 481-A, revising Order No. 481, issued October 26, 1987, establishing that FERC will accord FPA Section 10(a)(2)(A) comprehensive plan status to any federal or state plan that: (1) is a comprehensive study of one or more of the beneficial uses of a waterway or waterways; (2) specifies the standards, the data, and the methodology used; and (3) is filed with the Secretary of FERC.

FERC currently lists 46 comprehensive plans for the state of Vermont (FERC 2020). Of these listed plans, 21 are potentially relevant to the Center Rutland Project, as listed in Table 5.1.

Table 5.1 List of Qualifying Federal and State or Tribal Comprehensive Waterway Plans Potentially Relevant to the Center Rutland Project

Resource	Comprehensive Plan
Hydropower	Vermont Agency of Natural Resources. 1988. Hydropower in Vermont: an assessment of environmental problems and opportunities. Waterbury, Vermont. May 1988.
Water Resources	National Park Service. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. 1993.
	Vermont Agency of Environmental Conservation. 1986. Vermont Rivers Study. Waterbury, Vermont.
	Vermont Agency of Natural Resources. 1986. The waterfalls, cascades, and gorges of Vermont. Waterbury, Vermont. May 1986.
	Vermont Agency of Natural Resources. 2019. Otter Creek Tactical Basin Plan. Montpelier, Vermont. December 2019.
Fisheries	Fisheries Technical Committee. 2009. Strategic plan for Lake Champlain Fisheries. Lake Champlain Fish and Wildlife Management Cooperative. U.S. Fish and Wildlife Service. Essex Junction, Vermont. July 2009.
	U.S. Fish and Wildlife Service. n.d. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

Resource	Comprehensive Plan
	Vermont Agency of Natural Resources. 1990. Vermont's lake trout management plan for inland waters. Waterbury, Vermont. May 1990. St. Johnsbury, Vermont. July 1990.
	Vermont Department of Fish and Wildlife. 2018. The Vermont plan for Brook, Brown, and Rainbow Trout. Montpelier, Vermont. January 2018.
	Vermont Fish and Wildlife Department. 2017. Statewide Management Plan for Largemouth and Smallmouth Bass. Montpelier, Vermont. August 2017.
Wildlife	Vermont Agency of Natural Resources. 2015. Vermont's Wildlife Action Plan. Montpelier, Vermont. February 2016.
	Vermont Natural Heritage Program. New Hampshire Natural Heritage Inventory. 1988. Natural shores of the Connecticut River: Windham County, Vermont, and Cheshire County, New Hampshire. December 1988.
Recreation	Vermont Agency of Natural Resources. 1988. Wetlands component of the 1988 Vermont recreation plan. Waterbury, Vermont. July 1988.
	Vermont Department of Forests, Parks and Recreation. 2013. Vermont State Comprehensive Outdoor Recreation Plan (SCORP): 2014-2018. Montpelier, Vermont. August 2013.

Source: FERC 2020

The Center Rutland Project conforms with the listed comprehensive management plans for Vermont waters. As a small run-of-river Project, and as this document has laid out, there are minimal environmental effects associated with continued operations. GMP utilizes all options available to mitigate potential impacts and follows necessary protocols and permitting needs for any maintenance or out of the norm operations.

5.1 Relevant Resource Management Plans

In addition to the qualifying comprehensive plans listed above, the local municipality has developed resource management plans to help guide their actions regarding specific resources of jurisdiction. The resource management plan listed below may be relevant to the Center Rutland Project and may be useful in the relicensing proceeding for characterizing desired conditions:

- Town of Rutland Municipal Plan. 2019. Adopted October 15, 2019.

Based on a review of the available plans, GMP determined that current and proposed operations of Center Rutland Project facilities are consistent with these plans.

5.2 References

Federal Energy Regulatory Commission (FERC) . 2020. List of Comprehensive Plans. Available Online : *https://ferc.gov/sites/default/files/2020-07/ListofComprehensivePlans.pdf*. Accessed 7/27/2021

Town of Rutland. 2019. Town of Rutland Municipal Plan. Available Online: *https://www.rutlandrpc.org/_download.php?id=124&mode=towns_ddown&name=Rutland_Town_Plan_Adopted_Nov_29_2016.pdf*. Accessed 7/27/2021

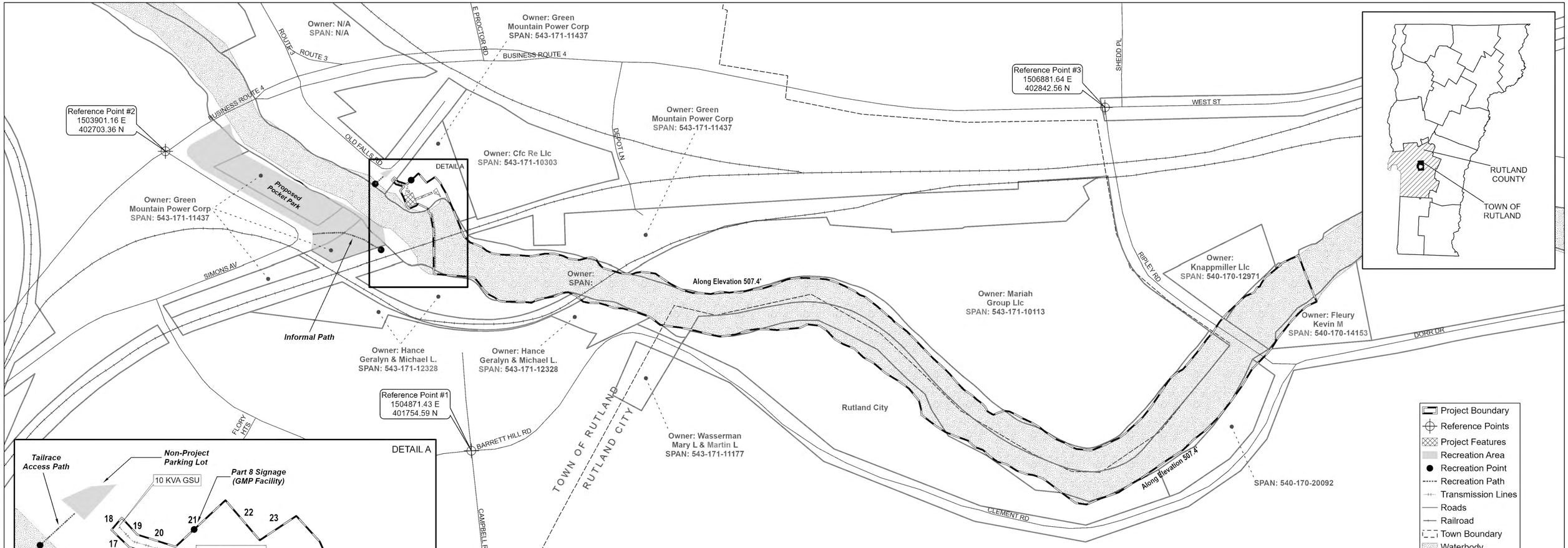
ATTACHMENT D

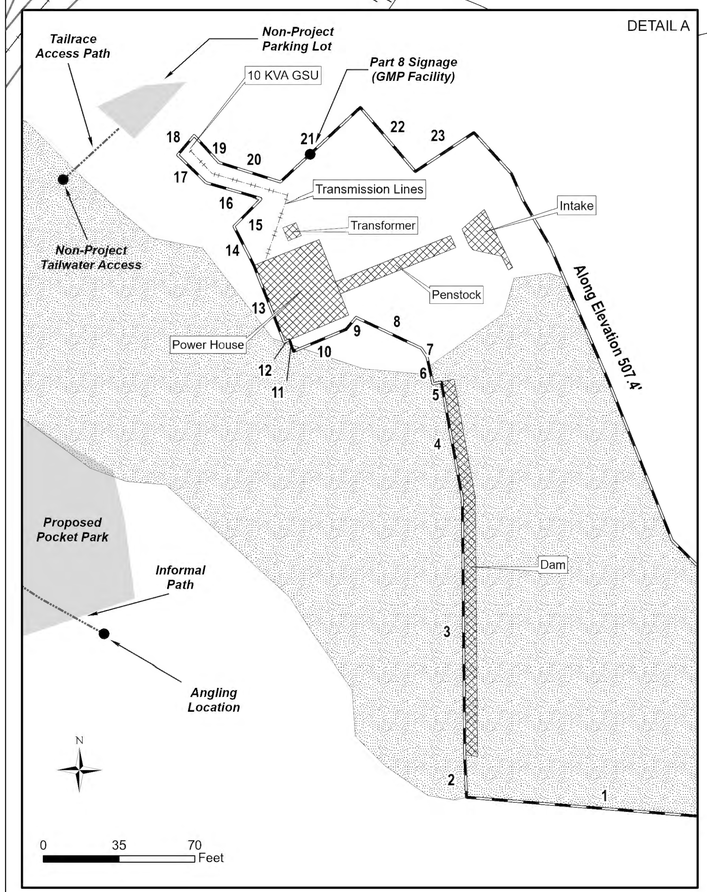
REVISED EXHIBIT F AND UPDATED STABILITY ANALYSIS CALCULATION PACKAGE

This Material is Critical Energy Infrastructure Information (CEII).
Members of the Public may Obtain Nonpublic or Privileged Information by Submitting a Freedom of Information Act (FOIA) Request.

ATTACHMENT E

REVISED EXHIBIT G





Course	Direction	Distance (ft)
1	N85° 19' 11"W	127.2
2	N2° 29' 41"W	19.7
3	N0° 31' 27"W	117.8
4	N10° 15' 36"W	54.7
5	S77° 25' 14"W	3.9
6	N12° 31' 44"W	12.8
7	N33° 41' 24"W	4.8
8	N64° 39' 51"W	33.3
9	S40° 1' 49"W	7.2
10	S67° 13' 47"W	26.3
11	N19° 34' 54"W	5.6
12	S67° 15' 21"W	2.6
13	N21° 37' 30"W	38.1
14	N27° 1' 41"W	20.2
15	N44° 41' 30"E	17.6
16	N73° 57' 4"W	26.3
17	N45° 45' 50"W	18.4
18	N40° 14' 11"E	11.8
19	S42° 30' 37"E	16.9
20	S72° 24' 27"E	29.8
21	N47° 3' 5"E	50.5
22	S40° 36' 5"E	39.0
23	N56° 24' 48"E	32.5

SURVEYORS STATEMENT

I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FORTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON THE BEST AVAILABLE HISTORICAL DRAWINGS AND DIGITAL REFERENCE SOURCES INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS.

STATE OF MAINE
STEPHEN W. EVERETT 2161
PROFESSIONAL LAND SURVEYOR

14° 28' 10" W
December 5, 2012

MAP NOTES:
1) HIGH-RESOLUTION ELEVATION DATA WERE NOT AVAILABLE AT TIME OF EXHIBIT DEVELOPMENT, THEREFORE PROJECT BOUNDARY (NORMAL WATER SURFACE) IS ASSUMED TO BE CONSISTENT WITH NORMAL WATER LEVELS. THE BOUNDARY DEPICTED WAS DIGITIZED FROM 0.15 M AERIAL PHOTOGRAPHY DATED DECEMBER 3, 2001 FOR RUTLAND CITY (VCGI) AND BING MAPS AERIAL PHOTOGRAPHY FOR TOWN OF RUTLAND (ESRI). THESE DATASETS ARE BETTER REPRESENTATIONS OF NORMAL WATER SURFACE THAN CURRENTLY AVAILABLE ELEVATION DATASETS.
2) WATERBODY IS NATIONAL HYDROGRAPHY DATASET (NHD) OBTAINED FROM U.S. GEOLOGICAL SURVEY IN COOPERATION WITH U.S. ENVIRONMENTAL PROTECTION AGENCY. THE NHD SHOULD BE USED FOR ORIENTATION & REFERENCE PURPOSES ONLY.
3) ELEVATIONS SHOWN ARE REFERENCED TO NGVD 29, WHERE MSL = NGVD 29
HORIZONTAL COORDINATE SYSTEM IS NORTH AMERICAN DATUM OF 1983 STATE PLANE VT FEET.
4) ROADS AND RAILROADS OBTAINED FROM VCGI.
5) ALL LANDS AND WATERS WITHIN THE PROJECT BOUNDARY ARE IN RUTLAND COUNTY, VERMONT.

EXHIBIT G

CENTER RUTLAND HYDROELECTRIC PROJECT

PROJECT BOUNDARY MAP

GREEN MOUNTAIN POWER CORPORATION

1:1,800

0 75 150 300 Feet

ATTACHMENT F

AGENCY CONSULTATION

Re: 2021 Study on the Otter Creek

Jessica Antonez <Jessica.Antonez@Kleinschmidtgroup.com>
Mon 5/9/2022 1:03 PM
To: Good, Shawn <Shawn.Good@vermont.gov>

Hi Shawn,

Thanks so much for your quick response. I appreciate it!

Jessica

Jessica Antonez
Associate Licensing Coordinator
Kleinschmidt
Office: 207-416-1214
www.kleinschmidtgroup.com

From: Good, Shawn <Shawn.Good@vermont.gov>
Sent: Monday, May 9, 2022 11:56 AM
To: Jessica Antonez <Jessica.Antonez@Kleinschmidtgroup.com>
Subject: RE: 2021 Study on the Otter Creek

HI Jessica – that electrofishing survey to characterize the fish community below the Center Rutland falls on Otter Creek did not happen due to lack of staffing.

Shawn

VERMONT

Shawn Good, M.Sc. | Fisheries Scientist IV
Vermont Fish & Wildlife Department
271 North Main St., Suite 215 | Rutland, VT 05701-2423
802-786-3863; shawn.good@vermont.gov
www.vtfishandwildlife.com

From: ANR - FW Information <ANR.FWInformation@vermont.gov>
Sent: Monday, May 9, 2022 9:53 AM
To: Good, Shawn <Shawn.Good@vermont.gov>
Subject: FW: 2021 Study on the Otter Creek

From: Jessica Antonez <Jessica.Antonez@Kleinschmidtgroup.com>
Sent: Monday, May 9, 2022 9:50 AM
To: ANR - FW Information <ANR.FWInformation@vermont.gov>
Subject: 2021 Study on the Otter Creek

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Hello,

I am working on the relicensing of the Center Rutland Hydroelectric Project with Green Mountain Power, and had a question about a potential fish survey that was going to occur in 2021. The last information that we have regarding this was that the Vermont Fish and Wildlife Department was planning to conduct a fish survey immediately downstream of the project in 2021. I am looking to confirm if this study occurred, and if it did, did not know if I could see a copy of the study results. Please let me know if you need any further information.

Thanks so much for your help!
Jessica

Sent from Mail for Windows

October 3, 2022

VIA ELECTRONIC FILING

Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Mail Code DLC, HL-11.2
888 First Street, NE Room 1A
Washington, DC 20426

Center Rutland Hydroelectric Project (FERC No. 2445-028)
Additional Information Request Response

Dear Secretary Bose:

On December 23, 2021, Green Mountain Power (GMP) filed a Final License Application for the relicensing of the Center Rutland Project, FERC No. 2445 (Project). On February 18, 2022, the Federal Energy Regulatory Commission (FERC or Commission) issued an Additional Information Request (AIR) pertaining to the license application. On September 2, 2022, FERC issued a second AIR. The FERC AIR requests additional information associated with studies at the Project, Exhibit E, and Exhibit G.

Attached for the Commission's review, please find:

- Attachment A – Additional Information Request Responses
- Attachment B – 1992 Aesthetics Flow Study Memo
- Attachment C – Additional Background Information on Project Recreation Plan
- Attachment D – Survey and Parcel Data
- Attachment E – Preliminary Pocket Park Design Map

Should you have any questions regarding this filing, please contact me at (207) 416-1214 or at Jessica.Antonez@KleinschmidtGroup.com or John Greenan at john.greenan@greenmountainpower.com or at 802-770-2195.

Sincerely,

KLEINSCHMIDT ASSOCIATES

Jessica Antonez

Jessica Antonez
Associate Licensing Coordinator

ATTACHMENT A

ADDITIONAL INFORMATION REQUEST RESPONSES

FERC AIR Responses

On September 2, 2022, the Federal Energy Regulatory Division (FERC or Commission) Division of Hydropower Licensing commented on the Center Rutland Final License Application[1] requesting additional Information. Please find responses to specific information needs included below.

1. **Commission staff's February 18 letter (Schedule B, Item 6) requested that GMP file a schedule for providing the results of a flow demonstration study that GMP had scheduled for early 2022. In its May 20 response, GMP stated that it intended to conduct the study in May or June of 2022, and would file the results of the study and any updates to its proposed minimum bypassed reach flows with the study. GMP did not state when it would file the results of the study or any updates to its proposed minimum flows. Please file the study report and any updates to the proposed minimum flows.**

Due to extreme low flow conditions, GMP was not able to complete a flow demonstration study in the 2022 field season. GMP will continue to work with stakeholders and resource agencies to complete the study to develop and propose a minimum flow regime for the Project. GMP maintains its licensing proposal to continue providing existing minimum flows but will work with the Vermont Agency of Natural Resources to incorporate an updated proposed minimum flow in the Water Quality Certificate, as appropriate.

2. **Section 4.6.1.1 of Exhibit E of the license application references a flow demonstration study that was conducted in 1992. Please file any available information on this 1992 study, including the study report.**

Flow demonstration study site meeting minutes (conducted in 1992), referenced in Section 4.6.1.1 of Exhibit E are included in Attachment B of this filing.

3. **Commission staff's February 18 letter requested revisions to Exhibit G (Schedule A, Item 3) and Exhibit E (Schedule B, Item 9) to document and describe the project's current recreation facilities, including the parking area, signage, landscaping, footpath to the river, and picnic area required by the current license.[2]**

[1] The Center Rutland FLA was Filed with the Commission on December 23, 2021 and can be accessed via eLibrary at: https://elibrary.ferc.gov/eLibrary/docinfo?accession_number=20211223-5017

[2] Article 407 of the 1993 license required the development of a recreation plan that included provisions for installing an off-street parking area, signage, landscaping, and a marked footpath to the river, to be located on land owned by the licensee on the south bank of the river downstream of the project's dam. Omya, Inc.,

In its May 20 response, GMP revised the Exhibit G to label a non-project parking lot and access path on the north bank of the river, downstream of the powerhouse and outside of the project boundary. GMP states that the sites on the north bank of the river are not project recreation facilities.

GMP states that the recreation facilities required by the current license on the south bank of the river were never developed due to landowner issues. GMP states that it is currently proposing to work with the Town of Rutland, Vermont to enhance recreation access through the development of a "pocket park" on the south bank of the river, downstream of the dam. GMP states that the pocket park would include two parking areas, a hand-carry boat put-in, walking trails, beach access, an observation area, a picnic area, and historic and informational signage. However, section 4.10.1.2.3 of Exhibit E states that the pocket park would be outside of the project boundary, would be managed by the Town of Rutland, and would not be a project recreation facility. In section 3.2 of Exhibit E, GMP states that it intends to transfer land owned by GMP to the Town of Rutland to develop the non-project park. To assist Commission staff with its assessment of this proposal, please provide the following information:

a. Regarding the statement that the recreation facilities required by the current license were not developed due to landowner issues, the current license required the development of the project recreation facilities on land already owned by the licensee on the south bank of the river downstream of the project's dam, which appears to be the same land that GMP is now proposing to transfer to the Town of Rutland. Please describe any past, present, or future landowner issues associated with the development of the project recreation facilities required by the current license. In addition, please provide any surveys for land owned by GMP on the south bank of the river downstream of the project's dam.

The FERC issued license for the Center Rutland Hydroelectric Project was transferred to GMP on September 13, 2012. On July 29, 2002, the former licensee filed a Recreation Plan pursuant to article 407 of the Project license and was modified and approved by FERC on April 15, 2004. The former licensee filed an additional request to amend the recreation plan on June 21, 2006. In this request, the licensee notified the Commission that it had, "not been able to acquire land from the Town of Rutland that is necessary for the kiosk and viewing platform."

62 FERC ¶ 62,224 (1993). The Commission approved the licensee's proposed recreation plan on April 15, 2004. Omya, Inc., 107 FERC ¶ 62,042 (2004). The Commission granted the licensee's request to amend the recreation plan on April 10, 2007. The amended recreation plan includes the facilities required by the 1993 license and a picnic area. Omya, Inc., 119 FERC ¶ 62,021 (2007).

Attachment C of this filing provides a summary of the background information on the project recreation plan.

Based on existing facilities and GMP's understanding of the history of the Project, no recreation facilities were developed on the south side of the river, but instead informal recreation facilities were developed on the north side as described in GMP's last AIR response, dated May 20, 2022. GMP owns the parcels as identified in Exhibit G and in the tax map included in Attachment D of this filing. This includes the lands on the south side of the river below the project, which is not part of the project boundary and not necessary for project purposes. This parcel on the south side of the river, although adjacent to the river, is land locked by the town of Rutland and was not further pursued for the originally proposed recreation facilities identified in the 2002 Recreation plan. Thus, the former licensee eliminated some of the facilities proposed in the original recreation plan based on the inability to get approval by the town of Rutland.

The town of Rutland has since changed directions and is in the process of developing the proposed pocket park initiative, which would be located on the town of Rutland property and the GMP parcel located on the south side of the river. GMP's intent is to transfer ownership of the south side of the river parcel in support of the town's proposed development of the park and is not associated with the project but is intended to support the town initiative to enhance regional recreation.

GMP also notes that Section 3.2 of the license application specifically identified transfer of this land, which is outside the project boundary, as an off-license agreement with the town of Rutland. Attachment D provides survey data for the proposed pocket park and parcel data for the area surrounding the Project. For Project purposes, lot 22-50-16 is necessary for Project operations and is within the project boundary.

b. Figure 4.8 of Exhibit E includes a rough outline of the pocket park, showing that it would include property currently owned by GMP and the Town of Rutland. Please provide the following information regarding the recreation facilities:

i. describe any differences between the types of facilities that would be installed at the pocket park on land owned by GMP and the project recreation facilities required by the current license; and

ii. please explain the basis for GMP's proposal to not include the project recreation facilities in any subsequent license, but to assist with the installation of similar non-project recreation facilities at the pocket park.

Article 407 of the current project license states that "Within one year from the effective date of this license, the Licensee shall develop and file, for Commission approval, a recreation plan for providing formal access to the project tailwaters. The plan must include provisions for and drawings of a small off-street parking area (with 3 to 5 car spaces), signage, landscaping, and a marked footpath to the river. In locating a site for these enhancement measures, the Licensee shall consider using the land parcel that the Licensee owns downstream of the Center Rutland Project located on the south bank. Also, as part of the plan, the Licensee shall explore the feasibility of providing a canoe portage route along the south bank."

As is discussed above, the project recreation facilities were not developed due to landowner issues, and that informal recreation facilities were developed on the north side of the river instead. The town of Rutland proposes to construct, on lands owned by GMP, a gravel or wood chip path, a warning/info board for safety alerts including those for combined sewer overflow, and proposed stairs to the water for fishing enthusiasts. All of the other features of the pocket park are currently proposed to be developed on land owned by the Town of Rutland. Attachment E provides the town of Rutland's preliminary design of proposed features of the pocket park.

GMP is not proposing for these features to be included in the subsequent license as project recreation facilities because these features are proposed to be developed, constructed and maintained by the Town of Rutland. The current plans for developing the pocket park on the south side of the river on currently owned GMP lands, which are outside of the project boundary as it is not necessary for project purposes, and the proposed development of the pocket park is a town initiative. GMP's intent to transfer ownership of that parcel is to support the town's proposed development of the park and is not associated with the project but is intended to support the town initiative to enhance regional recreation.

c. Based on the outline of the pocket park in figure 4.8 of Exhibit E, please provide the following information regarding the potential effects of the pocket park on terrestrial resources:

i. an estimate (in acres or square feet) of the total area of ground disturbance that would be needed to construct the facilities in the pocket park; and

ii. an estimate (in acres or square feet) of the total area of vegetation clearing that would be needed to construct and operate the facilities in the pocket park.

The proposed pocket park is being designed developed by the Town of Rutland. GMP is voluntarily involved in the process to support regional recreation opportunities, but is not actively working on the planning of the project facilities. GMP's involvement in the process would be limited to providing access to the parcel on the south side of the river either through easement on the project property or through the transfer of ownership of the parcels that the Town of Rutland is proposing to have pocket park features located on. This parcel is not necessary for operations of the Center Rutland Hydroelectric Project.

GMP is not leading the town's planning process but generally is involved in the project as a limited stakeholder. GMP would not be involved in actively managing the pocket park once it is developed. The Town of Rutland is leading the design, development, construction, and management of the pocket park project. GMP has participated as a stakeholder in the project process but is not aware of estimates of area that will be disturbed or the area necessary for vegetation clearing. Therefore, GMP cannot provide an estimate of total ground disturbance necessary for these facilities or an estimate of the area needed for vegetation clearing.

d. Section 1.3.2 of Exhibit E states that GMP is finalizing a memorandum that will include an evaluation of effects on historic resources associated with the project's operation and the development of the pocket park. GMP states that the memorandum is being prepared for the Vermont State Historic Preservation Officer (SHPO) pursuant to section 106 of the National Historic Preservation Act, and in accordance with a Phase II Archaeological Assessment prepared by GMP. On July 7, 2022, the Vermont Division for Historic Preservation, acting in its capacity as the Vermont SHPO, filed comments stating that GMP has not provided the SHPO with the final section 106 report and an evaluation of effects on historic properties. Please file with the Commission the final Phase II Archaeological Assessment and the section 106 memorandum discussed in section 1.3.2, and submit the documents to the Vermont SHPO if you have not already done so. If the Vermont SHPO has provided comments to GMP regarding the effects of the proposed project or the pocket park on historic properties, and those comments have not already been filed with the Commission, please file the comments.

d. GMP has filed the Phase II Archaeological Assessment with the Vermont Division of Historic Preservation. GMP has not yet received comments regarding the effects of the project or the proposed pocket park on historic properties. The proposed location of the pocket park is included in the Area of Potential Effect for historic resources for the property, but is not within the FERC project boundary. GMP will file comments with FERC once they have been received. GMP notes that the parcel where the proposed park is located is outside of the project boundary as it is not necessary for project purposes, and transfer of ownership of that parcel is intended to support the town initiative to enhance regional recreation.

ATTACHMENT B

1992 AESTHETICS FLOW STUDY MEMO

VERMONT MARBLE COMPANY
CENTER RUTLAND PROJECT (FERC No. 2445)

MINUTES OF SITE MEETING

DATE: August 19, 1992

TIME: 10:00 a.m.

LOCATION: Center Rutland, Vermont

ATTENDEES:

Jeff Cueto (JC)	Vt Agency of Natural Resources (ANR)
Rod Wentworth (RW)	ANR
Dave Callum (DC)	ANR
Rodney Barber (RB)	ANR
Steven Bliss (SB)	Vermont Marble Company (VMC)
Tom Dennehey (TD)	VMC
Mike Godec (MG)	VMC
Jon Christensen (JMC)	Kleinschmidt Associates (KA)
Brandon Kulik (BK)	KA

The purpose of the meeting was to incrementally view a range of flows from leakage up to 100 cfs in the bypass reach, in order to address minimum flow issues regarding fishery habitat and aesthetics. The group agreed that the most effective approach would be to document consensus in the field based on direct, qualitative observation, using professional judgement and group discussion. Each flow was photographed and video-taped for future reference.

Spillage flows of 0, 20, 40, 60, 80 and 100 cfs were sequentially observed (see photo plates). According to the adjacent USGS gage, project inflow was approximately 180 cfs, which is within a range that the project can control. The small size of the bypassed reach and rapid response in headpond elevation resulted in very rapid response of flows.

During the video taping, leakage through the boards was approximately 40 cfs. In following years, leakage will be reduced, and virtually the entire flow passed over the flashboards. The only change from viewed flows would be due to the veiling effects over the boards. 0 and 20 cfs spillage scenarios were simulated for the study by drawing the impoundment down to eliminate full leakage.

SB stated that evaluation flows would be provided by regulating project operation to create desired spill conditions. He added that the project unit had been calibrated the previous day, and that based on his rating curve data, and the ability to instantaneously interrogate the USGS gage (immediately downstream from the project tailrace), it was possible to accurately predict inflow and spillage into the bypass reach.

The group then divided into a fish habitat evaluation team (RW, DC, and BK) and an aesthetic evaluation team (RB, JMC). JC contributed to observations from both groups, but indicated his primary role was to observe the decision-making for purposes of subsequently preparing the section 401 water quality certificate. SB also interacted with both groups and supervised the station operation to produce study flows. TD operated the video camera from a vantage point on the powerhouse roof and MG operated the powerhouse. The powerhouse roof provided the only vantage point where the entire reach could be filmed, from the dam to the pool and downstream areas. The video-taping was supplemented by still photography from accessible viewing locations.

Fish Habitat

The bypassed reach consists of one large pool featuring shoal and deep areas. Water depth in the pool is controlled by tailrace discharge and a downstream riffle, and ranges from approximately 3 to 20 ft. The habitat team inspected the substrate and cover along the perimeter of the pool, under leakage/no generation conditions. This resulted in maximum drainout of the pool, and enabled close observation of all significant pool bed details. This revealed that the pool was composed of ledge at the toe of the dam and boulder debris elsewhere, which could provide good interstitial cover, and that the bypass reach remains wetted even with leakage inflow, and no generation. A staff gage was placed along the perimeter of the pool to document changes in depth associated with operation and/or spillage.

Prior to commencing study flows, the team pre-agreed that adequate circulation (determined by velocity chutes), depth and wetted area were the criteria by which habitat quality would be judged, and that the specific objective was to identify a flow which appears to provide adequate habitat conditions, especially as seasonal refuge (June 1 through October 15). Since the turbine discharge (total river flow) controlled wetted area, habitat quality was determined based on depth and circulation. DC and RW stated that primary game species of concern were adult brown trout, smallmouth bass, northern pike, and perch. RW and BK maintained a vantage point at the north end of the dam, near the powerhouse, and DC observed from across the reach, near the staff gage location.

The unit was turned off to allow the impoundment to rise and permit 20 cfs to spill. Once SB determined that the target was achieved the unit was restarted to match inflow and maintain 20 cfs. Operation of the unit resulted in a rapid increase in pool

depth of approximately 1 ft, due to backwatering from the hydraulic control noted above. Although this resulted in satisfactory pool depth and wetted area, the team agreed that 20 cfs spillage did not produce significant velocity chute penetration into the pool.

The unit was then shut off to allow the pond to build to 40 cfs spillage, and then restarted to maintain the spill. The pool backwatered as before. Although two clearly defined chutes appeared, penetration into the center of the pool was still negligible.

At 60 cfs spillage, depth, and chute penetration intensified. A slight back eddy began to form along the upstream portion of the pool. BK observed that at this flow, the pool was beginning to diversify hydraulically, with a feeding area (the two chutes) and a resting area (the back eddy) for fish.

At 80 cfs, depth increased slightly, and the chutes broadened noticeably across most of the surface of the ledge at the toe of the dam. Penetration of the main chutes into the pool increased somewhat, and the back eddy area increased in velocity. It was agreed that the single most significant increase in the evaluation parameters had occurred between 60 and 80 cfs.

The station was then operated to produce a 100 cfs spill. The team, in viewing the 100 cfs spill, observed marginal increases in depth and velocity, but agreed that habitat quality did not increase significantly over that observed at 80 cfs.

Aesthetic Flows

The aesthetics of the site were evaluated from convenient vantage points; notably the abandoned south bridge abutment, the riverbank adjacent to the pool, and the new Route 4 bridge downstream. Criteria judged included the veiling effects of flows over the dam, and the aesthetics of the minor falls, chutes and pools created by the ledge outcroppings below the dam. Photographs of the study flows from each of the vantage points are included in the attached photo plates.

Spillage flows of 0 and 20 cfs provided minimal coverage of the dam face, and very little noticeable veiling of the ledge. At 40 cfs some distinct minor falls were visible. At 60 cfs the minor falls widened, and much more coverage of chutes in the rocks was evident. At 80 cfs, the well-defined chutes were well covered with much more white water appearing. At 100 cfs, little additional coverage was noted, but depth of the chutes and volume of the minor falls increased slightly (see photo plates). Acoustics of the spillage releases did not change significantly from 60 to 100 cfs.

The entire dam was visible to pedestrians accessing the riverbank via the abandoned bridge abutment, but the southern half of the dam was obscured from atop the abutment. From Route 4, the viewing window to the dam is small (approximately 30 ft)

and viewing by motorists is very unlikely (speed limit is 45 mph at the bridge). However, pedestrians crossing the bridge, could view the dam, which had visible veiling at flows from 60 to 100 cfs.

Conclusions

At the conclusion of the flow demonstration, both teams rejoined, and it was agreed that the ANR staff would caucus and that the entire group would re-convene at 1:30 PM to discuss conclusions.

When the group re-convened, RB and JMC summarized that they had elected 80 cfs as the preferred flow for aesthetics. Additional conversation centered on the seasonality of providing aesthetic flows, with SB and JMC asserting that providing aesthetic flows concurrent with the proposed water quality flows (June 1 - October 15) should be adequate, since high spring flows are prevalent, and winter access to viewing locations is unlikely.

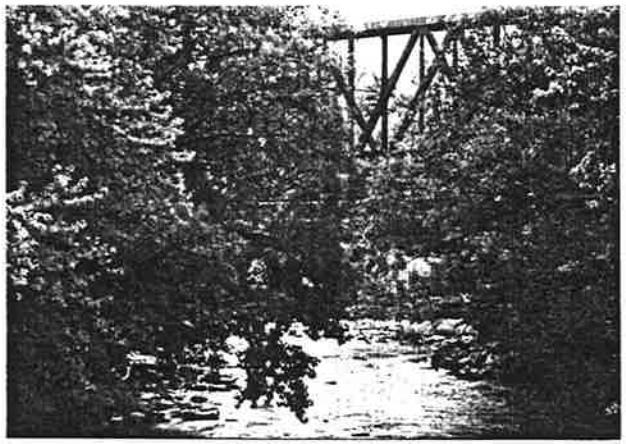
RW and BK also reported concurrence that 80 cfs would produce satisfactory fish habitat, and that 100 cfs was not substantially better. RW also acknowledged that station operation, not spillage was the primary factor influencing pool depth. RW felt that the pool offered fish habitat value primarily for summer refuge when overall river flow was low, and the deep pool would therefore provide cover.

Both JC and RW stated that they would recommend 80 cfs at least as a seasonal minimum flow (June 1 through October 15). During the remainder of the year, the ANR would consider recommending a lower flow release in consideration of the value of power production. Generally, changes in fish metabolism, due to colder water, shift habitat requirements so that deep water refuge is the primary habitat parameter; therefore, lower spillage flows can be justified during winter. SB and JC noted that the 80 cfs spill is estimated to occur 85% of the time during the winter months. SB and JMC further noted that they did not feel additional spill releases were warranted during winter months.

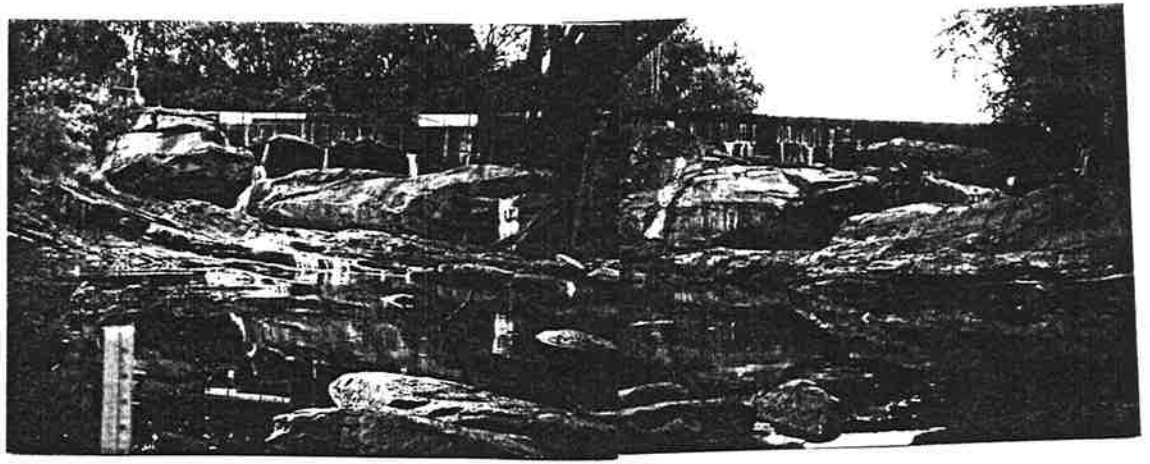
It was agreed that validated meeting minutes and the associated photographic record would suffice to document the decisions reached. JMC stated that KA would develop and circulate draft minutes for comment prior to finalization for the record. JC stated that the ANR would revise its §401 flow proposal in written correspondence to SB prior to the September 10, 1992 public meeting.

CENTER RUTLAND PROJECT (FERC NO. 2445)
MINIMUM FLOW DEMONSTRATION FOR AESTHETICS AND FISH HABITAT, AUGUST, 1992

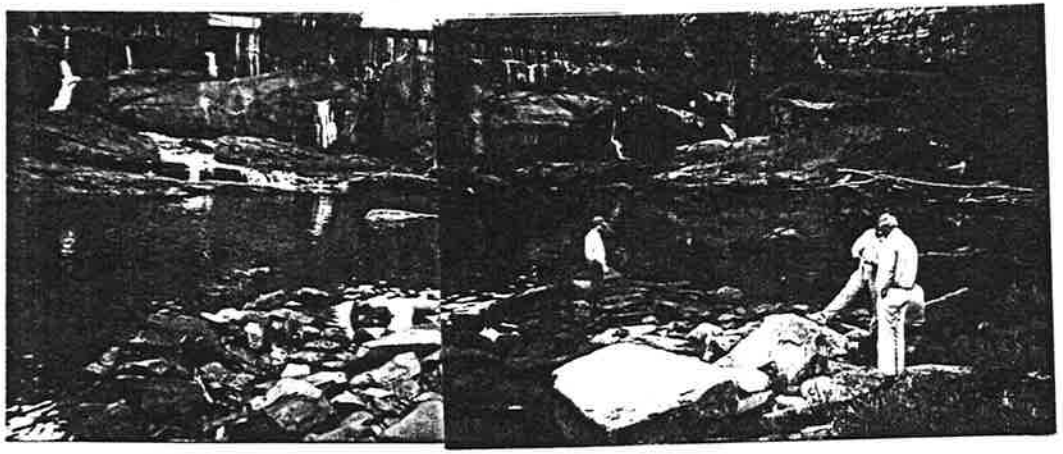
PHOTO PLATE 1: 0 CFS



AESTHETIC VIEW FROM ROUTE 4 BRIDGE



AESTHETIC VIEW FROM PLUNGE POOL. NOTE: POOL IS DRAWN DOWN DUE TO UNIT SHUTDOWN



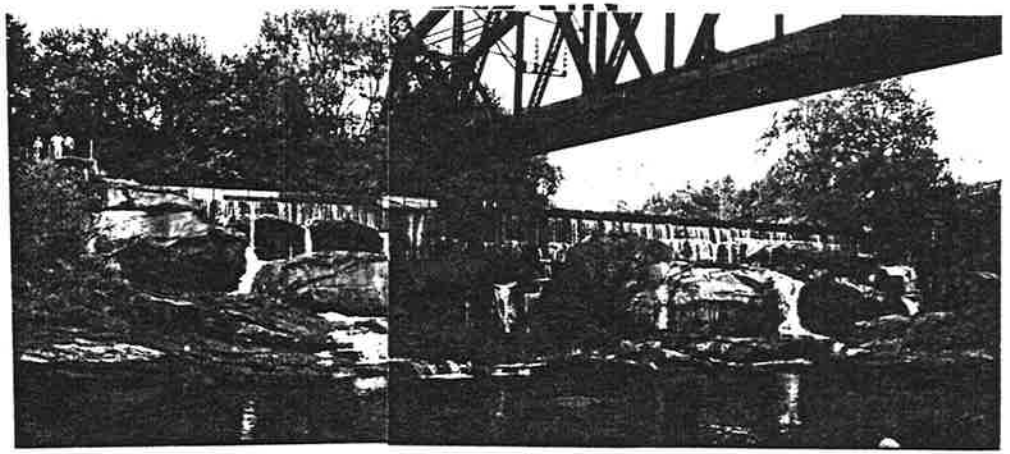
VIEW OF PLUNGE POOL SUBSTRATE. NOTE: POOL IS DRAWN DOWN DUE TO UNIT SHUTDOWN

VIEW OF PLUNGE POOL SHOWING NO SPILLAGE AND FULL UNIT OPERATION. NOTE THAT UNIT DISCHARGE CONTROLS POOL WATER ELEVATION

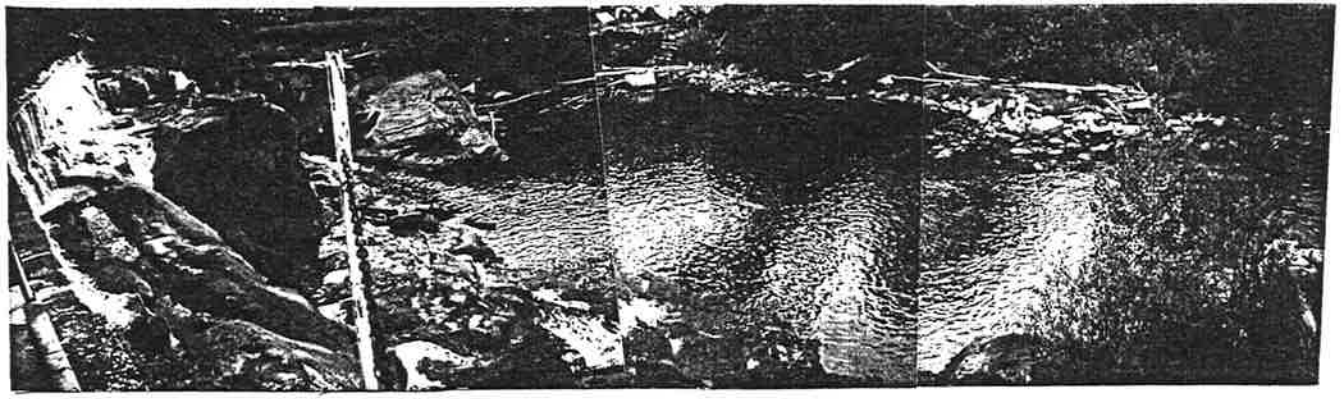
CENTER RUTLAND PROJECT (FERC NO. 2445)
MINIMUM FLOW DEMONSTRATION FOR AESTHETICS AND FISH HABITAT, AUGUST, 1992

PHOTO PLATE 2: 20 CFS

AESTHETIC VIEW FROM ROUTE 4 BRIDGE



AESTHETIC VIEW FROM PLUNGE POOL



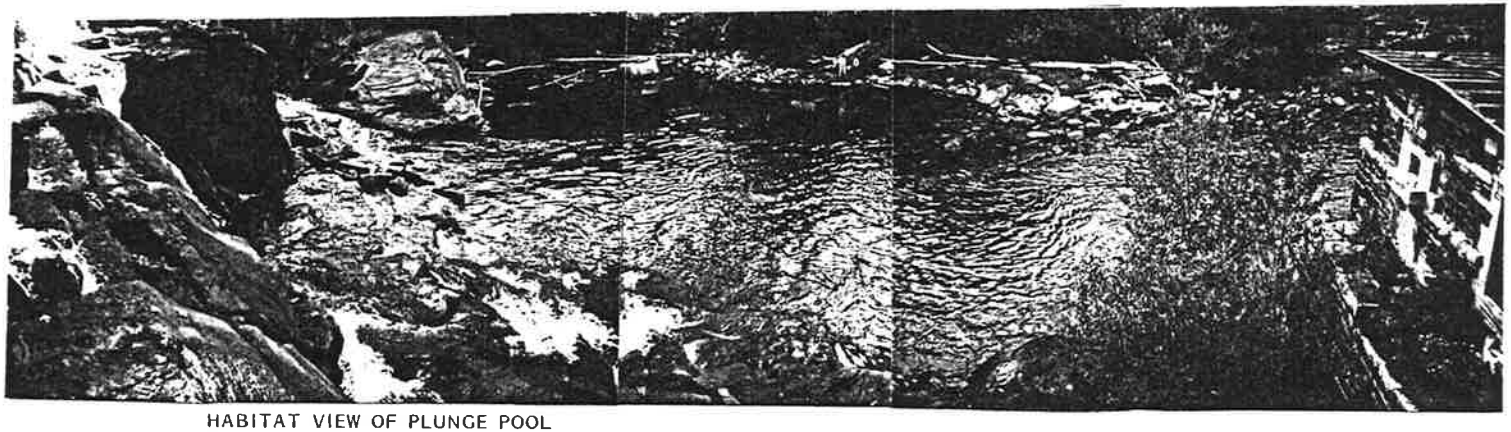
HABITAT VIEW OF PLUNGE POOL

CENTER RUTLAND PROJECT (FERC NO. 2445)
MINIMUM FLOW DEMONSTRATION FOR AESTHETICS AND FISH HABITAT, AUGUST, 1992

PHOTO PLATE 3: 40 CFS

AESTHETIC VIEW FROM ROUTE 4 BRIDGE

AESTHETIC VIEW FROM PLUNGE POOL

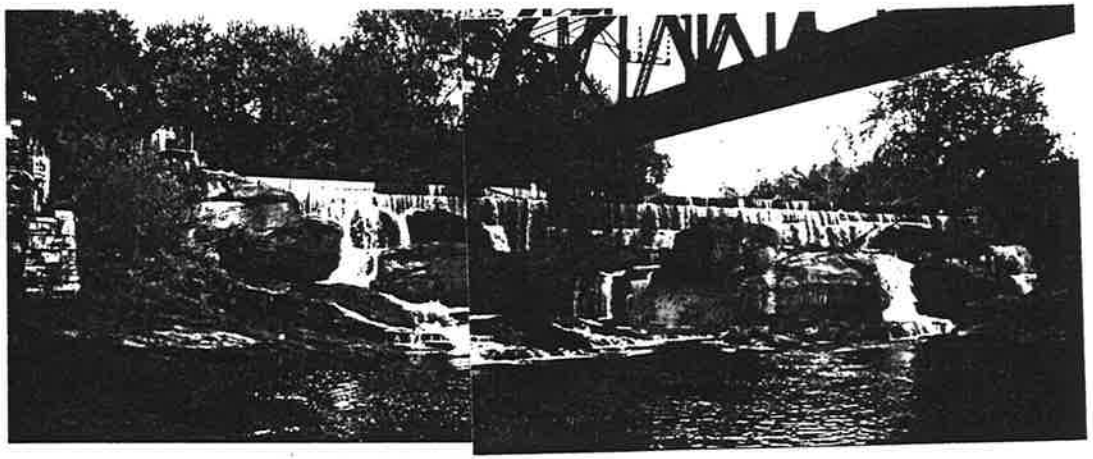


HABITAT VIEW OF PLUNGE POOL

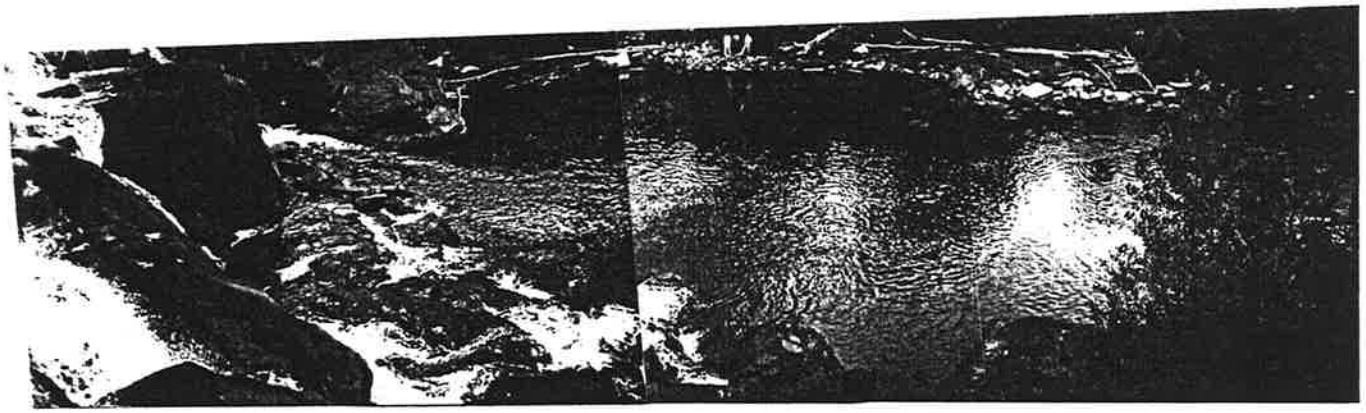
CENTER RUTLAND PROJECT (FERC NO. 2445)
MINIMUM FLOW DEMONSTRATION FOR AESTHETICS AND FISH HABITAT, AUGUST, 1992

PHOTO PLATE 4: 60 CFS

AESTHETIC VIEW FROM ROUTE 4 BRIDGE



AESTHETIC VIEW FROM PLUNGE POOL

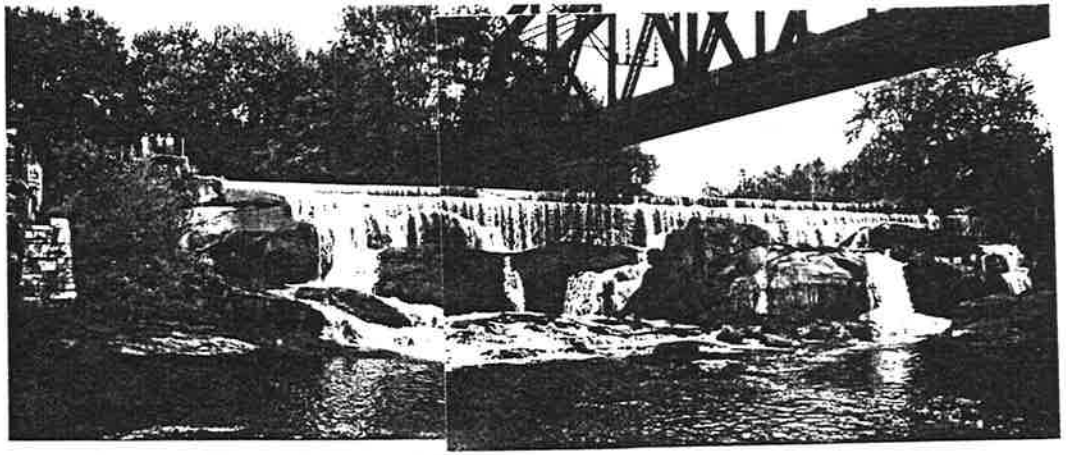


HABITAT VIEW OF PLUNGE POOL

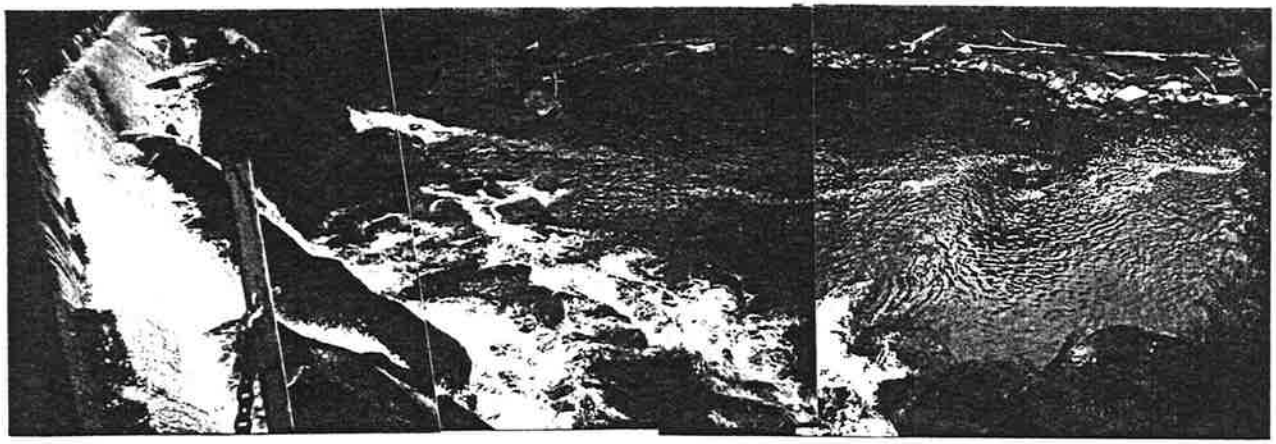
CENTER RUTLAND PROJECT (FERC NO. 2445)
MINIMUM FLOW DEMONSTRATION FOR AESTHETICS AND FISH HABITAT, AUGUST, 1992

PHOTO PLATE 5: 80 CFS

AESTHETIC VIEW FROM ROUTE 4 BRIDGE



AESTHETIC VIEW FROM PLUNGE POOL



HABITAT VIEW OF PLUNGE POOL

ATTACHMENT C

ADDITIONAL BACKGROUND INFORMATION ON PROJECT RECREATION PLAN

ATTACHMENT C.1

VERMONT MARBLE
POWER DIVISION
OF OMYA, INC.

61 Main Street
Proctor, Vermont 05765
Tel: (802) 459-3311
Fax: (802) 770-7447

OFFICE OF THE SECRETARY
02 JUL 29 PM 2:46
FEDERAL ENERGY
REGULATORY COMMISSION

July 24, 2002

David Boergers, Secretary
Federal Energy Regulatory Commission
Mail Code: DLC, HL 11.2
888 First St., N.E.
Washington, DC 20426

ORIGINAL

Re: Project No. 2445-007
Center Rutland

Mr. Boergers:

In accordance with Article 407 of the Minor License of the above referenced project issued on March 31, 1993, and with Mr. William Gleason's letter to you of October 25, 1999, copy enclosed, please find the final proposed Recreation Plan ("Plan") as well as an archaeological review of that Plan for the above referenced project. This Plan incorporates comments resulting from a process detailed in Mr. Gleason's letter.

Please provide comment on and/or approval of the enclosed Plan so that the Vermont Marble Power Division of OMYA, Inc. ("VMPD") may undertake the process to implement the Plan. By copy of this letter, VMPD asks that all listed below please provide the same. Should you have any comments or require anything further, please contact me at (802) 770-7138.

Sincerely,

Todd A. Allard
Operations Engineer

taa
Enclosures

CC: Mr. Anton J. Sidoti, NYRO
Mr. Jeffrey R. Cueto, ANR
Mr. Leonard Gerardi, VT Fish and Wildlife
Mr. Roderick Wentworth, VT Fish and Wildlife
Mr. John Warner, U.S. Fish and Wildlife
Mr. Joseph Zingale, Town of Rutland
Mr. Steven B. Sease, ANR
Ms. Emily Wadhams, VT SHPO

0207310201-3

A

DOCKETED

VERMONT MARBLE
POWER DIVISION
OF OMYA, INC.

61 Main Street
Proctor, Vermont 05765
Tel: (802) 459-3311
Fax: (802) 770-7447

October 25, 1999

Mr. David Boergers, Secretary
Federal Energy Regulatory Commission
Mail Code: DLC, HL11.2
888 First Street, N.E.
Washington, D.C. 20426

RE: Project No. 2445-007

Mr. Boergers:

Enclosed please find an original and eight copies of a proposed Recreation Plan submitted on behalf of the Vermont Marble Power Division of OMYA, Inc. ("VMPD") for its Center Rutland Station for filing with the Federal Energy Regulatory Commission ("FERC"). The enclosed plan is being filed pursuant to Article 407 of the Minor License for the above referenced project issued March 31, 1993, as amended by Order entered on September 8, 1999 extending to October 31, 1999 the deadline to file such plan.

In recognition of the fact that the ultimate Recreation Plan must be coordinated and consistent with the Cultural Resources Management Plan for the project, VMPD has scheduled a meeting among its consultant, the project's neighbors, as well as with Town and State Agency officials to be held on November 19, 1999 to solicit comments and suggestions on the Recreation Plan. Following that meeting, information and comments received will be evaluated for possible revisions to the Plan. Following that process, a final Recreation Plan will be filed with FERC.

Should you have any questions regarding the above, please contact me at (802) 770-7174.

Sincerely,

William C. Gleason
General Manager

Enclosure

Cc: Steven B. Sease
Joseph Zingale
Edward V. Schwiebert
Douglas Frink

LARGE-FORMAT IMAGES

One or more large-format images (over 8 ½" X 11") go here.
These images are available in FERRIS at:

For Large-Format(s):
Accession No.: 20030615-0432

Security/Availability:

- ☑ PUBLIC
- ☐ NIP
- ☐ CEII
- ☐ NON-PUBLIC/PRIVILEGED

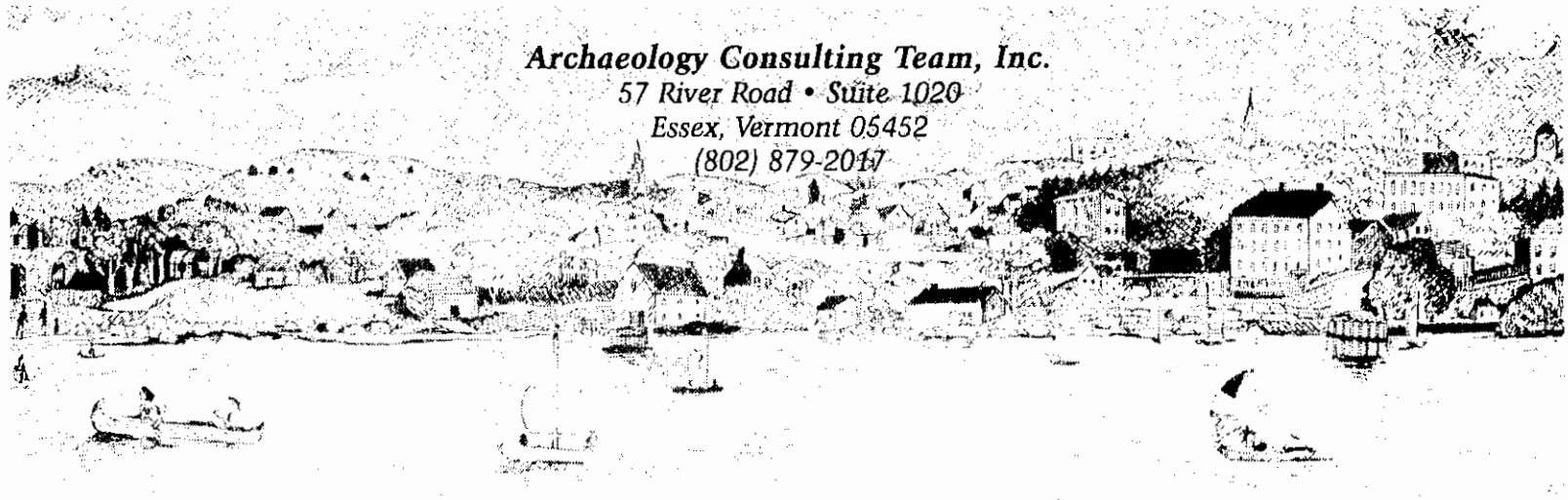
File Date: 7-29-02 Docket No.: P-2440

Parent Accession No.: 20020731-0201

Set No.: 1 of 1

Number of page(s) in set: 2

Archaeology Consulting Team, Inc.
57 River Road • Suite 1020
Essex, Vermont 05452
(802) 879-2017



Archaeological Review of the proposed revised Recreation Plan for Center Rutland Hydroelectric Facility (FERC No. 2445)

May 31, 2002

This is an archaeological review of the recreation plan designs, dated April 24, 2002, for the Center Rutland Hydroelectric Project (FERC No. 2445) (the Project) located in the Town of Rutland, Rutland County, Vermont. The proposed recreation plan for the Project was developed by the Vermont Marble Power Division of OMYA, Inc. (OMYA), in fulfillment of Article 407 of the Order Issuing Subsequent License from the Federal Energy Regulatory Commission (FERC) for the Project, issued March 31, 1993.

OMYA, in cooperation with the Vermont State Historic Preservation Officer (SHPO), developed a draft Cultural Resource Management Plan (CRMP) to satisfy the regulations of the FERC, and those on the Advisory Council on Historic Preservation. These parties are acting in accordance with the Order Issuing Subsequent License from FERC for the Project, pursuant to Section 106 of the National Historic Preservation Act and its regulations under the 1986 36 CFR 800 regulations.

As stated in Section 1.2 of the CRMP for the Project, "...this CRMP will be implemented as an ongoing experiment that will gather information to determine appropriate management actions...and alternative actions for future implementations will be discussed with due consideration of potential impacts on all types of resources." The CRMP for the Project stresses the importance of an integrated approach to the management of the river system. 4[1] The CRMP outlines procedures that will protect and maintain historic properties during the term of OMYA's FERC license to operate the Project. The CRMP is based on the principles of taking a proactive approach and managing the Project as a unified system. This approach involves programs designed to limit or prevent bank erosion, and thereby protect historic properties in conjunction with other resources. Likewise, the recreation plan should be

[1] Frink, Douglas S. (1999). Draft *Cultural Resource Management Plan for Archaeological and Historic Resources within the Center Rutland Hydroelectric Project, Rutland, Rutland County, Vermont (FERC No. 2445)*. Prepared by Archaeology Consulting Team (ACT), Essex Junction, VT for Vermont Marble Power Division of OMYA, Proctor, VT.

designed to promote recreation while protecting natural and cultural resources within the Project.

The currently proposed revised recreation plan supersedes the recreation plan, dated March 1997, that was reviewed in 2000 under the CRMP. [2] As shown on the revised April 24, 2002 design plans, the revised recreation plan will involve an Area of Potential Effect (APE) of approximately two-thirds of an acre (0.25 hectare). The APE, owned by OMYA, is located along the southerly bank of the Otter Creek, and bordered to the south and east by Simons Avenue and a railroad R.O.W., and to the north by Otter Creek. The proposed actions involve the removal of existing guide rails and asphalt, and the construction and installation of a picnic area, kiosk, viewing platform, signs, guard rails, chain link fence, foot path, and 10-space parking lot. The plan also calls for the installation of shade and flowering trees and evergreens along the footpath and viewing area (Figures 1 and 2).

Past Archaeological Studies within the Project

A Phase IA archeological site sensitivity study was conducted to determine areas of potential archaeological significance within the Project. [3] The study provides general environmental contexts, and describes two nineteenth-century mill complexes and one landform sensitive for early Native American sites that may contain significant archaeological information within the Project upstream from the dam. A limited Phase IB archeological site identification study report includes additional background information, and concludes that "... in the event that Vermont Marble Company proposes any additional facilities (e.g., new recreational development) or modifications in its project generation (e.g., increased impoundment levels) which may disturb areas adjacent to the head pond margin, additional archaeological phase I survey work will be necessary..." (Petersen 1992:48). [4]

Carris Reels, Inc., an abutting property owner to OMYA's landholdings on the northerly bank of the Otter Creek (opposite the current APE) commissioned a Phase IA study in 2001. [5] Sheila Charles, a qualified archaeologist under 36 CFR 61, provides contextual historic information regarding the current APE. She notes that US Route 4, now realigned west of the APE, passed through the eastern end of the APE until its abandonment in 1959. A review of historic maps by ACT has revealed only one former structure in the immediate vicinity of the APE. The 1897 United States Geographic Survey (USGS) 15 minute topographic map of *Castleton, Vermont*, indicates a building just northwest of the former highway (Figure 3). Charles (2001:35) notes that "Local resident Paul Kraby (2000) recollects meeting a former resident who indicated the

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[2] Frink, Douglas S. *Archaeological Review of the proposed Recreation Plan for Center Rutland Hydroelectric Facility FERC No. 2455 [sic.].* Letter Report dated June 14, 2000. Submitted by William C. Gleason of OMYA to Mr. David Boergers of FERC via cover letter dated July 5, 2000.

[3] Petersen, James B. (1991) *An Archaeological Phase IA Study of the Center Rutland Project (FERC No. 2445), Rutland County, Vermont.* Archaeology Research Center, University of Maine at Farmington.

[4] Petersen, James B. (1992) *An Archaeological Phase I Study of the Center Rutland Project (FERC No. 2445), Rutland County, Vermont.* Archaeology Research Center, University of Maine at Farmington.

[5] Charles, Sheila. (2001) *What Lies Beneath the Marble Retaining Wall, Center Rutland Hydroelectric Station District, Rutland Town, Rutland County, Vermont: An Archaeological Phase IA Literature Review and Sensitivity Assessment.* Prepared for Carris Reels Inc., Rutland, Vermont.

area was scoured and a house on the north side of Old Route 4 access from the study area [in or adjacent to current APE] was washed away during the 20th century [either the 1927 or 1938] flood." While the proposed recreation plan involves an APE outside the scope of these past archaeological studies (either downstream from the dam or on the opposite riverbank), these studies document past erosion caused by multiple flood events that have significantly affected the integrity of landforms and any significant archaeological information associated with any past Native American or European American uses of the current APE.

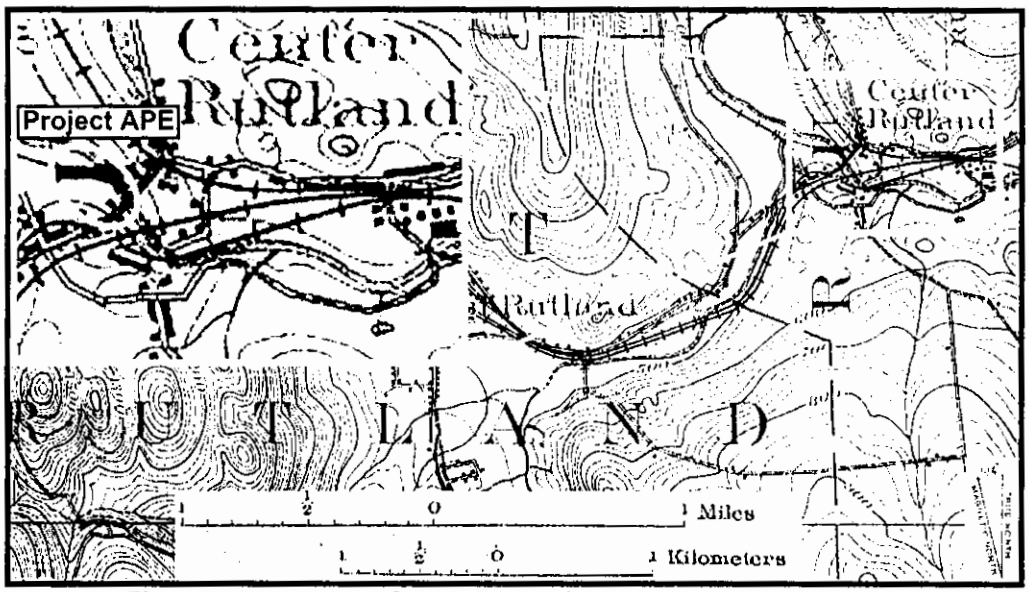


Figure 3: 1897 USGS map of Project recreation plan APE.

Past Flood Events Affecting the Project

Multiple flood events have been recorded in Vermont since the late 1700's, and at least six major flood events are recorded as having affected the Otter Creek drainage basin. The *Vermont Weather Book* describes major flood events on the Otter Creek in July 1811, October 1869, and April 1895. [6] The flood event of November 1927 affected many regions in Vermont, with an average of 7.5 inches of rainfall throughout the state. In *Vermont in Floodtime,* Luther B. Johnson describes:

> ...Dorr Bridge, a strongly-made structure which had stood for more than half a century, was washed off its piers by the current sweeping around the sharp bend of the river. As this long, heavy bridge went down toward the falls, it carried off everything in its path, including Ripley Bridge, and, passing the Vermont Rutland Marble Company's dam in Center Rutland, crushed the abutments of the Delaware & Hudson steel railroad trestle, causing it to drop into the river. At this point the Dorr Bridge apparently went to pieces, as both the old and new highway and foot bridges across the Creek, below Center Rutland falls stood firm, although the approaches on either side were taken out over 80 feet on each end [Johnson 1928:193]. [7]

[6] Ludlum, David M. (1985) *Vermont Weather Book.* Vermont Historical Society, Montpelier, Vermont.

[7] Johnson, Luther B. (1928) *Vermont in Floodtime.* Roy L. Johnson Company, Randolph, Vermont.

Hugh Henry, a 36 CFR 61 qualified architectural historian, narrates that the maximum recorded flow of water at the Center Rutland Falls (13,700 cubic feet per second) was documented during the September 22, 1938 flood event. [8] The proposed historic district in Henry (1988) does not include lands within the current APE. In November 1942, the Otter Creek flooded the Vermont Hydroelectric powerplant (now OMYA) after three days of steady rain, leaving local residents without power. On June 2-3, 1947, a flash flood collapsed a dam on East Creek in East Pittsford (roughly six miles north of Rutland) and the City of Rutland was inundated. Water levels were at estimated depths of 10 to 15 feet in the lower portion of the city (Ludlum 1985).

Effects of Flood Events

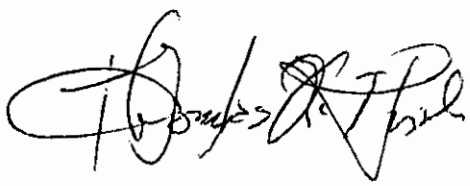
Extensive scouring of soils associated with these flood episodes most likely affected defoliated riverbanks, plowed hillsides, and floodplains that have been subsequently filled in or developed. Seasonal flooding is made more severe by loss of buffering floodplains and riverbank vegetation.

The proposed addition of landscape plants and trees in the APE as part of the recreation plan will help to protect existing soils and sediments in the APE and prevent erosion that would affect the sediment load of the river as well as landforms downstream from the Project. Riparian buffers, composed of mixed vegetation of trees, shrubs, and/or grasses, protect vulnerable riverbanks and floodplains, slow the rate of meandering and riverbank erosion, and remove sediment loads to backwater siltation ponds during seasonal floods.

Recommendations

Although the environmental and cultural settings indicate that significant archaeological information may have existed within the revised recreation plan's APE in the past, documents regarding historic flood events record the loss of the soil's integrity. Significant erosion during past seasonal and storm flood events, ice jams and flows, and soil disturbances associated with the former US Route 4 roadbed have resulted in the loss of integrity of potential archaeological information in the APE. No further archaeological review of the 2002 recreation plan, as currently designed, is necessary.

Sincerely,



Douglas S. Frink
Principal Investigating Archaeologist

---

[8] Henry, Hugh (1988) *Center Rutland Hydroelectric Station Historic District.* unsubmitted National Register of Historic Places Registration Form. On file, Vermont Division for Historic Preservation, Montpelier, VT.

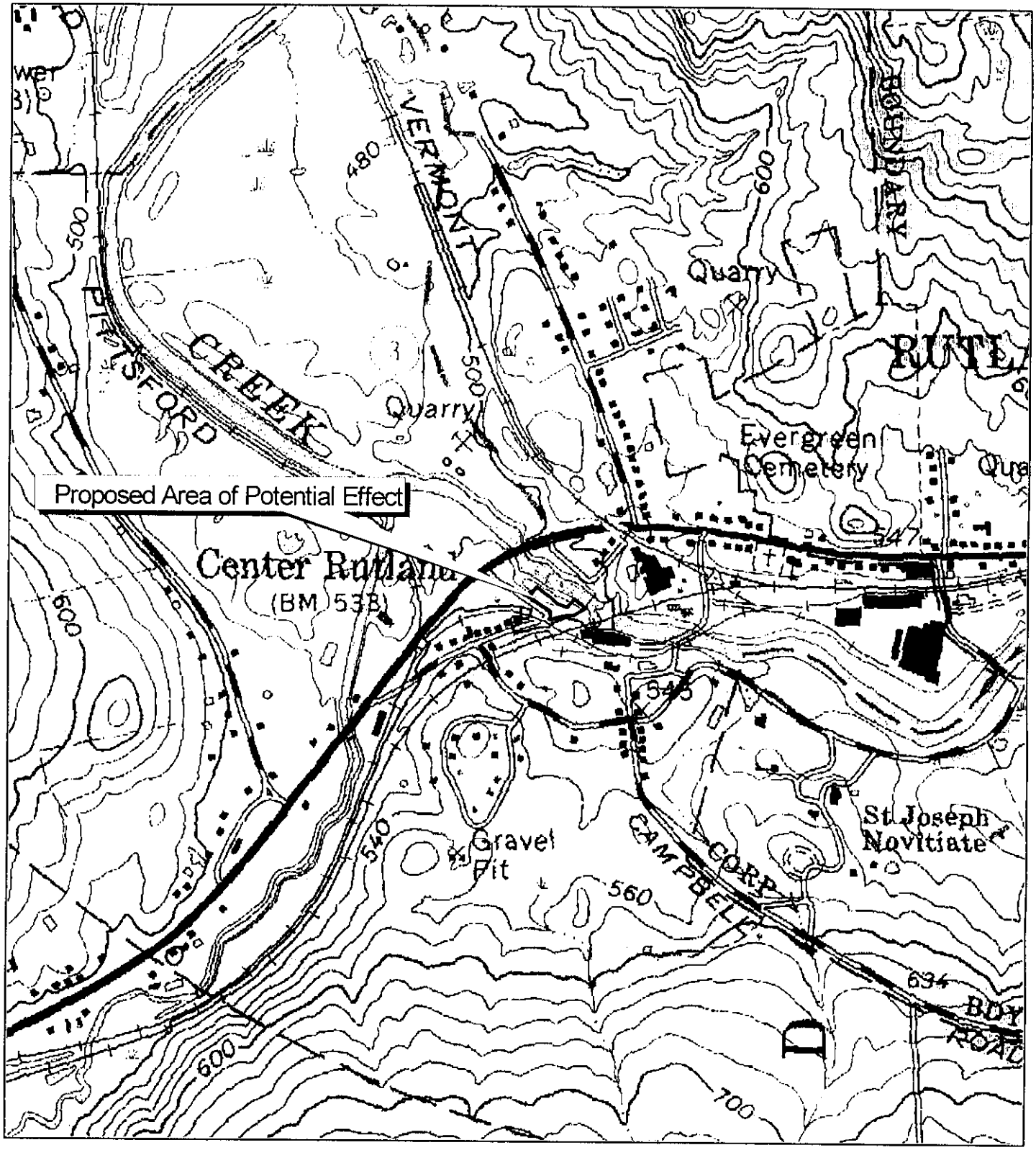


Figure 1: Location of 2002 proposed recreation plan improvements,
Center Rutland Hydroelectric Project (FERC No. 2445).
(USGS 1964 7.5 minute West Rutland, VT quadrangle, photorevised 1972)

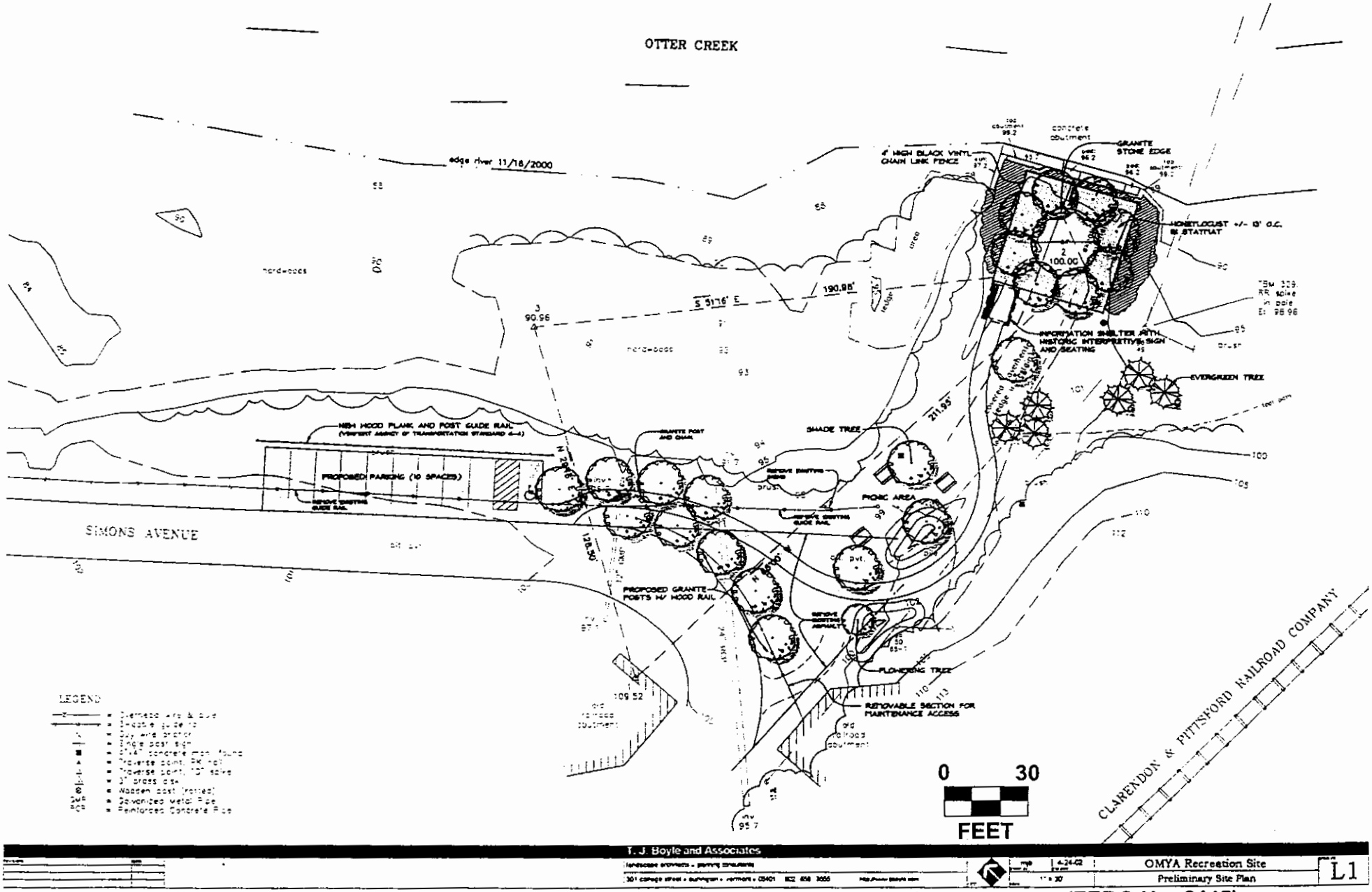


Figure 2: Recreation plan, dated April 24, 2002, for the Center Rutland Hydroelectric Project (FERC No. 2445)

ATTACHMENT C.2

20040415-3016 Issued by FERC OSEC 04/15/2004 in Docket#: P-2445-021

107 FERC ¶ 62,042
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

OMYA, Incorporated Project No. 2445-021

ORDER MODIFYING AND APPROVING RECREATION PLAN UNDER ARTICLE 407

(Issued April 15, 2004)

On July 29, 2002, OYMA, Incorporated (licensee) filed a Recreation Plan (plan) pursuant to article 407 of the license for the Center Rutland Project.[1] The project is located on Otter Creek in the Town of Rutland, Rutland County, Vermont.

BACKGROUND

Article 407 of the license requires that within one year from the effective date of the license, the licensee shall develop and file, for Commission approval, a recreation plan for providing formal access to the project tailwaters. The plan must include provisions for, and drawings of, a small off-street parking area (with 3 to 5 car spaces), signage, landscaping, and a marked footpath to the river. In locating a site for these enhancement measures, the licensee shall consider using the land parcel that the licensee owns downstream of the Center Rutland Project located on the south bank. Also, as a part of the plan, the licensee shall explore the feasibility of providing a canoe portage route along the south bank. The licensee shall consult with the current landowner, the Vermont Agency of Natural Resources (the Department of Forests, Parks, and Recreation; the Department of Environmental Conservation; the Vermont Agency of Development and Community Affairs, Division for Historic Preservation) (VANR), and the Town of Rutland to determine the feasibility of an agreement that would allow canoeists to cross the land.

The plan must also identify the entity responsible for operation and maintenance of the access facilities and documentation of consultation and copies of comments and recommendations on the plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan.

[1] 62 FERC 62,224 (Issued March 31, 1993)

20040415-3016 Issued by FERC OSEC 04/15/2004 in Docket#: P-2445-021

DESCRIPTION OF PLAN

The plan includes removing the existing guide rails and asphalt, and the construction and installation of a picnic area, kiosk, viewing platform, signs, guard rails, chain link fence, footpath, and a 10-space parking lot with one universally accessible space. The licensee's plan does not provide a canoe portage route along the south bank, but the footpath affords canoe access to the project tailwaters. The licensee is continuing to discuss completing a canoe portage route with the agencies. Shade, flowering, and evergreen trees will be provided along the footpath and viewing areas. The licensee is responsible for the operation, maintenance, and construction of the project-related recreation facilities.

AGENCY CONSULTATION

Copies of the plan were sent to VANR, Vermont Fish and Wildlife (VFW), U.S. Fish and Wildlife Service (USFWS), the Town of Rutland (Town), and the Vermont State Historic Preservation Officer by letters dated July 24, 2002. VANR, Department of Environmental Conservation, Water Quality Division, commented by letter filed August 26, 2002. VANR requested that the plan include a narrative describing the amenities to be provided, schedule for installation, and level of maintenance to be provided by the licensee. Also, the final landscaping plan should be filed with VANR for concurrence on species selection, care should be taken to avoid any clearing, continued angler access between the dam and the old bridge abutment should be provided via the existing footpath, and the overlook should be accessible. VANR also requests that the material to be used for the walkway surface be provided in the plan.

DISCUSSION AND CONCLUSION

Proposed recreation facilities at the project include the provisions required in article 407, plus a picnic area, kiosk, and viewing platform. The parking area includes one universally accessible parking space, but the plan does not indicate if the other facilities are accessible. The licensee is reminded that pursuant to 18 CFR 2.7(b), the needs of individuals with disabilities must be considered in the design and construction of recreation facilities and access.

With regard to the comments from VANR, a sufficient narrative is included in the plan. Construction, operation, and maintenance of the facility are the responsibility of the licensee. Within three months following the completion of construction, the licensee shall file as-built drawings with the Commission. Construction is expected to be

20040415-3016 Issued by FERC OSEC 04/15/2004 in Docket#: P-2445-021

completed by September 2005, and as-built drawing submission is expected by December 2005. As-built drawings should include a map of the recreation facilities and access areas in relation to the project features and project boundary. The location and text of all signage should be included on the drawings. Prior to commencing landscaping work, landscaping and materials for the walkway surface should be discussed with VANR. Regarding VANR's concern about continuing angler access between the dam and old bridge abutment, public access to project lands for recreation is required by article 13 of the project license unless restrictions are necessary for the protection of life, health, and property.

After review of the filed plan and the license requirements, Commission staff concludes that the licensee has appropriately addressed the requirements of article 407. The recreation plan should be approved.

The Director orders:

(A) The recreation plan, filed July 29, 2001, pursuant to article 407 of the project license, as modified by paragraphs (B) and (C), is approved.

(B) The licensee shall complete construction of the facilities by September 2005, and as-built drawings should be submitted by December 2005. As-built drawings should include a map of the recreation facilities and access areas in relation to the project features and project boundary. The location and text of all signage should be included on the drawings.

(C) Prior to commencing landscaping planting and installing the walkway surface, the licensee shall consult with the Vermont Agency of Natural Resources on the selection of plant species and walkway materials.

(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of this order, pursuant to 18 C.F.R. 385-713.

John E. Estep
Division of Hydropower
Administration and Compliance

ATTACHMENT C.3

20070410-3020 Issued by FERC OSEC 04/10/2007 in Docket#: P-2445-022

119 FERC ¶ 62,021
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

OMYA, Incorporated Project No. 2445-022

ORDER AMENDING RECREATION PLAN

(Issued April 10, 2007)

On June 21, 2006, OYMA, Incorporated (licensee) filed a request to amend the recreation plan for the Center Rutland Project (FERC No. 2445). The project is located on Otter Creek in the Town of Rutland, Rutland County, Vermont.

The recreation plan was required pursuant to license article 407.[1] Article 407 required the licensee to develop a recreation plan for providing access to the project tailwaters. The recreation plan provided for an off-street parking area, signage, landscaping, and a marked footpath to the river. The plan also included construction of a picnic area, kiosk, and viewing platform.

The licensee's June 21, 2006 filing included two letters that were sent to the Commission but not properly filed and were not in Commission records. In one of these letters, dated April 14, 2006, the licensee notified the Commission that it has not been able to acquire land from the Town of Rutland that is necessary for the kiosk and viewing platform. The letter requests that the recreation plan be revised to remove the requirement to construct a kiosk and viewing platform.

As discussed in the order modifying and approving the recreation plan,[2] the facilities proposed in the recreation plan include the provisions required in article 407, as well as a picnic area, kiosk, and viewing platform which the licensee proposed but were not prescribed in article 407. Because the land acquisition to complete the kiosk and viewing platform has not been possible to date, the licensee proposes amending the recreation plan to remove the kiosk and viewing platform. The viewing platform and kiosk were not recommended or identified as necessary by any of the consulted agencies, nor were they discussed in any of the consultation documents. Since the kiosk and viewing platform were additional measures proposed by the licensee and not specifically required in article 407, the licensee's request to amend the recreation plan should be approved.

---

[1] 62 FERC 62,224 (Issued March 31, 1993)

[2] Order Modifying and Approving Recreation Plan Under Article 407, issued April 15, 2004 (107 FERC ¶ 62,042).

20070410-3020 Issued by FERC OSEC 04/10/2007 in Docket#: P-2445-022

The Director orders:

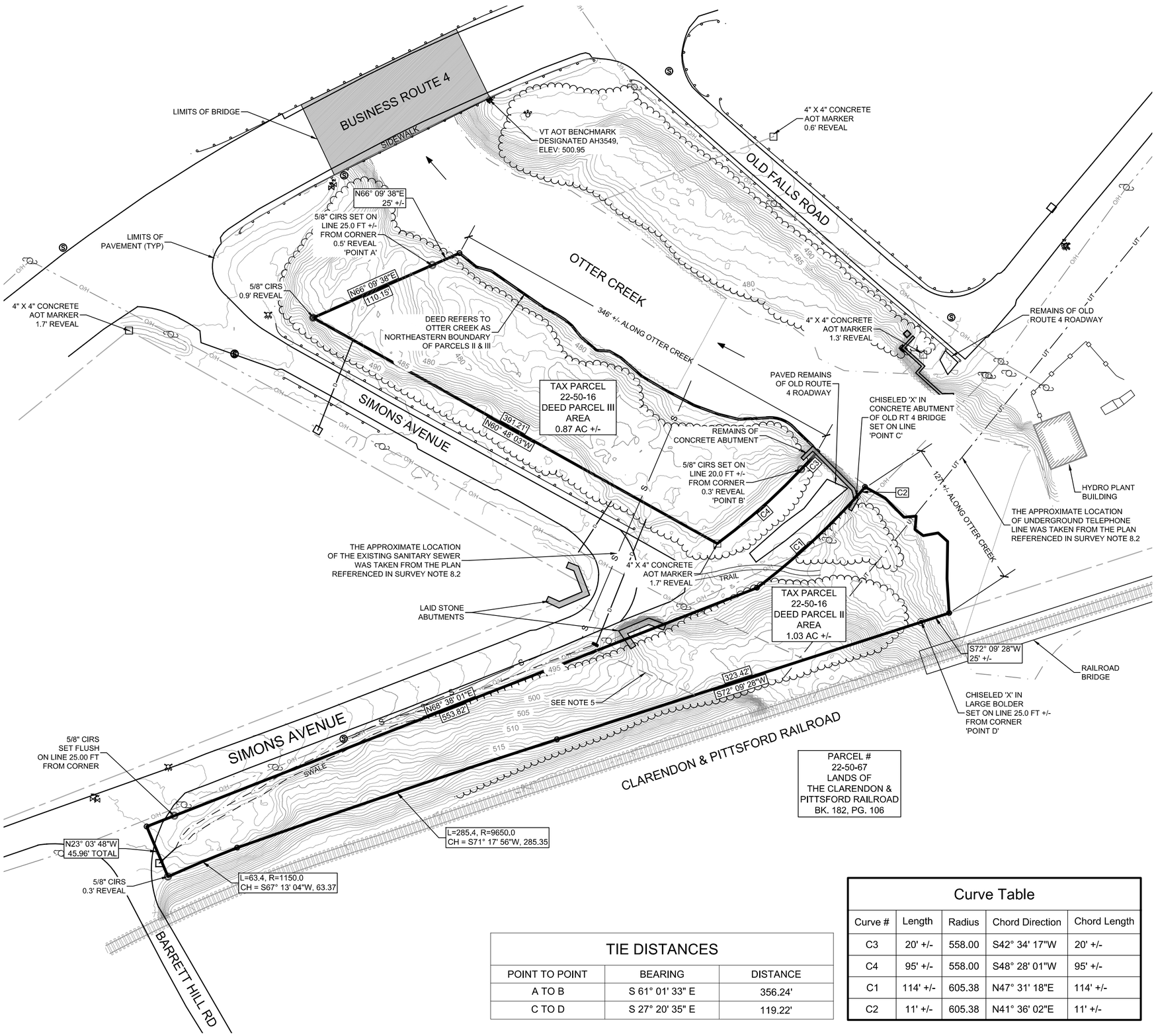
(A) OYMA, Incorporated's request to amend the project recreation plan for the Center Rutland Project recreation plan, filed June 21, 2006, is approved.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of this order, pursuant to 18 C.F.R. 385-713.

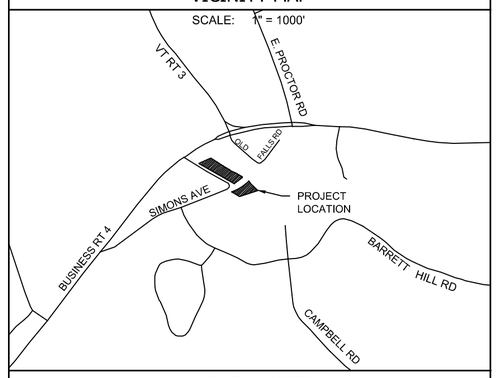
John E. Estep
Chief, Land Resources Branch
Division of Hydropower
Administration and Compliance

ATTACHMENT D

SURVEY AND PARCEL DATA



VICINITY MAP



SURVEY NOTES

1. BOUNDARY SURVEY PREPARED FOR THE GREEN MOUNTAIN POWER COMPANY AND THE TOWN OF RUTLAND.
2. TOWN OF RUTLAND PARCEL ID NUMBER: 22-50-16
3. TOWN OF RUTLAND ZONING DISTRICT: THE PARCELS ARE LOCATED WITHIN THE CONSERVATION AREA AS INDICATED ON THE TOWN OF RUTLAND LAND USE MAP, DATED NOVEMBER 29, 2016.
4. SOURCE OF TITLE: BEING PARCEL II AND PARCEL III OF LANDS AS DEEDED BY OMYA INC. TO CENTRAL VERMONT PUBLIC SERVICE CORPORATION BY WARRANTY DEED, RECORDED IN THE RUTLAND TOWN LAND RECORDS IN BOOK 170, PAGE 384 AND DATED SEPTEMBER 6TH, 2011.
5. PARCEL II AS REFERRED TO ABOVE INCLUDES 'ALL RIGHT TITLE AND INTEREST TO A PORTION OF THE FORMER CLARENDON AND PITTSFORD RAILROAD COMPANY AS REFERENCED IN BOOK 170, PAGE 384.
6. BEARINGS AS DEPICTED ON THIS PLAT ARE WITH RESPECT TO THE VERMONT STATE PLANE COORDINATE SYSTEM AND ARE BASED UPON GPS OBSERVATIONS MADE IN AUGUST OF 2021.
7. THIS PLAT IS BASED ON RECORD INFORMATION AS REFERENCED AND EVIDENCE OBTAINED FROM A FIELD SURVEY CONDUCTED IN AUGUST OF 2021.
8. OTHER INFORMATION USED IN THE DEVELOPMENT OF THIS PLAT:
   - 8.1. RIGHT OF WAY AND TRACK MAP FOR THE RENSSELAER AND SARATOGA RAILROAD COMPANY, OPERATED BY THE DELAWARE AND HUDSON COMPANY, SHEETS 1 OF 3 AND 9 OF 9, DATED JUNE 30, 1916.
   - 8.2. VERMONT AOT HIGHWAY PLAN FOR THE TOWN OF WEST RUTLAND AND RUTLAND ROUTE 4, DATED OCTOBER OF 1957.
9. THE LIMITS OF THE RIGHTS OF WAY FOR BUSINESS ROUTE 4, OLD ROUTE 4, SIMONS AVENUE AND THE CLARENDON AND PITTSFORD RAILROAD ARE BASED ON INFORMATION PROVIDED ON THE ABOVE REFERENCED MAPS.

LEGEND

- PROPERTY LINE
- ABUTTING PROPERTY LINE
- LIMITS OF RIVER AT TIME OF SURVEY
- FENCE LINE
- GUARDRAIL
- O/H POWER / U/G PHONE
- STORM SEWER / SANITARY SEWER
- APPX TREE LINE / RAILROAD TRACK
- CONCRETE HIGHWAY MARKER
- 5/8" CAPPED IRON REBAR SET (CIRS)
- UTILITY POLE / HYDRANT
- CATCH BASIN / SEWER MANHOLE

TIE DISTANCES

POINT TO POINT	BEARING	DISTANCE
A TO B	S 61° 01' 33" E	356.24'
C TO D	S 27° 20' 35" E	119.22'

Curve Table

Curve #	Length	Radius	Chord Direction	Chord Length
C3	20' +/-	558.00	S42° 34' 17"W	20' +/-
C4	95' +/-	558.00	S48° 28' 01"W	95' +/-
C1	114' +/-	605.38	N47° 31' 18"E	114' +/-
C2	11' +/-	605.38	N41° 36' 02"E	11' +/-

1 BOUNDARY SURVEY - GREEN MOUNTAIN POWER COMPANY AND THE TOWN OF RUTLAND

SCALE 1:60

0 60 120 Feet

NORTH

MSK ENGINEERS
P.O. BOX 139, 150 DEPOT STREET
BENNINGTON, VERMONT 05201
PH: (802) 447-1402 FAX: (802) 445-1291

PROJECT DESCRIPTION: BOUNDARY SURVEY PREPARED FOR GREEN MOUNTAIN POWER AND THE TOWN OF RUTLAND

PROPERTY OWNER: LANDS OF GREEN MOUNTAIN POWER

PROPERTY LOCATION: SIMONS AVENUE AND BUSINESS ROUTE 4, TOWN OF RUTLAND, COUNTY OF RUTLAND, VERMONT

DATE OF SURVEY:	08-20-21	DATE OF MAP:	09-15-21
SCALE:	1" = 60'	DRAWN BY:	EM

I CERTIFY THAT THIS PLAT CONFORMS TO THE ABOVE REFERENCED DEEDS, PLATS AND FIELD EVIDENCE AS SHOWN UNLESS OTHERWISE NOTED, AND TO THE REQUIREMENTS OF 27 VSA, SECTION 1403.

STATE OF VERMONT
EAMON MULLIGAN
No. 100478
LICENSED LAND SURVEYOR

LEGEND:

- = Right of way
- = Survey tie line
- = Overhead wire and pole
- = Chain-link fence
- = NGS Control Point, brass cap found
- = 3/4" Iron Pipe Found (IPF), w/plastic cap stamped: "R&F, Inc.", exposed 13"
- = 1½" Iron Rod Found (IRF), exposed 24"
- = Hydrant
- = Guy wire & anchor
- bit. pvt. = Bituminous pavement
- = Map or Plan reference
- (XXX.X') = Deeded distance
- Bk. - pg. = Immediate deed reference
- (Bk. - pg.) = Key deed reference
- = Concrete (conc.)
- = Marble wall

WINE
NAD83 (2007)
N: 403,474.28
E:1,504,092.24
El: 533.71'

N28°-20'-12"W
862.0'

TO VT Route 4B
— 200 feet±

OLD FALLS ROAD

bit. pvt.

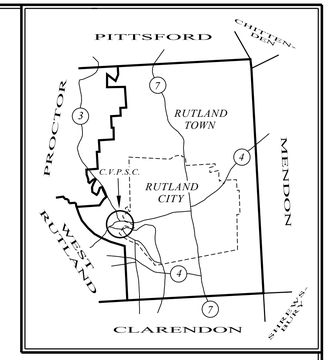
(Formerly U.S. Route 4)

T. H. #44

dead end

Magnetic North 2011
14½°±
21'11"
Astronomic North
GRID NORTH
W — E

Bearings Refer to Grid North



RUTLAND
Location Plan (not to scale)

CENTER RUTLAND GAGING STATION
NAD83 (2007)
N: 402,627.6
E:1,504,548.9
El: 490.71'

#131 5 6 48
#50 11 58
#FD603
crushed stone
push rods
slab
#131 6 47

CENTRAL VERMONT PUBLIC SERVICE CORPORATION
(44-76: 9/30/1880)

top of
bottom of
marble retaining wall
6" cast iron
6" cast iron

CARRIS REELS, INC.
(metal building)

bit. pvt.
bit. pvt.

LP tanks
conc. retaining wall
silos
metal shed
sawdust shed
silo
loading docks
eaves

metal shed
eaves
shelf
6' dia. penstock
control cabinet
metal shed
top of marble retaining wall
bottom of marble
wood planks
intake gate
trans-former
power station
penstock (6' dia.)
bridge
wood deck
marble wall
marble building shell
retaining wall

OTTER CREEK

CLARENDON & PITTSFORD RAILROAD
(Formerly The Delaware & Hudson Railroad Corp.)
38-1: 12/27/1983
railroad trestle

33'
33'
B
dam

shelf
(40')
intake
penstock (5.5' dia.)
top of marble retaining wall
bottom of marble retaining wall
(20')
(30')
(15')
(30')

JOSEPH & GERALYN HANCE
127-229: 10/30/2003
(24-135: 2/11/1976)
A

lawn
lawn

(154.0')
C.V.P.S.C.
(116-419: 8/06/2002)
40' Wide Easement
A
(96.1')

SURVEYOR'S NOTES:

JAMES EARLE to OMYA, INC., Rutland Town Land Records Book 116, page 419: 8/06/2002. 40' wide easement.

The the location of the railroad right-of-way is shown centered on the existing tracks, and is approximate.

This was a closed traverse survey using a Leica TCRP 1203 robotic total station. Bearings are based on solar observations taken near NGS Control Point CENTER RUTLAND GAGING STATION. The survey traverse was balanced by the method of Least Squares. Bearings and distances are shown on the Vermont Grid, NAD83 (2007). Distances are shown in U.S. Survey Feet. The coordinates are based on NGS Control Point WINE. Elevations were determined by the method of trigonometric leveling and are based on NAVD88. The combined Grid x Elevation Factor = 0.999965. Multiply Grid distances by 1.000035 to obtain ground distances. Rotate grid bearings 00°21'11" ccw to obtain astronomic bearings.

The land records were researched by Peter E. Chase, L.S.#14, Rutland, Vermont. Surveying assistant, Benjamin Bump, Bethel, Vermont.

MAP	DESCRIPTION
A	JAMES EARLE PROPERTY LOTS NO'S.1 & 2 BARRETT HILL RD. (TOWN HWY. NO.28) & NORTH CAMPBELL RD. (TOWN HWY. NO.31) TOWN OF RUTLAND, VERMONT DWG. NO.: 5-11, dated January 16, 2002 by Alan G. Olson, L.S. #529.
B	RIGHT OF WAY AND TRACK MAP THE RENSSELAER & SARATOGA RAILROAD COMPANY OPERATED BY THE DELAWARE AND HUDSON COMPANY SARATOGA DIVISION WASHINGTON BRANCH IN VERMONT STATION 3186+64.4 TO STATION 3239+06.6 V-10/19, dated June 30, 1916.

Scale In Feet
0 30 60 90 120 150 180 210 240

Office of the RUTLAND Town Clerk. I certify that the within instrument was filed in this office for record at _____ on the _____ day of _____, 20____, and was filed in Map Slide _____ at the RUTLAND Town Clerks Office.

Signature:_____ Title:_____

I certify to CENTRAL VERMONT PUBLIC SERVICE CORPORATION that this plat is based on information abstracted from deeds of record and on evidence found on the ground.

I certify that this plat meets the requirements of 27 VSA Section 1403 in addition to Section 5.5D of the Rules of the Board of Land Surveyors.

This certification is only valid when it is accompanied by my impression seal.

Signed:_____ Date:_____
Richard F. Lunna, L.S. #480

PRELIMINARY
This plan is For General Information Only. It May Not be Complete or Correct in All Details And Should Not Be Filed In The Land Records Or Used As A Basis For Design, Construction Or Conveyancing.
R.F. LUNNA ASSOCIATES, PC
11/22/2011

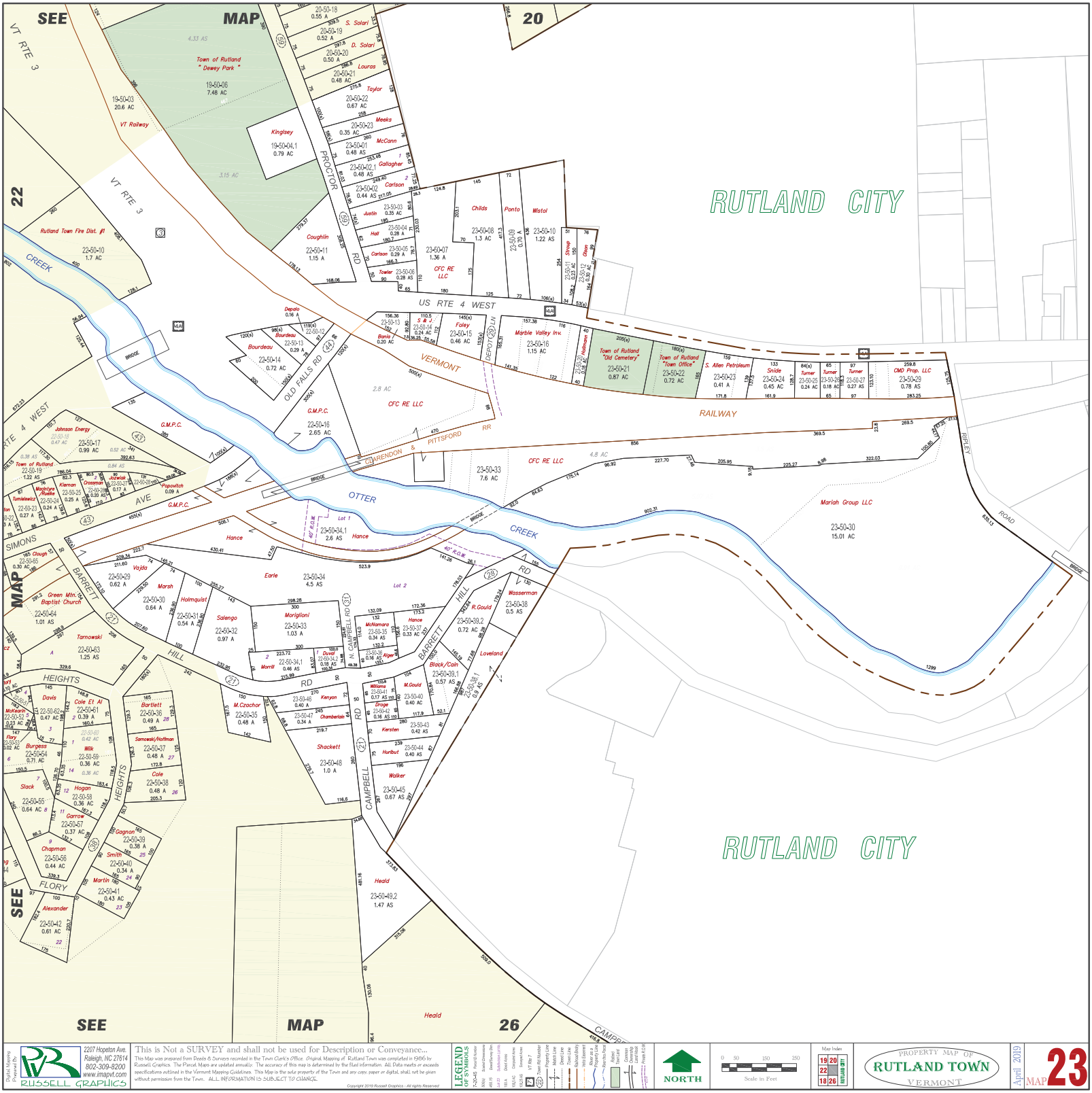
Copyright 2011

Location Plan For

RECORD OWNER:
CENTRAL VERMONT PUBLIC SERVICE CORPORATION
77 Grove Street - Rutland, Vermont. 05701

LOCATION:
Center Rutland Generating Station
Town Of Rutland - Rutland County - Vermont

SURVEYED BY:	*R.F.Lunna Associates, P.C.*	*Nov., 2011*
PLAT BY:	*Ben Bump & Richard Lunna*	*11/22/2011*
DISK FILE:	*749.dwg*	*PROJECT: 11-749*
SCALE:	*1" = 30'*	*SHEET: 1/1*



Digital Mapping Prepared By:
RUSSELL GRAPHICS
2207 Hopeton Ave.
Raleigh, NC 27614
802-309-8200
www.imapvt.com

This is Not a SURVEY and shall not be used for Description or Conveyance...

This Map was prepared from Deeds & Surveys recorded in the Town Clerk's Office. Original Mapping of Rutland Town was completed in 1986 by Russell Graphics. The Parcel Maps are updated annually. The accuracy of this map is determined by the filed information. All Data meets or exceeds specifications outlined in the Vermont Mapping Guidelines. This Map is the sole property of the Town and any copy, paper or digital, shall not be given without permission from the Town. ALL INFORMATION IS SUBJECT TO CHANGE.

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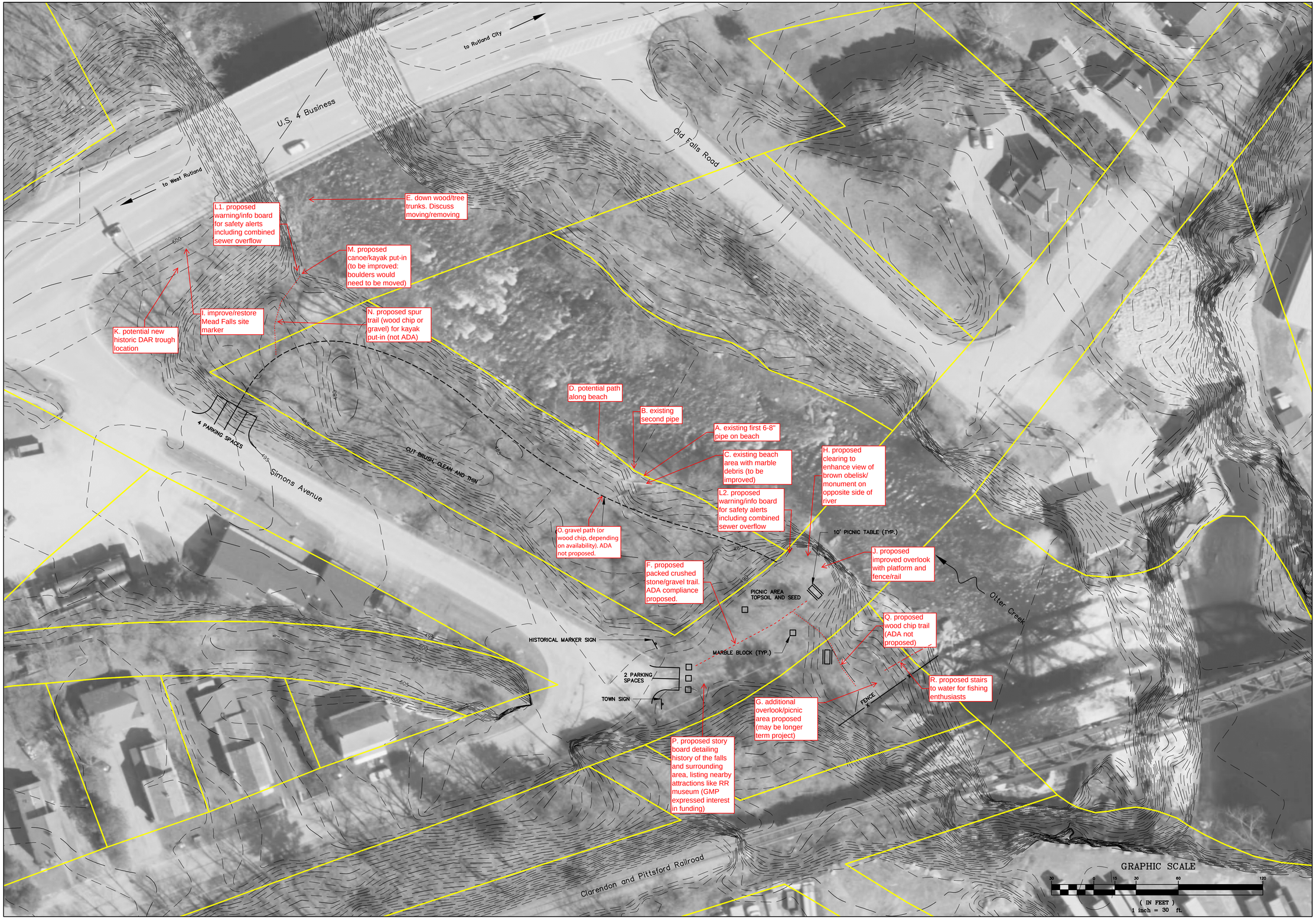
LEGEND

PROPERTY MAP OF
RUTLAND TOWN
VERMONT

April 2019
MAP 23

ATTACHMENT E

PRELIMINARY POCKET PARK DESIGN MAP



OTTER CREEK ENGINEERING

404 East Main Street
P.O. Box 712
East Middlebury, VT 05740
Telephone: 802 382-8522
Fax: 802 382-8640
-
110 Merchants Row
4th Floor, Suite 15
Rutland, VT 05701
Telephone: 802 747-3080
Fax: 802 747-4820
-
E-mail: info@ottercrk.com

STAMP AND SIGNATURE:

DESIGN ENGINEER

THESE DRAWINGS SHALL NOT BE ALTERED IN ANY WAY WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. ANY REVISIONS SHALL BE MADE BY THE ENGINEER AND NOTED IN THE REVISION BLOCK. © 2018

OTTER CREEK ENGINEERING, INC.

GRID NORTH

CITY OF RUTLAND
RUTLAND
POCKET PARK
CENTER RUTLAND, VERMONT

REVIEW

DATE ISSUED:	4/26/18
REVISIONS:	
DRAWN BY:	JS
CHECKED BY:	MY
SCALE:	1" = 30'
PROJECT NO.:	Rutland Pocket Park
CADD FILE:	Rutland Pocket Park

TITLE:

ORTHO EXHIBIT

DRAWING NO.

1

2152 Post Road
Rutland, Vermont 05701

November 23, 2022

VIA E-FILING

Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Center Rutland Hydroelectric Project (FERC No. 2445-028)
Additional Information Request Response

Dear Secretary Bose:

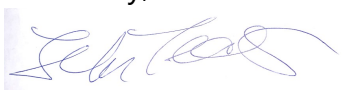
On December 23, 2021, Green Mountain Power (GMP) filed a Final License Application for the relicensing of the Center Rutland Project, FERC No. 2445 (Project). On February 18, 2022, the Federal Energy Regulatory Commission (FERC or Commission) issued an Additional Information Request (AIR) pertaining to the license application. On September 2, 2022, FERC issued a second AIR. On October 24, 2022, FERC issued a third AIR seeking additional details regarding the lands proposed for regional recreational development by the Town of Rutland. GMP herein provides clarification that these lands are not proposed for removal from the project boundary. The parcel intended for development by the Town are adjacent to the former project boundary (as licensed in 1983) but are outside the historic and current project boundary.

Attached for the Commission's review, please find:

- Attachment A – Additional Information Request Responses
- Attachment B – GMP Project Boundary and Pocket Park Parcel Map
- Attachment C – Town of Rutland Pocket Park Concept Map
- Attachment D – Land Survey
- Attachment E – Town of Rutland Final Report on the Proposed Pocket Park

Should you have any questions regarding this filing, please contact John Tedesco at john.tedesco@greenmountainpower.com or at 802-324-7318. GMP requests to schedule a call with Commission staff if outstanding questions remain regarding this issue for the Center Rutland Project relicensing.

Sincerely,



John Tedesco
Project Generation Coordinator

ATTACHMENT A

ADDITIONAL INFORMATION REQUEST RESPONSES

FERC AIR Responses

On October 24, 2022, the Federal Energy Regulatory Division (FERC or Commission) Division of Hydropower Licensing commented on the Center Rutland Final License Application[1] requesting additional Information. Please find responses to specific information needs included below.

> **To assist Commission staff with an environmental analysis of GMP's proposal to remove land associated with the project recreation facilities from the project, please describe the total area of land that GMP is proposing to remove from the project, including the size of the parcel (in acres or square feet) and the location of the parcel.**

Attachment B is provided in response to the Commission's additional information request to illustrate the location of the land parcel relative to the Project boundary. GMP notes that the property intended to be developed by the Town of Rutland (Town) for regional public recreational opportunities was not historically or currently within the Project boundary. Therefore, GMP is not proposing to remove land from the Project boundary. GMP understands the current Project license issued to a former licensee[2] included requirements to develop recreational access at this location, outside of the Project boundary on land currently owned by GMP. Due to circumstances outside of GMP's control, development of this recreational access did not occur. In support of the Town's intent to improve public recreational opportunities, GMP plans to develop a lease or other access agreement with the Town to allow for them to develop the pocket park on Tax Parcel 22-50-16. As noted herein, this parcel is not within the project boundary, as shown in Attachment B, which identifies the parcel tax map, historic (as amended in 1988) and existing project boundary, and area of potential effect (APE) as defined in consultation with the Vermont State Historic Preservation Officer (SHPO) for the Project. GMP is proposing to collaborate with the Town of Rutland to support regional recreation opportunities at this location outside of the project boundary.

[1] The Center Rutland FLA was Filed with the Commission on December 23, 2021 and can be accessed via eLibrary at: https://elibrary.ferc.gov/eLibrary/docinfo?accession_number=20211223-5017

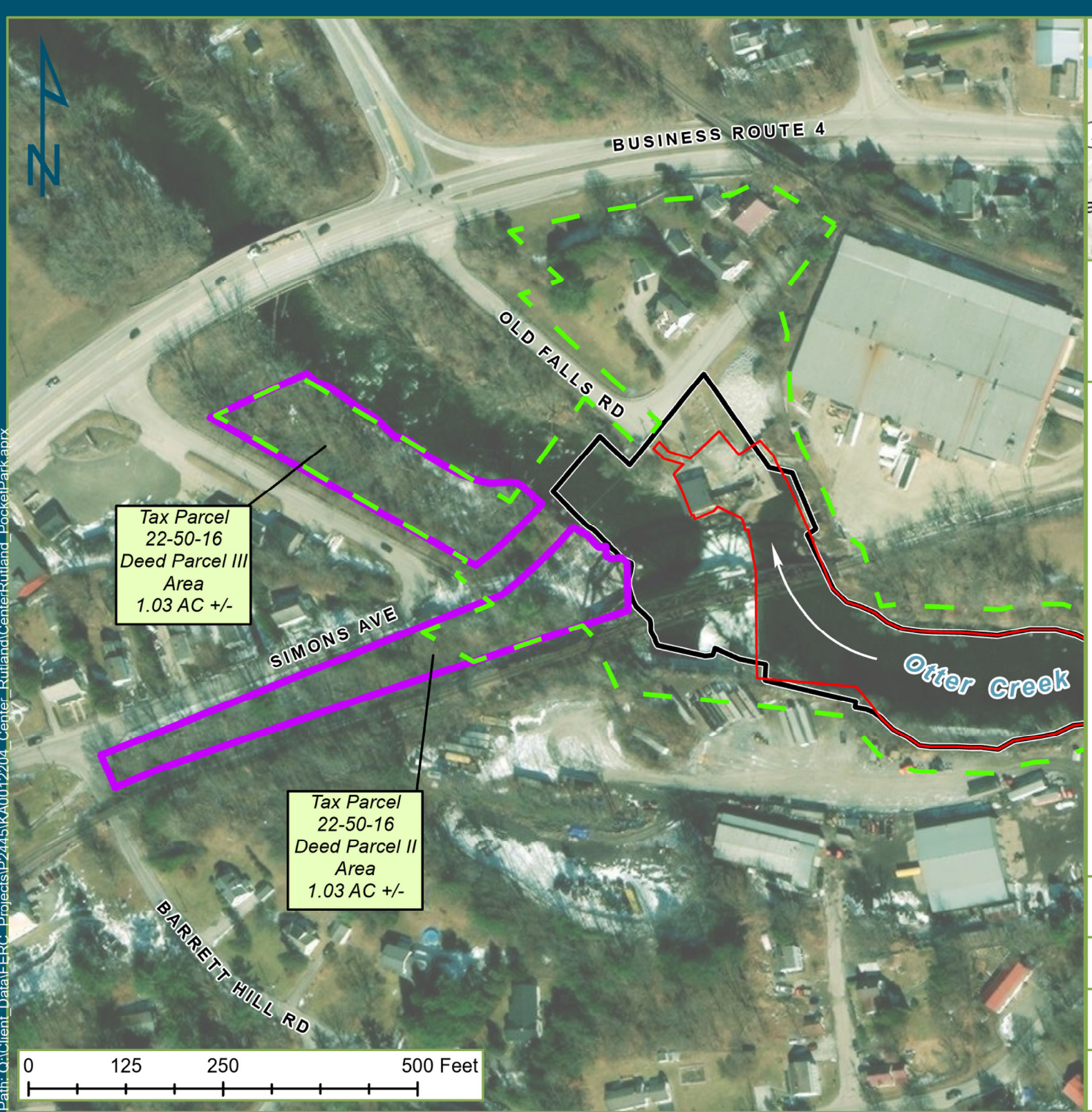
[2] On March 31, 1993, the Commission issued a Project license for the Center Rutland Project to Omaya Inc., which can be accessed via eLibrary at: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=00A28862-66E2-5005-8110-C31FAFC91712. On November 23, 2010, the Commission issued an Order Approving the Transfer of Licenses, Substitution of Applicant for the Center Rutland Project from Omaya Inc. to Central Vermont Public Service Corporation. On September 13, 2012, the Commission issued an Order Approving the Transfer of Licenses and Substitution of Applicant for the Center Rutland Project, transferring the project license from the Central Vermont Public Service Corporation to Green Mountain Power. This Order can be accessed via eLibrary at: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=01CF5632-66E2-5005-8110-C31FAFC91712

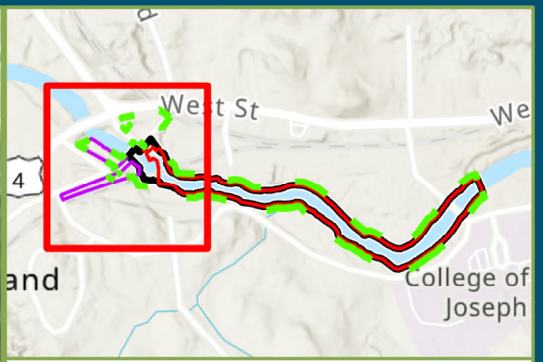
To the extent that GMP does not have detailed information regarding the specific actions that would be taken by the Town following any approval by the Commission to remove the land from the project, please consult with the Town to develop specific estimates and analyses regarding the effects of the Town's pocket park on terrestrial and cultural resources.

GMP is not proposing to transfer any land within the project boundary to the Town. The lands associated with the Town's planned pocket park is and historically has been outside of the licensed project boundary (see Attachment A), and therefore GMP is not proposing to remove lands from the project boundary. GMP is committed to working with the Town to improve regional recreation opportunities. To gain a better understanding of the Town's plan for developing the pocket park, GMP met with representatives from the Town on November 16, 2022. In that meeting, the Town provided GMP with an updated concept map of potential park facilities (see Attachment C), a boundary survey that the Town prepared in 2021 (Attachment D), a final report from the Town describing the planning and development of the pocket park (see Attachment E), and additional information on the potential schedule for the park. The Town is proposing to develop the pocket park in a phased approach. To support this approach, GMP committed to completing an Archaeological Resources Assessment in 2023, pending the availability of consultants to do so, in consultation with the SHPO, to better understand potential impacts to cultural resources through the development of the pocket park. GMP is aware that areas of the proposed pocket park are within the Area of Potential effect for the Project and is committed to working with the SHPO to prevent or minimize impacts to cultural resources. The Town understands that the Archaeological Resources Assessment is the first step in understanding what actions could be taken in the development of the pocket park. The Town would acquire all necessary permits and permissions to minimize impacts to terrestrial resources before the pocket park is developed.

ATTACHMENT B

GMP PROJECT BOUNDARY AND POCKET PARK PARCEL MAP





GMP Parcels

Legend

- Existing Project Boundary (As Amended in 1998 and As Proposed in 2021 Application)
- Historic Project Boundary (As Approved in the 1993 License)
- GMP Land (Non-Project)
- Area of Potential Effect (As Defined With SHPO)

Green Mountain Power

Rutland, VT

Drawn By:	Date Drawn:	Checked By:	Date Checked:
NXG	11-17-2022	KPN	11-17-2022

Kleinschmidt
141 Main St., PO Box 650
Pittsfield, Maine 04967
Telephone: (207) 487-3328
Fax: (207) 487-3124
www.KleinschmidtGroup.com

This map/data was created for informational, planning, reference and guidance purposes only. Kleinschmidt Associates makes no warranty, expressed or implied related to the accuracy or content of these materials.

Path: Q:\Client_Data\FERC_Projects\P2485\KA0012204_Center_Rutland\CenterRutland_PocketPark.aprx

Source: Esri 2022

PN: 012204.01

ATTACHMENT C

TOWN OF RUTLAND POCKET PARK CONCEPT MAP

Center Rutland (Mead) Falls

100 50 0 100 200

Feet

N W E S

1 inch = 0.01 miles

Map date:4/05/2022

RUTLAND REGIONAL PLANNING COMMISSION

1 Foot Contour Interval

State ROW

North End

1. Buff up Meads Falls historical marker; add a new sign for the pocket park. (State ROW restrictions?)
2. New parking lot off Simons Ave – four spots (two ADA compliant). Bicycle racks. Link parking to new gravel/wood or marble chip path that connects with overlook/picnic area on south end.
3. At parking lot, warning/info board for safety alerts during combined sewer overflows and flooding: solar-powered.
4. Canoe/kayak launch and new spur trail (marble/wood chips and wood/marble chip steps) off new main trail. Not ADA compliant.
5. Remove trees in creek (State Stream Alteration Permit?)
6. Cut brush, remove, or thin trees along Simons Ave. (across from Johnson Energy). Take out invasives/plant native species for birds and other wildlife. Add anti-vandalism measures such as signs with park hours & phone # to report suspicious activity, solar-powered lighting, and surveillance cameras.

South End

7. Additional two parking spots with two that are ADA compliant. Bicylce racks. Place marble blocks at trail entrance to keep vehicles off trails.
8. At parking lot, warning/info board for safety alerts during combined sewer overflows and flooding: solar powered.
9. Kiosk with web link/mobile app/QR code for virtual tour detailing history of falls and surrounding area. Various historical signs placed along paths and at overlooks. Pocket park sign.
10. Upgrade existing path with marble chips from parking lot to two grassed picnic areas and up to two overlooks, with platforms, benches, and metal fence/wood rail. ADA compliant. Move DAR watering trough to overlook/picnic area.
11. Clearing to view brown obelisk on opposite side of creek. ADA compliant.
12. New marble/wood chip spur trail for anglers. Not ADA compliant.
13. For liability reasons, add more fencing to keep people off Amtrak (D&H) railroad bridge.
14. Remove or cover unused two pipe ends along water's edge on west side; clean up beach.
15. New gravel path along beach (connecting north and south ends) to withstand 4 foot lateral flood levels. Not ADA compliant.
16. Cut brush, remove, or thin trees. Take out invasives/plant native species for birds and other wildlife. Add anti-vandalism measures such as signs with park hours & phone # to report suspicious activity, solar-powered lighting, and surveillance cameras.

OLD FALLS RD

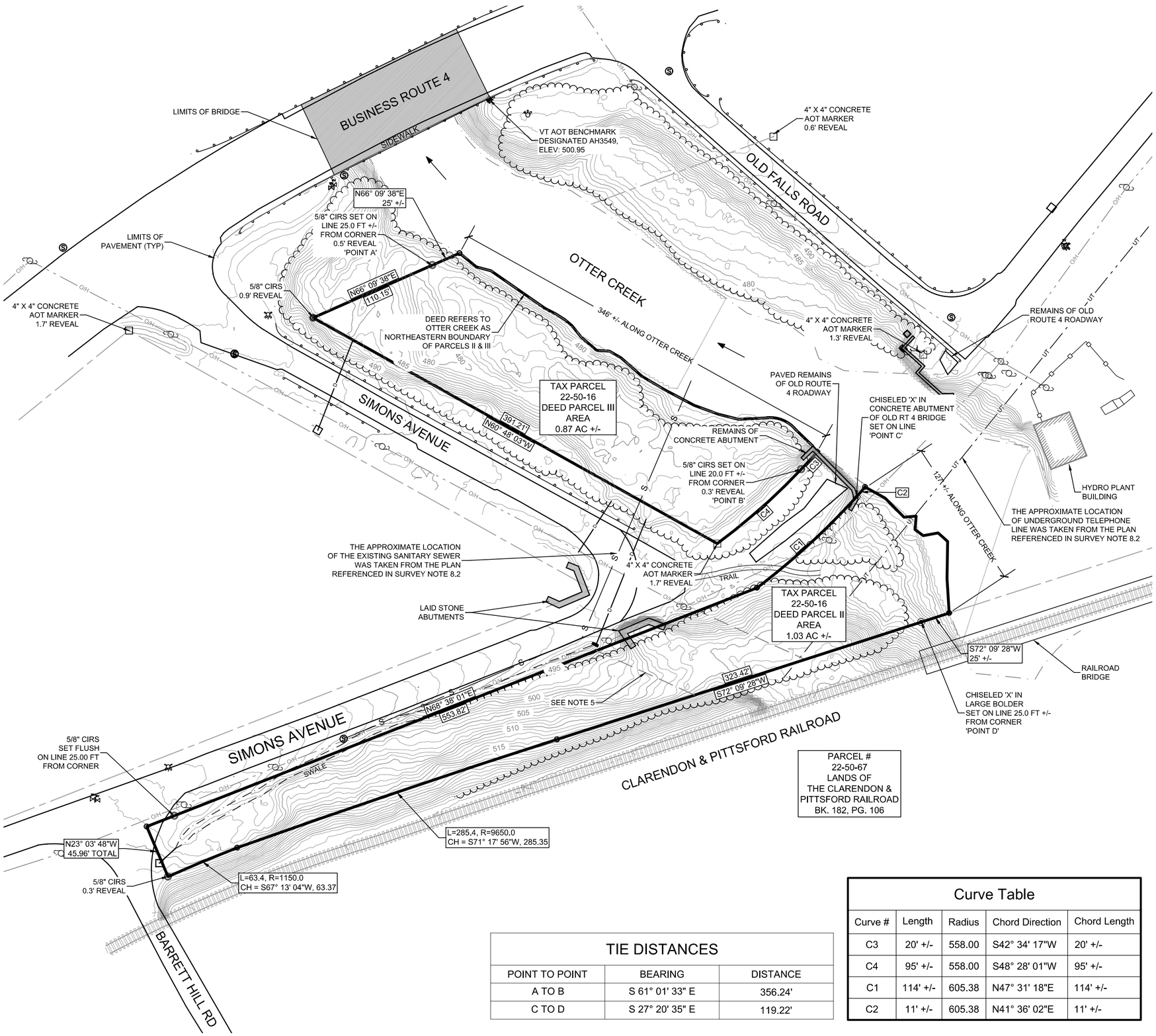
SIMONS AVE

OVERLOOK

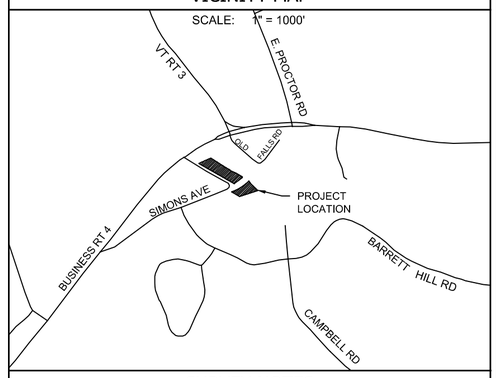
Partially funded by the Municipal Planning Grant program administered by the Department of Housing and Community Development.

ATTACHMENT D

LAND SURVEY



VICINITY MAP



SURVEY NOTES

1. BOUNDARY SURVEY PREPARED FOR THE GREEN MOUNTAIN POWER COMPANY AND THE TOWN OF RUTLAND.
2. TOWN OF RUTLAND PARCEL ID NUMBER: 22-50-16
3. TOWN OF RUTLAND ZONING DISTRICT: THE PARCELS ARE LOCATED WITHIN THE CONSERVATION AREA AS INDICATED ON THE TOWN OF RUTLAND LAND USE MAP, DATED NOVEMBER 29, 2016.
4. SOURCE OF TITLE: BEING PARCEL II AND PARCEL III OF LANDS AS DEEDED BY OMYA INC. TO CENTRAL VERMONT PUBLIC SERVICE CORPORATION BY WARRANTY DEED, RECORDED IN THE RUTLAND TOWN LAND RECORDS IN BOOK 170, PAGE 384 AND DATED SEPTEMBER 6TH, 2011.
5. PARCEL II AS REFERRED TO ABOVE INCLUDES 'ALL RIGHT TITLE AND INTEREST TO A PORTION OF THE FORMER CLARENDON AND PITTSFORD RAILROAD COMPANY AS REFERENCED IN BOOK 170, PAGE 384.
6. BEARINGS AS DEPICTED ON THIS PLAT ARE WITH RESPECT TO THE VERMONT STATE PLANE COORDINATE SYSTEM AND ARE BASED UPON GPS OBSERVATIONS MADE IN AUGUST OF 2021.
7. THIS PLAT IS BASED ON RECORD INFORMATION AS REFERENCED AND EVIDENCE OBTAINED FROM A FIELD SURVEY CONDUCTED IN AUGUST OF 2021.
8. OTHER INFORMATION USED IN THE DEVELOPMENT OF THIS PLAT:
   - 8.1. RIGHT OF WAY AND TRACK MAP FOR THE RENSSELAER AND SARATOGA RAILROAD COMPANY, OPERATED BY THE DELAWARE AND HUDSON COMPANY, SHEETS 1 OF 3 AND 9 OF 9, DATED JUNE 30, 1916.
   - 8.2. VERMONT AOT HIGHWAY PLAN FOR THE TOWN OF WEST RUTLAND AND RUTLAND ROUTE 4, DATED OCTOBER OF 1957.
9. THE LIMITS OF THE RIGHTS OF WAY FOR BUSINESS ROUTE 4, OLD ROUTE 4, SIMONS AVENUE AND THE CLARENDON AND PITTSFORD RAILROAD ARE BASED ON INFORMATION PROVIDED ON THE ABOVE REFERENCED MAPS.

LEGEND

- PROPERTY LINE
- ABUTTING PROPERTY LINE
- LIMITS OF RIVER AT TIME OF SURVEY
- FENCE LINE
- GUARDRAIL
- O/H POWER / U/G PHONE
- STORM SEWER / SANITARY SEWER
- APPX TREE LINE / RAILROAD TRACK
- CONCRETE HIGHWAY MARKER
- 5/8" CAPPED IRON REBAR SET (CIRS)
- UTILITY POLE / HYDRANT
- CATCH BASIN / SEWER MANHOLE

TIE DISTANCES

POINT TO POINT	BEARING	DISTANCE
A TO B	S 61° 01' 33" E	356.24'
C TO D	S 27° 20' 35" E	119.22'

Curve Table

Curve #	Length	Radius	Chord Direction	Chord Length
C3	20' +/-	558.00	S42° 34' 17"W	20' +/-
C4	95' +/-	558.00	S48° 28' 01"W	95' +/-
C1	114' +/-	605.38	N47° 31' 18"E	114' +/-
C2	11' +/-	605.38	N41° 36' 02"E	11' +/-

1 BOUNDARY SURVEY - GREEN MOUNTAIN POWER COMPANY AND THE TOWN OF RUTLAND

SCALE 1:60

0 60 120 Feet

NORTH

MSK ENGINEERS
P.O. BOX 139, 150 DEPOT STREET
BENNINGTON, VERMONT 05201
PH: (802) 447-1402 FAX: (802) 445-1291

PROJECT DESCRIPTION: BOUNDARY SURVEY PREPARED FOR GREEN MOUNTAIN POWER AND THE TOWN OF RUTLAND

PROPERTY OWNER: LANDS OF GREEN MOUNTAIN POWER

PROPERTY LOCATION: SIMONS AVENUE AND BUSINESS ROUTE 4, TOWN OF RUTLAND, COUNTY OF RUTLAND, VERMONT

DATE OF SURVEY:	08-20-21	DATE OF MAP:	09-15-21
SCALE:	1" = 60'	DRAWN BY:	EM

I CERTIFY THAT THIS PLAT CONFORMS TO THE ABOVE REFERENCED DEEDS, PLATS AND FIELD EVIDENCE AS SHOWN UNLESS OTHERWISE NOTED, AND TO THE REQUIREMENTS OF 27 VSA, SECTION 1403.

STATE OF VERMONT
EAMON MULLIGAN
No. 100478
LICENSED LAND SURVEYOR

ATTACHMENT E

TOWN OF RUTLAND FINAL REPORT ON THE PROPOSED POCKET PARK

FINAL REPORT - POCKET PARK

Background

A pocket park was proposed at Center Rutland (Mead's) Falls to promote redevelopment and new recreational opportunities along the Business Route 4 corridor between Center Rutland (in Rutland Town) and West Rutland in two recent studies:

- 2016 Town of West Rutland and Town of Rutland Smart Growth Connection Plan;
- 2017 Town of West Rutland and Town of Rutland Marbleway Path Scoping Study.

After the release of those reports and on the recommendation of the Rutland Regional Planning Commission (RRPC), the Rutland Town Select Board decided to apply for a Municipal Planning Grant from the Agency of Commerce and Community Developments (ACCD) to do a preliminary/scoping design of a park. With assistance from the Rutland Town Select Board and Planning Commission, RRPC submitted a planning grant application. A grant (07110-MP-2021-Rutland-42) was awarded on December 1, 2020 for $13,500 from ACCD with matching funding from the Town of $1,500. The deadline for final expenses is May 31, 2022 and grant closeout is June 30, 2022.

MPG Grant Required Tasks and Completed Actions

1. The Town of Rutland contract with Rutland Regional Planning Commission (RRPC) for administration of the grant.
   - On January 21, 2021, an agreement was executed between the Town of Rutland and RRPC detailing how RRPC would provide the services required by the MPG grant. (Copy of agreement in Appendix A).

2. Review materials including maps, historical documents, designs, plans, and studies.
   - RRPC staff reviewed historical information (books, records, historical journals, photos) from January 2021 and up through stakeholders' meetings in May and September 2021.
   - Individual consultations with local historians and local recreation groups were done before and after stakeholder meetings.
   - Copies of the materials collected during this process have been retained by RRPC.

3. Review materials with stakeholders.
   Besides the individual conversations, three virtual meetings were held to solicit suggestions for the pocket park. A group of recreational stakeholders was assembled as was a group of historians and a public meeting was held for townspeople.
   - Recreation stakeholders met with RRPC staff on 5/10/2021.
   - History stakeholders met with RRPC staff on 9/17/2021. (List of all stakeholders in Appendix B)
   - Public meeting on 3/3/2022. Eight people attended to offer suggestions for the park and the list of recommendations was updated. To promote the public meeting, posters, flyers, and maps were created to display at the Town Office building and various other locations around Town; articles were written for the Town's newsletter - The Circle, the Town's Facebook page, and for Front Porch Forum. (Flyers/posters in Appendix C)

4. Create graphic renderings of the pocket park and potential historical and cultural connections.
    - Multiple updated versions of a map showing historical and recreational features that were being suggested by stakeholders and the public were created by RRPC and shared with the Select Board, Town Planning Commission, and the public. A total of sixteen suggestions for park features came out of these meetings. The suggestions were mapped on the graphic renderings (maps). (Final map as Attachment)

5. Proposed design and permitting (detailed survey, site engineering, trail designs, final map).
   The proposed site for the pocket park is primarily owned by Green Mountain Power (GMP) with some Town rights of way bordering and bisecting the parcel. After meeting with GMP officials, it was determined a professional survey of its parcel did not exist. To best plan for the park and protect the Town's interests, it was decided that funds from the grant be used to conduct a comprehensive professional boundary survey.

   Also, the site being considered for the park has long been a crossroads for roads and rail lines. Even today, Vermont Business Route 4 runs along one boundary line of the park site as do active rail lines. It became clear that due diligence necessitated that research be conducted into the State of Vermont rights of way and property line records for the Vermont Railroad.
    - Professional boundary survey with natural features and physical structures survey was completed October 15, 2021 by MSK Engineering for Green Mountain Power tax parcel # 22-50-16. The survey delineates property lines, property owners through title/deed, describes and locates all utilities, signs, structures, bridges, and other land improvements; describes and locates land conditions on, under, over, and/or across any portion of the property; and provides drawings with elevation contour intervals of five feet. (Final survey as Attachment)
    - RRPC conducted preliminary site engineering with the assistance of stakeholders, the public, the Select Board, GMP, VTrans, and Clarendon and Pittsford Railroad resulting in a final proposed park design (including trails and other features) on April 12, 2022. (Refer to final map attachment)
    - Business Route 4 Rights of Way (ROW): VT Agency of Transportation's mapping data for rights of way in the vicinity of the proposed park were reviewed and were found to be outdated. After researching the ROWs with Brian Sanderson, VT AOT District Project Manager/District 3, it was determined that the agency had relinquished to the Town its rights of way along Simons Avenue and the old Route 4. Those were accepted by the Town in January 1997. Sanderson described the updated ROW boundary lines in a phone conversation on April 4, 2022 and the new lines were added to the graphic renditions for the pocket park for this grant. Sanderson also suggested that a boat launch and spur trail would be allowed in the ROW with special conditions. When the Town had a final design those special conditions could be finalized with VTrans. But a proposed flooding safety sign could not be in the ROW; he suggested moving it to the north parking lot in the Town's ROW. Also, Sanderson said the DAR water trough could not be moved into the ROW for safety reasons; he suggested moving it to the south end of the proposed park along with other historical markers and information. A Traffic Control Plan permit would be needed for such a move. (1997 Agreement in Appendix D; Notes from Sanderson phone conversations in Appendix E)
    - Clarendon & Pittsford Railroad property line verification: Through a series of phone conversations with Shane Filshov, General Manager, Clarendon & Pittsford Railroad, Vermont

Rail System, there are no deeded rights of way for rail lines; and parcel boundary lines are used. After researching the issue, Filshov indicated the railroad's property line maps were outdated. The MSK Engineering boundary survey was reviewed with him and he indicated if the park is not on railroad property, he's OK with the park current design. He did suggest that with the increased use of its rail line by Amtrak that park users be kept as far as possible from the tracks and he supported the idea of adding a fence in the park near the boundary of railroad property. (Notes from Filshov phone conversations in Appendix F)

- Permitting needs:
    1. VT AOT State Highway Access and Work Permit (#1111).This traffic control plan would be needed if the DAR water trough is moved from its current location. (Application in Appendix G)
    2. Vermont ANR Stream alteration permit would be needed if more than ten cubic yards of trees and debris are removed from Otter Creek. (Carvajal email in Appendix H)
    3. Official Business Directory Sign (OBDS). Signs are not allowed in a State ROW except in a few instances. The Town could apply for an OBDS from the State and would have to pay an annual maintenance fee. (OBDS application in Appendix I).

Summary and Recommendations

1. Pursue a use agreement or land transfer with Green Mountain Power for use of its parcel for a park. During the grant period, there were two initial meetings with GMP and Town representatives to begin discussing options.
2. Solicit a final design and cost estimates from a certified landscape architect or civil engineer.
3. Research grant opportunities for design and/or construction funding.
4. Use Rutland Town Planning Commission as needed to coordinate future work with the final design firm and the Select Board.
5. Continue to involve the public and build interest in the park by reaching out to community groups and institutions to cultivate volunteer opportunities.

Appendix B

RUTLAND REGIONAL PLANNING COMMISSION

AGREEMENT BETWEEN THE

RUTLAND REGIONAL PLANNING COMMISSION

AND THE

TOWN OF RUTLAND

FOR PLANNING SERVICES

I. GRANT AGREEMENT

It is agreed by and between the Rutland Regional Planning Commission (hereinafter called the RRPC) and the Town of Rutland (hereinafter called the Town) that the RRPC shall assist the Town in the design of a pocket park at Mead Falls/Center Rutland Falls, in accordance with Attachment A - Scope of Work and Attachment B - Budget.

II. GENERAL TERMS AND CONDITIONS

A. All services under this agreement shall be performed for a lump sum of $15,000, unless amended, as provided by the State of Vermont Agency of Commerce and Community Development Municipal Planning Grant award of $13,500 and the Town's match contribution of **$1,500** per award number 07110-MP-2021-Rutland-42. The expenses related to the scope of work are projected. The Town of Rutland is not responsible for expenses exceeding the lump sum of **$15,000** and RRPC is not obligated to return or reduce any portion of the agreement amount that is not expended or obligated at the end of the period of performance.

B. The period of performance under this Agreement shall commence on December 1, 2020 and run through May 31, 2022 or the completion of the products detailed in Attachment A - Scope of Work and Attachment B - Budget, whichever is sooner.

C. Ownership of all data and materials collected under this Agreement shall remain with the Town and the RRPC. The parties may use the information for their own purposes.

D. Changes, modifications, or amendments in the terms, conditions and fees of this Agreement shall be written and signed by the duly authorized representatives of the RRPC and the Town.

E. This Agreement may be canceled by either party by giving written notice at least thirty (30) days in advance. If the termination is at the Town's request, payment to the RRPC will be made for the amount of any fees earned to the date of the notice of termination less any payments previously made.

F. The parties agree that the RRPC, and any agents and employees of the RRPC, shall act in an independent capacity and not as officers or employees of the Town.

G. The Town, by any authorized representative, shall have the right at all reasonable times, to inspect or otherwise evaluate the work performed or being performed under this Agreement.

III. OBLIGATIONS OF THE REGIONAL PLANNING COMMISSION

A. RRPC staff will work with the Rutland Town Selectboard and the Rutland Town Planning Commission in providing the services outlined in Attachment A - Scope of Work and Attachment B - Budget.

B. RRPC shall maintain all books, documents, payrolls, papers, accounting records and other evidence pertaining to costs incurred under this Agreement and make them available during the period of this Agreement.

IV. OBLIGATIONS OF THE TOWN

A. In consideration of the services to be provided by the RRPC, the Town agrees to pay the RRPC fifty Percent (50%) of the total fee with the execution of the Contract, and Fifty Percent (50%) shall be paid on completion of Attachment A – Scope of Work.

B. The Rutland Town Planning Commission and the Rutland Town Selectboard agree to schedule meetings as necessary to review various documents and recommendations as called for in Attachment A – Scope of Work and Attachment B - Budget.

C. The Town agrees to make available to the RRPC any information, data, reports, plans, maps, or drawings relevant to this project.

D. The Town agrees to cooperate with and administratively assist the RRPC, without charge, in carrying out the planning tasks necessary to complete the project.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed.

Edward Bove, Executive Director
RUTLAND REGIONAL PLANNING COMMISSION

1/21/21
DATE

Selectboard Chair
TOWN OF RUTLAND

1-11-21
DATE

ATTACHMENT A - SCOPE OF WORK

Task # and Name	Description of Task
1. Contract with Rutland Regional Planning Commission	Finalize contract agreement between Rutland Town and RRPC. RRPC will assist the Town with project administration and with grant administration through the State of Vermont GEARS system.
2. Review materials including maps, historical documents, designs, plans and studies	The RRPC will compile existing maps, plans and studies.
3. Review materials with stakeholders	The RRPC will create a broad-reaching and multi-faceted public input program to solicit input on the project and incorporate results into the design.
4. Create graphic renderings of the pocket park and potential historical and cultural connections with proposed design and permitting	The RRPC will subcontract with a historical consultant to review information from 3.). The RRPC will present the Rutland Town Selectboard with any necessary permit applications for the Town-owned portion of the project and a Proposed Design informed by a detailed survey, site engineering and trail plans conducted by a historical consultant.
5. Create graphic renderings of the pocket park and potential historical and cultural connections with proposed design and permitting	The RRPC will subcontract with an engineering consultant to review information from 3.). The RRPC will present the Rutland Town Selectboard with any necessary permit applications for the Town-owned portion of the project and a Proposed Design informed by a detailed survey, site engineering and trail plans conducted by an engineering consultant.

ATTACHMENT B - BUDGET

Task # and Name	Responsibility	Total Cost Per Task					
		Hours	*Hourly Rate*	*Labor Cost*	*Description*	*Direct Expenses Cost*	*Total Cost*
1. Contract with Rutland Regional Planning Commission	Town of Rutland / RRPC	10	85	$850			$850
2. Review materials including maps, historical documents, designs, plans and studies	Town of Rutland / RRPC	60	$85	$5,100			$5,100
3. Review materials with stakeholders	Town of Rutland / RRPC	50	$85	$4,250		$500	$4,750
4. Create graphic renderings of the pocket park and potential historical and cultural connections with proposed design and permitting	Town of Rutland / RRPC/ Historical consultant	10	$150	$1,500	Mileage, supplies, printing, postage	$800	$2,300
5. Create graphic renderings of the pocket park and potential historical and cultural connections with proposed design and permitting	Town of Rutland / RRPC/ Engineering consultant	10	$150	$1,500	Mileage, supplies, printing, postage	$500	$2,000
			TOTALS	**$13,200**		**$1,800**	**$15,000**

Appendix C

Center Rutland Falls Pocket Park MPG - Stakeholder Groups

Recreation

GMP
- John Greenan and others John.Greenan@greenmountainpower.com

Anglers
- Trout Unlimited: Joe Kraus joekraus@mac.com

Audubon Vermont/Rutland Co -
- Marvin and Sue Elliott marvelliott61@gmail.com
- Kathleen Guinness kathleenguinness63@gmail.com

Mike Wichrowski, VT Fish & Wildlife (Otter Creek Trail, Mt Tabor to LC) Mike.Wichrowski@vermont.gov

Gabrielle Bickford, VT Dept of Forests, Parks & Recreation, Gabrielle.Bickford@vermont.gov

Boy Scouts (paddle sports) Troop 105/120
Claudius Stute claudius.stute@gmail.com 802-855-8017 (H); 802-683-5906 (C)
(Fern Fryer ferndana@comcast.net))
Edward Gelbar, West Rutland Boy Scouts edandkari@comcast.net

Neighbors (from SB ad hoc group)
- Sharron Jozwiak, neighbor 773-6263

Police chief – Ed Dumas ed.dumas@vermont.gov

Rec director – Mike Rowe michael.rowe@grcsu.org

Road Commissioner – Byron Hathaway rthighway@rutlandtown.com

RT Planning Commission members?

Mark Raishart, Stafford Technical Center, Forestry mark.raishart@rcpsvt.org

Historical

GMP
- John Greenan and others John.Greenan@greenmountainpower.com
- Katie Sellers Katie.Sellers@KleinschmidtGroup.com

Elaine Purdy emacgpurdy@comcast.net

Dawn Hance 802-775-1402/ 802-775-4406

Jim Rowe *mtnsidemaple@gmavt.net;* Barry Griffith *bgriffithvt@gmail.com*; Dale Christie *dale@christiemediaworks.com* - Crown Point Road

Barbara Giffin, Daughters of the American Revolution tgifvt2@msn.com
Barbara Giffin, Rutland Historical Society tgifvt2@msn.com

Jim Davidson

Railroad Museum
Matt Rockwell (802) 855-1332

Historical Society of Rutland Town?

Lawrence Miller, Vermont Marble Museum/ Vermont Marble Company lmiller@fivevineconsulting.com
Bob Stein, Vermont Marble Museum rstein206@aol.com 802-236-4139

R. Scott Dillon, Senior Historic Preservation Review Coordinator, Vermont Division for Historic Preservation, 802-272-7358 scott.dillon@vermont.gov

Elizabeth Peebles, Vermont Division for Historic Preservation, elizabeth.peebles@vermont.gov

Chief Don Stevens, Nulhegan Band of the Coosuk - Abenaki Nation, chiefdonstevens@comcast.net

Rich Holschuh, Nulhegan and Elnu Tribal Historic Preservation, rich.holschuh@gmail.com

Brian Chenevert, Nulhegan and Elnu Tribal Historic Preservation, tgifvt2@msn.com

Bonney Hartley, Tribal Historic Preservation Officer of the Stockbridge Munsee Mohican Tribal Historic Reservation Bonney.Hartley@mohican-nsn.gov
Nathan Allison thpo@mohican-nsn.gov

Neighbors (from SB ad hoc group)
- Sharron Jozwiak, neighbor sjozwiak@kinneypike.com 773-6263
- Mary Wasserman, neighbor martin.wasserman@comcast.net 775-2416
- Heather Ruelke, neighbor h_ruelke@yahoo.com 775-7604

Appendix D

WANTED:

YOUR IDEAS FOR DESIGNING THE POCKET PARK IN CENTER RUTLAND

Frederick Church Painting of Center Rutland - 1848
Credit: The White House Historical Association (White House Collection)

Credit- Rutland Historical Society

The design of a pocket park at Center Rutland Falls (Mead's Falls) along Otter Creek is in its final phases.

Now we'd like to hear your thoughts!

Please join us for a public meeting **March 3** at **6:00 pm** via Zoom by computer or phone.

The Google Map below shows the proposed park, outlined in black. It runs along Simons Avenue between Business Rt. 4 and the narrow railroad overpass.

To join the public meeting by Zoom:
https://us06web.zoom.us/j/83611247715

Phone:
646-558-8656

Meeting ID:
83611247715

For more info:
Barbara@rutlandrpc.org

WANTED:

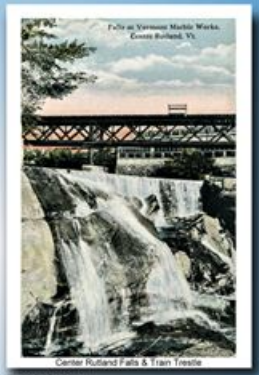
YOUR IDEAS FOR DESIGNING THE POCKET PARK IN CENTER RUTLAND

The design of a pocket park at Center Rutland Falls (Mead's Falls) along Otter Creek is in its final phases.

Now we'd like to hear your thoughts!

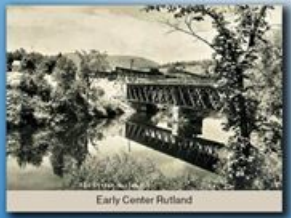
Please join us for a public meeting **March 3** at **6:00 pm** via Zoom by computer or phone.

Tell us what you think should be included as recreational and historical features in the pocket park!



Center Rutland Falls & Train Trestle

Credit- Rutland Historical Society



Early Center Rutland

To join the public meeting by Zoom:
https://us06web.zoom.us/j/83611247715

Phone:
646-558-8656

Meeting ID:
83611247715

For more info:
Barbara@rutlandrpc.org

facebook Sign Up

Events

Events

MAR
3

Center Rutland Pocket Park Public Meeting

Public · Hosted by **Town of Rutland, Vermont**

Thursday, March 3, 2022 at 6:00 PM EST

Town of Rutland, Vermont
181 Business Route 4, Center Rutland, VT 05736

Show Map

Details

Rutland Town has a grant to design a pocket park at the falls and along Otter Creek. A group with recreational interests and one of historians have come up with a list of suggested features for the park. Now it's your turn! The public meeting is March 3 at 6:00 pm - in person at the Town Office or via Zoom. Please save the date and stay tuned for more details.

Front Porch Forum blurb – Pocket Park public meeting

The design of a pocket park at Center Rutland Falls (Mead's Falls) along Otter Creek is in its final phases. Now we'd like to hear your thoughts!

So far the ideas for enhancing the area's recreational opportunities include a trail system, picnic areas, overlooks, additional parking, and a boat launch for non-motorized craft. To highlight the falls' storied history, there are suggestions for more historical signs and a kiosk (with a web link and mobile app to a historical virtual tour).

Please join us for a public meeting on **March 3** at **6:00 pm** - which you can attend by Zoom through your computer or phone.

To join the public meeting by Zoom:
https://us06web.zoom.us/j/8361127715

Phone Number:
646 558 8656

Meeting ID:
83611247715

Appendix E

272

(PROP2012)

A G R E E M E N T

This Agreement, made by and between the State of Vermont, Agency of Transportation, hereinafter referred to as the "State", and the Town of Rutland through its Board of Selectmen, in the County of Rutland and State of Vermont, hereinafter referred to as the "Town".

WITNESSETH:

WHEREAS, the said parties mutually agree that certain sections of highway should be relinquished from State control to the control of the Town pursuant to 1993 Vt. Acts No. 61, §4 (b) and that relinquishment of said sections of highway is in the best public interest;

NOW, THEREFORE, in consideration of the premises and the agreements of each of them herein contained, they do agree as follows:

(1) The State hereby relinquishes and the Town hereby accepts control of the following described sections of T. H. #43 and T. H. #44 pursuant to 1993 Vt. Acts No. 61, § 4 (b):

Relinquishment I (T. H. #43):

Beginning at a point in the southerly right-of-way boundary of Business Route #4 in the Town of Rutland said point being approximately 66 feet distant southeasterly radially from approximate station 95+34 of the centerline of Highway Project West Rutland-Rutland F65 (11), said centerline hereinafter referred to as CL;

thence 232 feet, more or less, northeasterly along a line which is 66 feet from and parallel to said CL and crossing existing Town Highway #43 to a point which is 66 feet distant southeasterly radially from approximate station 97+76 of said CL;

thence southeasterly along the westerly bank of the Otter Creek to a point 140 feet distant southerly radially from approximate station 98+15 of said CL;

thence 135 feet, more or less, southwesterly to a point 130 feet distant southerly radially from approximate station 96+70 of said CL;

thence 385 feet, more or less, southeasterly along a line which is 40 feet from and parallel to "A" approach centerline of said Highway Project to a point in the northerly right-of-way boundary of former U.S. Route #4 (now a part of Town Highway #43), 40 feet distant northeasterly at right angle from approximate station 5+45 of said "A" approach centerline;

thence 105 feet, more or less, westerly along the northerly right-of-way boundary of former U.S. Route #4 and crossing existing Town Highway #43 to a point approximately 40 feet distant southwesterly at right angle from approximate station 4+85 of said "A" approach centerline;

thence 385 feet, more or less, northwesterly along a line which is 40 feet from and parallel to said "A" approach centerline to a point 115 feet distant southerly radially from approximate station 95+60 of the aforementioned CL;

thence 58 feet, more or less, northwesterly to the point of beginning.

Relinquishment II (T. H. #44):

Beginning at a point in the easterly bank of the Otter Creek, said point being approximately 66 feet distant southerly radially from approximate station 99+03 of the centerline of Highway Project West Rutland-Rutland F65 (11), said centerline hereinafter referred to as CL;

thence 220 feet, more or less, easterly along a line which is 66 feet from and parallel to said CL and crossing existing Town Highway #44 to a point which is approximately 66 feet distant southerly from approximate station 101+32 of said CL;

thence 90 feet, more or less, southeasterly to a point 140 feet distant southerly radially from approximate station 101+95 of said CL;

thence 56 feet, more or less, westerly to a point 145 feet distant southerly radially from approximate station 101+25 of said CL;

thence 200 feet, more or less, southeasterly along a line which is 33 feet from and parallel to "C" approach centerline of said Highway Project to a point which is 33 feet distant northeasterly at right angle from approximate station 3+90 of said "C" approach centerline;

thence 88 feet, more or less, southwesterly and crossing existing Town Highway #44 to a point in the easterly bank of the Otter Creek, said point being approximately 55 feet distant southwesterly at right angle from approximate station 3+90 of said "C" approach centerline;

thence northwesterly along the easterly bank of the Otter Creek to a point 145 feet distant southerly radially from approximate station 99+55 of the aforementioned CL;

thence continuing in a northwesterly direction along the easterly bank of the Otter Creek to the point of beginning.

Said relinquishment areas to also include slope rights within said areas as described above.

(2) It is also understood and agreed that no junk yards, as defined in 23 U.S.C. § 136 and 24 V.S.A. § 2241, shall be established or maintained on said above described areas.

(3) It is also understood and agreed that any outdoor advertising structures erected on the relinquishment areas herein described shall conform to 23 U.S.C. § 131 and 10 V.S.A. Chapter 21.

(4) The Town agrees to assume all future maintenance and repairs in connection with the relinquishment agreement herein contained.

(5) The Town will not permit any encroachments on the relinquishment areas herein described without written permission of the State.

In aid of the descriptions herein contained reference is hereby made to plans of Highway Project West Rutland-Rutland F65 (11) and a plat entitled, "State of Vermont, Agency of Transportation, Town of Rutland", dated March 16, 1993 which plat is attached hereto and made a part hereof.

IN WITNESS WHEREOF, the State of Vermont has caused its name to be subscribed, this 2 day of January, 1997, by its Secretary of Transportation duly authorized to do so.

IN PRESENCE OF:

Witness

STATE OF VERMONT
AGENCY OF TRANSPORTATION
(STATE)

Glenn Gershaneck, its Secretary of Transportation and duly authorized Agent

STATE OF VERMONT

Washington County, ss

At Montpelier, this 2 day of January, 1997, personally appeared Glenn Gershaneck and acknowledged the foregoing instrument by him executed as Secretary of Transportation for the State of Vermont to be his free act and deed, and the free act and deed of the said State of Vermont.

Before me,

Notary Public

APPROVED AS TO FORM:

DATED: 11-08-96

ASSISTANT ATTORNEY GENERAL

Re: West Rutland-Rutland F65 (11)
AGREEMENT
Town of Rutland 3

Received for Record the 15th day of January A.D. 1997 at 9:15 A.M.

Richard J Del Bianco, Town Clerk

IN WITNESS WHEREOF, the Town of Rutland has caused its name to be subscribed this 9th day of December, 1996, by its Selectboard, duly authorized to do so.

IN PRESENCE OF:

Witness

TOWN OF RUTLAND
SELECTBOARD

John Paul Faignant

Rodney T Gallipo

John D. Flory Jr.

Karen Bossi

STATE OF VERMONT

Rutland County, ss.

At Rutland Town, this 9th day of December, 1996, personally appeared John P. Faignant, William Matteson, Rodney T Gallipo, John D Flory JR., Karen Bossi

members of the Selectboard of the Town of Rutland and acknowledged this instrument by them subscribed to be their free act and deed and the free act and deed of the Town of Rutland.

Before me,

Notary Public

Re: West Rutland-Rutland F65 (11)
AGREEMENT
Town of Rutland 4

Received for Record 01/15/97 @ 9:15 AM
See page 274 for Signature

Appendix F

Brian Sanderson (phone call) (4-4-2022)

~~[illegible]~~ VTrans had outdated mapping for ROW.

Relinquished To Town – Jan. 15, 1997
Recorded Town Roads Book 89, p. 272

Boat launch + sign trial – OK in ROW
w/ special conditions

#3 sign not at pocket park

Water trough – not allowed by state existing sign
fixed solid object – threat to errant vehicles
need permit to move – 1111 – traffic control plan
– if don't move the trough can get something
in writing that about special condition in ROW,
move to South End?

Trough moved from #1 to #10

#3 – Safety sign – needs to be out of ROW; moved to parking lot

Appendix G

Shane Filskov - MEADS FALLS POCKET PARK – CLARENDON & PITTSFORD RR ROW

Phone conversation: 4/11/2022 at 10:25 am
There are no deeded ROWs for railroads. Property lines are used instead.
As long as we're not on Clarendon & Pittsford property, we're OK. New survey's property lines should be accurate.
That said, the RR suggests we not encourage pedestrian activity near the lines. #13 in Suggestions: *For liability (safety) reasons, add more fencing to keep people off Amtrak (D&H) railroad bridge.*
And away from rail lines especially since Amtrak activity is increasing.

Email: Wed 4/6/2022 3:48 PM
Unfortunately without having any maps showing that particular area the railroad is not comfortable commenting on where the property boundaries are located. Any design should take this unknown into account.

Email: 4/6/22 at 3:22 pm
It's typically 33' from centerline of the track, it can vary though. The area near Barret Hill bridge does reflect 33' on sheet MM R3-R2, but with the area around your project not showing I cant say for sure.

Email: 4/6/2022 at 2:16 pm
Hi Barbara,
I've attached the two evaluation maps that we have for this area. Unfortunately Im not sure they will be of much help as that specific area appears to be omitted from these two maps.
I'll continue to look for better versions in our files but we have come across this situation in the past.
A survey may be required to accurately define the boundaries to be sure.

Shane Filskov
General Manager
Vermont Rail System
O- (802) 775-4356
C- (802) 363-6835
sfilskov@vrs.us.com

Appendix H

FOR AGENCY USE ONLY

PERMIT ID#_____
AMOUNT PAID_____
CHECK #_____
RECEIVED DATE_____
ACCEPTED BY_____

VERMONT AGENCY OF TRANSPORTATION
State Highway Access and Work Permit

FEE SCHEDULE (July 1, 2016)

The applicant shall pay the applicable administrative processing and application review fee by submitting a check made payable to the "State of Vermont" to the following address

Vermont Agency of Transportation
Development Review and Permitting Services Section
One National Life Drive
Montpelier, VT 05633-5001
(802) 828-2653

Municipal and State projects are **not** exempt from fees**.** Nonprofit organizations and companies are **not** exempt from fees. Permit revisions and time completions are **not** exempt from fees. **Fees are not refundable.**

The Agency reserves the right to return an application that is incomplete, inaccurate or does not meet the requirements for a VSA, Title 19, Section 1111 Permit. The Agency may require an applicant to submit additional information that the Agency considers necessary in order to make a decision on the permit request. Calculate the fee using the table below (only **one** fee per permit)

Residential or Agricultural	**$0**
Utility Installations	**$100**
Minor Commercial Developments	**$250**
Major Commercial Developments	**$2,500**
Annual Utility Permits	**$500**

Notes:

1. "Residential or Agricultural" means accesses serving a single-family home, a duplex residence, or a logging or field access for agricultural use only. Three or more dwelling units are considered a "Minor" or "Major" Commercial Development." **All** land subdivisions are considered either "Minor" or "Major Commercial Development;
2. "Utility Installations," include each direct connection to the State highway storm water system;
3. "Minor Commercial Developments" means a commercial development for which the Agency does not require the applicant to submit a traffic impact study. Resurfacing or reconstructing an existing commercial access is considered a Minor Commercial Development;
4. "Major Commercial Developments" means a commercial development for which the Agency requires the applicant to submit a traffic impact study (in any case involving an access permit for a development contributing 75 or more peak hour trips to State highways based upon latest trip generation guidance by Institute of Transportation Engineers);
5. "Annual Utility Permits" are the Routine Maintenance and Emergency Repair Permits;
6. There exist other types of permits for which a fee is **not** required. Examples of these types of permits are; temporary traffic control signage, survey or boring work, sidewalks, installation of traffic counting devices, trailer-mounted or permanent speed radar feedback signs and regrading of a roadside ditch; and
7. **Any questions please call the Permitting Services Office at (802) 828-2653**

PERMIT ID#_____

FOR AGENCY USE ONLY

Town: _____
Route: _____
Mile Marker: _____
Log Station: _____

VERMONT AGENCY OF TRANSPORTATION

State Highway Access and Work Permit

Applicant to Complete

Owner's/Applicant's Name, Address, E-mail & Phone No._____

_____

Co-Applicant's Name, Address, E-mail & Phone No. (if different from above) _____

_____

The location of work (town, highway route, distance to nearest mile marker or intersection & which side)

_____

Description of work to be performed in the highway right-of-way (attach plan) _____

_____

_____

_____

_____

Property Deed Reference Book:_____ Page:_____ (only required for Permit Application for access)

Fee $_____ (fees do not apply for residential or agricultural purposes)

Is a Zoning Permit required? Yes ☐ No ☐ - If Yes, #_____

Is a 30 VSA § 248 permit required? Yes ☐ No ☐ - If Yes, #_____

Is an Act 250 permit required? Yes ☐ No ☐ - If Yes, #_____

Other permit(s) required? Yes ☐ No ☐ - If Yes, name and # of each _____

Date applicant expects work to begin _____ 20 __

Owner/Applicant: _____ Position Title: _____

(Print name above)

Sign in Shaded area:		Date:	

Co-Applicant: _____ Position Title: _____

(Print name above)

Sign in Shaded area:		Date:	

INSTRUCTIONS: **-**Contact the Development Review and Permitting Services Section (802.828.2653) or your local area Transportation Maintenance District Office to determine your issuing authority. The issuing authority will determine what plans, fee and other documents are required to be submitted with your Vermont Statutes Annotated, Title 19, Section 1111, permit application request.

- Original signatures are required on an original Form. The Owner/Applicant and Co-Applicant (if applicable) declares under the pains and penalty of perjury that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.

FEE: **-**See **Fee Schedule** for applicable administrative processing and application review fee.

PERMIT APPROVAL

The work is subject to the restrictions and conditions on the reverse page, plus the Special Conditions stated on the attached page(s).

Date work is to be completed

Date work accepted: _____

By: _____

By _____ Issued Date

DTA or Designee

Authorized Representative for
Secretary of Transportation

NOTICE: **This permit covers only the Vermont Agency of Transportation's jurisdiction over this highway under Vermont Statutes Annotated, Title 19, Section 1111.** It does not release the petitioner from the requirements of any other statutes, ordinances, rules or regulations. This permit addresses only access to, work within, and drainage affecting the state highway. It does not address other possible transportation issues, such as access to town highways, use of private roads, and use of railroad crossings. If relevant to the proposed development, such issues must be addressed separately.

No work shall be done under this permit until the owner/applicant has contacted the District Transportation Office at:

RESTRICTIONS AND CONDITIONS

DEFINITIONS:

"Agency" means the Vermont Agency of Transportation (a/k/a VTrans).

"Engineer" means the authorized agent of the Secretary of Transportation.

"Owner/Applicant" means the party(s) to whom the permit is to be issued.

"Co-Applicant" means the party who performs the work, if other than Owner/Applicant or a secondary Owner/Applicant under a joint permit application.

"Permit Holder" means the party who currently owns the lands abutting the highway that are the subject of the permit.

GENERAL:

By accepting this permit, or doing any work hereunder, the Owner/Applicant agrees to comply with all of the restrictions and conditions and any imposed special conditions. If the Owner/Applicant is aggrieved by the restrictions and conditions or special conditions of the permit, they shall submit a written request for consideration to the Engineer within 30-days of permit issuance and prior to starting any work. No work will be authorized by the Agency, or performed under the permit, until the dispute is fully resolved.

Vermont Statutes Annotated, Title 30, Chapter 86 ("Dig Safe") requires notice to Dig Safe before starting excavation activities. The Permit Holder or his/her contractor must telephone Dig Safe at 811 at least 48 hours (excluding Saturdays, Sundays and legal holidays) before, but not more than 30 days before, starting excavation activities at any location. In addition, please note that the Agency and many municipalities <u>are not</u> members of Dig Safe and will need to have their utility facilities investigated with due diligence prior to starting excavation activities in or on the State Highway right-of-way.

The Permit Holder is to have a supervisory representative present any time work is being done in or on the State Highway right-of-way. A copy of this permit and Special Conditions must be in the possession of the individual performing this work for the Permit Holder.

Except with the specific, written permission of the District Transportation Administrator, all work in the State Highway right-of-way shall be performed during normal daylight hours and shall cease on Sunday, on all holidays (which shall include the day before and the day following), during or after severe storms, and between December 1 and April 15. These limitations will not apply for the purposes of maintenance, emergency repairs, or proper protections of the work which includes, but not limited to, the curing of concrete and the repairing and servicing of equipment.

The Owner/Applicant shall be responsible for all damages to persons or property resulting from any work done under this permit, even if the Applicant's Contractor performs the work. All references to the Owner/Applicant also pertain to the Co-Applicant.

The Owner/Applicant must comply with all federal and state statutes or regulations and all local ordinances controlling occupancy of public highways. In the event of a conflict, the more restrictive provision shall apply.

The Owner/Applicant must, in every case where there is a possibility of injury to persons or property from blasting, use a pre-approved Blasting Plan. All existing utility facilities shall be protected from damage or injury.

The Owner/Applicant shall erect and maintain barriers needed to protect the traveling public. The barriers shall be properly lighted at night and must be MUTCD (Manual on Uniform Traffic Control Devices) compliant.

All temporary and permanent traffic control measures and devices shall be MUTCD compliant.

The Owner/Applicant shall not do any work or place any structures or obstacles within the State Highway right-of-way, except as authorized by this permit.

The Owner/Applicant may pay the entire cost of the salary, subsistence and traveling expenses of any inspector appointed by the Engineer to supervise such work.

The Engineer may modify or revoke the permit at any time for safety-related reasons, without rendering the Agency or the State of Vermont liable in any way.

In addition to any other enforcement powers that may be provided for by the law, the Engineer may suspend this permit until compliance is obtained. If there is continued use or activity after suspension, the Engineer may physically close the work area and take corrective action to protect the safety of the highway users.

The Permit Holder shall be responsible to rebuild, repair, restore and make good all injuries or damage to any portion of the highway right-of-way that has been brought about by the execution of the permitted work, for a minimum period of eighteen (18) months after final inspection by the District.

Any approved variance from the permitted plans is to be recorded on "as-builts" with copies provided to both the Chief of Permitting Services and the District Transportation Administrator.

ACCESS:

This permit (if for access) does not become effective until the owner/applicant records in the office of the appropriate municipal clerk, the attached "Notice of Permit Action"

As development occurs on land abutting the highways, the Agency may revoke a permit for access and require the construction of other access improvements such as the combination of access points by adjoining owners.

Under Vermont Statutes Annotated, Title 19, Section 1111, no deed purporting to subdivide land abutting a state highway can be recorded unless all the abutting lots so created are in accordance with the standards of Section 1111.

The Permit Holder acknowledges and agrees that neither this permit nor any prior pattern of use creates an ownership interest or other form of right in a particular configuration or number of accesses to or through the highway right-of-way, and that the right of access consists merely of a right to reasonable access the general system of streets, and is not a right to the most convenient access or any specific configuration of access.

DRAINAGE:

The Owner/Applicant shall install catch basins and outlets as may be necessary, in the opinion of the Engineer, to preclude interference with the drainage of the state highway. Direct connections shall <u>not</u> be allowed without written approval.

UTILITY WORK; CUTTING AND TRIMMING TREES:

The Owner/Applicant shall obtain the written consent of the adjoining owners or occupants or, in the alternative, an order from the State Transportation Board in accordance with, Vermont Statutes Annotated, Title 30, Section 2506, regarding cutting of or injury to trees.

In general, all utilities shall be located adjacent to the State Highway right-of-way boundary line and shall be installed without damaging the highway or the highway right-of-way. No pole, push-brace, guy wire or other aboveground facilities shall be placed closer than 10 feet to the edge of traveled-way. If the proposed utility facilities are in conflict with the above, each location is subject to the approval of the Engineer.

Poles and appurtenances shall be located out of conflict with intersection sight distance, guardrail, ditches, signs, culverts, etc.

Where the cutting or trimming of trees is authorized by permit, all debris resulting from such cutting and trimming shall be removed from the State Highway right-of-way.

Open cut excavation for highway crossings is NOT the option of the Applicant, and may be utilized only where attempted jacking, drilling, or tunneling methods fail or are impractical. The Owner/Applicant shall obtain an appropriate modification of the highway permit from the Engineer before making an open cut.

JOINT PERMITS:

A joint permit application is required when more than one party will be involved with the construction, maintenance, and/or operation of the facility being constructed under this permit. Examples include, but are not limited to, joint ownership or occupancy of a utility pole line and construction of a municipal utility line by a contractor. Both utility companies, and in the second case, the municipality and the contractor, must be joint applicants.

Appendix I

Barbara Noyes-Pulling

From: Carvajal, Joshua <Joshua.Carvajal@vermont.gov>
Sent: Wednesday, April 27, 2022 11:22 AM
To: Barbara Noyes-Pulling
Subject: Re: question about possible stream alteration

Follow Up Flag: Follow up
Flag Status: Flagged

Hey Barbara,

If the volume of trees and debris is 10 cubic yards or more then a permit is needed. Send a map and photos please

Josh

> On Apr 27, 2022, at 11:11 AM, Barbara Noyes-Pulling <barbara@rutlandrpc.org> wrote:
>
> **EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.**
> Hi Josh,
> Hope all is well.
> I'm working with the Town of Rutland on a preliminary design for a pocket park at the base of Center Rutland (Mead's) Falls. This is in the vicinity of Business Rt. 4, Simons Avenue, and GMP's hydroelectric facility at the falls.
> As part of the design, the Town is hoping to improve access to Otter Creek. Under consideration is the removal of some woody debris in the creek to make it more accessible to anglers and kayakers.
> Would a Stream Alteration Permit be needed if the Town decided to proceed with removing debris? Or is there another kind of State permit that would pertain to this?
> Any advice you have on this is greatly appreciated. Thanks.
> Barbara
>
> **Barbara Noyes Pulling**
> Rutland Regional Planning Commission
> The Opera House / P.O. Box 430
> Rutland, VT 05702
> 802-747-7535
>
> <image001.png>

Appendix I

APPLICATION FOR OFFICIAL BUSINESS DIRECTIONAL SIGN (OBDS)

FOR TIC USE

DATE RECD

CK# AMT RECD

APP#

The undersigned hereby applies for an Official Business Directional Sign and encloses the required check or money order of $175.00 per sign payable to VT Agency of Transportation. A separate application is required for each sign requested. A non-refundable annual renewal fee of $100.00 per sign will be billed to applicant. **The application must be filled out completely or it will be returned to you; please refer to the accompanying instructions**. From the date the application is received until the sign is erected (provided it is approved) it will be 90 to 120 days, depending on the availability of crews to install signs.

9-DIGIT FEDERAL ID#

E-MAIL ADDRESS

1. Your own name and your business address or other post office address:

2. Legal name of business:

3. Business phone number:

4. If business offers public accommodations, approvals by agencies listed below are required before OBDS applications can be approved:

   We (have have not) been approved by the Vermont Department of Health
   We (have have not) been approved by the Vermont Department of Labor & Industry Fire Prevention Division

5. **Business** is located in town/city of on highway route # leading from (which town) to (which town) and miles (north south east west) of **nearest** intersection (of 2 town highways, town and state highways, or 2 state highways)

6. We wish to have an **OBDS** located in town/city of on highway route # leading from (which town) to (which town) and **feet** (north south east west) of nearest highway/mileage marker number / / (see instruction sheet for definition of highway mileage marker)

7. Please state name and address of owner of property at proposed location of OBDS; See note in instructions.

8. An existing assembly of OBDS (stands does not stand) at proposed location, containing OBDS for:

9. I hereby certify that the proposed location meets the Vermont Transportation Board Traffic Safety Regulations, and that it is not within the following distances:

   a. 200 feet of any traffic control sign or device
   b. 750 feet approaching and 200 feet beyond the intersection of two numbered highways or a signalized intersection
   c. 200 feet approaching and 200 feet beyond the intersection of a numbered state highway with a town highway or street
   d. 100 feet approaching and 100 feet beyond the intersection of unnumbered highways
   e. 750 feet approaching and 200 feet beyond a railroad grade crossing
   f. 200 feet of another OBDS assembly, if an existing assembly at the proposed location already has three OBDS on it; three is the maximum; see instructions

"The location of an existing traffic control device or the need for a new device, shall take precedence over the location of an official business directional sign, either existing or proposed." (Vermont Transportation Board Traffic Safety Regulations)

10. Wording desired on the OBDS (limited to legal name of business, directional arrow and **mileage from sign to business**. Each line takes approximately 13 characters if no TIC symbol or business logo is used on sign; a TIC symbol or business logo reduces the number of characters per line. Punctuation and spaces between words count as characters. **NO DESCRIPTIVE ADVERTISING MAY BE USED**. If a TIC symbol or business logo is used, it will appear in space marked 1 below. **The TIC reserves the right to abbreviate text requested by applicant.**

1. (Symbol or business logo) 2a. 3. (arrow)

   2b. 4. (mileage)

Key:
1. Optional TIC symbol or business logo. Circle appropriate TIC symbol below or request specifications for business logo.
2. 13 characters on each of 2 lines, counting spaces and punctuation as one character each; subtract 3 characters if symbol or logo used.
3. Arrow indicating left or right turn.
4. Mileage, including fractions in tenths, **from requested sign location to place of business**.

Standard symbols adopted by the Travel Information Council for use on Official Business Directional Signs; others may be available. **No charge for standard symbols; distinctive business logos must be provided at applicant's expense.**

Lodging - Food - Crafts/Antiques - Recreation - Goods & Services

On separate sheet of paper, attach a detailed diagram showing location of business and location of requested sign.

Return application to: VT Agency of Transportation, Travel Information Council, 2178 Airport Road, Unit A, Barre, VT

05641

Signature of applicant and title Date

THIS SIDE FOR REVIEW BY DISTRICT COMMITTEE:

This application was received on_____by the undersigned members of the Travel Information Council District Committee for Transportation District No._____and we have:

_____ Approved application Date _____

_____ Disapproved application Date _____

Reason for disapproval: _____

_____

_____

_____

_____

Suggested alternative location proposed by District Committee:

_____

_____

_____

_____

Signed: _____
Business Representative

_____
Public Representative

_____
Regional Planning Representative

INSTRUCTIONS FOR COMPLETING APPLICATION FORM FOR OFFICIAL BUSINESS DIRECTIONAL SIGN (OBDS)

Please complete all items on the application form. If you have questions about any of the items, please call the Sign Control Section at (802) 279-9599. First year license fee of $175.00 per sign must accompany the application; make check payable to VT Agency of Transportation and mail to Agency of Transportation, Travel Information Council, 2178 Airport Road, Unit A, Barre, VT 05641. The renewal fee is $100.00 per year per sign.

1. **Applicant's name and business address:** Please print or type your name and the mailing address of your business. You are the contact person unless you specify another individual by name. Please include your e-mail address if you have one, and the federal ID number for your business.
2. **Name/nature of business:** How are you listed with the Vermont Secretary of State's Office? **The only name we can use on the OBDS is your legal name; we need either a corporate name or a DBA**. If you aren't registered, you must do so; call the Secretary of State's Office at (802) 828-2386 to find out what to do. What kind of business do you operate?
3. **Phone numbers:** Please list two phone numbers where you can be reached if we have questions.
4. **Accommodations:** If you offer accommodations, you must be approved by the Vermont Department of Health and by the Department of Labor and Industry's Fire Prevention division before we can act on your application. **This is mandatory**. You can reach the Health Department at (802) 863-7221 and the Fire Prevention Division at (802) 828-2106.
5. **Business location:** What town or city is the business physically located in? What is the name or number of the street or highway on which the business is located? On which side of the street is the business located? Where does the highway lead (from what town to what town, or from what street to what other street)? How far is the business from the nearest intersection of two roads, and what are the names or numbers of those roads?
6. **OBDS location: Finding a location is the applicant's responsibility. Be specific in this section; tell us exactly where you want the sign. Our personnel cannot approve applications or install signs if they can't find the site. *We will return incomplete applications for further information*.** Where do you wish to have the sign placed? What town is the sign to be erected in, on what street or highway? A highway mileage marker is a green 6"x8" plaque with three rows of numbers, usually located every 2/10 of a mile on alternating sides of the road. This is the preferred way of locating the OBDS, but if you cannot find one in a reasonable distance, use another recognizable feature or building. How far is the sign location from the closest mile marker or other unique landmark, and in which direction? Is the proposed location on the same or the opposite side of the road as the marker or other feature? What is the E-911 address of the property at the location?
7. **Property owner:** Signs are erected in the highway right-of-way. In the case of new sign locations, we strongly recommend that applicants contact the abutting property owner to identify the best location for the sign in order to minimize the potential for conflict. If the identity of the landowner is not evident, you may contact the local town or city clerk to obtain the information.
8. **Existing sign:** If an OBDS **for an individual business** already stands at a location which would work for you, you may ask to have your sign placed on that assembly, provided there are no more than 2 signs on the posts already (no more than three signs are placed on one assembly). **PLEASE NOTE: OBDS for individual businesses are never placed on posts with Travel Information directional signs; these have a row of five logos on the top board, while the bottom board says "Travel Information" and gives specific directions to one of our information plazas, or to an information booth.** Please indicate whether an assembly is located at your preferred location, and if one is, list the signs on it.
9. **Certification:** Please check this list carefully to be certain that the location you select meets all the conditions; if you're not sure about any of them, please call us for assistance.
10. **Wording:** The text is limited to the legal name of your business (corporate or DBA) and any directional information (next left, 2ND right, etc.) **The distance in section 4 of the OBDS is from the sign location to your business – not from the OBDS to the turn to your business.** If you wish to use a logo other than one of the standard symbols supplied by us, you must have the logo made at your expense. If you plan to use a unique logo, please wait to have it made until we notify you that the application has been approved.

A diagram showing the location of your business and the proposed sign location is essential to the person from our District Committee who reviews the application, as well as to the AOT crew who installs the sign. Label the roads, landmarks, distances and directions clearly. Please be sure to sign the application.

Note regarding your on premise sign: Your business sign on your property **must** be in place before the District Committee can review your application. If it is not the District Committee will either disapprove the application or send it back to our office without taking action. **This is particularly important where an applicant has requested a sign on the same highway as the business.**

Remember: Be complete, be specific, and include your check. Please call if you have any questions. From the date we receive the application until the OBDS is installed (if it is approved), it will be 90-120 days, depending upon the availability of crews to install signs.

Revised 06/19/17

VERMONT'S OFFICIAL BUSINESS DIRECTIONAL SIGN PROGRAM

Vermont's landmark sign law was adopted in 1968. It banned off-premise advertising (small signs as well as billboards) and provided for a system of State-owned Official Business Directional Signs (OBDS) and information plazas to replace them. The law applies to town highways as well as to State highways. No signs are allowed on limited-access highways (the interstates and parts of other Federal or State highways) or on their ramps.

The OBDS is directional in nature and is intended to direct travelers from one highway to another. Signs are limited to the town in which the business is located, except in instances where no appropriate location within the town is available.

Signs are not put up on the same highway on which a business is located unless a business can demonstrate that its own on premise sign is not adequately visible to the traveler for reasons over which the business has no control. These include obstructions on adjoining property, contours of the land or other geographic features. Visibility simply means being able to **see** a sign, not necessarily to **read** it; the readability of a sign is something which a business can control. Adequate visibility is 500 feet in a 50 MPH zone (400 feet at 40 MPH, 300 feet at 30 MPH and so on). **If a business is requesting an exception to this rule, it should submit a letter explaining what the circumstances are.**

Any legally-registered Vermont business may apply for up to four signs at different locations in its town. Only one sign is permitted in either direction on the same highway. The text on an OBDS is limited to the legally-registered name of the business (recorded by the Secretary of State) and to directional information (2nd left, next right, etc.).

Signs are available with or without a symbol. If a business has a distinctive logo it wishes to use, the logo must be provided by the business, and made to State specifications. Specifications are available upon request. It is advisable **not** to have logos made until you have been notified that the application has been approved. **Use of a symbol reduces the number of characters which can be used by 25%.**

The business selects the sign locations. If an OBDS stands at a place which would serve the applicant's needs, and if there are no more than two OBDS already on the posts, the applicant may request that its sign be placed at that location. If the posts are full, the applicant must find another site at least 200 feet away (see item #9 on the OBDS application form).

Signs are erected in the highway right-of-way. In the case of new sign locations, we strongly recommend that applicants contact the abutting property owner to identify the best location for the sign in order to minimize the potential for conflict. If the identity of the landowner is not evident, you may contact the local town or city clerk to obtain the information.

The approval, fabrication & installation process takes 90-120 days. Applications are reviewed by a citizen committee in the transportation district in which the business is located. If the district committee recommends approval, the sign is ordered and installed by the Agency of Transportation.

If an application is denied by the district committee, the applicant is notified by certified mail and may appeal the denial to the State Travel Information Council (TIC). The TIC meets at least four times a year. If the Council approves the appeal, the signs are fabricated and installed; if the appeal is denied, the applicant's license fee is refunded.

All signs are reviewed periodically for conformity to the TIC's Rules of Procedure. A review may find that conditions exist at the time of the exception have changed (visibility of the on premise sign has improved, obstructions have been removed, or additional on premise signing has been added). In this event, the TIC may order removal of the OBDS if it is not in conformance with the guidelines for making exceptions to the Rules. Before final action is taken, the business is notified and may appeal the decision to deny renewal.

Application forms must be filled out completely and signed by the applicant. A fee of $175.00 per sign is payable with the application. This covers the license fee for the first twelve months. Subsequently, businesses are sent a renewal notice. The renewal license fee is $100.00 per sign per year.

Questions about the forms, the sign law in general or the TIC Rules of Procedure may be addressed to Sign Control at (802) 279-9599. Applications should be submitted to:

VT Agency of Transportation
Travel Information Council
2178 Airport Road, Unit A
Barre, VT 05641

Rule 14. Location of Official Business Directional Signs

a. Except where a hardship to the traveling public can be demonstrated by the applicant, the location of official business directional signs, in addition to those restrictions contained in Title 10 V.S.A. Chapter 21, and in the Traffic Safety Regulations adopted pursuant to Section 490 thereof, shall be subject to the following conditions:

1. Official business directional signs shall be located in the same town as the applicant/business, service or point of interest to which the sign directs attention, unless one or more of the following conditions are present:

(a) The location of the sign must be in a town other than that of the applicant business in order to satisfy the Traffic Safety Regulations. In such a case the sign shall be located as close to the business' turnoff as possible;

(b) (1) The business is located on a highway which does not have a state-assigned route number, and (2) the turnoff from the numbered route is in another town, and (3) this turnoff is the business' only access point from the nearest highway with a state-assigned route number;

(c) There is an absence of State destination signs directing travelers to the town in which the business is located; or

(d) The absence of an official business directional sign creates a safety hazard to the traveling public.

2. Official business directional signs shall be located prior to those intersections of public highways where the traveler must change direction from one highway to another highway in order to reach the business or point of interest. However, individual business directional signs shall not be approved on highways where there is an information directional sign which directs travelers to a state or locally operated information plaza or information office or booth and travel to that information source will cause neither undue inconvenience to the traveler nor traffic congestion.

3. Signs may be approved on the same highway as the business, or its legal on premise signing, only when, in the opinion of the Travel Information Council, the traveling public is subject to an unsafe situation without one or more official business directional signs. For the purposes of these Rules, an unsafe situation shall exist when there is insufficient visibility of the business' on premise signing which cannot be improved by the applicant/business, such as; (a) obstructions on applicant/business' property which cannot be removed; (b) obstructions on adjoining property which the adjoining property owner cannot or will not remove; (c) physical or natural features which the Travel Information Council finds cannot be altered or removed by the applicant business; or (d) some other circumstance over which the applicant/business has no control.

4. Consideration will be given to limitations placed on the size, location or design of on premise signing by local zoning ordinances which cannot be waived. The safety hazard may exist which a traveler who is specifically looking for the applicant/business has insufficient advance visibility of the business' on premise signing to allow the traveler to signal, slow and turn into its driveway safely. Adequate visibility shall be determined by the Travel Information Council in consultation with the Agency of Transportation.

b. In all cases where the applicant believes that the proposed location for an official business directional sign should be approved because of hardship to the traveler, where the proposed location fails to satisfy conditions 1, 2 or 3 of Section a above, the applicant shall submit to the district committee

a claim of hardship together with any evidence he/she wishes to present in support of his/her claim. Where hardship has been demonstrated to the satisfaction of the district committee, it may approve locations for official business signs which are otherwise in violation of subsections 1, 2 or 3 of Section a of this rule. Where hardship has not been demonstrated to the satisfaction of the district committee, it shall disapprove the application. In all cases where the applicant claims exception to subsection 1, 2 or 3 of Section a because of hardship, the district committee shall state with particularity the reasons for which it approves or disapproves the application.

c. In all cases where hardship is claimed by the applicant, the determination of the district committee shall be subject to review by the Travel Information Council.

d. Nothing in this rule shall be construed to limit the right provided by law to any applicant or other person to appeal any decision of a district committee.

e. Pursuant to Title 10 V.S.A. Section 499(c), the following procedure is established whereby all official business directional signs previously approved as hardship exceptions to Section a, subsections 1, 2 or 3 will be reviewed periodically with conformance with current policies and regulations, and those found to be non-conforming will be removed at the end of their current license year. On or before March 1 of each year, the Sign Control Section and the Travel Information Council district committees will review approximately one-third of all official business directional signs and determine which appear to be non-conforming with present policies and regulations of the Travel Information Council and the Traffic Safety Regulations adopted pursuant to title 10 V.S.A. Section 490. They will submit recommendations to the Travel Information Council as to which official business directional signs are non-conforming. The Council will determine which signs are non-conforming and will so advise the applicant/business by letter. The letter will notify the applicant/business of its opportunity to petition the Travel Information Council for review of the determination of non-conformance.

If the applicant/business so petitions within 30 days of the date of the letter, an appeal hearing will be scheduled. If the applicant/business is able to prove that there is sufficient hardship on which to base continued approval of the official business directional sign as a hardship exception to this Rule, the Council may vote to renew the license for one more year or until the next scheduled review. If the applicant/business is not able to show that there is sufficient justification on which to approve the hardship exception, the council may vote not to renew the license in which case the sign will be removed at the end of the current licensing year. The applicant/business has the right to judicial review of the Council's decision under Title 10 V.S.A. section 484(d).

Approved by the Travel Information Council January 18, 1989
Filed with the Secretary of State's Office February 16, 1989
Adopted as a Final Rule May 26, 1989
Effective date June 7, 1989

VERMONT AGENCY OF TRANSPORTATION
Travel Information Council
2178 Airport Road, Unit A
Barre, VT 05641

Specifications for business logos to be provided by Applicant for Official Business Directional Sign

SIZE: 13-3/4" wide by 14" high with 1-1/2" radius on all four corners
Please note on the back of the logo which side is the top.

MATERIAL: Scotchlight #3290 engineer grade vinyl sheeting – Reflective Silver (VT 28), self-adhesive, with pressure-sensitive backing:

OR Scotchcal #3650 vinyl sheeting – Non-reflective white, black, red, *etc*., self-adhesive, with pressure-sensitive backing;

OR equivalent; adhesive-backed paper is ***not*** acceptable.

PAINT: Good quality, bulletin grade or weather-resistant exterior grade.

COLORS: No restrictions on background or foreground colors.

BACKING The finished logo **must** be mounted on a piece of background material of one of the types listed above, trimmed to the dimensions shown; cut-outs with no backing behind them are unacceptable. The area of the sign reserved for logos is covered with white, non-reflective vinyl.

RESTRICTIONS: Logo may **not** contain telephone numbers, web sites or advertising; the same restrictions apply to business signs.

MAIL TO: VT Agency of Transportation
Travel Information Council
2178 Airport Road, Unit A
Barre, VT 05641

Please ship the logo(s) <u>flat</u>, not rolled; this will prevent wrinkling or curling.

WHEN: As soon as possible ***after*** you have been notified that the application has been approved. **Do *not* send logos with the application.**

QUESTIONS: Call the Travel Information Council, Business Sign Program:
Phone: 802-279-9599
E-mail: toni.may@vermont.gov

Revised 06/19/17

SAMPLE OBDS INFORMATION SHEET

This is a version of the sheet used by the Transportation Agency to order OBDS; it is provided to give applicants guidance on how to lay out the text for their signs.

BUSINESS _____

TOWN _____

ROUTE # _____ **BACKGROUND COLOR: BLACK**

#1 A BOARD WITH STANDARD SYMBOL OR BUSINESS LOGO - LENGTH 72" 13-15 characters, depending on width

LOGO SUPPLIED BY BUSINESS OR STANDARD SYMBOL														←	DIRECTIONAL ARROW - UP, LEFT, RIGHT OR DIAGONAL
EITHER LOGO OR SYMBOL TAKES 15" OF SPACE														←	TOTAL MILEAGE TO BUSINESS FROM SIGN

#2 B BOARD WITH TEXT ONLY, NO SYMBOL OR LOGO - LENGTH 72" 16-18 characters, depending on width

															←	DIRECTIONAL ARROW - UP, LEFT, RIGHT OR DIAGONAL
															←	TOTAL MILEAGE TO BUSINESS FROM SIGN

One block is required for each letter, punctuation mark, and space between words. A directional arrow and mileage are required in the spaces indicated. Text is limited to the name of the business as registered with the Secretary of State; advertising, phone numbers and web addresses are not permitted. A logo or symbol takes 15" of space on an A board; if directions to a business are required, there may not be room for a logo or symbol. Your proposed layout may be altered by VTrans staff if necessary. If you have any questions, call VTrans staff at 802-279-9599.

APPLICATION FOR A VERMONT INFORMATION PLAZA ADVERTISING PLAQUE

PART A

Name of company to be invoiced _____

Billing address _____

Business phone_____Contact name _____

Generic heading requested (circle one): **LODGING** FOOD** CRAFTS/ANTIQUES RECREATION GOODS/SERVICES**

****Must be approved by VT Dept of Health or Dept of Labor & Industry Fire Prevention Division; see other side for note**

Plaza locations requested (see list on Part B of form) _____

PLAQUE FORMAT:

All plaques are made of magnetic vinyl and measure 6"x6" actual size. After reading the descriptions below, please select one of the formats and provide us with the information requested.

FORMAT #1: Typeset by us in Helvetica Medium (48 and 19 pt.); room for 8 lines of text only, no logos.

FORMAT #2: Typeset by us; room for 3 lines of text and logo (supplied by applicant) not to exceed 1-1/2" high and 4" wide.

FORMAT #3: Camera-ready copy provided by applicant (see other side for details).

I wish to have my plaque(s) in:____**Format #1 (text only)**____**Format #2 (with my logo)**____**Format #3 (camera-ready)**

Information for Formats 1 and 2: Please complete the following. Numbers 1 through 5 below will appear on the plaque.

1. **Name of business** (15 characters per line) _____

_____

NOTE: Numbers 2, 3 and 4 have a limit of 22 characters per line.

2. **Owner, Lessee or Host(s)** (circle one) _____
3. **Location** (Town or city, route number or road/street name; use #5 to give more precise directions if necessary) _____

_____

4. Phone (Use area code with day or evening number if appropriate) _____
5. Text: Limit of 37 characters per line, including spaces and punctuation; 8 lines for Format 1, 3 lines for Format 2. Use this space to describe your business, services, seasons, location, house, access from major routes, etc. Please print or type neatly.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

If using Format 2, please enclose a logo for each plaque. **The logo must be made of a semi permanent, self-adhesive material and must not exceed 1-1/2" high or 4" wide.** Instructions for Format 3 are below.

Format Option #1

KING'S MTN RESORT

OWNERS Gordon & Carol Ely
LOCATION King's Mtn Road, Elyville
PHONE 1-999-KINGS MT

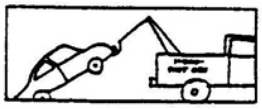
A vacation paradise with full R/V facilities, playground with pool, tent sites, cottages. Recreation hall contains pool tables, video arcade, big-screen TV. Great fishing nearby; many hiking and mountain biking trails; country setting, but near major attractions.

Format Option #2

FAST EDDIE'S AUTO BODY

OWNER Eddie Smith
LOCATION 238 Route 99, Lewis
PHONE 1-999-FAST EDS

Complete auto body repair work performed by certified technicians.
24-hour wrecker service available.



5. Continued

   Format #3: Applicant may provide camera-ready copy which meets the following specifications:

   -Fully camera-ready, requiring no additional work.

   -Image area no larger than 5-1/2”x5-1/2”.

   -No photographs or half-tones.

   -All line art and copy must be in black on a matte white background.

   -Mechanical must be at 100% - same size as finished plaque.

   -No “bleeds”; copy or drawings cannot go right to the edge.

6. If offering food or public accommodations, please circle the appropriate statement:

   We have have not been approved by the Vermont Department of Health

   We have have not been approved by the Department of Labor and Industry Fire Prevention Division.

7. We have enclosed a check for the plaque(s) ordered.

   Prices: One plaque, $25; each additional plaque, with no copy changes, $22.50

   Number of plaques ordered_____ Total enclosed $_____

Signature _____

Please include a check for the total number of plaques ordered; make check payable to **VT Agency of Transportation** and mail it with the application to: **VT Agency of Transportation 2178 Airport Road, Unit A, Barre, VT05641**

If you have any questions, please call the Sign Control Section at (802) 279-9599

VERMONT INFORMATION PLAZA PLAQUE ORDER FORM

PART B

Business name

In the space below, please circle the location(s) of the information plaza(s) where you wish to have a plaque placed.

REGION	***PLAZA # AND LOCATION***
NORTHERN:	19. Vermont Wildflower farm, Charlotte, US 7
	41. Ferry dock, Port Kent, NY, opposite Burlington
	56. Jeffersonville, Mobil station, junction of VT 15 & VT 108
	74. Derby Line, southbound rest area, I-91
CENTRAL:	27. Randolph southbound rest area, I-89
	37. Groton, Upper Valley Grill, US 302
	47. Pittsford, New England Maple Museum, US 7
	76. Hancock, VT 125 adjacent to library
	80. Bethel, Texaco station, VT 107 at I-89 Exit 3
	88. West Rutland, Sunoco station, Bus US 4
SOUTHERN:	04. Rockingham, Vermont Country Store, VT 103
	10. Londonderry, Mtn. Marketplace, junction of VT 11 & 100
	89. Sunderland, Basket Barn, VT 7A

Questions? 802-279-9599

06/19/17

2152 Post Road
Rutland, Vermont 05701

February 6, 2023

VIA E-FILING

Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Center Rutland Hydroelectric Project (FERC No. 2445-028)
Additional Information Request Response

Dear Secretary Bose:

On December 6, 2022, Green Mountain Power (GMP) met with representatives of the Federal Energy Regulatory Commission (FERC or Commission) to discuss GMP's November 23, 2022 additional information response for the Center Rutland Hydroelectric Project, FERC No. 2445 (Project). In that call, GMP stated that within 30 to 60 days, it would file information in the record pertaining to the effects of the relicensing proposal and the potential development of recreation facilities on land currently owned by GMP associated with the current project license.

Attached for the Commission's review, please find:

- Attachment A – Response to Additional Information Request
- Attachment B – Town of Rutland Tax Maps
- Attachment C – Pocket Park Project Survey
- Attachment D – Town of Rutland Pocket Park Concept Map
- Attachment E – Center Rutland Project APE
- Attachment F – IPaC Report

Should you have any questions regarding this filing, please contact John Tedesco at john.tedesco@greenmountainpower.com or at 802-655-8753.

Sincerely,

John Tedesco
Generation Project Coordinator

ATTACHMENT A

ADDITIONAL INFORMATION REQUEST RESPONSES

Additional Information for the Center Rutland Hydroelectric Project

On December 6, 2022[1], representatives of the Federal Energy Regulatory Division (FERC or Commission) Division of Hydropower Licensing and Green Mountain Power (GMP) met to discuss GMP's November 23, 2022[2] additional information response for the Center Rutland Hydroelectric Project. GMP stated that it would file additional information in the record pertaining to the effects of the relicensing proposal and potential development of recreation facilities on land currently owned by GMP during the term of the license but through an off-license arrangement with the Town for a non-project pocket park the Town plans to develop. GMP will comply with recreational obligations by working with the Town on the development of this Town operated park. Please find the additional information provided below.

1. **The Commission's staff has asked for GMP to describe the total area of land that GMP is proposing to transfer for the development of the pocket park, including the size of the parcel in acres or square feet, and the location of the parcel.**

GMP is proposing to transfer an easement or lease interest in Rutland Town Tax Parcel 22-50-16 Deed Parcel III, or a certain portion thereof, which entire parcel has an area of approximately 0.87 acre and an easement or lease interest in a certain portion of Tax Parcel 22-50-16 Deed Parcel II, which entire parcel has an area of approximately 1.03 acres. The two parcels are located on the southwestern side of the Otter Creek. Tax Parcel 22-50-16 Deed Parcel III is bordered by Simons Avenue, the Otter Creek, and the former right of way for the old Route 4 Bridge. Under current design by the Town of Rutland, only part of Tax Parcel 22-50-16 Deed Parcel II will be necessary for development of the park, making up approximately 0.5 acre of the combined 1.9 acres between Deed Parcel II and Deed Parcel III. This portion of Tax Parcel 22-50-16 Deed Parcel II is bordered by the Otter Creek, Simons Avenue, and the Clarendon and Pittsford Railroad. The portion of Tax Parcel 22-50-16 Deed Parcel II that would be needed for the development of the pocket park may be split by the right-of-way to the former Clarendon and Pittsford Railroad Company. "Deed Parcel II and Deed Parcel III" are shown on a survey plot entitled "Boundary Survey Prepared for Green Mountain Power and the Town of Rutland," dated 09-15-21, as prepared by MSK Engineers. Please see Attachment B to view the Town of Rutland tax maps. The two parcels where a transfer of an easement or lease interest is proposed to occur are highlighted yellow. GMP understands that due to the current license requirements for recreation facilities on the southeast side of Otter Creek that were

[1] A summary of the conference call held December 6, 2022 can be accessed via eLibrary at: https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20221212-3012&optimized=false

[2] The November 23, 2022 Additional Information can be accessed via eLibrary at: https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20221123-5045&optimized=false

not constructed by the prior licensee[3] due to the prior licensee being unable to acquire land from the Town of Rutland necessary for the kiosk and viewing platform, and that the transfer of easement or lease interests in the parcels to the town of Rutland cannot occur without the approval of the Commission. Please see Attachment C to view the above referenced boundary survey of the two parcels. Please note, the project powerhouse is labeled on the survey map as "Hydro Plant Building."

2. **The Commission's staff has asked for GMP to consult with the Town of Rutland on plans for the development of the pocket park to develop specific estimates and analyses regarding the effects of the Town's pocket park on terrestrial and cultural resources.**

GMP has further discussed plans of the pocket park with representatives from the Town of Rutland to better understand potential impacts to terrestrial and cultural resources in the development of the pocket park. Please see Attachment D to view the Town of Rutland Pocket Park Concept Map. The Town of Rutland is committed to obtaining all necessary state permits and approvals before proceeding forward with any development.

The proposed pocket park area is located within the Center Rutland Project APE (see Attachment E). Cultural resource studies for the Center Rutland Project relicensing identified six Archaeologically Sensitive Areas (ASA) within and adjacent to the Project APE. Construction of pocket park features necessitating ground disturbance have the potential to impact archaeological resources within the area. The VDHP, the Abenaki Nation, and the Stockbridge Munsee Band of the Mohicans will continue to be consulted with as the designs for the park are being finalized and when they are final to minimize any impacts to cultural resources. GMP will work with VDHP, the Abenaki Nation, and the Stockbridge Munsee Band of the Mohicans to determine if the pocket park area requires additional archaeological review and if necessary, plans will be adapted to minimize potential effects. Plans for the pocket park also include signage placed along paths and overlooks to present the historic significance of this area to visitors, which will be designed in consultation with VDHP, the Abenaki Nation, and the Stockbridge Munsee Band of the Mohicans.

GMP is also proposing to execute a Programmatic Agreement and develop an Historic Properties Management Plan in consultation with VDHP to avoid negatively affecting cultural resources and allow for continued preservation of those resources within the Project's APE. The HPMP will be filed with the Commission within 1 year of receipt of subsequent license. GMP plans to include consultation with the Abenaki Nation and the

[3] The Center Rutland Project license went into effect on January 1, 1994 to OMYA, Inc. On November 23, 2010, FERC issued an Order Approving Transfer of ownership from Vermont Marble Power, a division of OMYA Inc. to Central Vermont Public Service Corporation. The license was then transferred from Central Vermont Public Service Corporation to GMP per the FERC Order issued on September 13, 2012.

Stockbridge Munsee Band of the Mohicans prior to any ground disturbing activities within the HPMP. GMP additionally anticipates that the HPMP will incorporate protection measures surrounding future construction of the off-license Town of Rutland pocket park located within the Project APE.

GMP is committed to completing an Archaeological Resources Assessment in consultation with the Town of Rutland and the VDHP prior to any ground disturbance or other activities that have the potential to impact cultural resources through the development of the pocket park. The Town understands that the Archaeological Resources Assessment is the first step in understanding what actions could be taken in the development of the pocket park. With these measures in place, the development of the pocket park as proposed is not expected to have unavoidable adverse effects on cultural or tribal resources.

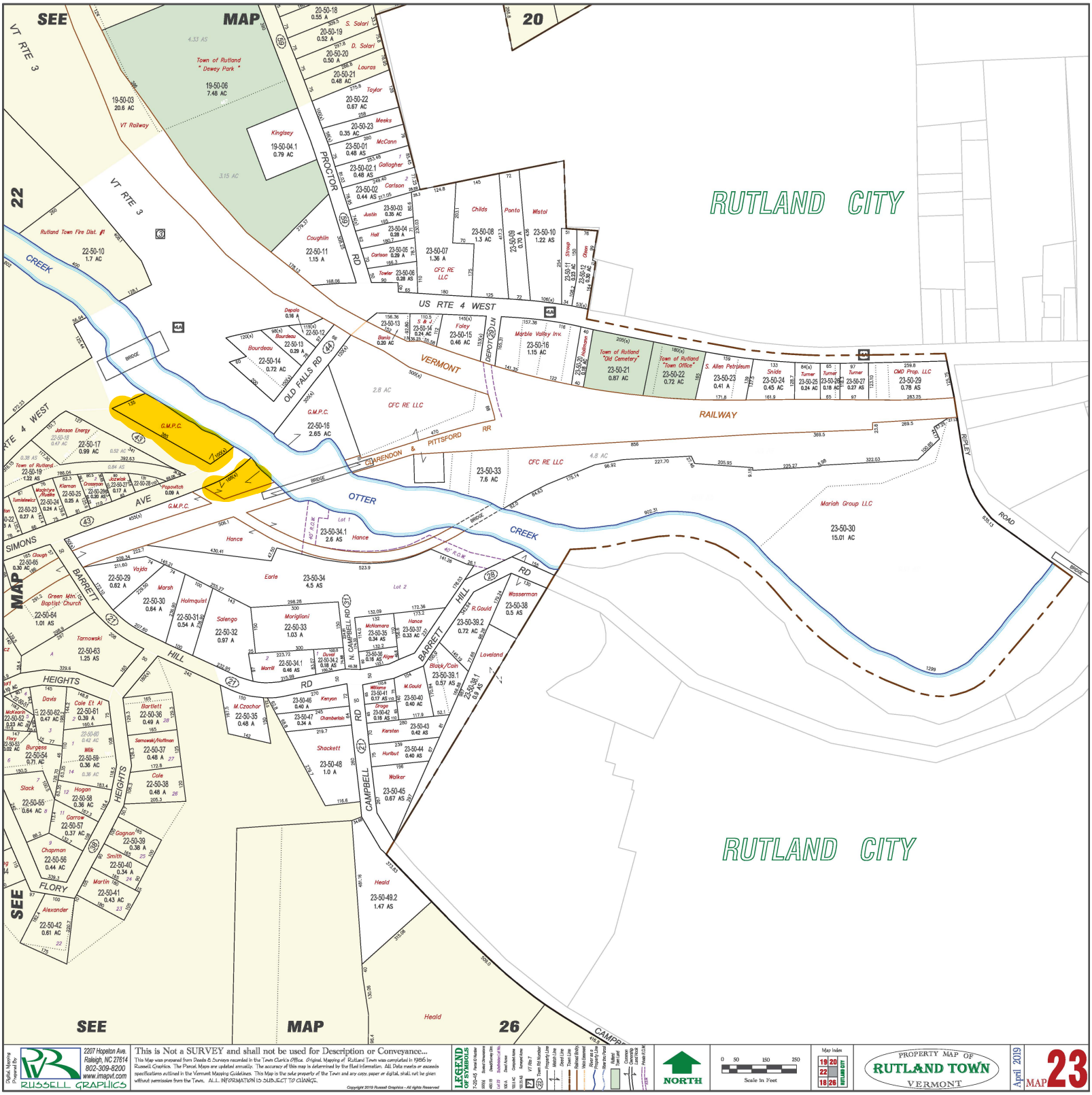
The proposed pocket park would result in changes to terrestrial resources in the proposed area, (approximately 0.5 acres) for the development of recreational resources, including paths, a kiosk, and an overlook area. The pocket park would be located within an industrialized portion of the Otter Creek watershed, with a narrow portion of trees and shrubbery in the area of the proposed pocket park. The Town of Rutland classifies the area proposed for the development of the park as a commercial/industrial zone, with limited terrestrial resources present in the area. Species considered important because of their commercial, recreational, or cultural value are not likely to use the Project area and immediate surrounding lands for permanent habitat as the area is fragmented by commercial and residential development and the Route 4 road corridor.

The Northern-Long Eared Bat (Myotis septentrionalis) listed as endangered under the Endangered Species Act and the monarch butterfly (Danaus plexippus), a candidate species may be present in the area of the proposed pocket park (see Attachment F to view the Project's IPaC Report). Additionally, on September 13, 2022, the USFWS announced a proposal to list the tricolored bat as endangered under the Endangered Species Act. The known range of the tricolored bat includes the entire state of Vermont. The current plans for the pocket park include the Town of Rutland removing any invasive plant species that may be found from the area and planting native species to help support birds and other wildlife. These actions have the potential to positively influence terrestrial resources and create additional habitat for native wildlife. Please see #5 and #16 in Attachment D to view the planned location for these activities. Minimal tree clearing activities are proposed in current plans for the pocket park. The Town of Rutland would follow protocols from the VANR and the USFWS to ensure that any tree clearing would not negatively impact northern long-eared bat or tricolored bat. The development of the pocket park is not expected to result in unavoidable adverse effects to rare, threatened, or endangered species.

The development of the pocket park would lead to short-term impacts to terrestrial resources as sections are converted to recreational resources. However, with the removal of invasive species, planting of native species, and proposed maintenance activities, it is not anticipated that terrestrial resources would be adversely affected. The proposed area of the pocket park is a commercial/industrial zone. The Town of Rutland is committed to obtaining all of the necessary permits and permissions needed to help ensure that terrestrial resources in the area would be protected through the development of the pocket park.

ATTACHMENT B

TOWN OF RUTLAND TAX MAP



Digital Mapping Prepared By

RUSSELL GRAPHICS

2207 Hopeton Ave.
Raleigh, NC 27614
802-309-8200
www.imapvt.com

This is Not a SURVEY and shall not be used for Description or Conveyance...

This Map was prepared from Deeds & Surveys recorded in the Town Clerk's Office. Original Mapping of Rutland Town was completed in 1986 by Russell Graphics. The Parcel Maps are updated annually. The accuracy of this map is determined by the filed information. All Data meets or exceeds specifications outlined in the Vermont Mapping Guidelines. This Map is the sole property of the Town and any copy, paper or digital, shall not be given without permission from the Town. ALL INFORMATION IS SUBJECT TO CHANGE.

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LEGEND

NORTH

Map Index
19 20
22
18 26
RUTLAND CITY

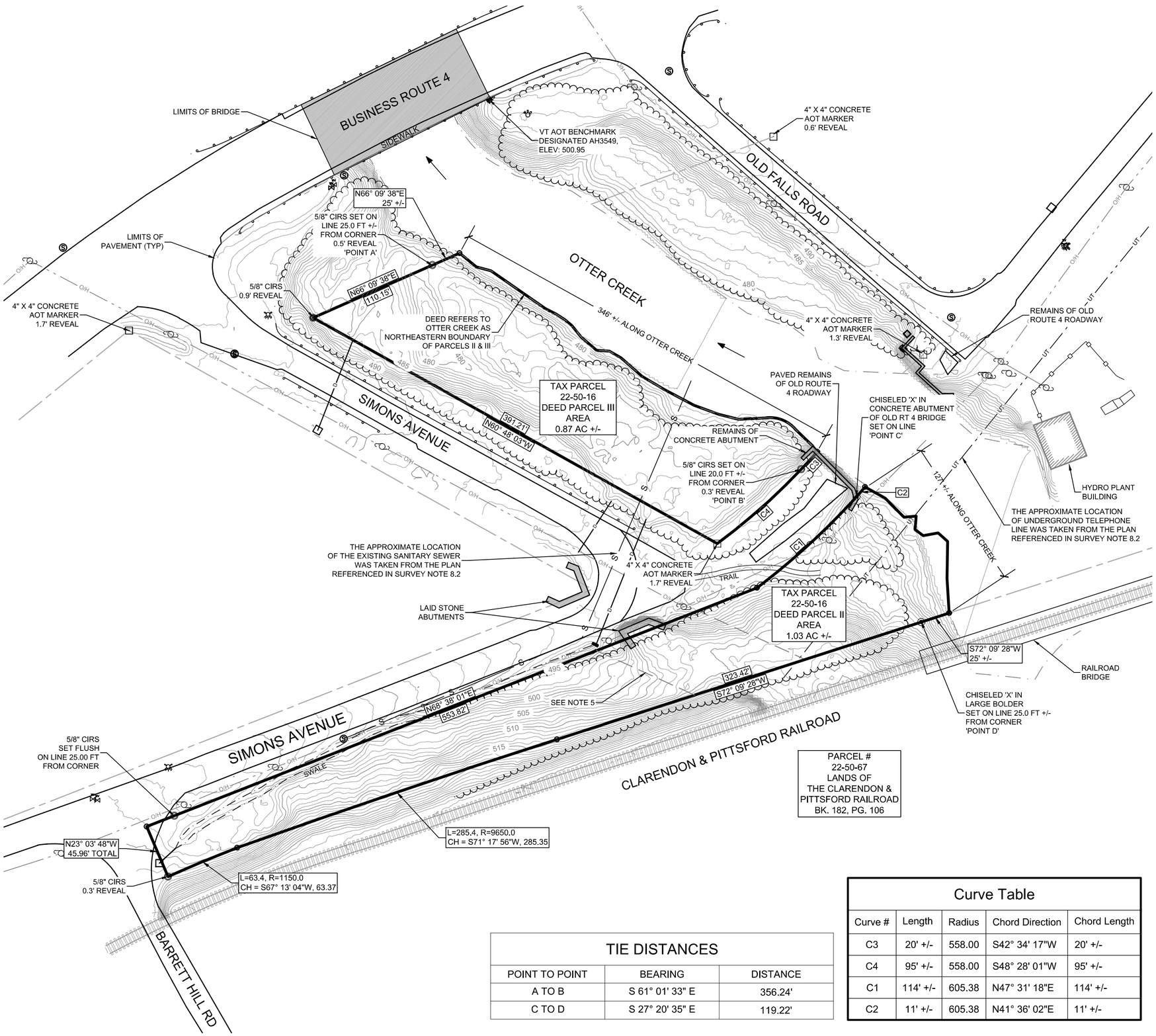
PROPERTY MAP OF
RUTLAND TOWN
VERMONT

April 2019

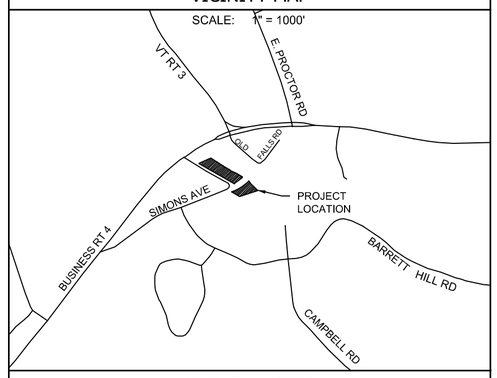
MAP 23

ATTACHMENT C

POCKET PARK PROJECT SURVEY



VICINITY MAP



SURVEY NOTES

1. BOUNDARY SURVEY PREPARED FOR THE GREEN MOUNTAIN POWER COMPANY AND THE TOWN OF RUTLAND.
2. TOWN OF RUTLAND PARCEL ID NUMBER: 22-50-16
3. TOWN OF RUTLAND ZONING DISTRICT: THE PARCELS ARE LOCATED WITHIN THE CONSERVATION AREA AS INDICATED ON THE TOWN OF RUTLAND LAND USE MAP, DATED NOVEMBER 29, 2016.
4. SOURCE OF TITLE: BEING PARCEL II AND PARCEL III OF LANDS AS DEEDED BY OMYA INC. TO CENTRAL VERMONT PUBLIC SERVICE CORPORATION BY WARRANTY DEED, RECORDED IN THE RUTLAND TOWN LAND RECORDS IN BOOK 170, PAGE 384 AND DATED SEPTEMBER 6TH, 2011.
5. PARCEL II AS REFERRED TO ABOVE INCLUDES 'ALL RIGHT TITLE AND INTEREST TO A PORTION OF THE FORMER CLARENDON AND PITTSFORD RAILROAD COMPANY AS REFERENCED IN BOOK 170, PAGE 384.
6. BEARINGS AS DEPICTED ON THIS PLAT ARE WITH RESPECT TO THE VERMONT STATE PLANE COORDINATE SYSTEM AND ARE BASED UPON GPS OBSERVATIONS MADE IN AUGUST OF 2021.
7. THIS PLAT IS BASED ON RECORD INFORMATION AS REFERENCED AND EVIDENCE OBTAINED FROM A FIELD SURVEY CONDUCTED IN AUGUST OF 2021.
8. OTHER INFORMATION USED IN THE DEVELOPMENT OF THIS PLAT:
   - 8.1. RIGHT OF WAY AND TRACK MAP FOR THE RENSSELAER AND SARATOGA RAILROAD COMPANY, OPERATED BY THE DELAWARE AND HUDSON COMPANY, SHEETS 1 OF 3 AND 9 OF 9, DATED JUNE 30, 1916.
   - 8.2. VERMONT AOT HIGHWAY PLAN FOR THE TOWN OF WEST RUTLAND AND RUTLAND ROUTE 4, DATED OCTOBER OF 1957.
9. THE LIMITS OF THE RIGHTS OF WAY FOR BUSINESS ROUTE 4, OLD ROUTE 4, SIMONS AVENUE AND THE CLARENDON AND PITTSFORD RAILROAD ARE BASED ON INFORMATION PROVIDED ON THE ABOVE REFERENCED MAPS.

LEGEND

- PROPERTY LINE
- ABUTTING PROPERTY LINE
- LIMITS OF RIVER AT TIME OF SURVEY
- FENCE LINE
- GUARDRAIL
- O/H POWER / U/G PHONE
- STORM SEWER / SANITARY SEWER
- APPX TREE LINE / RAILROAD TRACK
- CONCRETE HIGHWAY MARKER
- 5/8" CAPPED IRON REBAR SET (CIRS)
- UTILITY POLE / HYDRANT
- CATCH BASIN / SEWER MANHOLE

TIE DISTANCES

POINT TO POINT	BEARING	DISTANCE
A TO B	S 61° 01' 33" E	356.24'
C TO D	S 27° 20' 35" E	119.22'

Curve Table

Curve #	Length	Radius	Chord Direction	Chord Length
C3	20' +/-	558.00	S42° 34' 17"W	20' +/-
C4	95' +/-	558.00	S48° 28' 01"W	95' +/-
C1	114' +/-	605.38	N47° 31' 18"E	114' +/-
C2	11' +/-	605.38	N41° 36' 02"E	11' +/-

1 BOUNDARY SURVEY - GREEN MOUNTAIN POWER COMPANY AND THE TOWN OF RUTLAND

SCALE 1:60

0 60 120 Feet

NORTH

MSK ENGINEERS
P.O. BOX 139, 150 DEPOT STREET
BENNINGTON, VERMONT 05201
PH: (802) 447-1402 FAX: (802) 445-1291

PROJECT DESCRIPTION: BOUNDARY SURVEY PREPARED FOR GREEN MOUNTAIN POWER AND THE TOWN OF RUTLAND

PROPERTY OWNER: LANDS OF GREEN MOUNTAIN POWER

PROPERTY LOCATION: SIMONS AVENUE AND BUSINESS ROUTE 4, TOWN OF RUTLAND, COUNTY OF RUTLAND, VERMONT

DATE OF SURVEY:	08-20-21	DATE OF MAP:	09-15-21
SCALE:	1" = 60'	DRAWN BY:	EM

I CERTIFY THAT THIS PLAT CONFORMS TO THE ABOVE REFERENCED DEEDS, PLATS AND FIELD EVIDENCE AS SHOWN UNLESS OTHERWISE NOTED, AND TO THE REQUIREMENTS OF 27 VSA, SECTION 1403.

STATE OF VERMONT
EAMON MULLIGAN
No. 100478
LICENSED LAND SURVEYOR

ATTACHMENT D

TOWN OF RUTLAND POCKET PARK CONCEPT MAP

Center Rutland (Mead) Falls

100 50 0 100 200

Feet

N W E S

1 inch = 0.01 miles

Map date:4/05/2022

RUTLAND REGIONAL PLANNING COMMISSION

1 Foot Contour Interval

State ROW

North End

1. Buff up Meads Falls historical marker; add a new sign for the pocket park. (State ROW restrictions?)
2. New parking lot off Simons Ave – four spots (two ADA compliant). Bicycle racks. Link parking to new gravel/wood or marble chip path that connects with overlook/picnic area on south end.
3. At parking lot, warning/info board for safety alerts during combined sewer overflows and flooding: solar-powered.
4. Canoe/kayak launch and new spur trail (marble/wood chips and wood/marble chip steps) off new main trail. Not ADA compliant.
5. Remove trees in creek (State Stream Alteration Permit?)
6. Cut brush, remove, or thin trees along Simons Ave. (across from Johnson Energy). Take out invasives/plant native species for birds and other wildlife. Add anti-vandalism measures such as signs with park hours & phone # to report suspicious activity, solar-powered lighting, and surveillance cameras.

South End

7. Additional two parking spots with two that are ADA compliant. Bicylce racks. Place marble blocks at trail entrance to keep vehicles off trails.
8. At parking lot, warning/info board for safety alerts during combined sewer overflows and flooding: solar powered.
9. Kiosk with web link/mobile app/QR code for virtual tour detailing history of falls and surrounding area. Various historical signs placed along paths and at overlooks. Pocket park sign.
10. Upgrade existing path with marble chips from parking lot to two grassed picnic areas and up to two overlooks, with platforms, benches, and metal fence/wood rail. ADA compliant. Move DAR watering trough to overlook/picnic area.
11. Clearing to view brown obelisk on opposite side of creek. ADA compliant.
12. New marble/wood chip spur trail for anglers. Not ADA compliant.
13. For liability reasons, add more fencing to keep people off Amtrak (D&H) railroad bridge.
14. Remove or cover unused two pipe ends along water's edge on west side; clean up beach.
15. New gravel path along beach (connecting north and south ends) to withstand 4 foot lateral flood levels. Not ADA compliant.
16. Cut brush, remove, or thin trees. Take out invasives/plant native species for birds and other wildlife. Add anti-vandalism measures such as signs with park hours & phone # to report suspicious activity, solar-powered lighting, and surveillance cameras.

OLD FALLS RD

SIMONS AVE

OVERLOOK

Partially funded by the Municipal Planning Grant program administered by the Department of Housing and Community Development.

ATTACHMENT E

CENTER RUTLAND PROJECT AREA OF POTENTIAL EFFECT

www.vhb.com

September 18, 2020

Ref: 58450.00

CONCUR
Vermont Division for Historic Preservation

E-SIGNED by Laura Trieschmann
on 2020-09-24 20:58:20 GMT

State Historic Preservation Office

Mr. Scott Dillon
Senior Historic Preservation Review Coordinator
Vermont Division for Historic Preservation
1 National Life Drive, Davis Bldg, 6th Floor
Montpelier, VT 05620
ACCDProjectReview@vermont.gov

Re: Green Mountain Power Center Rutland Hydroelectric Project - Relicensing
FERC No. 2445
Village of Center Rutland, Town of Rutland, Rutland County, VT

Dear Mr. Dillon:

This letter serves as narrative statement to clarify the Area of Potential Effect (APE) as defined for cultural resources studies for Green Mountain Power's (GMP) Center Rutland Hydroelectric Project (Project) relicensing process (FERC No. 2445). The existing FERC Project boundary for the Center Rutland Hydroelectric Project was evaluated and, as necessary, revised to more fully encompass the components of the Project and areas where the Project may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.

The proposed APE is equal to the Project boundary and/or lands located within 10-meters of the edge of the riverbank as measured from the top of the bank, whichever is greater of these two areas. Note that the APE differs from the 10-meter buffer in locations where either the GMP parcel or other infrastructure associated with the Project may be affected by Project operations and therefore necessitate a larger buffer around the Project area. These areas include portions of two GMP-owned parcels at the northwestern portion of the APE, three houses located across Old Falls Road to the north of the Project, and all infrastructure associated with the Project itself.

The downstream (northwestern) limit of the APE is the former Route 4 bridge abutment on the north bank of the river, where it is presumed that natural flow of the river is not influenced by the dam or the impoundment. On the south bank of the river, the downstream limit of the APE incorporates a GMP-owned parcel where proposed Town of Rutland pocket park access may occur. The upstream (eastern)

Engineers | Scientists | Planners | Designers

40 IDX Drive, Building 100
Suite 200
South Burlington, Vermont 05403
P 802.497.6100
F 802.495.5130

limit of the APE is the presumed upstream edge of the impoundment just east of the Ripley Road bridge. In this area, the APE includes a marble retaining wall and the remains of a former powerhouse located on the north bank of the river known as Ripley's Mill.

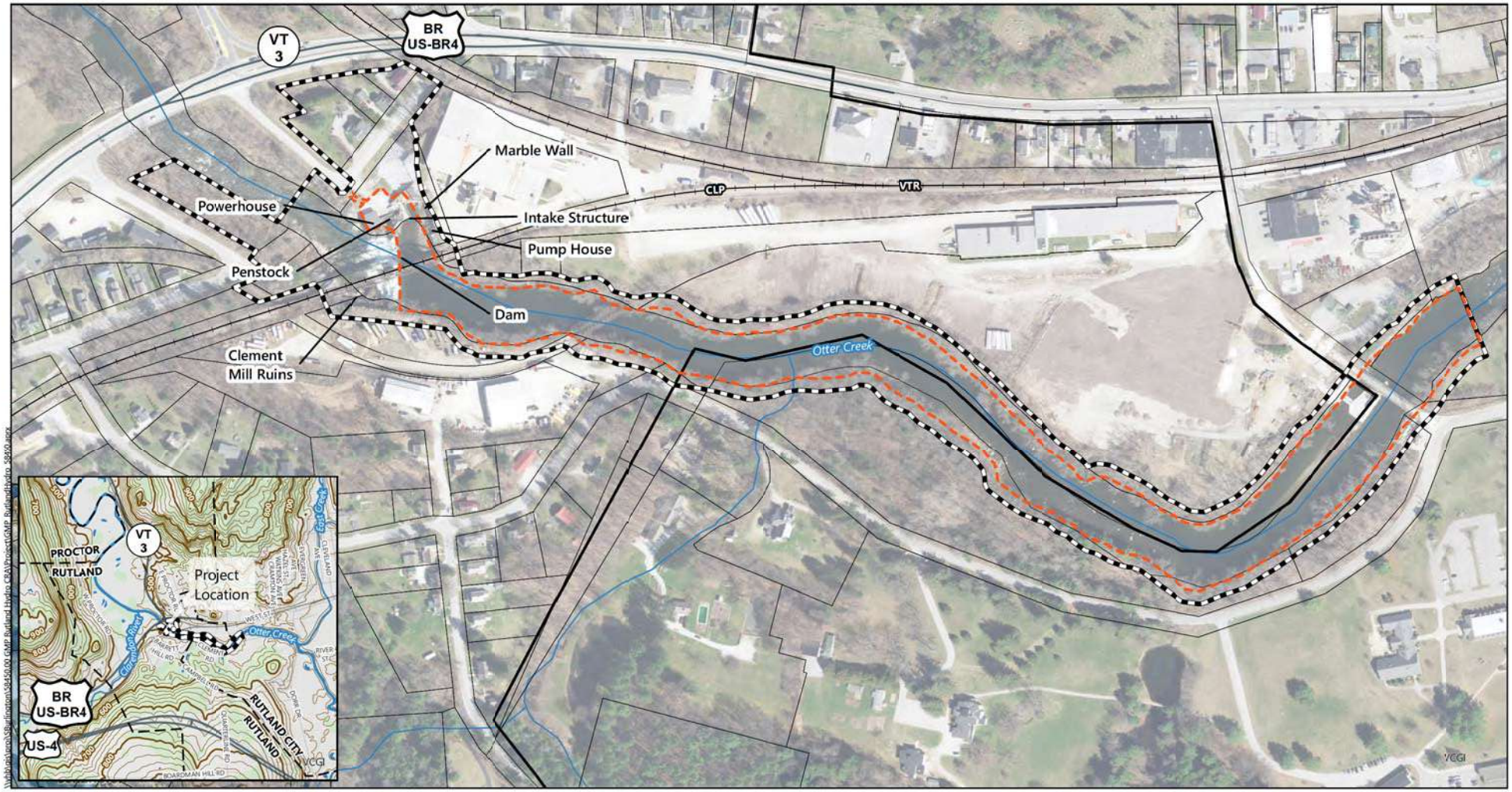
Please refer to the "Area of Potential Effect" map for a visual depiction of the approximate APE boundary as overlaid on the original FERC project boundary.

Sincerely,

Britta Tonn
Preservation Planner
VHB

Robert N. Bartone, M.A.
Director and Principal Investigator
Northeast Archaeology Research Center

\\vhb\gbl\proj\SBurlington\58450.00 GMP Rutland Hydro CRA\Reports\APE\Center Rutland Hydro APE Letter_091820.doc



0 125 250 500 Feet

Area of Potential Effect (VHB)
FERC Project Boundary (FERC)
Railroad (VTrans)
VHD Stream (VCGI)
Parcel Boundary (VCGI)

GMP Rutland Hydro | Rutland, Vermont

Sources:
Background Imagery by VCGI (Collected in 2018)
FERC - Federal Energy Regulatory Commission
VCGI (Vermont Center for Geographic Information - Various Dates)
VTrans (Vermont Agency of Transportation - Various Dates)
VHB - 2020

Area of Potential Effect

ATTACHMENT F

IPAC REPORT

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

In Reply Refer To:
Project Code: 2023-0031899
Project Name: Center Rutland Relicensing

January 09, 2023

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

To Whom It May Concern:

Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

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. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

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 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. 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 by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the "**New England Field Office Endangered Species Project Review and Consultation**" website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat Update - Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to be addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

Additional Info About Section 7 of the Act
Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines 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 Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. 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:

https://www.fws.gov/service/section-7-consultations

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) 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. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the

ESA. The species' occurrence on an official species list does not convey a requirement to consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

https://www.fws.gov/program/migratory-bird-permit

https://www.fws.gov/library/collections/bald-and-golden-eagle-management

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

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

Project Summary

Project Code: 2023-0031899
Project Name: Center Rutland Relicensing
Project Type: Power Gen - Hydropower - FERC
Project Description: FERC Relicensing Center Rutland
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.60215675,-73.00686996849238,14z

Counties: Rutland County, Vermont

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Kleinschmidt Associates
Name: Jessica Antonez
Address: 6 Fundy Road Suite 500
City: Falmouth
State: ME
Zip: 04105
Email jessica.antonez@kleinschmidtgroup.com
Phone: 2074161214

VERMONT AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Water Quality Certification
(33 U.S.C. §1341)

In the matter of: Center Rutland Hydroelectric Project
Green Mountain Power Corporation
2152 Post Road
Rutland, Vermont 05701

APPLICATION FOR CENTER RUTLAND HYDROELECTRIC PROJECT

Section 401 of the federal Clean Water Act requires that any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates that any such discharge will comply with other substantive provisions of the Clean Water Act. 33 U.S.C. § 1341(a)(1). The certifying State may set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant for a federal license or permit will comply with the Clean Water Act and with any other appropriate requirement of State law. 33 U.S.C. § 1341(d). In Vermont, the Agency of Natural Resources is the certifying agency of the State for purposes of Section 401 of the Clean Water Act. 10 V.S.A. § 1004. The Secretary of Natural Resources has delegated the authority to make certification determinations to the Department of Environmental Conservation (Department).

The Department has reviewed a water quality certification application dated April 12, 2023, and filed by Green Mountain Power Corporation (the Applicant or GMP) for the Center Rutland Hydroelectric Project (the Project). The supporting documentation for the certification application includes the Applicant's Federal Energy Regulatory Commission (FERC) final license application (FERC No. 2445) dated December 22, 2021, and other supporting documents filed by the Applicant in support of the application. The record for this decision includes these supporting documents, including the Applicant's responses to the February 18, 2022, September 2, 2022, and October 4, 2022, FERC Additional Information Requests (AIR); and many other documents related to the Project and its relicensing filed through March 8, 2024. An Environmental Assessment for the Project to be conducted by FERC has yet to be completed.

The current application is subject to review under the Vermont Water Quality Standards promulgated by the Agency of Natural Resources and effective November 15, 2022 (Environmental Protection Rule, Chapter 29A) (Standards). (Standards, Section 29A-101 Applicability).

The Department held a public hearing on February 22, 2024, at 1 PM to receive oral comments. The Department accepted written comments through 4:30 PM on March 8, 2024. For additional information on the decision, application, and any pertinent updates can be found at the Vermont Agency of Natural Resources Environmental Notice Bulletin Board (https://enb.vermont.gov/), by searching for the Project name.

The Department, based on the application and record before it, makes the following findings and conclusions.

I. Applicable Statues and Regulations

A. Applicable Provisions of the Vermont Water Quality Standards

1. The applicable 2022 Vermont Water Quality Standards (Standards) were adopted by the Secretary of the Agency of Natural Resources pursuant to 10 V.S.A., Chapter 47, Water Pollution Control. Section 1252 of Chapter 47 provides for the classification of designated uses as either Class A(1), A(2), B(1) or B(2) and authorizes the adoption of standards of water quality to achieve the purpose of classification.

2. All waters of the State shall be managed to support their designated and existing uses. (Standards, § 29A-104(b)).

3. The designated uses of waters of the State are: aquatic biota and wildlife that may utilize or are present in the waters; aquatic habitat to support aquatic biota, wildlife, or plant life; the use of waters for swimming and other primary contact recreation; the use of waters for boating and related recreational uses; the use of waters for fishing and related recreational uses; the use of waters for the enjoyment of aesthetic conditions; the use of the water for public water source; and the use of water for irrigation of crops and other agricultural uses. (Standards, § 29A-104(d)).

4. The affected reaches of the Otter Creek have been classified as Class B(2) for all uses.

5. The Antidegradation Policy in the Standards requires that "[a]ll waters shall be managed in accordance with these [Standards] to protect, maintain, and improve water quality." (Standards, Section 29A-105).

6. The Otter Creek east of Vermont Route 22A is designated as cold water fish habitat. (Standards, Section 29A-308).

7. In waters designated as cold-water fish habitat and the Secretary determines are salmonid spawning or nursery areas important to the establishment or maintenance of the fishery resource, the dissolved oxygen (D.O.) standard is not less than 7 mg/L and 75 percent saturation at all times, nor less than 95 percent saturation during late egg maturation and larval development of salmonids. In all other waters designated as a cold-water fish habitat, the standard is not less than 6 mg/L and 70 percent saturation at all times. (Standards, Section 29A-302(5)(A)).

8. The general temperature standard for all waters is "[c]hange or rate of change in temperature, either upward or downward, shall be controlled to ensure full support of aquatic biota, wildlife, and aquatic habitat uses." (Standards, Section 29A-302(1)(A)).

9. In waters designated as cold water fish habitat and classified as Class B(2) for the fishing designated use, the total increase from ambient temperature due to all discharges and activities shall not exceed 1.0° F. (Standards, Section 29A-302(1)(B)(iii)).

10. The turbidity standard as an annual average under dry weather base-flow conditions is 10 NTU for cold water fish habitat. (Standards, Section §29A-302(4)(A)).

11. The general criteria applicable to all waters include criteria that shall be achieved regardless of their classification including "Sludge deposits or solid refuse. None." (Standards, Section §29A-303(1)).

12. The management objectives for waters classified as Class B(2) for aquatic biota and wildlife are "Waters shall be managed to achieve and maintain good biological integrity" (Standards, Section 29A-306(a)(3)(A)). The Class B(2) criteria for aquatic biota and wildlife use require "Change from the natural condition for aquatic macroinvertebrate and fish assemblages not exceeding moderate changes in the relative proportions of taxonomic, functional, tolerant, and intolerant aquatic organisms." (Standards, Section 29A-306(a)(3)(B)).

13. The management objectives for waters classified as Class B(2) for aquatic habitat are "Waters shall be managed to achieve and maintain high quality aquatic habitat. The physical habitat structure, stream processes, and flow characteristics of rivers and streams and physical character and water level of lakes and ponds necessary to fully support all life-cycle functions of aquatic biota and wildlife, including overwintering and reproductive requirements, are maintained and protected" (Standards, Section 29A-306(b)(3)(A)). The Class B(2) criteria for aquatic habitat use in rivers and streams are "Changes to flow characteristics, physical habitat structure, and stream processes limited to moderate differences from the natural condition and consistent with the full support of high quality aquatic habitat (Standards, Section 29A-306(b)(3)(B)(i)). Additionally, "waters shall comply with the Hydrology Criteria in Section 29A-304" of the Standards (Standards, Section 29A-306(b)(3)(B)(iii)).

14. The hydrology policy in the Standards requires that "[t]he proper management of water resources now and for the future requires careful consideration of the interruption of the natural flow regime and the fluctuation of water levels resulting from the construction of new, and the operation of existing, dams, diversions, and other control structures" (Standards, Section 29A-103(f)(1)).

15. To effectively implement the hydrology policy, hydrology criteria shall be achieved and maintained, where applicable (Standards, § 29A-304(a)). The hydrology criteria require for waters classified as Class B(2) for aquatic habitat that "[a]ny change from the natural flow regime shall provide for maintenance of flow characteristics that ensure the full support of uses and comply with the applicable water quality criteria." Further, the Standards establish "the preferred method for ensuring compliance with this subsection is a site-specific flow study. In the absence of a site-specific study, the Secretary may establish hydrologic standards and impose additional hydrologic constraints, consistent with any applicable Agency of Natural Resources rule or procedure, to ensure compliance with the requirements of this subsection" (Standards, Section 29A-304(b)(3)).

16. The water level fluctuation criteria for lakes, ponds, reservoirs, riverine impoundments, and any other waters classified as B(2) for aquatic habitat or boating establish that "waters may exhibit artificial variations in water level when subject to water level management, but only to the extent that such variations ensure full support of uses" (Standards, § 29A-304(d)(2)).

17. The management objectives for waters classified as Class B(2) for aesthetics are "[w]aters

shall be managed to achieve and maintain good aesthetic quality" (Standards, Section 29A-306(c)(3)(A)). The Class B(2) criteria for aesthetics in rivers and streams are "[w]ater character, flows, water level, bed and channel characteristics, and flowing and falling water of good aesthetic value" (Standards, Section 29A-306(c)(3)(B)(i)).

18. The management objectives for waters classified as Class B(2) for boating are "[w]aters shall be managed to achieve and maintain a level of water quality compatible with good quality boating (Standards, Section 29A-306(d)(3)(A)). The Class B(2) criteria for boating use is "waters shall comply with the Hydrology Criteria in Section 29A-304 of these rules" (Standards, Section 29A-306(d)(3)(B)).

19. The management objectives for waters classified as Class B(2) for swimming and other primary contact recreation are "[w]here sustained direct contact with the water occurs, waters shall be managed to achieve and maintain a level of water quality compatible with good quality swimming and other primary contact recreation with very little risk of illness or injury from conditions that are a result of human activities" (Standards, Section 29A-306(f)(3)(A)).

20. The management objectives for waters classified as Class B(2) for fishing are "[w]aters shall be managed to achieve and maintain a level of water quality compatible with good quality fishing. (Standards, Section 29A-306(e)(3)(A)). The criteria for fishing are "measures of wild salmonid densities, biomass, and age composition indicative of good population levels" and compliance with the temperature criteria in Section 29A-302(B) of the Standards. ((Standards, Sections 29A-306(e)(3)(B)(i)) and 29A-306(e)(3)(B)(ii)).

II. Factual Findings

A. General Setting and Background

21. The Center Rutland Hydroelectric Project is an existing FERC licensed project (FERC No. 2445) located on the Otter Creek in the town of Rutland in Rutland County, Vermont.

22. The Otter Creek is a major tributary of Lake Champlain and it is Vermont's longest stream. It flows about 100 miles from its headwaters in the wetlands above Emerald Lake in the town of Dorset to its confluence with Lake Champlain in Ferrisburgh, Vermont.

23. The Otter Creek is characterized by two differing river types. The upper section, which extends to Proctor, Vermont, is steeper and lends itself to faster water movement. The Center Rutland Project is in this upper portion of the watershed. The lower section extends from Proctor to Ferrisburgh is flatter and is characterized by slower, meandering reaches with elevation drops that occur over a series of natural fall lines where dams have been constructed.[1]

24. The Project is located at river mile 71 where the drainage area is roughly 307 square miles. The project site is approximately 1,000 feet upstream of the confluence of the Clarendon River with Otter Creek and 6,000 feet downstream of the confluence of East

[1] Federal Energy Regulatory Commission (FERC). 1998. Environmental Assessment for Hydropower Licensing. Vergennes Hydroelectric Project. FERC Project No. 2674.

Creek with Otter Creek.

25. The original license for the Project was issued with an effective date of April 1, 1962, and an expiration date of December 31, 1993. The current license, a subsequent license, was issued with an effective date of January 1, 1994, with an expiration date of January 1, 2024.

26. The water quality certification associated with the current license was issued by the State of Vermont's Water Resources Board on April 13, 1995.

B. Project and Civil Works

27. The Center Rutland Hydroelectric Project is owned and operated by Green Mountain Power Corporation.

28. The Project dam is a 190-foot long, 14-foot-high gravity dam made of concrete and stone. The dam is comprised of two sections: (1) A 174-foot-long spillway section; and a (2) 16-foot-long non-overflow section.

29. Without flashboards in place, the dam forms an impoundment with a surface area of 7 acres at the crest elevation of 504.8 feet (NGVD 29).

30. The headworks consist of a forebay and an intake structure. The forebay makes an S-bend from the impoundment and is 13 feet long and varies in width from 7 to 30 feet as it leads to the intake structure. The intake structure, constructed of concrete and marble masonry, measures 39.58 feet wide and 18 feet high. The intake structure houses a steel headgate, measuring 6.7 feet in width and 6.5 feet in height.

31. A trashrack is located at the intake structure measuring 30 feet wide and 12 feet high with 9/16-inch clear bar spacing. The trashracks are cleaned by a mechanical rack raker. The trashracks are cleaned at minimum once per week, but as frequently as every few hours under adverse conditions.

32. Water is conveyed from the intake structure via a penstock that is 75 feet long and 6 feet in diameter. The penstock is welded steel penstock and situated on marble block saddles. Approximately 15-feet of the penstock is within the powerhouse.

33. The powerhouse is made of stone, marble masonry, and concrete. This powerhouse spans 40 feet in length and 33 feet in width, and houses a single turbine-generator. The turbine is a 275 kW horizontal Francis type unit manufactured by Holyoke Machine Company. The turbine has a minimum hydraulic capacity of 60 cubic feet per second (cfs) and a maximum hydraulic capacity of 190 cfs. The generator is a General Electric horizontal-shaft, open-type, synchronous generator and is rated at 0.275 MW.

34. The tailrace from the project powerhouse discharges on river right directly into the downstream corner of a plunge pool located at the base of the ledge outcrop on which the dam is constructed. The project creates an approximately 100-foot-long bypassed reach of the Otter Creek.

35. Electricity generated by the project is transferred from a substation to a 480-volt/12.47-kilovolt (kV) transformer that connects to the local distribution grid via an 80-foot-long, 12.47 kV transmission line. The transmission line meets an incoming 0.35-mile-long fiber optic cable that provides smart grid communications to the Center Rutland Project.

33. Appurtenant facilities include plant controls, as well as other supporting features.

C. River Hydrology

34. The Project is located towards the middle of the Otter Creek drainage basin, but in the upper, steeper portion of the watershed. Tributaries upstream of the Center Rutland Project include East Creek, Mill River, and Cold River. Tributaries downstream of the Center Rutland Project include the Clarendon River, Leicester River, Middlebury River, New Haven River, and Lemon Fair River. East Creek joins the Otter Creek just upstream of the Project and the Clarendon River enters the Otter Creek just downstream of the Project. The largest lakes in the Otter Creek watershed are Lake Dunmore, located downstream of the Project, and the Chittenden Reservoir, located upstream at the head of East Creek.

35. The Otter Creek watershed is heavily utilized for hydroelectric power generation. The Center Rutland Hydroelectric Project is the most upstream project on the Otter Creek mainstem with the Proctor development (FERC P-2558), Middlebury Lower Hydroelectric Project (FERC P-2737), Beldens Falls development (FERC P-2558), Huntington Falls development (FERC P-2558), Weybridge Hydroelectric Project (FERC P-2731), and Vergennes Hydroelectric Project (FERC P-2674) being located further downstream toward the confluence with Lake Champlain.[2] In addition, the Chittenden Reservoir is located on East Creek along with three FERC unlicensed generating developments: East Pittsford, Glen, and Patch.

36. Additional flow modifying activities in the Otter Creek watershed include discharges from wastewater treatment facilities (WWTFs). The Wallingford and Rutland WWTFs discharge to the Otter Creek upstream of the Project, with the outfall of the latter being less than one river mile upstream. The Proctor, Middlebury, and Vergennes WWTFs discharge downstream.

37. The United States Geological Survey (USGS) maintains a gage (04282000) on the Otter Creek at Center Rutland, Vermont, which is located immediately downstream of the Project. The drainage area at the gage is 307 square miles. An additional USGS gage (04282500) is located downstream of the project on the Otter Creek at Middlebury, Vermont with a drainage area of 628 square miles.

38. Hydrologic statistics for the Project are provided in Table 1. These statistics were estimated using the USGS gage at Middlebury, Vermont and prorating to the drainage area at the Project. The gage at Middlebury was utilized as the intervening drainage area between the Center Rutland gage and the Middlebury gage has little flow regulation, whereas peaking operations on East Creek have a greater influence on the Center Rutland

[2] The Proctor, Beldens Falls, and Huntington Falls development are components of the Otter Creek Hydroelectric Project.

gage. Given the influences on the gages, it is expected that the flow data from the further downstream gage in Middlebury may be more representative of the hydrology of the watershed. A 30-year trend analysis was performed, and only the 50% exceedance flow had an increasing trend annually, therefore the statistics presented are based on the entire record.

Table 1. Estimated hydrologic statistics at the Center Rutland Hydroelectric Project on the Otter Creek from years 1929-2022 using the USGS gage (USGS 04282500) at Middlebury, Vermont.

Hydrologic statistic	Discharge Cubic feet per second (cfs)	Discharge Cubic feet per second per square mile (csm)
10 % Exceedance Flow	1,151	3.75
50 % Exceedance Flow*	476	1.55
90 % Exceedance Flow	105	0.34
7Q10	69	0.22

*For this statistic a Mann-Kendall test detected a statistically significant trend over the period of record.

D. Current Operations

39. The Center Rutland Hydroelectric Project is licensed as a run-of-river project.[3]

40. The current license requires 80 cubic feet per second or inflow to the impoundment, whichever is less, be uniformly spilled over the dam crest into the bypassed reach from June 1st through October 15th for the protection of aquatic and aesthetic resources.

41. No flow is currently required to be provided into the bypassed reach from October 16th through May 31st.

42. When the project is not generating, all flow is required to be spilled over the Project dam into the bypassed reach.

43. The current license requires a minimum flow release of 154 cfs or 90 percent of inflow to the impoundment, whichever is less, downstream of the powerhouse when refilling the impoundment following a drawdown for maintenance or emergencies.

44. The Project is primarily operated manually where an operator visits the site on weekdays to ensure facility compliance and safety of the site. However, two pressure transducers allow the programmed headpond setpoint values to be maintained and for the remote monitoring of the Project's headpond elevation, generation data, and trashrack differential. Wicket gates can also be adjusted remotely.

[3] The Agency defines run-or-river operations as outflow is equal to inflow on a near instantaneous basis. This means that there is no utilization of impoundment storage and therefore there is no artificial regulation of streamflow below the tailrace. The flow regime below the project is essentially the rivers natural regime except for short term deviations such as maintenance activities.

45. 2.3-foot-high flashboards are permitted under the current license, but have not been utilized since before 2012.

46. The headpond level is maintained at a stable level plus or minus less than 1-inch within the minimum level calculated for the required spillage. Without flashboards, the normal full pond elevation is maintained at 505.05 feet mean sea level (msl) when providing the seasonal minimum flow and 504.8 feet msl when minimum flows are not required.

47. The Applicant provides public access and use of Project lands and waters; and provides an informal hand-carry put-in/fishing access area located downstream of the powerhouse. Maintenance associated with these informal areas is limited to occasional mowing and weed whacking.

E. Applicant's Proposal

48. In its certification application, GMP has proposed to continue to operate the Project in instantaneous run-of-river mode.

49. The Applicant also proposes to provide a flow of 80 cfs (or inflow, whichever is less) to the bypassed reach from June 1st to October 15th and 40 cfs (or inflow, whichever is less) over the spillway from October 16th to May 31st.

50. The Applicant proposes to provide the proposed flows into the bypassed reach via spill over the dam.

51. The Applicant proposes to develop a flow management and monitoring plan (FMMP) that will define run-of-river operations, operations data monitored to maintain compliance, operational protocols under normal and adverse conditions, consultation requirements, and record keeping.

52. The Applicant additionally proposes to: (1) implement a seasonal tree clearing restriction for trees that are 3 inches in diameter or greater from April 15 through October 31; (2) consult with VANR DEC prior to conducting maintenance and repair work that may impact water quality; and (3) develop and implement a historic properties management plan.

53. The Applicant originally proposed to reinstall the 2.3-foot-high flashboards, which would have increased the impoundment surface elevation, along with additional studies to assess associated impacts. However, the Applicant subsequently proposed eliminating the proposal to reinstall flashboards.

54. While not a formal element of the Applicant's proposal, GMP also plans to establish a land transfer or similar agreement with the Town of Rutland for the Town to develop a pocket park on what is currently GMP property, but located outside of the Project boundary, to provide additional recreational opportunities in the Project area.

F. Current Status of Waters in the Project Area

55. In October 2022, the U.S. Environmental Protection Agency approved a list of waters considered to be impaired based on water quality monitoring efforts and in need of total

maximum daily load (TMDL) development to address pollution. The Department submitted the list under section 303(d) of the Federal Clean Water Act according to the State of Vermont's 2022 303(d) list of impaired surface waters in need of a TMDL.

56. The Otter Creek just above the Project, specifically in the vicinity of the Rutland City WWTF, is listed on Vermont's 303(d) list of impaired surface water in need of a TMDL.[4] The reach is listed as impaired for the uses of aesthetics and contact recreation due to E. coli (*Escherichia coli*) and organic enrichment biological indicators attributed to the Rutland City WWTF collection system and combined sewer overflows.

57. The Department concurrently issued a four-part list, List of Priority Surface Waters Outside the Scope of the Clean Water Act Section 303(d) in 2022. These waters correspond to Category 4c of EPA's Consolidated Assessment Listing Methodology. No waters affected by the Project are listed as priority surface waters.

58. The Agency's publication Hydropower in Vermont, *An Assessment of Environmental Problems and Opportunities* is a state comprehensive plan.[5] The plan indicated that hydroelectric development has a significant impact on Vermont streams, as power projects are usually located on important scenic and ecological sections of streams. Artificial regulation and diversion of natural stream flows were found to have largely reduced the success of state initiatives to restore the beneficial values and uses for which the affected waters are managed under the federal Clean Water Act and Vermont law.

59. The Otter Creek Tactical Basin Plan provides an overall assessment of the health of listed rivers to target resources to those actions that will have the greatest influence on surface water protection or restoration.[6] The waters affected by the Center Rutland Hydroelectric Project are not specifically listed within this state comprehensive plan as a concern.

60. The 2015 Wildlife Action Plan indicates that American eel in the Lake Champlain drainage is a species of greatest conservation need and listed as a medium priority.[7] Dams are identified as a threat to the species as they fragment habitat and impede access to valuable rearing habitats. The plan indicates that successful upstream and downstream fish passage at barriers is critical to maintaining a spawning stock biomass from the U.S. Atlantic coast. The plan identifies a high priority strategy for eels is to restore fish passage at dams to allow upstream migrants access to rearing habitats and ensure safe, timely and effective downstream passage of silver eels. The plan recommends the requirement of eelways where warranted for peak passage performance.

G. Water Chemistry

61. Upstream of the Project, the Rutland WWTF discharges to the Otter Creek with the outfall of the latter located one mile upstream of the Project.

62. Previous collection of water quality data on the mainstem of the Otter Creek within the

[4] State of Vermont. 2022. 303(d) List of Waters, Part A-Impaired Surface Waters in Need of TMDL.
[5] DesMueles and Parks. 1988. Hydropower in Vermont. An assessment of Environmental Problems and Opportunities. Vermont Department of Environmental Conservation. Montpelier, Vermont.
[6] Vermont Agency of Natural Resources. 2019. Otter Creek Tactical Basin Plan. Montpelier, Vermont.
[7] Vermont Fish and Wildlife Department. 2015. Vermont's Wildlife Action Plan. Montpelier, Vermont.

vicinity of the Project has occurred sporadically both through time and by a variety of parties. The FLA describes monitoring performed by Vermont Marble Company from July 10 through 15, 1988 along a 9.7-mile reach of Otter Creek from just upstream of the Center Rutland dam to downstream of the Proctor Hydroelectric Development in which dissolved oxygen (DO) and water temperature data was collected. At the time, the waters were classified as Class C and the DO standard was 6 mg/l. DO concentrations below 6 mg/L were documented upstream of the dam, however below the dam DO concentrations exceeded 6.8 mg/L. Temperature ranged from a minimum of 70.7° F to a maximum of 80.5° F above the dam and a minimum of 70.4° F to a maximum of 80.6° F below the dam.

63. Three monitoring sites located both upstream and downstream of the Project characterize water quality data for a limited set of parameters.[8, 9, 10] These sites were sampled for E. coli, total phosphorous, total nitrogen, and turbidity eight times from June 6th through August 29th, 2007 by the Upper Otter Creek Watershed Council with the support of the LaRosa Partnership Program, a collaborative monitoring effort between community organizations and the Department of Environmental Conservation. A summary of this monitoring effort is provided in Table 2.

Table 2. Summary of monitoring sites in the vicinity of the Center Rutland Hydroelectric Project on the Otter Creek collected by the Upper Otter Creek Watershed Council in collaboration with the LaRosa Partnership Program.

Site	Description	Statistic	E. coli (#/100 ml)	Nitrogen (mg/L)	Phosphorous (ug/L)	Turbidity (NTU
500922	Dorr Drive Bridge	Min.	172	0.3	15.0	0.97
		Mean	714	0.36	17.9	2.07
		Max.	2420	0.49	25.3	2.84
500923	Upstream of Rutland WWTF	Min.	345	0.36	15.2	0.80
		Mean	884	0.41	22.7	2.39
		Max.	2420	0.49	28.4	4.31
500924	Downstream of Business Route 4 Bridge	Min.	79	0.46	17.6	1.49
		Mean	802	0.79	22.9	2.65
		Max.	2420	1.27	35.8	3.82

64. The Department's biomonitoring program has also periodically sampled water quality in the vicinity of the project. Since 2016, sampling has occurred upstream and downstream of the Rutland WWTF, which is approximately one river mile above the Project dam, over five sampling dates: August 8, 2016; September 27, 2016; September 28, 2016;

[8] https://anrweb.vt.gov/DEC/IWIS/ReportViewer.aspx?Report=ChemistryMulti&L=500922
[9] https://anrweb.vt.gov/DEC/IWIS/ReportViewer.aspx?Report=ChemistryMulti&L=500923
[10] https://anrweb.vt.gov/DEC/IWIS/ReportViewer.aspx?Report=ChemistryMulti&L=500924

July 8, 2020, and September 21, 2020.[11, 12] The Department's sampling consists of instantaneous measurements of conductivity, pH, temperature, and dissolved oxygen and grab samples that are analyzed for total chloride, total nitrogen, total phosphorous, and turbidity. Temperature and dissolved oxygen data for the occasions in which sampling occurred on the same day for the comparative value is provided in Table 3.

Table 3. Summary of instantaneous temperature and dissolved oxygen data collected by the Department's biomonitoring program in the vicinity of the Project.

Site	Description	Date	Temperature (Degrees C)	DO (mg/L)	DO (% Saturation)
500923	Upstream of Rutland WWTF	8/8/2016	22.1	8.1	94.1
		7/8/2020	23.9	7.6	95.2
502230	300m Below Rutland WWTF	8/8/2016	22.5	8.3	97
		7/8/2020	24	7.7	96.1

65. The Applicant originally proposed to develop a water quality monitoring study plan and implement the study upon reinstallation of the 2-foot 3-inchhigh wooden flashboards. However, the Applicant has subsequently revised their proposal to no longer include reinstallation of the flashboards, which would not trigger the development of a water quality monitoring study plan.

H. Aquatic Biota

66. "Aquatic Biota" means all organisms that, as part of their natural life cycles, live in or on waters. (Standards, Section 29A-102(5)). Aquatic biota includes fish, aquatic invertebrates, amphibians, and some reptiles such as turtles.

67. The Otter Creek is classified as Class B(2) for the aquatic biota and wildlife designated use.

68. In addition to the water quality sampling described in finding 64, the Department's biomonitoring program also conducts macroinvertebrate sampling and assessments to determine support of the aquatic biota designated use. Three sites have been assessed by kick net collection on multiple occasions since 1985. [13, 14, 15] From 1985 through 1991, macroinvertebrate communities at these locations were generally assessed as 'poor' or 'fair', with the exception of one assessment upstream of the Rutland WWTF in 1988 that was assessed as 'good'. Across sampling events in 1996, 2001, 2006, 2016, and 2020, macroinvertebrate communities in the vicinity of the Project, have generally been assessed as 'good'.

[11] https://anrweb.vt.gov/DEC/IWIS/ReportViewer.aspx?Report=ChemistryMulti&L=500923
[12] https://anrweb.vt.gov/DEC/IWIS/ReportViewer.aspx?Report=ChemistryMulti&L=502230
[13] https://anrweb.vt.gov/DEC/IWIS/ReportViewer.aspx?Report=BugSiteSummary&LocationID=500923
[14] https://anrweb.vt.gov/DEC/IWIS/ReportViewer.aspx?Report=BugSiteSummary&LocationID=502230
[15] https://anrweb.vt.gov/DEC/IWIS/ReportViewer.aspx?Report=BugSiteSummary&LocationID=502229

69. Fish communities in the vicinity of the Project have not been recently surveyed by the Vermont Fish and Wildlife Department (VFWD), although several prior surveys have occurred. A mix of warm and cold water fish species are known to inhabit the waters, including centrarchids like smallmouth bass, as well as salmonids like trout species. The fish species present in the affected reaches of the Otter Creek are likely to include, but may not be limited to, those identified below in Table 4.

Table 4. Fish species found in the reaches of the Otter Creek affected by the Center Rutland Hydroelectric Project.

Common Name	Scientific Name
Bluegill	*Lepomis macrochirus*
Bluntnose minnow	*Pimephales notatus*
Brook trout	*Salvelinus fontinalis*
Brown trout	*Salmo trutta*
Brown bullhead	*Ameiurus nebulosus*
Burbot	*Lota lota*
Common shiner	*Luxilus cornutus*
Creek chub	*Semotilus atromaculatus*
Cutlips minnow	*Exoglossum maxillingua*
Fallfish	*Semotilus corporalis*
Largemouth bass	*Micropterus salmoides*
Longnose dace	*Rhinichthys cataractae*
Northern pike	*Exos lucius*
Pumpkinseed	*Lepomis gibbosus*
Rainbow trout	*Oncorhynchus mykiss*
Rock bass	*Ambloplites rupestris*
Smallmouth bass	*Micropterus dolomieu*
Tessellated darter	*Etheostoma olmstedi*
Yellow perch	*Perca flavescens*
White sucker	*Catostomus commersonii*

70. The area in the vicinity of the Project contains wild brown trout and wild rainbow trout in addition to those fishes stocked by the VFWD.

71. Regarding migratory species, the Project is within the historic range of American eel (*Anguilla rostrata*), a catadromous species. Catadromous fish spend their adult life in freshwater, but then migrate to the sea to breed.

72. The Applicant conducted a freshwater mussel survey in the Project impoundment and bypassed reach.[16] The objective was to characterize the species composition, distribution, relative abundance, age structure, and habitat of the mussel community in areas of the Otter Creek influenced by the Project. Target mussel species included creek heelsplitter (*Lasmigona compressa*), giant floater (*Pyganodon grandis*), creeper (*Strophitus undulatus*), and triangle floater (*Alasmidonta undulata*). Live mussels of three species,

[16] Biodrawversity. 2019. Freshwater Mussel Survey in Otter Creek for the Center Rutland Hydroelectric Project.

including the rare creek heelsplitter, were found. The creek heelsplitter was found at a depth of 4.0 feet in the Project impoundment.

Protection Measures for Aquatic Biota

73. Properly sized and positioned intake screening is necessary to minimize impingement[17] and entrainment[18]. Operation of a hydroelectric project without adequate exclusionary screening may subject fish to impingement on the trashracks or entrainment through the turbine, which conflicts with the management objectives for aquatic biota.

74. The United States Fish and Wildlife Service (USFWS) typically requires full depth, angled trashracks with a maximum clear bar spacing of 1-inch and an approach velocity of two feet per second or less to minimize impingement and entrainment.

75. Full depth trashracks with 9/16-inch clear bar spacing are located upstream of the intake structure.

76. The Applicant calculated the approach velocity at the intake to be 0.70 feet per second at full generation.

I. Aquatic Habitat

77. "Aquatic habitat" means the physical, chemical, and biological components of the water environment. (Standards § 29A-102(6)). Examples include aquatic plants, woody debris, and an adequate flow or water level fluctuation regime.

78. The Otter Creek is classified as Class B(2) for the aquatic habitat designated use.

79. There are three distinct areas where the Project may affect aquatic habitat: the impounded reach above the dam, the reach of the Otter Creek that is bypassed by the diversion of water to the powerhouse, and the reach downstream of the powerhouse.

80. The Project impoundment is riverine in character as it is narrow and shallow with an average depth of approximately 2.3 feet. The impoundment extends upstream approximately 3,200 feet with a surface area of approximately 7 acres at a water surface elevation of 504.8 feet NGVD29.[19]

81. The Project bypass is approximately 100 feet long and consists of the ledge outcrop on which the dam is founded and a plunge pool at the base of the outcrop. The ledge outcrop is approximately 60 feet long and 24 feet high. The plunge pool is at the same approximate elevation as the tailrace from the Project powerhouse. Flows that have been passed through the turbines also feed the plunge pool to a degree.

[17] Impingement refers to when a fish is held in contact with the intake screen by the flow of water and is unable to free itself.
[18] Entrainment refers to when a fish and other aquatic organisms is drawn into a water intake and travels through the turbine.
[19] Vermont Water Resources Board. 1995. Water Quality Certificate In re: Application for Center Rutland Hydroelectric Project.

82. The bypassed reach consists predominately of a pool with bedrock habitat. Near the shoreline of the bypassed reach is shallower habitat with cobble substrate. The southern end of the bypassed reach under the railroad bridge is an eddy that is created by a bedrock outcrop. Just upstream of where the tailrace and bypass connect is a pinch point, where velocities can increase at higher flows.

83. The tailrace from the Project powerhouse discharges into the downstream corner of a plunge pool located at the base of the ledge outcrop. Immediately below the plunge pool is a riffle reach of about 700 feet terminating just below the U.S. Route 4 bridge, below which the Otter Creek turns into a slower moving, meandering river with numerous oxbows and S-bends further downstream.[20]

Hydrologic Conditions to Support Aquatic Habitat

Flow Needs for the Protection of Aquatic Habitat

84. The Applicant has proposed to operate the Project in a true run-of-river mode, where outflow from the Project equals inflow to the Project on an instantaneous basis. Under this operating mode, a project does not operate out of storage, nor does it regulate flow below the project, except for short term and unavoidable circumstances such as during impoundment refilling following maintenance activities and project shutdowns.

85. An instantaneous run-of-river project operating mode means the flow regime below the project is essentially the river's natural regime, except in the special circumstances outlined above.

86. The diversion of river flow creates the bypassed reach described in findings 81 and 82 where the flow regime is altered. Flow alteration is known to impact aquatic habitat and aquatic biota.[21]

87. The Applicant has proposed to provide a minimum flow of 80 cfs (or inflow, whichever is less) over the spillway and into the bypassed reach from June 1st to October 15th and 40 cfs (or inflow, whichever is less) over the spillway from October 16th to May 31st.

88. The Department requested a flow study be conducted in the bypassed reach to assess the conservation flow necessary to support the aquatic habitat designated use.[22] The study request noted that an instream flow evaluation for the bypass reach at the Project can be supported by quantitative (e.g., modeling, empirical measurements along transects, etc.) or semi-quantitative/qualitative (e.g., visual rating/scoring of habitat conditions at different flows) flow assessment methods as long as the approach is capable of characterizing how the quality and quantity of habitat changes across a range of flows.

89. Before conducting additional field data collection, GMP provided the Agency with copies of videos from the 1992 flow demonstration study for the prior relicensing that evaluated

[20] Green Mountain Power Corporation. 2021. Final License Application for Center Rutland Hydroelectric Project.
[21] Bunn, S., Arthington, A. 2002. Basic Principles and Ecological Consequences of Altered Flow Regimes for Aquatic Biodiversity. Environmental Management 30, 492–507.
[22] Vermont Agency of Natural Resources. 2019. Comments on Pre-Application Document and Study Requests for the Center Rutland Hydroelectric Project.

releases ranging from leakage to 100 cfs. The Agency reviewed the video footage and found it difficult to assess aquatic habitat due to the video's low quality and requested that GMP release a limited number of test flows to review in person or to obtain updated video footage to aid in the assessment of aquatic habitat. GMP, USFWS, and the Agency agreed that a flow demonstration assessment to view releases of 20, 40, 60, 80, and 100 cfs over the dam into the bypassed reach would be conducted.

90. GMP collected video and still images for the flow releases and provided the data to the Agency on March 28, 2023.[23]

91. Representatives for the Agency and the Applicant reviewed the video footage on April 17, 2023. The assessment team was divided into two groups with one focused on aquatic habitat and the other on aesthetics. Habitat was evaluated using two metrics, percent of reach with broken water surface, and percent of reach with active circulation. Broken water surface presents in the form of bubbles and currents and can provide cover for some fishes. Active circulation includes areas where movement appears on the surface or below. This ensures oxygen circulation and food distribution for some fish species.

92. The Agency's assessment of the metrics for each of the observed flows is provided in Table 5. Additional documentation of the Agency's assessment of the flow demonstration is documented by memorandum.[24]

Table 5. Agency assessed habitat metrics at assessed flows in the bypassed reach of the Center Rutland Hydroelectric Project.

	Habitat Metrics	
Flow Release	Broken Surface (% of reach)	Active Circulation (% of reach)
20 cfs	15	30
40 cfs	30	45
60 cfs	40	65
80 cfs	50	75/80
100 cfs	65	80/85

93. At 20 cfs, much of the bypass reach appeared stagnant, particularly under the railroad bridge. There was water circulation near the tailrace on river left as the channel narrowed and broken water surface at the base of the dam.

94. At 40 cfs, there was more broken water surface and spray was reaching further away from the base of the dam, with bubbles moving closer to the pinch point, where the bypass meets the tailrace, as compared to 20 cfs. Water movement in the pool was visible, but lacking in the center of the pool. There continued to be areas without circulation in the southern corner of the bypass. Wetted width appeared similar to that observed at 20 cfs.

95. At 60 cfs, there was additional broken water surface extending into the larger pool, but

[23] Center Rutland Landing Page (kleinschmidtgroup.com)
[24] Vermont Department of Environmental Conservation. Memorandum from Betsy Simard re: Center Rutland (FERC No. 2445) Bypass Flow Analysis dated June 27, 2023.

decreasing closer to the southern corner of the bypass. Consistent broken water surface was present into the pinch point. Some minor wave action extended to river left, indicating some additional water circulation. Wetted width continued to appear similar to both 20 cfs and 40 cfs.

96. At 80 cfs, there was slightly more broken water surface extending into the channel, with most of the center of the pool having active circulation. There was however still limited water movement on river left and into the southern corner. There were also larger wave undulations in the pool.

97. At 100 cfs, there appeared to be fast moving water through the pinch point to the tailrace, which created additional broken water surface. Otherwise, this flow was very similar to 80 cfs in terms of active circulation.

Water Level Fluctuation in the Impoundment

98. Operating in an instantaneous run-of-river mode, the Project will not operate out of storage. This will result in little artificial water level fluctuation within the impoundment during normal operations, outside of project shutdowns or for maintenance activities.

99. Maintenance activities are not seasonally planned as they are dependent on when repairs are needed. The timing and duration of a drawdown can have different effects on the habitat available within the impoundment. Drawdowns in the spring or fall may result in loss of spawning and rearing habitat for some fish. Additionally, lowering the impoundment may affect the mussel community that inhabits areas affected by the Project. The community is comprised of three species, including the creek heelsplitter, which is listed as rare in Vermont.

Stream Processes and Physical Habitat Structure

100. Stream processes are defined as the hydrologic, bed-load sediment, and large woody debris regimes of a particular stream reach and is a term used to describe stream channel hydraulics, or the erosion, deposition, sorting, and distribution of instream materials by the power of flowing water. Stream processes work toward an equilibrium condition, are governed by flow characteristics, stream morphology, channel roughness, and floodplain connectivity and, in part, determine physical habitat structure and aquatic habitat quality (Standards § 29A-102 (43)).

101. Physical habitat structure is defined as the diverse combination and complexity of instream forms created within substrate and woody debris on and within the bed and banks of the channel by stream processes and flow characteristics. Physical habitat structure, in part, determines aquatic habitat quality at the stream reach and stream network scales by providing for all life cycle functions, which include the full set of forms necessary for the provision of and access to cover, overwintering, and temperature refuge and the substrates necessary for feeding and reproduction of aquatic biota and wildlife (Standards, § 29A-102 (34)).

102. Water level fluctuation and flow alteration associated with hydroelectric projects can contribute to erosion.[25]

Protection and Support of Life Cycle Functions

103. The Project creates an impediment to fish movement. Many of the species believed to be present are resident species that change movement patterns. For example, some species, such as rainbow trout move in the spring in search of spawning habitat, and others may seek refuge due to warming water temperatures.

104. American eel, as a catadromous fish, depends on successful migration to inland waters and outmigration back to the sea to complete their life cycle.

105. The Project does not currently have passage measures in place for American eel to access the inland waters above the project that are within their historical range.

J. Wildlife and Wetlands

106. The Vermont Water Quality Standards require the Secretary of the Agency of Natural Resources to identify and protect existing uses of state waters, which include those of surficial wetlands. The Standards prohibit activities that degrade the existing uses of wetlands. These uses can include fish and wildlife habitat, fishing, swimming, recreation, water quality maintenance, and others.

107. The USFWS National Wetlands Inventory identified several wetland types within the Project area. These include eight acres of freshwater and riverine wetlands that are characterized by deepwater habitats within the river channel. Additionally, a freshwater forested/shrub wetland community is identified approximately 840 feet downstream of the Center Rutland Project area along the Otter Creek shoreline. No terrestrial wetlands are mapped within the Project boundary.

108. The Vermont Wetlands Program has not identified significant wetlands as class II in the Project area.

K. Rare, Threatened, and Endangered Species

109. Several rare, threatened, and endangered species are, or potentially are, present within the Project area. These include the Northern long-eared bat, creek heelsplitter, and American eel. Each of these species is included in Vermont's Wildlife Action Plan, which is recognized by FERC as a comprehensive plan.

110. The Project is within the range of the Northern long-eared bat (*Myotis septenrionalis*) which is state and federally listed as endangered. This species is in serious danger of extirpation in Vermont and across its range. While the primary stressor is White-nose

[25] Lawson, D.E., 1985, Erosion of northern reservoir shores: An analysis and application of pertinent literature: US Army Corps of Engineers Cold Regions Research and Engineering Laboratory Monograph 85-1, 198 p.

syndrome, loss of maternity roosts is also considered a concern.[26]

111. To protect roosting Northern long-eared bat, it is recommended that removal of trees greater than or equal to 3 inches diameter at breast height be avoided between April 1st and October 31st.

112. The creek heelsplitter was documented in a single location in the Project impoundment. This mussel is ranked as rare in Vermont. One threat to mussels generally are dams due to habitat degradation, creating barriers to movement, as well as unnatural water level and flow changes.

113. The Applicant proposes to consult with the Department prior to conducting maintenance and repair work that may impact water quality.

114. American eel are ranked rare in Vermont and are reported to only spawn in the Sargasso Sea of the Atlantic Ocean. Larvae are carried by ocean currents to coastal areas where they transform into glass eels, then elvers and begin a long upstream migration to inland waters where they can live for more than 20 years as immature yellow eels before returning to the sea to spawn as silver eels.

115. American eel are subjected to a wide variety of challenges associated with extensive migrations and residency in both marine and freshwater environments. Obstructions, such as dams, can fragment habitat and limit access to valuable rearing habitats. Delays and mortality associated with hydro facilities during outmigration can limit spawning potential and reduce total production. Therefore, successful upstream and downstream fish passage at barriers is critical to maintaining spawning and a viable population.

L. Recreation

116. The Otter Creek within the general vicinity of the Project and within the Project area are sought after for recreational opportunities, in particular angling and boating.

117. There are no formal recreational facilities at the Project, though there are several informal sites in the vicinity of the Project area. Informal public access to the Otter Creek is provided by the Applicant just below the Project tailwater on the north bank. This informal access point consists of a dirt footpath wide enough for canoe transport. Anglers also access the river at this location. GMP provides informal parking adjacent to the footpath.

118. Anglers also informally access Otter Creek from its south bank downstream of the dam, off Simons Avenue. Due to the use of this area, the Applicant began discussing collaborative development of a "pocket park" with the Town of Rutland that would be located on GMP and town property, between Simons Avenue and the Otter Creek. The Applicant is not proposing to incorporate the facility into the FERC license as a project recreation facility because the proposed park will be outside of the Center Rutland Project boundary and managed by the Town of Rutland. Preliminary pocket park designs provide for two parking areas, hand carry boat put-in, walking trails, beach access, an

[26] Vermont Fish & Wildlife Department. 2015. Vermont Wildlife Action Plan 2015. Vermont Fish & Wildlife Department. Montpelier, VT. https://vtfishandwildlife.com/node/551

observation area, a picnic area, and historic and informational signage.

119. The Applicant proposes to continue to provide public access to the Otter Creek via the current informal areas near and through project lands. This includes the informal access areas described in findings 117 and 118. Related to the Simons Avenue access area, the Applicant proposes to continue collaborating with the Town regarding finalizing design and development of a land easement or land transfer agreement for use of GMP lands for an off-license recreation enhancement. GMP additionally proposes to collaborate on the development and installation of a cultural heritage information kiosk (e.g. storyboard type sign) for the pocket park site.

M. Debris

120. The depositing or emission of debris and other solids to state waters violates Vermont's solid waste laws and Standards, Section 29A-303(1) and Section 29A-303(2) of the Standards. Debris may also impair aesthetics and boating.

121. Debris from the mechanical rack raker are sorted through on a deck near the dam. Materials of natural origin are placed in a wheelbarrow and are returned into the river downstream of the dam. Any trash, which can include construction materials, refuse, or other debris are placed in the garbage and properly disposed of.

N. Aesthetics

122. The Final License Application notes that the Project dam is situated atop a rock outcropping that was a natural, historic falls known as Mead Falls (or Gookin Falls or Center Rutland Falls). The turbine discharges into a pool located at the base of the natural ledge outcrop.

123. The Applicant is proposing to operate the Project in instantaneous run-of-river mode, with a flow provided via spill to the bypass of 80 cfs (or inflow, if less) from June 1st to October 15th and 40 cfs (or inflow, if less) from October 16th to May 31st.

124. The Department requested an aesthetic flow study in the bypassed reach, to assess the conditions necessary to support the aquatic habitat designated use.[27] The study request noted that a demonstration study can be arranged for direct observation of flows by a team for subjective grading, or the applicant can document various flows using video to support a subsequent analysis of aesthetics. If the latter approach were used, it was requested that the flows be documented using both still photographs and video.

125. The aesthetic flow study was conducted coincident with the aquatic habitat flow study, so the process described in findings 89-91 also applies to this study. Initially, photographs and video from the prior relicensing were provided for Agency review, the parties agreed additional data collection was prudent, the Applicant collected photographs and videos at 20, 40, 60, 80, and 100 cfs, and representatives for the Agency and the Applicant met to review and rate the flows.

[27] Vermont Agency of Natural Resources. 2019. Comments on Pre-Application Document and Study Requests for the Center Rutland Hydroelectric Project.

126. At 20 cfs, the aesthetic character of the flow was generally assessed to be fair. The veil over the dam was generally rated as good, but water movement through the channel below the dam was lacking.

127. At 40 cfs, the aesthetic character of the flow was generally assessed to be good and comparatively better to significantly better than 20 cfs. The veil over the dam was noted to be thicker, the auditory characteristics improved, and most notably water movement improved through the channel above the pool at the bottom of the reach.

128. At 60 cfs, the aesthetic character of the flow was generally assessed to be good to very good and comparatively the same or better than 40 cfs. The veil over the dam was again noted to be thicker, the auditory characteristics again improved, and the flow was better distributed across the bedrock cascades with broken water surface extending into the pool feature.

129. At 80 cfs, the aesthetic character of the flow was generally assessed to be good to very good and comparatively the same or better than 60 cfs. The veil over the dam was little changed, however auditory characteristics continued to improve and additional broken water surface extended into the pool.

130. At 100 cfs, the aesthetic character of the flow was generally assessed to be good to very good or very good and comparatively the same or better than 80 cfs. The veil over the dam continued to remain similar to the prior flow, although additional turbulence entering the pool was noted.

III. Analysis

131. A state's 401 certification shall assure "that a discharge from a Federally licensed or permitted activity will comply with water quality requirements." (40 C.F.R §121.3). Accordingly, the Department may set forth limitations and other requirements necessary for it to find that there is reasonable assurance that the Project will be operated in a manner which will not violate Vermont Water Quality Standards. A goal of the Standards and the Clean Water Act is to restore the biological integrity of waters such that aquatic biota and wildlife are sustained by high quality habitat.

132. Continued operation of the Project may lead to violations of Standards. Those particular aspects of operation that have the potential to cause violations of Standards are analyzed below to determine the limitations and requirements necessary to find that there is reasonable assurance that the discharge will not violate Vermont Water Quality Standards.

133. In addition to the specific items pertaining to the Application on review, if an activity was not presented in the Application and not consistent with the findings of this Certification, the Department reserves the right to review said activity to assure it will not cause a violation of Vermont Water Quality Standards (e.g., change in operation, maintenance drawdown, construction activity, etc.). In addition to specific operational conditions, other provisions like reporting, inspections, and flow monitoring will also be necessary to assure the discharge does not violate Vermont Water Quality Standards.

A. Water Chemistry

134. The Otter Creek in the vicinity of the Project is classified as Class B(2) for all designated uses and is designated as cold water fish habitat. The criteria for the dissolved oxygen (DO) standard is not less than 7 mg/L and 75 percent saturation at all times, nor less than 95 percent saturation during late egg maturation and larval development of salmonids in waters that the Secretary determines are salmonid spawning or nursery areas important to the establishment or maintenance of the fishery resource. In all other waters designated as a cold water fish habitat, the standard is not less than 6 mg/L and 70 percent saturation at all times. (Standards, Section 29A-302(5)(A)).

135. The data collected by the prior project owner for the previous relicensing and described in finding 62 is dated, however all DO concentrations recorded below the project exceeded 6 mg/L, the minimum at some locations exceeded 7 mg/L and all exceeded 80% saturation. In addition, the data showed little temperature change through the reaches affected by the Project.

136. The more recent water quality monitoring described in finding 64 focused on the area upstream of the dam in the area of the WWTF outfall where the historic data indicated DO concentrations were lowest. The DO concentrations documented in this sampling exceeded the criteria of the Standards.

137. The Applicant's proposal to operate in instantaneous run-of-river mode, with a bypass flow based on site-specific study, and providing this flow via spillage, will assure the pool below the dam is oxygenated and provides reasonable assurance that dissolved oxygen standards will be attained in the bypass and below the Project. Additionally, the forebay is limited in length (finding 30) and the tailrace discharges directly to a plunge pool (finding 34) limiting residence time in the areas of the Project associated with diversion of river flow. Therefore, it is not anticipated that continued operations of the Project will have adverse effects on water chemistry parameters over the certification term.

B. Aquatic Biota

138. The management objectives for waters classified as Class B(2) for aquatic biota and wildlife are "Waters shall be managed to achieve and maintain good biological integrity" (Standards, Section 29A-306(a)(3)(A)). To ensure full support of the aquatic biota use, the Agency seeks to minimize potential negative effects of the Project on fish and other aquatic life.

139. The existing trashrack configuration described in finding 75 and approach velocity described in finding 76 is generally considered adequate to minimize entrainment and impingement. Based on the current infrastructure in place at the Project, there does not appear to be excessive impingement and entrainment risk. Therefore, additional exclusionary measures are not required at this time.

C. Aquatic Habitat

140. Waters designated as Class B(2) for aquatic habitat use shall be managed to achieve and maintain high quality aquatic habitat, characterized by the physical habitat structure, stream processes, and flow characteristics of rivers and streams and the physical character and water level of lakes and ponds necessary to protect and support all life-cycle functions of aquatic biota and wildlife, including overwintering and reproductive requirements (Standards, Section 29A-306(b)(3)(A)).

Hydrologic Conditions to Support Aquatic Habitat

Flow Needs for the Protection of Aquatic Habitat

141. The Applicant proposes to operate the development in instantaneous run-of-river mode. Instantaneous run-of-river operations with outflow equal to inflow on a near instantaneous basis except for short term deviations will protect the natural flow regime and will support aquatic habitat in the impoundment and below the tailrace (Standards, Section 29A-306(b)(3)).

142. This Certification is being conditioned to adopt the Applicant's proposal such that the operating mode will be instantaneous run-of-river (findings 48, 85, and 141; condition B).

143. The Applicant proposes to provide a flow to the bypassed reach of 80 cfs (or inflow, whichever is less) from June 1st to October 15th and 40 cfs (or inflow, whichever is less) from October 16th to May 31st.

144. Agency analysis of the flows assessed in the demonstration flow study determined that a flow of at least 60 cfs year-round is necessary to provide high quality aquatic habitat in the reach bypassed by the Project.

145. This Certification is being conditioned such that a flow of 60 cfs shall be provided to the bypassed reach consistent with high quality aquatic habitat (findings 15, 92-97, and 144; condition B).

146. Additionally, the Applicant proposes to provide the bypass flow via spill over the spillway. The proposed spillage will support aquatic habitat at the base of the dam by providing cover, in addition to reoxygenation.

147. This certification is being conditioned to adopt the Applicant's proposal such that the bypass flow shall be comprised of spillage over the dam (findings 50 and 146; condition B).

148. To ensure project operations comply with Standards, this certification is being conditioned to adopt the Applicant's proposal to develop a flow management and monitoring plan (findings 51 and 133; condition C). This plan shall demonstrate how the Applicant will operate the Project according to condition B of this certification.

Water level fluctuation in the impoundment

149. Future drawdown of the impoundment will be needed for maintenance purposes. These activities can impact aquatic habitat within the impoundment variably by season. Additionally, impoundment lowering may affect mussel species including the creek heelsplitter, designated as rare in Vermont.

150. As an additional mitigation measure, the Applicant proposes to consult with the Department prior to conducting maintenance and repair work that may impact water quality.

151. This certification is being conditioned to adopt the Applicant's proposal such that the Applicant shall consult with the Department if deviations from the prescribed flow and water level management are necessary for maintenance purposes (findings 16, 52, and 150; condition H). Any such deviations shall be subject to Department approval.

Physical Habitat and Stream Processes

152. The Applicant has operated the Project in an instantaneous run-of-river mode and proposes to continue this operating mode. The Applicant's proposal will minimize fluctuations in impoundment water levels and downstream flows when inflow is within the capacity of the Project. Therefore, it is not anticipated that continued operation of the Project will adversely affect stream processes or erosion.

Protection and Support of Life Cycle Functions

153. American eel must be able to pass dams to complete their life-cycle. Specifically, American eel require access to upstream inland waters to complete their adult life stage and then must outmigrate to the sea to reproduce.

154. The Applicant has not proposed protection or mitigation measures related to American eel. As the Project is within the natural range of American eel, this certification is being conditioned to include measures to allow American eel to complete their life cycle. Pursuant to condition D of this certification, within 1 year of upstream eel passage measures being implemented at the Otter Creek Hydroelectric Project (FERC No. 2558) located immediately downstream, the Applicant shall develop a plan to provide eel passage at the Project, which shall include an implementation schedule (findings 13, 104, 105, and 153; condition D).

D. Wildlife and Wetlands

155. The Applicant has operated the Project in an instantaneous run-of-river mode and proposes to continue this operating mode. The Applicant's proposal will minimize fluctuations in impoundment levels and downstream flows when inflow is within the capacity of the Project. Therefore, it is not anticipated that continued operation of the Project will adversely affect wildlife or wetlands.

E. Rare, Threatened, and Endangered Species

156. The Northern long-eared bat is listed at both the federal and state level (finding 110).

Project operations, in particular maintenance, may affect roosting Northern long-eared bats, so protection measures are warranted.

157. The Applicant has proposed to abide by restrictions of clearing trees that are 4-inches diameter breast height or greater during the period from April 15th to October 31st. Should tree clearing be required during the restricted time period, the Applicant proposes to consult with the Department, VTFWD, and USFWS regarding removal needs.

158. To protect roosting Northern long-eared bat, this certification is being conditioned to adopt the Applicant's proposal with modification. This certification is being conditioned to restrict tree clearing during the period recommended by the USFWS, from April 1st through October 31st for trees greater than 3-inches and require consultation if removal is necessary (finding 111 and 156; condition E).

159. The creek heelsplitter is ranked as rare in Vermont. Threats to this species include the presence and operation of dams.

160. The Applicant proposes to consult with the Department prior to conducting maintenance and repair work that may impact water quality. To ensure maintenance activities do not adversely affect this rare species, this certification is being conditioned to adopt the Applicant's proposal and require consultation when deviations from the operating conditions required by Condition B to protect aquatic biota and aquatic habitat are necessary (Finding 16, 99, 112, and 159; Condition H).

161. American eel are ranked rare in Vermont and obstructions to their extensive migrations are a threat to the population. As described in finding 154, this certification is being conditioned to support the life cycle needs of this rare species through the implementation of passage measures.

F. Recreation

162. The Vermont Water Quality Standards require that waters achieve and maintain good quality that fully support boating, fishing, and other designated recreational uses. (Standards, Section 29A-306(d)(3)(A); Standards, Section 29A-306(e)(3)(A); and Standards, Section 29A-306(f)(3)(A)).

163. This certification is being conditioned to adopt the terms proposed by the Applicant to maintain and improve recreation access at the Project (finding 119; condition F).

G. Debris

164. The Applicant described how the project-related debris is disposed of, which appears to be consistent with the Standards and applicable state laws and regulations (findings 121). However, this Certification is being conditioned (condition G) to assure that debris disposal is consistent with applicable regulations (finding 11).

H. Aesthetics

165. Aesthetics is a designated use of the Standards. The management objective for waters classified as Class B(2) for aesthetics is "waters shall be managed to achieve and

maintain good aesthetic quality" (Standards, Section 29A-306(c)(3)(A)). The Class B(2) criteria for aesthetics use in rivers and streams are "water character, flows, water level, bed and channel characteristics, and flowing and falling water of good aesthetic value." (Standards, Section 29A-306(c)(3)(B)(i)).

166. The Applicant is proposing to operate the Project in instantaneous run-of-river mode, with a flow in the bypass of 80 cfs, or inflow if less, from June 1st to October 15th and 40 cfs, or inflow if less, from October 16th to May 31st. The proposed flows would be provided by spillage over the dam.

167. Under the Applicant's proposal, the flow regime in the impoundment and below the Project will essentially be the natural flow regime of the river, which supports the aesthetics use (finding 85).

168. Based on the results of the aesthetic flow study, a flow of at least 40 cfs is necessary to provide good aesthetic value in the bypassed reach. Finally, the Applicant's proposal to provide flow to the bypass reach via spill over the dam will support aesthetics over the dam (finding 127).

169. Accordingly, the flow management conditions which have been adopted by condition of this certification are consistent with the protection and support of the aesthetics designated use in the reaches affected by the Project (finding 167 and 168; Condition B).

I. Antidegradation

170. Pursuant to the Anti-Degradation Policy set forth in the Standards (§ 29A-105) and the Agency's 2010 Interim Anti-Degradation Implementation Procedure (Procedure), the Secretary must determine whether proposed discharges or activities are consistent with the Policy by applying the Procedure during the review of applications for any permit for a new discharge if, during the application review process, compliance with the Standards is evaluated pursuant to applicable state or federal law. (Procedure, Section III(A)). This includes water quality certifications required by Section 401 of the federal Clean Water Act for a federal license or permit for flow modifying activities. (Procedure, Section III(B)(3)).

171. In making a determination that proposed activities are consistent with the Anti-Degradation Policy and Implementation Procedure, the Secretary is required to use all credible and relevant information and the best professional judgement of Agency staff. (Procedure, Section III(D)). Section VIII of the Procedure governs the Agency's review of Section 401 applications for flow modifying activities. (Procedure, Section VIII(A)(1)). The Secretary may have to review a single waterbody under multiple tiers of review depending on whether a waterbody is impaired or high quality for certain parameters.

172. Tier 3 review is required if the project will discharge to an Outstanding Resource Water. (Procedure, Section VIII(D)). This Project does not affect any Outstanding Resource Waters and therefore does not trigger a Tier 3 review under Section VIII of the Procedure.

173. This Project affects waters classified as B(2) for all designated uses and criteria, which are presumed to be high quality waters for certain parameters that triggers a Tier 2 review under Section VIII of the Procedure. (Procedure, Section VIII(E)(1)(c)). Under Tier 2, the Secretary must determine whether the proposed discharge will result in a limited reduction in water quality of a high quality water by utilizing all credible and relevant information and the best professional judgment of Agency staff. (Procedure, Section VIII(E)(2)(b)).

174. When conducting a Tier 2 review, the Secretary may consider, when appropriate, any of the following factors when determining if a proposed new discharge will result in a reduction in water quality: (i) the predicted change, if any, in ambient water quality criteria at the appropriate critical conditions; (ii) whether there is a change in total pollutant loadings; (iii) whether there is a reduction in available assimilative capacity; (iv) the nature, persistence and potential effects of the pollutant; (v) the ratio of stream flow to discharge flow (dilution ratio); (vi) the duration of discharge; (vii) whether there are impacts to aquatic biota or habitat that are capable of being detected in the applicable receiving water; (viii) the existing physical, chemical and biological data for the receiving water; (ix) degree of hydrologic or sediment regime modifications; and (x) any other flow modifications. (Procedure, Section VIII(E)(2)(d)).

175. The Secretary considered the foregoing factors during the review of the project to determine if the project will result in a reduction of water quality in the waters affected by the project. The principal impacts of the Project are in the reaches of the Otter Creek affected by the Project and consist of flow and water level management associated with Project operations and the resulting effects on aquatic biota and wildlife and aquatic habitat. The changes in operation of the Center Rutland Hydroelectric Project will not result in a discharge of additional pollutants or reduce other ambient water quality criteria. As a result, factors (i), (ii), (iii), (iv), (v), and (vi) are not at issue. Conditions B and C of this certification, which prescribe flow and water level management regimes and monitoring requirements, are expected to maintain or improve aquatic habitat conditions and reduce the degree of hydrologic alteration associated with operation and maintenance of the facility.

176. This certification does not authorize any activities that would result in a reduction of water quality for those parameters that exceed Standards.

177. For those parameters for which project waters do not exceed Standards, the Secretary must conduct a Tier 1 review. (Procedure, Section VIII(F)).

178. When conducting a Tier 1 review, the Secretary may identify existing uses and determine the conditions necessary to protect and maintain these uses. (Procedure, Section VIII(F)). In determining the existing uses to be protected and maintained, the Secretary must consider the following factors: (a) aquatic biota and wildlife that utilize or are present in the waters; (b) habitat that supports existing aquatic biota, wildlife, or plant life; (c) the use of the waters for recreation and fishing; (d) the use of the water for water supply, or commercial activity that depends directly on the preservation of an existing high level of water quality; and (e) evidence of the ecological significance of the use in the functioning of the ecosystem or evidence of the rarity of the use. (Procedure, Section VIII(F)(2)).

179. The Secretary considered the foregoing factors pertinent to a Tier 1 review of the Project and, based on information supplied by the Applicant and Agency staff field investigations, identified the following existing uses in the reaches of the Otter Creek affected by the Project: aquatic biota and wildlife; aquatic habitat; recreation; and aesthetics.

180. The Applicant is maintaining an instantaneous run-of-river mode of operation as a condition of this certification. Additionally, the Applicant will implement a year-round flow in the bypassed reach that is consistent with high quality aquatic habitat and will provide this flow via spillage over the dam. The conditions of this certification were developed to reduce hydrologic alteration associated with operation and maintenance of the facility and the analysis herein demonstrates the conditions of the certification will fully support the existing uses identified in finding 179.

181. The Secretary finds that operation of the Project, as conditioned by this certification, will comply with the Vermont Water Quality Standards and other applicable rules. Accordingly, the Secretary finds that the Project, as conditioned, meets the requirements of the Policy and Procedure relating to the protection, maintenance, and improvement of water quality.

IV. Decision and Certification

The Department has examined the Project application and other pertinent information deemed relevant by the Department to issue a decision on this certification application pursuant to the Department's responsibilities under Section 401 of the federal Clean Water Act and 10 V.S.A. § 1253(h). After examination of these materials, the Department certifies that there is reasonable assurance that operation of the Project, in accordance with the following conditions, will not violate Standards; will not have a significant impact on use of the affected waters by aquatic biota, fish or wildlife, including their growth, reproduction, and habitat; will not impair the viability of the existing populations; will not result in a significant degradation of any use of the waters for recreation, fishing, water supply or commercial enterprises that depend directly on the existing level of water quality; and will be in compliance with sections 301, 302, 303, 306, and 307 of the federal Clean Water Act, 33 U.S.C. section 1341, and other appropriate requirements of state law:

A. Compliance with Conditions. The Applicant shall operate and maintain this Project consistent with the findings and conditions of this certification. The Applicant shall not make any changes to the Project or its operations that would have a significant or material effect on the findings, conclusions, or conditions of this Certification without approval of the Department.

See finding 133 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-101.

B. Flow Management. The Project shall be operated in instantaneous run-of-river mode. Instantaneous run-of-river mode means no utilization of impoundment storage and that outflow from the facility is equal to inflow to the impoundment on a near instantaneous basis except for short term, unavoidable deviations.

The Applicant shall provide a conservation flow of 60 cfs, or inflow if less, to the bypassed reach year-round. The conservation flow shall be provided via spillage over the dam, unless otherwise described in the flow management and monitoring plan or approved by the Department. When the Project is not operating, all flow shall be spilled at the dam.

See findings 141, 144, and 146 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-304 & § 29A-306 (b)(3)(B) & § 306 (c)(3)(B)(i).

C. Flow Management and Monitoring Plan. The Applicant shall develop, within 180 days of the effective date of the FERC license, a flow management and monitoring plan detailing how the Project will operate in instantaneous run-of-river mode and comply with the conservation flow requirements. The plan will also include a method for continuous monitoring and reporting of flow releases (e.g. conservation flow, spillage, and turbine discharge) at the Project, impoundment levels, and inflow. The plan shall include provisions for the flow data to be available on a near real-time basis to allow for records to be furnished upon request.

The plan will include procedures for reporting deviations from prescribed operating conditions to the Department. Reports shall be made within 15 days after a deviation and will include, if possible, the cause, severity, and duration of the deviation, observed or reported

adverse environmental impacts from the incident, pertinent data, and measures to be taken to avoid recurrences.

The plan shall be subject to Department approval. The Department reserves the right to review and approve any material changes made to the plan.

See finding 133 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-304 & § 29A-306(b).

D. American Eel Passage. Within 1 year of upstream American eel passage having been installed at the Otter Creek Hydroelectric Project (FERC No. 2558), the Applicant shall initiate plan development for American eel passage. Before developing the plan, the Applicant shall consult with the Vermont Agency of Natural Resources and the U.S. Fish and Wildlife Service. The plan shall be reviewed and approved by the Vermont Agency of Natural Resources and the U.S. Fish and Wildlife Service before implementation. In addition to the method of passage, the plan shall include an implementation schedule. The plan can include, but is not limited to, a trap and truck program or eel ramp installation, or other appropriate measures.

See finding 154 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-306(b)(3)(A).

E. Northern Long-eared Bat Protection. The Applicant shall avoid tree trimming and removal of trees 3- inch diameter breast height or greater in the project boundary between April 1st and October 31st to avoid any roost disruption of the Northern long-eared bat, except when necessary to protect public safety or respond to emergency conditions. In case of a public safety issue or emergency where tree trimming or removal are required during the seasonal protective period, the Applicant will consult with the Department as soon as practical after conducting the trimming or removal.

See finding 158 for a statement of necessity. 10 V.S.A. § 5403.

F. Recreation. The Applicant shall continue to: (1) provide public access and use of Project lands and waters; (2) provide access to and maintain the hand carry put-in/fishing access area located downstream of the powerhouse; and (3) establish an agreement with the Town of Rutland for a pocket park pending appropriate approvals.

See finding 162 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 §29A- 303(d-f).

G. Debris Disposal. Debris associated with Project operations shall be disposed of in accordance with the Standards and applicable state laws and regulations.

See findings 164 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-303(1).

H. Maintenance and Repair Work. The Applicant shall consult with the Department prior to conducting Project maintenance or repair work that necessitates a deviation from the conditions that assure compliance with water quality requirements (e.g., water level or flow management). Such maintenance and repair work shall be subject to review and approval by

the Department.

See findings 149 and 151 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § 29A-304(d) and § 29A-306(b).

I. Compliance Inspection by Department. The Applicant shall allow the Department to inspect the Project area at any time to monitor compliance with certification conditions.

See findings 2 and 133 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § § 29A-104(a).

J. Posting of Certification. A copy of the certification shall be prominently posted within the Project powerhouse.

See findings 2 and 133 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § 29A-104(a).

K. Modification of Certification. The conditions of this certification may be altered or amended by the Department to assure compliance with the Vermont Water Quality Standards and to respond to any changes in classification of management objectives for the waters affected by the Project, when authorized by law, and, if necessary, after notice and opportunity for hearing.

See findings 2 and 133 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § 29A-104(a).

Effective Date and Expiration of Certification

This certification shall become effective on the date of issuance, and the conditions of any certification shall become conditions of the federal permit (33 U.S.C. § 1341(d)). If the federal authority denies a permit, the certification becomes null and void. Otherwise, the certification runs for the terms of the federal license or permit.

Enforcement

Upon receipt of information that water quality standards are being violated as a consequence of the Project's construction or operation or that one or more certification conditions has not been complied with, the Secretary, after consultation with the Applicant and notification of the appropriate federal permitting agency, may, after notice and opportunity for a public hearing, modify the Certification and provide a copy of such modification to the Applicant and the federal permitting agency.

Certification conditions are subject to enforcement mechanisms available to the federal agency issuing the license and to the state of Vermont. Other mechanisms under Vermont state law may also be used to correct or prevent adverse water quality impacts from construction or operation of activities for which certification has been issued.

Appeals

Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. Pursuant to 10 V.S.A. Chapter 220, an aggrieved person shall not appeal this decision unless the person submitted to the Secretary a written comment during the applicable public comment period or an oral comment at the public meeting conducted by the Secretary. Absent a determination of the Environmental judge to the contrary, an aggrieved person may only appeal issues related to the person's comments to the Secretary as prescribed by 10 V.S.A. § 8504(d)(2). The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or their attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the Applicant or any permit involved in the appeal. The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings, available online at www.vermontjudiciary.org. The address for the Environmental Division is 32 Cherry Street, 2nd Floor, Suite 303; Burlington, VT 05401 (Tel. 802.951.1740).

Dated this 28th day of March 2024

Julia S. Moore, Secretary
Vermont Agency of Natural Resources

By

Peter LaFlamme, Director
Watershed Management Division

**PROGRAMMATIC AGREEMENT BETWEEN
THE FEDERAL ENERGY REGULATORY COMMISSION AND
THE VERMONT STATE HISTORIC PRESERVATION OFFICE
FOR MANAGING HISTORIC PROPERTIES THAT MAY BE AFFECTED
BY ISSUING A SUBSEQUENT LICENSE TO GREEN MOUNTAIN POWER
CORPORATION FOR THE CONTINUED USE AND OPERATION OF THE
CENTER RUTLAND HYDROELECTRIC PROJECT
IN RUTLAND COUNTY, VERMONT
(FERC Project No. 2445-028)**

WHEREAS, the Federal Energy Regulatory Commission or its staff (hereinafter, "Commission") is proposing to act on an application for a subsequent license filed by Green Mountain Power Corporation (hereinafter, "Licensee") for the continued operation of the Center Rutland Hydroelectric Project No. 2445 (hereinafter, "Project") as authorized by Part I of the Federal Power Act, 16 U.S.C. sections 791(a) through 825(r), *as amended*; and

WHEREAS, the Commission has determined that issuing a subsequent license may affect properties included in or eligible for inclusion in the National Register of Historic Places (hereinafter, "historic properties"); and

WHEREAS, section 3.3.5, *Cultural Resources*, of the associated Environmental Assessment for Hydropower License for the Center Rutland Hydroelectric Project, dated April 24, 2024 (hereinafter, "April 24, 2024 Environmental Assessment"), provides a description of the Project, the Project's area of potential effects (hereinafter, "APE"), historic properties, and anticipated effects identified as of the date of this Programmatic Agreement; and

WHEREAS, the APE for the Project is (1) land enclosed by the Project boundary; and (2) land outside the Project boundary where the authorized Project uses may cause changes in the character or use of historic properties, if historic properties exist, to include land around the project impoundment up to a contour elevation of 507.4 feet National Geodetic Vertical Datum of 1929 (NGVD 29), the entirety of archaeological site VT-RU-266, two existing informal tailwater access trails, and a proposed cultural heritage kiosk;[1] and

[1] *See* April 24, 2024 Environmental Assessment at 41-42.

WHEREAS, section 3.3.5, *Cultural Resources*, of the April 24, 2024 Environmental Assessment explains that the the licensee-proposed APE for the Project was modified by Commission staff to exclude (1) the area of the proposed pocket park; (2) three residential buildings across Old Falls Road; and (3) the 10-meter (32.8 feet) buffer around the impoundment because no project-related effects on these areas were identified.

WHEREAS, the Commission has consulted with the Vermont State Historic Preservation Officer (hereinafter, "Vermont SHPO") pursuant to 36 C.F.R. section 800.14(b) of the Advisory Council on Historic Preservation's (hereinafter, "Advisory Council") regulations (36 C.F.R. Part 800) implementing section 106 of the National Historic Preservation Act (54 U.S.C.§ 306108; hereinafter, "section 106"); and

WHEREAS, the Advisory Council has been invited to participate in the execution of this Programmatic Agreement and has chosen not to participate; and

WHEREAS, the Project may affect lands important to the Stockbridge-Munsee Community Band of Mohican Indians and St. Regis Mohawk Tribe (hereinafter, "Tribes"), and the Tribes have participated in the consultation and have been invited to concur in this Programmatic Agreement; and

WHEREAS, the Licensee has participated in the consultation and has been invited to concur in this Programmatic Agreement; and

WHEREAS, the Commission will require the Licensee to implement the provisions of this Programmatic Agreement as a condition of issuing a subsequent license for the Project; and

NOW THEREFORE, the Commission and Vermont SHPO agree that the Project will be administered in accordance with the following stipulations to satisfy the Commission's section 106 responsibilities during the term of the Project's license.

S T I P U L A T I O N S

The Commission will ensure that, upon issuing a license for this Project, the Licensee implements the following stipulations. All stipulations that apply to the Licensee will similarly apply to any and all of the Licensee's successors. Compliance with any of the following stipulations does not relieve the Licensee of any other

obligations it has under the Federal Power Act, the Commission's regulations, or its license.

I. HISTORIC PROPERTIES MANAGEMENT PLAN

A. Within one year of license issuance for the Project, the Licensee will file with the Commission, for approval, an Historic Properties Management Plan (hereinafter, "HPMP") specifying how historic properties will be managed within the Project's APE, as defined in 36 C.F.R. section 800.16(d), during the term of the license. During the development of the HPMP, the Licensee will consult with the Vermont SHPO, and Native American Tribes (Tribes), as defined in 36 C.F.R. section 800.2(c).[2] The Licensee will seek the Vermont SHPO's concurrence on the HPMP.

B. The Licensee will take into account the "Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines" (Federal Register, September 29, 1983, Vol. 48, No. 190, Part IV, pp. 44716-44740; hereinafter, "Secretary's Standards") and the "Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects,"[3] while developing the HPMP. The HPMP will be developed by, or developed under the direct supervision of, a person or persons who meet(s), at a minimum, the professional qualifications standards for architectural history and archaeology in the Secretary's Standards (48 FR 44738-39). To develop the HPMP, the individual or individuals need not possess both qualifications.

C. The HPMP will include, at a minimum, provisions for:

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[2] The Licensee must allow the consulting parties at least 30 days to respond to a request for a review of a finding or determination involving the HPMP and during the interim period, pursuant to Stipulation IV of this Programmatic Agreement.

[3] This document was issued jointly by the Commission and the Advisory Council on May 20, 2002. The document is available at http://www.ferc.gov/industries/hydropower/gen-info/guidelines/hpmp.pdf.

1. the identification of the APE for the Project and inclusion of a map or maps that clearly show the APE in relation to the Project boundary;

2. the completion, if necessary, of identification of historic properties within the APE;

3. the continued use and maintenance of historic properties;

4. treatment of historic properties threatened by Project-induced shoreline erosion,[4] other Project-related ground-disturbing activities, and vandalism;

5. consideration and implementation of appropriate treatment that would minimize or mitigate unavoidable adverse effects on historic properties;

6. treatment and disposition of human remains that may be discovered, consistent with applicable state laws and taking into account the Advisory Council's "Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects," February 23, 2007;

7. notification and treatment procedures to address effects on any previously unidentified properties that are discovered during Project operations;

8. public interpretation of the historic and archeological properties at the Project;

9. a list of activities (i.e., routine repair, maintenance, and replacement in kind at the Project) that do not require consultation with the Vermont SHPO because these activities would have little or no potential effect on historic properties;

10. treatment procedures to address effects on historic properties in the event of a Project emergency or Project modifications not specifically authorized by the license; and

11. a periodic review of the HPMP by the Licensee, the Vermont SHPO, and the Tribes to ensure that the information continues to assist the Licensee in managing historic properties and updating the HPMP based on agency and tribal consultations.

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[4] Project-induced shoreline erosion does not include shoreline erosion attributable to flood flows or phenomena, such as wind driven wave action, erodible soils, and loss of vegetation due to natural causes.

II. HPMP REVIEW AND IMPLEMENATION

A. The Licensee will submit the HPMP, along with documentation of the views of the Vermont SHPO and the Tribes, to the Commission for review and approval.

B. If the Vermont SHPO has concurred with the HPMP and the Commission determines that the HPMP is adequate, the Commission will forward a copy of the HPMP, along with the views of the Vermont SHPO and the Tribes, to the Advisory Council for filing.

C. If the Vermont SHPO has not concurred with the HPMP, or the Commission finds the HPMP inadequate, the Commission will consult with the Licensee and Vermont SHPO to seek agreement on the HPMP. If concurrence is not reached within 45 days, the Commission will request that the Advisory Council enter into consultation to seek agreement on the HPMP.

1. If agreement is reached on the HPMP, the Commission will forward a copy of the revised HPMP to the Advisory Council for filing.

2. If agreement on the HPMP cannot be reached among the Commission, the Vermont SHPO, and the Licensee, then the Commission will request that the Advisory Council comment pursuant to Stipulation IV.B of this Programmatic Agreement.

D. The Licensee will submit an annual report with the Vermont SHPO and the Tribes on activities conducted under the implemented HPMP. The report will contain a detailed summary of any cultural resources work conducted during the preceding year; if no work was completed, a letter from the Licensee will be prepared to that effect, and will satisfy the intent of this stipulation.

III. INTERIM TREATMENT OF HISTORIC PROPERTIES

A. After a license for the Project has been issued, but before the HPMP has been approved by the Commission (hereinafter, “the Interim”), the Licensee will

consult with the Vermont SHPO and the Tribes regarding the effects of the following actions that could be implemented in the Interim:

1. Project-related activities, including recreational developments, that require ground-disturbance;

2. non-routine maintenance, new construction, demolition, or rehabilitation of National Register-eligible structures within the Project APE; and

3. Project-induced shoreline erosion of archeological sites not attributable to flood flows or phenomena, such as wind-driven wave action, erodible soils, and loss of vegetation due to natural causes.

B. Consultation will be in accordance with 36 C.F.R. sections 800.4 and 800.5, with the Licensee acting as the Agency Official. If the Licensee and the Vermont SHPO agree that the activity will not adversely affect historic properties, the Licensee may proceed in accordance with any agreed-upon treatment measures or conditions.

C. If the Licensee or Vermont SHPO determines that the activity will have an adverse effect on an historic property, and the affected property is a National Historic Landmark, the Licensee will submit the matter to the Commission, which will initiate the process set forth at 36 C.F.R. section 800.6. Otherwise, the Licensee or Vermont SHPO will consult to develop a strategy for avoiding or mitigating such adverse effects. If the Licensee and Vermont SHPO can reach agreement, the Licensee will implement the agreed-upon strategy. If they disagree, the Licensee will submit the matter to the Commission, which will initiate the process set forth at 36 C.F.R. sections 800.6 and 800.7(a) through (c)(3).

IV. DISPUTE RESOLUTION

A. If at any time during implementation of this Programmatic Agreement and the resulting HPMP, the Licensee, the Vermont SHPO, or the Tribes object to any action or any failure to act pursuant to this Programmatic Agreement or the HPMP, they may file written objections with the Commission. In the event a written objection is filed with the Commission, the Commission will follow the steps listed below.

1. The Commission will consult with the objecting party, and with other parties as appropriate, to resolve the objection.

2. The Commission may initiate, on its own, such consultation to remove any of its objections.

B. If the Commission determines that the objection cannot be resolved, the Commission will forward all documentation relevant to the dispute to the Advisory Council and request that the Advisory Council comment. Within 30 days after receiving all pertinent documentation, the Advisory Council will either:

1. provide the Commission with recommendations, which the Commission will take into account in reaching a final decision regarding the dispute; or

2. notify the Commission that it will comment pursuant to 36 C.F.R. sections 800.7(c)(1) through (c)(3) of the National Historic Preservation Act, and proceed to comment.

C. The Commission will take into account any Advisory Council comment, provided in response to such a request, with reference to the subject of the dispute, and will issue a decision on the matter. The Commission's responsibility to carry out all actions under this Programmatic Agreement that are not the subject of dispute will remain unchanged.

V. AMENDMENT AND TERMINATION OF THIS PROGRAMMATIC AGREEMENT

A. The Commission, the Licensee, the Vermont SHPO, or the Tribes may request that this Programmatic Agreement be amended, whereupon these parties will consult in accordance with 36 C.F.R. section 800.14(b) to consider such amendment.

B. The Commission or the Vermont SHPO may terminate this Programmatic Agreement by providing 30 days written notice to the other parties, provided that the Commission, Licensee, the Vermont SHPO, and the Tribes consult during the 30-day notice period in order to seek agreement on amendments or other actions that would avoid termination. In the event of termination, the Commission will

comply with 36 C.F.R. sections 800.3 through 800.7(c)(3), with regard to individual actions covered by this Programmatic Agreement.

VI. DURATION OF THIS PROGRAMMATIC AGREEMENT

The provisions of this Programmatic Agreement will remain in full force and effect for the term of the license and any subsequent annual license.

Execution of this Programmatic Agreement, and its subsequent implementation, is evidence that the Commission has satisfied its responsibilities pursuant to section 106 of the National Historic Preservation Act, *as amended*, for all individual actions carried out under the license. Provided, however, that unless and until the Commission issues a license for the Project and this Programmatic Agreement is incorporated by reference therein, this Programmatic Agreement has no independent legal effect for any specific license applicant or Project.

FEDERAL ENERGY REGULATORY COMMISSION

NICHOLAS JAYJACK Digitally signed by NICHOLAS JAYJACK Date: 2024.08.16 09:44:34 -04'00'

By:_____ Date:_____

Nicholas Jayjack, Director
Division of Hydropower Licensing

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VERMONT STATE HISTORIC PRESERVATION OFFICER

Signed by:
By: _____ Date: 9/27/2024
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Laura V. Trieschmann
Vermont State Historic Preservation Officer

CONCUR: ST. REGIS MOHAWK

By:_____ Date:_____
Darren Bonaparte
St. Regis Mohawk Tribal Historic Preservation Officer

CONCUR: STOCKBRIDGE-MUNSEE COMMUNITY BAND OF MOHICAN INDIANS

By:_____ Date:_____
Jeff Bendremer
Stockbridge-Munsee Community Band of Mohican Indians
Tribal Historic Preservation Officer

CONCUR: GREEN MOUNTAIN POWER COPORATION

By:_____ Date: September 15, 2024

John Tedesco
Green Mountain Power Corporation

ENVIRONMENTAL ASSESSMENT
FOR
HYDROPOWER LICENSE

Center Rutland Hydroelectric Project

FERC Project No. 2445-028

Vermont

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Licensing
888 First Street, NE
Washington, D.C. 20426

April 2024

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ACRONYMS AND ABBREVIATIONS

APE	area of potential effect
certification	water quality certification
C.F.R.	Code of Federal Regulations
cfs	cubic feet per second
CEQ	Council of Environmental Quality
Center Rutland	Center Rutland Hydroelectric Project No. 2445
Commission	Federal Energy Regulatory Commission
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DBH	diameter at breast height
DO	dissolved oxygen
EA	environmental assessment
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
°F	degree Fahrenheit
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
fps	feet per second
FWS	U.S. Fish and Wildlife Service
GMP	Green Mountain Power
HPMP	Historic Properties Management Plan
Interior	U.S. Department of the Interior
IPaC	Information for Planning and Consultation
kW	kilowatt
mg/L	milligrams per liter
MWh	megawatt-hours
MW	megawatt
National Register	National Register of Historic Places
NERC	North American Electric Reliability Corporation
NGVD29	National Geodetic Vertical Datum of 1929
NHPA	National Historic Preservation Act
NLEB	northern long-eared bat
NPCC-New England	Northeast Power Coordinating Council's New England Region
O&M	operation and maintenance
PA	Programmatic Agreement
rpm	revolutions per minute
SCORP	Statewide Comprehensive Outdoor Recreation Plan
USGS	U.S. Geological Survey
Vermont ANR	Vermont Agency of Natural Resources
Vermont DEC	Vermont Department of Environmental Conservation
Vermont SHPO	Vermont State Historic Preservation Officer

ENVIRONMENTAL ASSESSMENT
Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Licensing
Washington, DC

Center Rutland Hydroelectric Project
FERC Project No. 2445 – Vermont

1.0 INTRODUCTION

1.1 APPLICATION

On December 23, 2021, Green Mountain Power Corporation (GMP) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) for a subsequent license to continue to operate and maintain the Center Rutland Hydroelectric Project No. 2445 (Center Rutland Project, or project).[1] The 275-kilowatt (kW) project is located on Otter Creek in Rutland County, Vermont (see Figure 1).

1.2 PURPOSE OF ACTION AND NEED FOR POWER

1.2.1 Purpose of Action

The purpose of the Center Rutland Project is to provide a source of hydroelectric power. Therefore, under the provisions of the Federal Power Act (FPA), the Commission must decide whether to issue a subsequent license to GMP for the Center Rutland Project, and what conditions should be placed on any license issued. In deciding whether to issue a license for a hydroelectric project, the Commission must determine that the project will be best adapted to a comprehensive plan for improving or developing the waterway. In addition to the power and developmental purposes for which licenses are issued (such as flood control, irrigation, and water supply), the Commission must give equal consideration to the purposes of: (1) energy conservation; (2) the protection of, mitigation of damage to, and enhancement of fish and wildlife resources; (3) the protection of recreational opportunities; and (4) the preservation of other aspects of environmental quality.

[1] *See OMYA, Inc.*, 62 FERC ¶ 62,224 (1993).

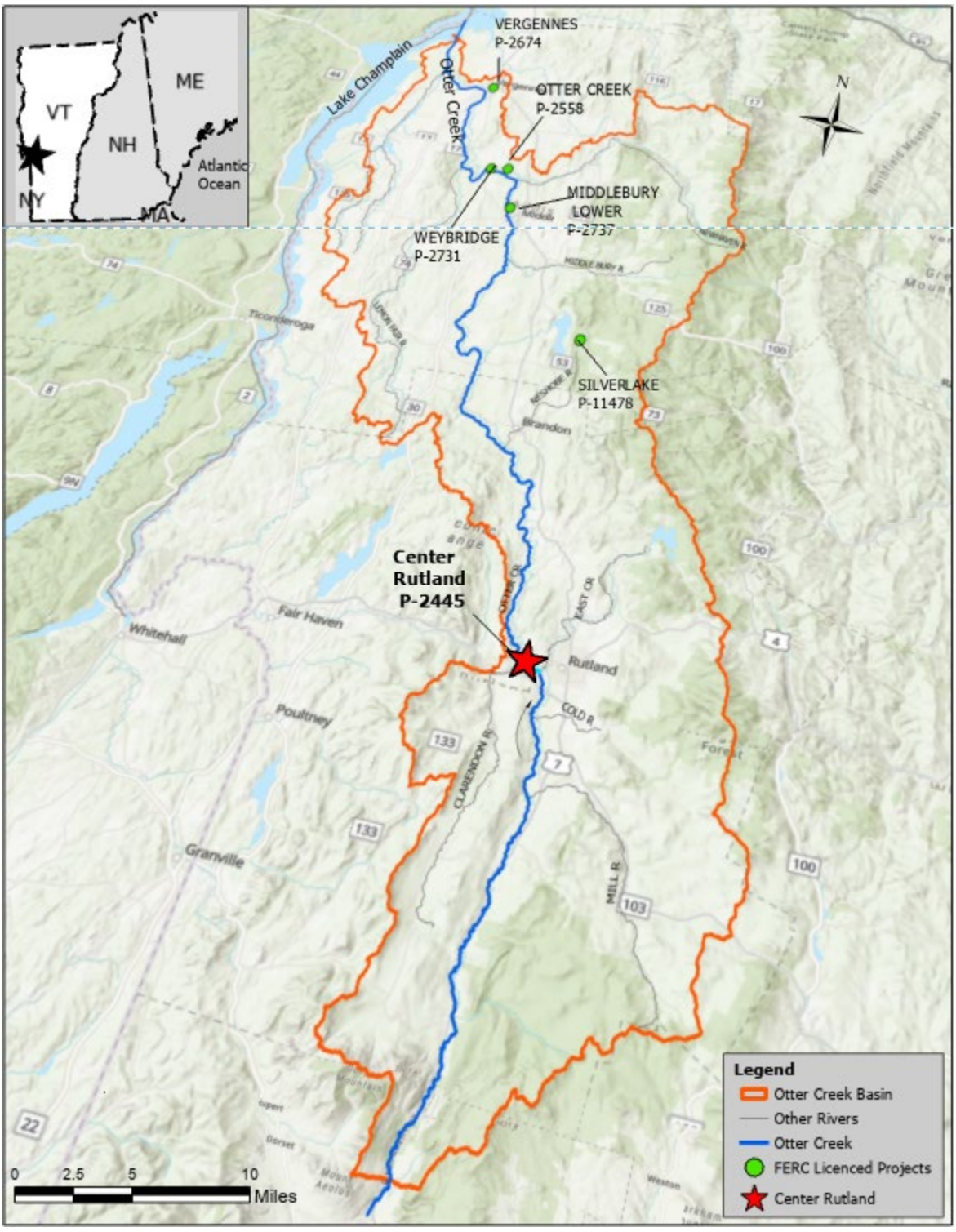

Figure 1. Location of the Center Rutland Project and other FERC-licensed Hydroelectric Projects on Otter Creek (Source: Staff).

Issuing a subsequent license for the Center Rutland Project would allow GMP to continue to generate electricity at the project for the term of the license, making electric power from a renewable resource available to its customers.

We prepared this environmental assessment (EA) in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA),[2] the Council on Environmental Quality's (CEQ) regulations for implementing NEPA,[3] and the Commission's implementing regulations.[4] This EA assesses the environmental and economic effects associated with continued operation of the project, and alternatives to the proposed project. It includes recommendations to the Commission on whether to issue a subsequent license, and if so, recommends terms and conditions to become a part of any license issued.

In this EA, we assess the environmental and economic effects of continuing to operate the project: (1) as proposed by GMP (Proposed Action), (2) the Proposed Action with additional or modified measures (Staff Alternative), and (3) the Staff Alternative with the mandatory conditions that have been filed to date. We also consider the effects of no action (No-Action Alternative). Under the No-Action Alternative, the project would continue to operate as it does under the existing license, and no new environmental protection, mitigation, or enhancement measures would be implemented. The primary issues associated with relicensing the project are minimum flows in the bypassed reach of Otter Creek, recreational access, federally listed endangered species, and cultural resources.

1.2.2 Need for Power

The Center Rutland Project provides hydroelectric generation to meet part of the New England Region's power, resource diversity, and capacity needs. The project has an installed capacity of 275 kW and an average annual energy production of about 541.7 megawatt-hours (MWh) from 2014 through 2020.

To assess the need for power, we looked at the needs in the operating region in which the project is located. The North American Electric Reliability Corporation (NERC) annually forecasts electrical supply and demand nationally and regionally for a 10-year period. The Center Rutland Project is located within the Northeast Power Coordinating Council's New England region (NPCC-New England) of the NERC. According to NERC's 2023 Long-Term Reliability Assessment, the net internal demand for this region is projected to increase by about 1.3% from 2024 through 2033 for summer and 3.5% for winter. The anticipated reserve margin (i.e., the primary metric used to evaluate the adequacy of projected generation resources to serve forecasted peak load) is expected to range from 9.2% in 2033 to 25.6% in 2024. The NPCC-

[2] National Environmental Policy Act of 1969, amended (Pub. L. 91-190. 42 U.S.C. §§ 4321–4347, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, Pub. L. 97-258, §4(b), September 13, 1982, Pub. L. 118-5, June 3, 2023).

[3] 40 C.F.R. Parts 1500-1508.

[4] 18 C.F.R. Part 380.

New England assessment area is forecasted to meet NPCC-New England's reference reserve margin of 12.9% in 2024, 12.6% in 2025, 11.0% in 2026 through 2029, 10.0% in 2030 through 2031, and 11.0% in 2032 through 2033 (NERC, 2023).

If relicensed, power from the Center Rutland Project would continue to help meet a need for power in the New England region in both the short and long-term. The project provides power that displaces generation from non-renewable sources. Displacing the operation of non-renewable facilities may avoid some power plant emissions and create an environmental benefit.

1.3 STATUTORY AND REGULATORY REQUIREMENTS

A subsequent license for the Center Rutland Project would be subject to numerous requirements under the FPA and other applicable statutes. The major regulatory and statutory requirements are described in Appendix D.

1.4 PUBLIC REVIEW AND COMMENT

The Commission's regulations (18 C.F.R. § 16.8) require applicants to consult with appropriate resource agencies, Tribes, and other entities before filing an application for a license. This consultation is the first step in complying with the Fish and Wildlife Coordination Act, Endangered Species Act (ESA), National Historic Preservation Act (NHPA), and other federal statutes. Pre-filing consultation must be completed and documented according to the Commission's regulations.

1.4.1 Scoping

Before preparing this EA, staff conducted scoping to determine what issues and alternatives should be addressed. A scoping document was distributed to interested agencies and others on June 6, 2022. It was noticed in the *Federal Register* on June 10, 2022.[5] The Vermont Division of Historic Preservation (Vermont DHP) filed comments on July 7, 2022. Commission staff issued a letter on August 1, 2022, stating that a Scoping Document 2 was not warranted.

1.4.2 Interventions

On February 17, 2023, the Commission issued a notice accepting the application and setting April 18, 2023 as the deadline for filing motions to intervene and protests. The notice was published in the *Federal Register* on February 24, 2023.[6] The Vermont Agency of Natural Resources (Vermont ANR) filed a notice of intervention on April 18, 2023.

1.4.3 Comments on the Application

On February 17, 2023, the Commission issued a Ready for Environmental Analysis notice for the project, setting April 18, 2023 as the deadline for filing comments,

[5] 87 Fed. Reg. 35,539 (June 10, 2022)

[6] 88 Fed. Reg. 11,906 (February 24, 2023)

recommendations, terms and conditions, and prescriptions. The notice was published in the *Federal Register* on February 24, 2023.

On April 12, 2023, Vermont ANR filed comments and recommendations. On April 12, 2023, the U.S. Department of the Interior (Interior) requested that the Commission reserve authority to prescribe fishways under section 18 of the FPA in any license issued for the project. GMP did not file reply comments.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 NO ACTION ALTERNATIVE

Under the no-action alternative, the project would continue to operate under the terms and conditions of the current license, and no new environmental protection, mitigation, or enhancement measures would be implemented. We use this alternative to establish baseline environmental conditions for comparison with other alternatives, and to judge the benefits and costs of any measures that might be required under a subsequent license.

2.1.1 Current Project Facilities

The Center Rutland Project is located on Otter Creek in the Town of Rutland, in Rutland County, Vermont, approximately 71 river miles upstream of the mouth, located in Lake Champlain in Ferrisburgh, Vermont. Otter Creek flows approximately 100 miles north before reaching Lake Champlain. The current project boundary is shown in Figure 2.

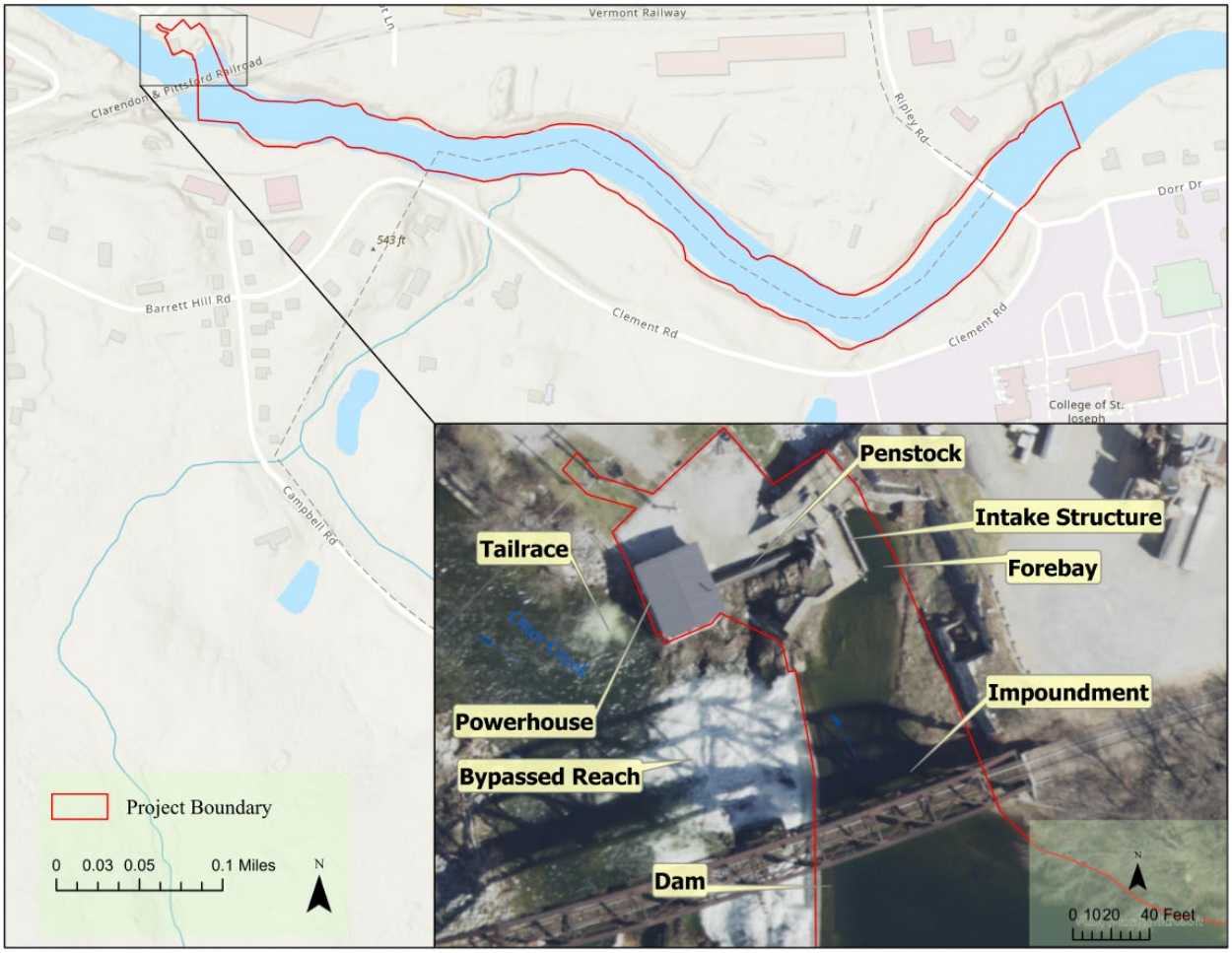

Figure 2. Current Center Rutland Project Boundary and Facilities (Source: Staff).

The Center Rutland Project includes a 190-foot-long, 14-foot-high concrete and stone masonry gravity dam that consists of: (1) a 174-foot-long spillway section with a crest elevation of 504.8 feet National Geodetic Vertical Datum of 1929 (NGVD 29);[7] and (2) a 16-foot-long non-overflow section. The project also includes a 13-foot-long, 7- to 30-foot-wide forebay; and a 39.58-foot-wide, 18-foot-high concrete and marble masonry intake structure with a 6.7-foot-wide, 6.5-foot-high steel headgate and a 30-foot-wide, 12-foot-high trashrack with 9/16-inch clear bar spacing.

The current license authorizes the use of 27-inch-high flashboards on top of the spillway and describes an impoundment surface elevation of 507.4 feet when the flashboards are in place, resulting in an impoundment surface area of about 12 acres. However, GMP states that it has not installed the flashboards since prior to 2012, when GMP acquired the project. Without the

[7] All elevations described in this EA are expressed in NGVD 29.

flashboards installed, the dam creates an impoundment that has a surface area of approximately 11 acres[8] at an elevation of 504.8 feet. The existing project facilities are shown in Figure 2.

From the impoundment, water flows through the intake structure to a 6-foot-diameter, 75-foot-long steel penstock that provides water to a 275-kilowatt (kW) horizontal Francis turbine-generator unit located in a 40-foot-long, 33-foot-wide stone and marble masonry powerhouse. Water is discharged from the turbine through a draft tube directly into Otter Creek. The project creates an approximately 100-foot-long bypassed reach.

There are no project recreational facilities.

The project generator connects to a 480-volt/12.47-kilovolt (kV) transformer and 80-foot-long, 12.47-kV transmission line that interconnects with the local distribution grid.

2.1.2 Current Project Boundary

The current project boundary encompasses approximately 11.2 acres (Figure 2). The project boundary encloses: (1) approximately 11 acres of land and water in and around the impoundment up to an elevation 507.4 feet; and (2) the project facilities listed above in section 2.1.1.

2.1.3 Project Safety

The Center Rutland Project has been operating for more than 30 years under its existing license. During this time, Commission staff has conducted operational inspections focusing on the continued safety of the structures, identification of unauthorized modifications, efficiency and safety of operations, compliance with the terms of the license, and proper maintenance.

As part of the licensing process, Commission staff will evaluate the continued adequacy of the project's facilities under a subsequent license. Special articles will be included in any license issued, as appropriate. Commission staff would continue to inspect the project during the term of any subsequent license to assure continued adherence to Commission-approved plans and specifications, special license articles relating to construction (if any), operation and maintenance (O&M), and accepted engineering practices and procedures.

[8] Exhibit A of the license application and the 1993 license specify that the impoundment has a surface area of 13 acres at an elevation of 504.8 feet (the elevation without flashboards installed). *See OMYA, Inc.,* 62 FERC ¶ 62,224, at Ordering Paragraph B(2) (1993). However, the georeferenced shapefile of the project boundary filed on December 22, 2021, as part of the license application, indicates that the impoundment has a surface area of approximately 11 acres at an elevation of 504.8 feet. Commission staff used the georeferenced shapefile, aerial photographs, Exhibit G maps, and the project description in the 1993 license to confirm that the impoundment has a surface area of approximately 11 acres at elevation 504.8 feet.

2.1.4 Current Project Operation

GMP operates the project in a run-of-river mode using a pond level control system, such that outflow from the project approximates inflow to the impoundment at any given point in time. The surface elevation of the impoundment is maintained at 0.25 feet above the spillway crest elevation of 504.8 feet when providing the seasonal minimum flow noted below, and at the spillway crest elevation when minimum flows are not required. From June 1 through October 15, GMP provides a minimum flow of 80 cubic feet per second (cfs) or inflow to the impoundment, whichever is less, over the spillway and into the bypassed reach for the protection of aquatic and aesthetic resources. When refilling the impoundment following a drawdown for maintenance or emergencies, the current license requires a minimum flow release of 154 cfs or 90% of inflow to the impoundment, whichever is less, downstream of the powerhouse.

The turbine-generator unit has a minimum and maximum hydraulic capacity of 60 cfs and 190 cfs, respectively. When inflow to the impoundment is less than the minimum hydraulic capacity of the turbine plus the seasonal minimum flow, water is released over the spillway to the bypassed reach. When generating, GMP withdraws 60 to 190 cfs from the impoundment to generate electricity and releases it into Otter Creek. When inflow exceeds the maximum hydraulic capacity plus the seasonal minimum flow, GMP continuously operates the turbine-generator unit and releases excess flow from the spillway. The average annual energy production of the project from 2014 through 2020 was 541.7 MWh.

GMP manages vegetation by trimming vegetation back to a minimum of 15 feet from project structures once or twice per year, occasionally mowing and trimming vegetation surrounding the dam, intake, and powerhouse area, and periodically trimming an informal tailwater access trail that leads from an informal parking area to the Otter Creek shoreline below the project's powerhouse.

2.2 APPLICANT'S PROPOSAL

2.2.1 Proposed Project Facilities

GMP proposes no changes to the current project facilities. Consistent with the discontinued use of flashboards since prior to 2012, GMP requests that the new license not include flashboards in the list of licensed project facilities.

2.2.2 Proposed Operation and Environmental Measures

As described in the license application, GMP proposes the following operational and environmental measures.

- To protect aquatic habitat, continue operating the project in a run-of-river mode, such that outflow from the project approximates inflow at any given point in time.

- To protect and enhance aquatic habitat and aesthetic resources, continue to provide a minimum flow of 80 cfs, or inflow, whichever is less, over the spillway into the bypassed reach from June 1 through October 15; and provide a minimum flow of

40 cfs, or inflow, whichever is less, over the spillway into the bypassed reach from October 16 through May 31.

- Develop an operation compliance monitoring plan within 6 months of any license issued and in consultation with Vermont DEC. The plan would define run-or-river operation and operational data to be monitored in order to maintain compliance, specify operational protocols under normal and adverse conditions, and specify requirements for consultation and record keeping.

- To protect the federally endangered northern long-eared bat (NLEB), avoid the removal of trees that are equal to or greater than 4 inches in diameter at breast height from April 15 through October 31.[9]

- To enhance recreation, establish a 1.9-acre land transfer or similar agreement with the Town of Rutland (Town) for the Town's development of a non-project pocket park[10] downstream of the dam, that would include two parking areas, a hand carry boat put-in, walking trails, beach access, observation area, picnic area, historic and informational signage.[11]

- To enhance recreation and awareness to the regional history, install a cultural heritage information kiosk for the Town's non-project pocket park.

- Develop an Historic Properties Management Plan (HPMP) in consultation with the Vermont SHPO to protect historic properties that are eligible for or listed on the National Register of Historic Places (National Register).

[9] GMP's proposal defines the diameter to be that which is measured at the tree's "base" height. However, diameter at breast height (DBH) is the standard for measuring trees in forestry, where the diameter of the tree is measured at 4.5 feet above the ground. Commission staff assumes that GMP's proposal to avoid trees of 4 inches or greater diameter at "base" height is a typographical error and that they meant DBH.

[10] A pocket park is a small recreational space, usually in an urban area, that is accessible to the public.

[11] The 1.9 acres of land GMP proposes to transfer to the Town is located on the south shoreline of Otter Creek, just downstream of the project's dam. It is owned by GMP, but outside of the project boundary.

2.3 STAFF ALTERNATIVE

Under the staff alternative, the project would be operated as proposed by GMP, with the following modifications and additional staff-recommended measures, which include measures required by Vermont ANR's March 29, 2024 water quality certification (certification):[12]

- Implement an impoundment refill procedure following emergency and maintenance drawdowns, whereby 90% of inflow is passed downstream and 10% of inflow is used to refill the impoundment, to protect aquatic resources in the downstream reach.

- To protect NLEB, avoid the removal of trees that are equal to or greater than 3 inches in diameter at breast height (DBH) from April 1 through October 31, instead of GMP's proposal to avoid the removal of trees equal to or greater than 3 inches in DBH from April 15 through October 31 (condition E).

- Develop a recreation monitoring plan to evaluate and ensure recreation needs at the project are met over the term of any license issued.

Water Quality Certification Conditions Not Recommended

The staff alternative does not include the following water quality certification conditions because, pursuant to sections 4(e) and 10(a) of the FPA, the benefits would not justify the costs, or the conditions are for conditional future actions for which we cannot determine benefits and costs:

- Operate the project in an instantaneous run-of-river mode (condition B);

- Provide a year-round minimum flow of 60 cfs, or inflow if less, from the dam spillway into the bypassed reach (condition B); and

- Develop a plan to install upstream eel passage within 1 year of installation of upstream eel passage at the Otter Creek Hydroelectric Project (FERC No. 2558) (Otter Creek Project) (condition D).

2.4 STAFF ALTERNATIVE WITH MANDATORY CONDITIONS

We recognize that the Commission is required to include all section 401 water quality certification conditions in any license issued for the project. Therefore, the staff alternative with mandatory conditions includes all the measures included in the staff alternative with the addition

[12] Vermont ANR's certification for the Center Rutland Project is included in Appendix M. Vermont ANR conditions A and H through K are administrative in nature, and do not address specific resources; therefore, they are not analyzed in this EA. In addition to the certification conditions listed below, Vermont ANR conditions C (operation compliance monitoring plan) and F (recreation access and off-license pocket park) are consistent with GMP's proposal discussed above in section 2.2.2.

of the section 401 water quality certification conditions not included in the staff alternative, as discussed above in section 2.3, *Staff Alternative*.

2.5 ALTERNATIVE CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

Project decommissioning was considered as an alternative to relicensing the project but has been eliminated from further analysis because it is not reasonable in the circumstances of this case. This alternative is presented in Appendix F.

3.0 ENVIRONMENTAL ANALYSIS

This section includes: (1) a general description of the project vicinity, (2) an explanation of the scope of our cumulative effects analysis, and (3) our analysis of the proposed actions and other recommended environmental measures. Sections are organized by resource area (aquatics, recreation, etc.), with historic and current conditions described first. Current conditions are the baseline against which the environmental effects of the proposed action and alternatives are compared, including an assessment of the effects of proposed protection, mitigation, and enhancement measures, and any cumulative effects of the proposed actions and alternatives. Staff conclusions and recommended measures are discussed in section 5.1, *Comprehensive Development and Recommended Alternative* and in Appendix I.[13]

3.1 GENERAL DESCRIPTION OF THE RIVER BASIN

The Center Rutland Project is located on Otter Creek in the Town of Rutland, Rutland County, Vermont. The Otter Creek watershed drains an area of 936 square miles in west central Vermont. Otter Creek originates at Emerald Lake and wetlands south of the lake in the town of Dorset, Vermont in northern Bennington County. From the project, Otter Creek flows north for approximately 71 miles and empties into Lake Champlain in Ferrisburgh, Vermont.

The Otter Creek watershed is known by two sections, the upper section, which begins at Emerald Lake and continues to Proctor, Vermont, and has moderately steep gradients and rapid flows. The Center Rutland Project is in the upper portion of the Otter Creek watershed. The lower portion of the Otter Creek watershed extends from Proctor to Vergennes, and has slow, meandering reaches with elevation drops that occur over a series of dams, and it generally flat from Vergennes to Lake Champlain in Ferrisburgh. The Otter Creek watershed is located within the Lake Champlain-Richelieu River Basin.

Significant water features in the Otter Creek Basin include Lake Dunmore, located downstream of the project, and the Chittenden Reservoir, located just upstream of the project at the head of East Creek. Tributaries of Otter Creek upstream of the Center Rutland Project

[13] Unless otherwise indicated, the sources of our information are the application for subsequent license filed by GMP on December 23, 2021, and GMP's May 20, 2022, October 3, 2022, November 23, 2022, and February 6, 2023 responses to staff's requests for additional information.

include East Creek, Mill River, and Cold River. Tributaries downstream of the project include the Clarendon River, Leicester River, Middlebury River, New Haven River, Lemon Fair River, and Dead Creek. East Creek joins Otter Creek approximately one mile upstream of the project and the Clarendon River joins Otter Creek approximately 0.3 miles downstream of the project.

Based on climatological data recorded at Rutland, Vermont for the period 1981 through 2020, the average monthly air temperature ranges from about 19 degrees Fahrenheit (°F) in January to about 69 °F in July. The average monthly precipitation ranges from about 2.1 inches in February to about 4.8 inches in July. Snowfall averages between about 13 and 19 inches per month from December through March.

There are currently nine dams on Otter Creek, beginning with the Emerald Lake dam, located at the headwaters for Otter Creek, in Dorset, Vermont. Seven of those dams currently include hydropower projects that operate under a FERC license. Table C-1 details the name, location, and attributes of the nine dams on Otter Creek from upstream to downstream. The dam locations are shown in Figure 1.

3.2 SCOPE OF CUMULATIVE EFFECTS ANALYSIS

According to the CEQ's regulations for implementing NEPA, a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities.

Based on our review of the license application, as well as agency and public comments, we have identified streamflow as a resource that could be cumulatively affected by the continued operation and maintenance of the Center Rutland Project, in combination with other hydroelectric projects on Otter Creek and its tributaries. We discuss these cumulative effects at the end of section 3.3.1.

3.2.1 Geographic Scope

The geographic scope of the cumulative effects analysis defines the physical limits or boundaries of the proposed action's effect on the resources and contributing effects from other hydropower and non-hydropower activities within the Otter Creek Basin.

We have identified the geographic scope for streamflow to include Otter Creek and its tributaries. We chose this geographic scope because the operation and maintenance of the Center Rutland Project, in combination with the other dams on Otter Creek and its tributaries, could affect streamflow within the basin.

3.2.2 Temporal Scope

The temporal scope of our cumulative effects analysis includes a discussion of past, present, and reasonably foreseeable future actions and their effects on each resource that could be cumulatively affected. Based on the potential term of a subsequent license, the temporal scope looks 30 to 50 years into the future, concentrating on the effects on the resources from reasonably foreseeable future actions. The historical discussion is limited, by necessity, to the amount of available information. We identified the present resource conditions based on the license application, agency comments, and comprehensive plans.

3.3 PROPOSED ACTION AND ACTION ALTERNATIVES

In this section, we discuss the project-specific effects of the project alternatives on environmental resources. For each resource, we first describe the affected environment, which is the existing condition and baseline against which we measure project effects. We then discuss and analyze the site-specific environmental issues.

Only the resources that would be affected, or about which comments have been received, are addressed in detail in this EA. Based on this, we have determined that aquatic resources; terrestrial resources; threatened and endangered species; recreation, land use, and aesthetic resources; cultural resources; and environmental justice communities may be affected by the proposed actions and alternatives. We have not identified any substantive issues related to geology and soils with the proposed actions; therefore, these resources are not assessed in the EA. We present our recommendations in section 5.1, *Comprehensive Development and Recommended Alternative*.

3.3.1 Aquatic Resources

3.3.1.1 Affected Environment

Water Quantity

Otter Creek at the project (river mile 71) has a drainage area of 307 square miles. The project dam creates an approximately 11-acre impoundment at an elevation of 504.8 feet.[14] Mean monthly flows at the project, from 1991 to 2020, range from a low of 223 cfs in September to a high of 1,417 cfs in April, with a mean annual flow of 606 cfs (see Table C-2).[15]

GMP operates the project as a run-of-river facility, such that outflow from the project approximates inflow. Flows in Otter Creek equal or exceed the 60-cfs minimum hydraulic capacity and the 190-cfs maximum hydraulic capacity of the project approximately 99% and

[14] Although the license includes 27-inch-high flashboards and an elevation of 507.4 feet, the flashboards have not been installed since 2012 and GMP is proposing to not reinstall them.

[15] These flows are reported at the U.S. Geological Survey (USGS) gage no. 04282000 on Otter Creek approximately 350 feet downstream of the project dam.

80% of the time, respectively, on an annual basis. Generation flows are discharged to Otter Creek at the end of the 100-foot-long bypassed reach. Flows in excess of the maximum hydraulic capacity, plus the required seasonal minimum bypassed reach flow, are released into the bypassed reach from the spillway.

Water Quality

State Water Quality Classifications

Vermont has regulatory authority over water quality in Otter Creek. Otter Creek at the project is classified as Class B(2) coldwater fish habitat in Vermont.[16]

In Vermont, the dissolved oxygen (DO) concentration must not be less than 6 milligrams per liter (mg/l) or 70% of saturation. The DO standard is 7 mg/l in designated salmonid spawning areas. The Vermont water quality standard for temperature states that the total increase in temperature from all discharges and activities must not exceed 1°F. The section of Otter Creek in which the project is located is not listed on the Clean Water Act section 303(d) list of impaired waters (Vermont ANR, 2022).

There are five wastewater treatment facilities that discharge to Otter Creek. Wallingford and Rutland are upstream of the project, and Proctor, Middlebury, and Vergennes are downstream of the project. The Rutland wastewater treatment facility discharge is located less than one mile upstream of the project dam and just upstream of the project boundary. There are no existing or proposed water withdrawals for irrigation, water supply, or other industrial uses within the project boundary.

Water Quality Data

Vermont Marble Company (the previous licensee for the project) conducted a comprehensive water quality survey at the project site from July 10 to 15, 1988. That study documented DO and temperature that met state water quality criteria at all but one site on one day. During that study, there was one DO measurement in the forebay during early morning hours that was 5.4 mg/l. That low-DO measurement was attributed to an algal bloom and the resulting overnight decline of DO.

Since the 1988 study, the most recent water quality data available are from Vermont DEC. Vermont DEC collects water quality data occasionally at sites 0.75 miles upstream of the project dam (approximately the upstream end of the impoundment) and at 1,000 feet downstream of the project dam. These data suggest that Class B water quality standards for DO are being met under existing conditions and project operation. Single-day measurements for DO in July 2020; August 2016; and September of 2006, 2016, and 2021 ranged from 7.7 mg/l to 10.2 mg/l at the upstream site. At the downstream site, the DO in October 2004 was 10.6 mg/l.

[16] In Vermont, Class B water bodies are considered acceptable for fishing, swimming, and other recreational purposes, and after treatment, are potential water supplies.

Additional evidence of good water quality at the project is provided by macroinvertebrate surveys conducted by Vermont DEC at the same two sites where DO was measured. At the upstream site, Vermont DEC described the species richness of mayflies, caddisflies, and stoneflies as "very good" in 2006 and "good" in 2016 and 2020. All surveys were conducted in late September. At the downstream site, Vermont DEC described the species richness for the same aquatic insect taxa as "good to very good" in October 2001.

Aquatic Habitat

The 11-acre impoundment is riverine in character, with an average depth of approximately 2.3 feet and width of 140 feet. Large woody debris and submergent and emergent vegetation provide habitat for aquatic organisms. Substrate in the impoundment ranges from silt and sand to gravel and cobble. An island in the impoundment provides additional shoreline areas with littoral vegetation that provides a variety of habitat for fish, and other aquatic habitat, including spawning and nursery habitat for fish.

The dominant features of the 100-foot-long bypassed reach include the bedrock falls that are approximately 60-feet-long, and an approximately 40-foot-long and 3- to 20-foot-deep pool at the base of the falls with a water surface elevation similar to the tailrace. There is minimal aquatic habitat in the bedrock falls section, but the deep pool provides protective cover for fish, as well as feeding and overwintering habitat. The deep pool is backwatered by and hydraulically connected to the tailrace outflow. Downstream from the tailrace, there is a 700-foot-long riffle that provides good habitat for fish, aquatic insects, and other aquatic organisms such as crayfish.

Fishery Resources

There are no migratory fish, including American eel, in the project area. The resident fish community within the impoundment and in Otter Creek downstream of the project has not been surveyed recently. However, past surveys in the project area and other reaches of Otter Creek documented a mix of coldwater and warmwater species, including brook trout, rainbow trout, brown trout, smallmouth bass, northern pike, yellow perch, tessellated darter, and several species of sunfish, minnows, and suckers.

The trout in the project area are primarily the result of stocking, although some natural reproduction is likely to occur in the riffles downstream of the project tailrace, as well as in free-flowing sections upstream of the project impoundment, or in tributaries of Otter Creek both upstream and downstream of the project. In 2020, Vermont Fish and Wildlife Department stocked 2,000 brown trout in the 6-mile reach upstream of the project and 1,000 brown trout in the 12-mile reach downstream of the project. The deep pool in the bypassed reach and the 700-foot-long riffle downstream of the tailrace are popular locations for trout angling.

Freshwater Mussels

GMP surveyed the impoundment for mussels in 2019. The survey identified three species, including the eastern elliptio (*Elliptio complanata*), creeper (*Strophitus undulatus*), and

the state-listed "rare" creek heelsplitter (*Lasmigona compressa*). Although the 2019 study also included surveys of the tailrace and bypassed reach, no mussels were found in these locations, most likely because the substrate is dominated by bedrock and boulders and does not include suitable mussel habitat.

3.3.1.2 Environmental Effects

Mode of Operation

GMP proposes to continue operating the project in a run-of-river mode, such that outflow from the project approximates inflow to the impoundment at any time, and the surface elevation of the impoundment is maintained at an elevation between 504.8 (elevation of the spillway crest) and 505.05 feet, the latter being the elevation which results in the 80 cfs minimum flow passing over the spillway and into the bypassed reach.

Vermont ANR's certification condition B specifies that GMP operate the project in an instantaneous run-of-river mode, whereby outflow from the project equals inflow at all times.

Our Analysis

The operation of hydropower projects in a run-of-river mode, whereby the total outflow from a project approximates the inflow to the impoundment, generally provides a more stable upstream and downstream environment than other modes of operation (i.e., peaking operation and storage projects). Compared to peaking projects and storage projects, run-of-river operation minimizes the degree of water level fluctuations and associated erosion and temperature fluctuations in impoundment surface waters (due to shorter residence times) and results in a downstream flow regime that is more similar in magnitude and timing to natural river flows.

As discussed in section 3.3.1.1, *Affected Environment, Water Quality,* DO, water temperature, and macroinvertebrate data indicate that water quality is adequate to sustain aquatic life.

The project's current run-of-river mode of operation limits fluctuating water levels, which influence the reproductive success of fish that spawn in near-shore areas (Sammons and Bettoli, 2000), such as smallmouth bass, northern pike, yellow perch, and sunfish. By continuing to operate the project in a run-of-river mode as proposed, habitat in the impoundment and habitat in Otter Creek downstream of the project would remain unchanged from current conditions for aquatic organisms, including fish, mussels, and macroinvertebrates. Additionally, continuing run-of-river operation would continue to minimize the length of time water is retained in the impoundment and would help avoid increasing water temperatures in the upper levels of the impoundment from solar heating, which would continue to benefit water quality, fish, and benthic macroinvertebrates.

Vermont ANR has not demonstrated the project is capable of operating in an instantaneous run-of-river mode, with total outflow from the project equaling inflow on an instantaneous basis. The project is currently operated in a run-of-river mode using an automatic pond level control system. This system measures changes to the surface elevation of the

impoundment, thus providing an indirect measure of changes to inflow. As inflow increases or decreases, a certain amount of time elapses before the impoundment elevation changes, depending on the rate and magnitude of the change in inflow. Once the change in inflow affects the impoundment elevation, the pond level control system automatically adjusts turbine flow. Based on these technical limitations and the delay associated with adjusting project outflow to match inflow, it would not be possible to match outflows and inflows on an instantaneous basis, as specified by Vermont ANR's certification condition B.

Continuing to operate the project such that the total outflow from the project *approximates,* rather than equals, inflow at any point in time would result in stable impoundment elevations, which in turn would help protect fish spawning areas and freshwater mussel beds from becoming dewatered and limit project-related erosion along the impoundment shoreline. Operating the project in this manner would likewise ensure that downstream flows are not affected by project operation. Therefore, operating the project as run-of-river – defined as the sum of all outflows approximating the sum of all inflows at any given point in time – would provide the same level of benefits to aquatic resources upstream and downstream of the project as Vermont ANR's instantaneous run-of-river mode of operation, and is operationally feasible.

Minimum Flow Releases

Under the current license, GMP releases a minimum flow of 80 cfs, or inflow, whichever is less, over the spillway and into the bypassed reach from June 1 through October 15. The rest of the year, flows spill into the bypassed reach only when flows are less than 60 cfs or greater than 190 cfs, the project's minimum and maximum hydraulic capacity, respectively.

GMP proposes to continue to provide a minimum flow of 80 cfs, or inflow, whichever is less, over the spillway and into the bypassed reach from June 1 through October 15. GMP proposes to release a minimum flow of 40 cfs, or inflow, whichever is less, over the spillway and into the bypassed reach from October 16 through May 31.

Vermont ANR's certification condition B specifies that GMP release a year-round minimum flow of 60 cfs, or inflow if less, from the spillway into the bypassed reach. Vermont ANR made this requirement after reviewing videos of flows that GMP apparently provided to Vermont ANR in the spring of 2023.[17]

Our Analysis

The current seasonal minimum flow of 80 cfs from June through mid-October that GMP is proposing to continue is based on a 1992 flow demonstration study, during which the Vermont

[17] Vermont ANR references the spring 2023 flow demonstration videos in its letter filed on April 12, 2023 and in the certification. GMP did not filed the spring 2023 flow demonstration videos, or a description of the observations, on the record. Therefore, staff rely on the 1992 study and the 2023 study findings as described in paragraphs 88 through 97, 144, and 145 of the certification.

Marble Company (the applicant at the time), in consultation with Vermont ANR, evaluated flows for aquatic habitat and aesthetics at 20, 40, 60, 80, and 100 cfs. Biologists from the Vermont Marble Company's consultant and Vermont ANR described the flow over the bedrock falls as primarily passing through two chutes that feed into the deep pool at the base of the falls. The amount of flow released over the spillway gradually increased the influence of the chutes' contribution to flow mixing and the complexity of flows within the deep pool at the base of the falls. Flow mixing improves aeration, which benefits fish and aquatic invertebrates. As flow complexity increases, so does the variety of microhabitats within the pool. Different species and life stages of fish have different preferences for flow velocities. An increase in flow complexity therefore provides suitable habitat for more species and life stages. The biologists noted that although this increase in mixing and complexity was evident up through a flow of 80 cfs, there was minimal change between 80 cfs and 100 cfs.

The nature of the bypassed reach, being dominated by bedrock and boulders, is such that any change in the structure, quantity, or quality of the habitat between 1992 and now is extremely unlikely. Therefore, the value of the flow demonstration study from spring 2023 (referenced by Vermont ANR) is unclear. The 1992 study already determined the apparent limit of increasing fish habitat benefits as somewhere between 80 cfs and 100 cfs. Additionally, photographs in GMP's application make it clear that there is virtually no fish habitat in the bypassed reach except for the deep pool, which is hydraulically connected to the tailrace.

GMP's proposed minimum flow regime from June 1 through October 15 would result in no change in aquatic habitat compared to existing conditions. The minimum flow of 80 cfs would continue providing the flow mixing and complexity within the deep pool described during the 1992 study. This mixing and flow complexity is an important factor in making the deep pool quality habitat for fish cover and feeding, especially during the open water months when fish are most active.

GMP's proposal to release a minimum flow of 40 cfs, or inflow, whichever is less, from October 16 through May 31 would provide some additional habitat benefits compared to the existing conditions, where there is no required minimum flow during this period. The 1992 study describes the effect of a 40 cfs flow as providing negligible flow mixing within the deep pool, but states that it is enough flow for the tailrace and deep pool to remain hydraulically connected. The benefits of a minimum flow of 40 cfs during this period would primarily be aesthetic in the bedrock falls portion of the bypassed reach (as describe in section 3.3.4.2 *Environmental Effects, Aesthetics*) because for most of the months during this period, the deep pool is covered with ice. Fish do not require as much flow complexity for feeding and cover in overwintering habitat because they have the cover of ice and are also not feeding as much as during the open water season when water temperatures are higher and fish are more active. Nevertheless, overwintering habitat for fish in the deep pool would be improved by a 40-cfs minimum flow compared to existing conditions, where there is no flow passing over the spillway and into the bypassed reach under certain flow and project operation conditions.

Vermont ANR's certification condition B specifies a year-round 60-cfs minimum flow, or inflow if less. Compared to GMP's proposed 80 cfs minimum flow, Vermont ANR's minimum flow requirement of 60 cfs would provide marginally less flow mixing and complexity benefits than GMP's proposed 80-cfs minimum flow from June 1 through October 15. While the

1992 study describes a 60-cfs flow as the flow at which an increase in mixing and complexity becomes apparent, it describes an 80 cfs flow as providing greater benefits.

From October 16 through May 31, Vermont ANR's specified flow of 60 cfs would increase the base level of flow mixing and complexity within the deep pool during the period over both current conditions. However, as discussed above for GMP's 40-cfs minimum flow proposal for this time period, the flow mixing and complexity benefits are not as critical during periods when the pool is covered by ice and fish are less active. Nevertheless, overwintering habitat would likely be somewhat improved under Vermont ANR's condition B, compared to both existing conditions and GMP's proposed 40-cfs minimum flow.

Impoundment Drawdown and Refill Procedure

Periodically, GMP draws down the project impoundment for maintenance and emergencies. During these times, run-of-river operation is temporarily interrupted. Under the existing license, GMP is required to release a flow of 154 cfs, or 90% of inflow, whichever is less, downstream of the powerhouse during impoundment refilling.

Our Analysis

Retaining all inflows to refill the impoundment after an impoundment drawdown would adversely affect aquatic resources by dewatering aquatic habitat in the bypassed and downstream reaches, potentially stranding fish, mussels, and other aquatic organisms. On the other hand, releasing all flows to the downstream reach would adversely affect aquatic life in the impoundment by sustaining the dewatered conditions. Implementing a refill procedure whereby the impoundment is slowly refilled by passing approximately 90% of the inflow downstream through the turbines and retaining the remaining 10% of inflow to refill the impoundment (90/10 refill procedure) would ensure that flows downstream of the powerhouse are kept near project inflow levels and that the impoundment is refilled in a timely manner following drawdowns for routine maintenance, such as crest gate repair. Minimizing the length of time that the impoundment is drawn down and that flows are reduced downstream would help maintain the existing aquatic habitat for fish and other aquatic species during drawdowns for routine maintenance.

Compliance Monitoring

GMP proposes to develop an operation compliance monitoring plan within 6 months of any license issued for the project and in consultation with Vermont DEC. The plan would define run-or-river operation and operational data to be monitored in order to maintain compliance, specify operational protocols under normal and adverse conditions, and specify requirements for consultation and record keeping.

Vermont ANR's certification condition C specifies that GMP develop an operation compliance monitoring plan to document compliance with run-of-river operation and flow releases, including methods for continuously monitoring flow releases, impoundment levels, and inflows; and provisions for flow data to be available on a "near real-time basis," if requested. Vermont ANR's condition C also specifies that GMP report deviations from required operating

conditions within 15 days of a deviation, including the cause, severity, and duration of the deviation; any adverse environmental impacts associated with the deviation; pertinent data relevant to the deviation; and measures to avoid recurrences of the deviation. Finally, Vermont ANR's certification condition H specifies that GMP consult with it prior to conducting maintenance or repair work that would cause a deviation from operational requirements that could affect water quality.

Our Analysis

Although compliance measures do not directly affect environmental resources, they do allow the Commission to verify that a licensee is complying with the environmental requirements of a license. An operation compliance monitoring plan would help GMP document compliance with the operational provisions of any license for the project and provide a mechanism for reporting deviations. An operation compliance monitoring plan would also help the Commission verify that the project is operating in compliance with any license, thereby facilitating administration of the license and assisting with the protection of resources that are sensitive to deviations from normal operating conditions. The plan could be developed in consultation with the resource agencies, and include: (1) a detailed description of how GMP will maintain, monitor, and document compliance with the operational requirements of the license; (2) a description of the gages and other measuring devices that would be used to monitor compliance with license requirements; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled and unscheduled facility shutdowns; and (5) a schedule for installing monitoring equipment needed to document compliance with the operational requirements of the license. In addition, notifying the Commission and resource agencies of planned and unplanned deviations from run-of-river, impoundment level, and flow requirements would ensure adequate information flows from GMP to the Commission and resource agencies during the term of the license.

Upstream Eel Passage

As discussed above, migratory fish, including American eel, are not currently present in the project area; however, American eel are present in Lake Champlain. Vermont ANR's certification condition D specifies that GMP is required to begin preparing a plan to provide upstream eel passage at the project within 1 year of installation of upstream eel passage at the Otter Creek Project (P-2588). As shown in Table C-1, the Otter Creek Project consists of three developments, the most upstream of which is at river mile 64, 7 miles downstream of the Center Rutland Project. Certification condition D states that the plan could include either trap and truck or an eel ramp, as possible methods for providing upstream eel passage at the project.

Our Analysis

If American eel are present in the project area in the future, then upstream passage for juvenile American eel at the project using such as trap and truck or an eel ramp would be beneficial by allowing American eel to move upstream past the project more efficiently than if GMP provides no eel passage measures. The magnitude of the potential benefit to American eel

populations would depend on the number of juvenile eels reaching the Center Rutland Project after passage at the Otter Creek Project, and the amount of habitat available for American eel between the two projects and upstream of the Center Rutland Project. Staff are not aware of any information in the record, however, to estimate those potential benefits at this time.

Potential for Entrainment and Impingement

As discussed in section 3.3.1.1, *Affected Environment, Fishery Resources*, Otter Creek in the project area supports a population of resident coldwater fish (e.g., trout and northern pike) and warmwater fish (e.g., smallmouth bass). These species utilize a variety of lotic and lentic habitats available in the project impoundment and the upstream reach of Otter Creek, and do not require downstream passage from the impoundment to complete their life history requirements.

Although fish in the impoundment do not require downstream passage to complete their life history requirements, fish could still encounter the project intake when foraging in the impoundment. Water intake structures can injure or kill fish that encounter intake screens/trashracks. At hydropower projects, fish that successfully pass through the intake(s) are also subject to potential turbine injury/mortality.

Fish that are wider than the clear spacing between the trashrack bars, and/or have burst swim speeds lower than approach velocities can become trapped against intake screens or bars of a trashrack. This process is known as impingement and can cause physical stress, suffocation, and death of some organisms (EPRI, 2003). Entrainment into the intake structure occurs if fish are small enough to pass between trashrack bars, and they are unable to overcome the approach velocity, or if they choose to pass downstream through the trashrack. If entrainment occurs, injury or mortality can result from collisions with turbine blades, exposure to pressure changes, shear forces in turbulent flows, or water velocity accelerations created by turbines (Rochester et. al., 1984). Altogether, fish that are entrained and killed are removed from the river population and no longer available for recruitment to the fishery.

The likelihood of a fish becoming impinged is a function of the spacing between the bars on an intake structure, as well as the size and body shape of the fish. To determine the potential for fish to become impinged on the trashrack, staff examined the correlation between fish size and trashrack bar spacing.

Staff estimated the likelihood that a fish would be physically excluded by the present 9/16-inch trashrack configuration by using proportional measurements for smallmouth bass, northern pike, rainbow trout, brown trout, and brook trout, as reported by Smith (1985).[18] The maximum length for these species in northern Vermont is about 21, 40, 17, 21, and 20 inches, respectively. These species would be physically excluded from the turbines by the 9/16-inch

[18] Staff used proportional measurements to calculate a scaling factor of body width to total length (scaling factor = width/total length), and then used the scaling factor to estimate the length that would be physically excluded by the 9/16-inch trashrack. For smallmouth bass, northern pike, rainbow trout, brown trout, and brook trout Commission staff used scaling factors of 0.13, 0.08, 0.11, 0.11, and 0.12, respectively.

trashrack spacing if they are longer than 4.3, 7.0, 5.1, 5.1, and 4.7 inches, respectively. Shorter fish would not be physically excluded by the 9/16-inch trashrack and would be susceptible to entrainment.

Even if fish are small enough to fit through trashrack bars, however, they are likely to behaviorally avoid entrainment and could escape entrainment if their burst speed is greater than the water velocity at the intake (Knapp et al., 1982). Fish are able to detect obstacles using stimuli such as flow acceleration, turbulence, and sound (Coutant and Whitney, 2000). As fish approach the intake and the trashrack, they sense flow acceleration near the trashrack and sound from the turbine operation. Fish sensing these cues would typically respond by swimming away from the intake at burst speed. The burst speeds of certain fish species likely to occur in the project impoundment are shown in Table C-3. The headgate structure at the Center Rutland Project is currently screened by a trashrack that is approximately 30 feet wide by 12 feet tall, with 9/16-inch clear spacing. Nine feet of the 12-foot-tall trashrack is underwater. The approach velocity is 0.70 feet per second (fps). Commission staff calculated the average through-bar velocity for the existing trashrack at the Center Rutland Project at the current maximum hydraulic capacity of 190 cfs. The calculated through-bar velocity is 1.21 feet per second (fps).[19]

Adult smallmouth bass, northern pike, brook trout, brown trout, and rainbow trout could behaviorally avoid impingement and entrainment because their burst speeds exceed the calculated through-bar velocity under both current and proposed operation (see Table C-3). However, juvenile life stages of some fish species in the project impoundment would be susceptible to entrainment because they could fit through the clear bar spacing of the trashrack and their burst speeds do not exceed the calculated through-bar velocity at the trashrack. For example, juvenile brook trout burst speeds range from 0.1 to 2.0 fps, which overlaps with the calculated through-bar velocity of 1.21 fps when the project inflow is 190 cfs. Therefore, some juvenile brook trout at the project would be susceptible to entrainment. Juvenile rainbow trout, brown trout, and smallmouth bass at the project would not be susceptible to entrainment.

GMP did not conduct any turbine passage survival studies. The project has one horizontal Francis turbine-generator with a maximum hydraulic capacity of 190 cfs. The turbine has a rotational speed of 300 revolutions per minute (rpm). Winchell et al. (2000) compiled turbine passage survival data and found trends in survival related to fish size, turbine type, rotational speed, and hydraulic capacity. Winchell et al. (2000) found that a Francis turbine with a discharge capacity of 275 to 695 cfs, and a rotational speed greater than 250 rpm, has a turbine

[19] To estimate the flow velocity through the trashrack, Commission staff calculated the effective area in which flow could pass through the trashrack at the project. Specifically, staff accounted for the following parameters: (1) the effective intake width (18 feet), as calculated from (a) the clear spacing of the trashrack (9/16 inch) and (b) the number of bars necessary to span the 30-foot-wide trashrack (384 bars at an average bar thickness of 0.375 inches); and (2) the underwater trashrack height of 9 feet, installed at an angle of approximately 15 degrees from vertical. Staff calculated the velocity through the clear spaces of the trashrack at 190 cfs by dividing the maximum hydraulic discharge flow by the effective area of the trashrack (156.4 ft^2).

passage survival rate ranging from 31.0% to 97.6% (average of 70.1% for six turbines studied) for fish less than 4 inches in length. As discussed above, juvenile brook trout would be susceptible to entrainment and, as shown in Table C-3, can be less than 4 inches in length. Therefore, some turbine passage mortality could occur under current and proposed operation for juvenile brook trout. Turbine passage survival for brook trout through the project's Francis turbine could be greater than discussed by Winchell, however, because the project's Francis turbine discharges at a lower rate than discussed by Winchell.

Cumulative Effects

Streamflow

As discussed in section 3.1 *General Description of the River Basin*, and shown in Table C-1, there are two dams upstream of the Center Rutland Project and six dams downstream of the project, in addition to other dams on tributaries of Otter Creek. These dams contribute to a cumulative effect on streamflow by impounding riverine sections and, in the case of hydropower dams, often bypassing sections of the natural river channel by diverting water through a penstock to a powerhouse for generation some distance downstream from the dam.

The Center Rutland Project has the potential to have cumulatively beneficial effects on streamflow within the Otter Creek basin in two ways. First, continuing to operate in a run-of-river mode, as proposed by GMP, would preserve the riverine nature of the impoundment. Moreover, compared to the existing license, under which GMP is permitted to install 27-inch-high flashboards, GMP's proposal to not reinstall the flashboards would make the impoundment more closely resemble a free-flowing section of river because the depth would decrease and water velocity through the impoundment would increase.

The second way in which GMP's proposal would have cumulatively beneficial effects on streamflow is by providing a minimum flow during the period from October 16 through May 31, during which there is currently no required minimum flow. As discussed in section 3.3.1.2, *Environmental Effects, Minimum Flow Releases,* although the bypassed reach at the Center Rutland Project is relatively short, providing a flow of 40 cfs, or inflow, whichever is less, would marginally improve habitat in the deep pool at the downstream end of the bedrock falls and make this feature of the bypassed reach more closely resemble a free-flowing section of river, compared to existing conditions. Vermont ANR's certification, which specifies a 60-cfs minimum flow during this period, would also have cumulatively beneficial effects on streamflow for the same reasons and to a marginally greater degree.

3.3.2 Terrestrial Resources

3.3.2.1 Affected Environment

The Center Rutland Project is located in the Western New England Marble Valleys ecoregion (Griffith et al., 2009), which is characterized by irregularly shaped scenic lowlands with generally flat topography and outcroppings of erosion-resistant rocks from surrounding ecoregions. This region consists primarily of mixed and deciduous forests, pastures, cropland,

and urban areas. The Center Rutland Project is located in the Village of Center Rutland, Rutland County, Vermont. The project facilities are located in a highly developed area with commercial, industrial, and residential use. Approximately 0.3 acre of upland is located within the project boundary and is primarily occupied by project facilities or structures. The impoundment and tailrace shorelines are relatively steep and forested with a narrow buffer of deciduous overstory and understory species. These forested riparian areas are adjacent to the project boundary and provide suitable habitat for terrestrial species tolerant to urban activities. Similar forested habitat exists within the 1.9 acres of land GMP proposes to transfer to the Town for the development of a non-project pocket park.

According to FWS's National Wetlands Inventory system (FWS, 2022a), there are no palustrine wetlands located within the project boundary. Approximately 15 acres of forested wetlands occur 175 feet south of the impoundment. No wetlands are located within the land GMP proposes to transfer to the Town.

Upland, riparian, and wetland habitat in the vicinity of the project boundary support a variety of wildlife species. Mammals common to the area include eastern gray squirrel, racoon, porcupine, small rodents, and skunks, with occasional white-tailed deer. Many bird species are likely to occur in the area at various times throughout the year, including resident and migratory waterfowl, neotropical songbirds, and resident species. Birds common to the area include mallard duck, American black duck, American robin, European starling, flycatchers, sparrows, blue jays, and finches. Herptiles likely to occur in the area include various species of non-venomous snakes, turtles, frogs, toads, and salamanders.

3.3.2.2 Environmental Effects

Operation and Maintenance

GMP is not proposing any modifications to licensed project facilities, other than the proposal to not reinstall the flashboards, as described in section 2.2.1. Current and proposed vegetation management is limited to trimming vegetation back to a minimum of 15 feet from project structures once or twice a year; occasional mowing and trimming of vegetation surrounding the dam, intake, and powerhouse area; and periodically trimming the informal tailwater access trail that leads from the informal parking area to the shoreline below the powerhouse. Development of the non-project pocket park would include the conversion of approximately 0.5 acre of forested riparian habitat into foot paths, a kiosk, and an overlook area. The Town proposes minimal tree-clearing for park construction and replacement of any identified invasive plants species found in the area with native species.

GMP proposes to continue operating the project in a run-of-river mode, such that outflow from the project approximates inflow to the impoundment at any time and the surface elevation of the impoundment is maintained at an elevation of between 504.8 (elevation of the spillway crest) and 505.05 feet, the latter being the elevation which results in 80 cfs passing over the spillway and into the bypassed reach. GMP proposes to continue to provide a minimum flow of 80 cfs, or inflow, whichever is less, over the spillway and into the bypassed reach from June 1 through October 15. GMP proposes to implement a minimum flow of 40 cfs, or inflow, whichever is less, over the spillway and into the bypassed reach from October 16 through

May 31. GMP does not describe in detail its procedures for refilling the impoundment after scheduled maintenance or emergency shutdown and has not proposed an impoundment refill procedure, although the current license requires that GMP release a minimum flow of 154 cfs or 90% of inflow, whichever is less, downstream of the powerhouse during impoundment refilling.

Our Analysis

Continuing to operate the project in a run-of-river mode would maintain stable impoundment levels and minimize effects on terrestrial habitat along the shoreline of the impoundment and Otter Creek downstream of the project. Currently, there are no minimum bypassed reach flow requirements from October 16 through May 31. Releasing a continuous minimum flow of 40 cfs, or inflow, whichever is less, to the bypassed reach would provide habitat stability and could improve foraging opportunities for aquatic and semi-aquatic wildlife, including waterfowl and some mammals. Stable and consistent flow in the bypassed reach could improve the overall function of riparian habitat and provide a small benefit to wildlife.

Forested wetlands located 175 feet south of the impoundment occur at a higher elevation than the impoundment elevation of between 504.8 and 505.05 feet and would therefore not be affected by proposed operation of the project. There are no wetlands hydrologically connected to the impoundment; therefore, drawdowns and refills associated with project maintenance and emergencies would not affect wetlands.

Vegetation management activities at the project are limited to occasionally mowing and trimming vegetation away from and around project structures and periodically trimming the informal tailwater access trail. Current project operation and maintenance does not include any tree-clearing or major ground-disturbing activities, and GMP does not propose, nor do any action alternatives include, measures that would require tree-clearing or major ground-disturbing activities as part of relicensing.[20] Therefore, because there is minimal upland habitat in the project boundary and minimal vegetation management required at the project, relicensing the project would not significantly affect wildlife and terrestrial habitat.

Shoreline Erosion

Certain modes of operation of hydropower projects may result in rapid or repeated fluctuations in impoundment levels that can affect shoreline erosion. Peaking and flood-storage are examples of modes of project operation that have the potential to contribute to shoreline erosion. Compared to peaking projects and storage projects, run-of-river operation at the Center Rutland Project minimizes the degree of water level fluctuations in the impoundment, which, in turn, minimizes project effects on shoreline erosion.

The Center Rutland Project does not fluctuate impoundment levels for operational purposes or for flood mitigation. GMP propose to continue operating the project in a run-of-

[20] GMP proposes to transfer 1.9 acres of land to the Town of Rutland for the development of an off-license pocket park. Development of the land into a park would require some tree clearing.

river mode, such that outflow from the project approximates inflow to the impoundment at any time and the surface elevation of the impoundment is maintained at an elevation of between 504.8 (elevation of the spillway crest) and 505.05 feet. Continuing to operate the Center Rutland Project in a run-of-river mode would maintain stable impoundment levels and minimize project effects on erosion and terrestrial habitat along the shoreline of the impoundment and Otter Creek downstream of the project.

Pocket Park

The Town's current development plan for the non-project pocket park includes ground disturbance and minimal tree clearing in approximately 0.5 acre of upland forested habitat to construct foot paths, a kiosk, and an overlook area. Proposed vegetation management activities within the pocket park include the removal of invasive species and replanting with native species. Development of the pocket park would lead to the permanent removal of approximately 0.5 acre of terrestrial wildlife habitat and enhancement of the remaining 1.4 acres of terrestrial habitat within the pocket park through the replacement of invasive species with native species. Therefore, development of the pocket park, which is off-license, is unlikely to significantly affect terrestrial resources.

3.3.3 Threatened and Endangered Species

Section 7 of the ESA requires federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. According to the FWS's Information for Planning and Consultation (IPaC) database, the federally endangered NLEB (*Myotis septentrionalis*), proposed tricolored bat (*Perimyotis subflavus*), and candidate monarch butterfly (*Danaus plexippus*) could occur in the project vicinity.[21]

Our analyses of project impacts on the NLEB, tricolored bat, and monarch butterfly are summarized here and presented in full in Appendix E, *Biological Assessment*. Although proposed and candidate species are provided no special protection under the ESA, we nevertheless provide an analysis of the proposed action on these species because they may later be added to the list of federally endangered and threatened species.

ESA-Listed Species

Although no tree-clearing activities are proposed by GMP as part of relicensing, project maintenance activities during the term of any license could require periodic tree removal that may affect NLEB habitat. Avoiding the removal of trees with diameters that are equal to or greater than 3 inches at breast height from April 1 through October 31 would reduce the likelihood of disturbing NLEB in the vicinity of the project boundary and ensure that any tree

[21] *See* Commission staff's March 26, 2024 Memorandum on FWS's Updated List of Threatened, Endangered, Candidate, and Proposed Species; *see also IPaC*, FWS, https://ipac.ecosphere.fws.gov/ (accessed March 26, 2024). A previous IPaC list was requested on August 31, 2023.

removed within the project boundary is not actively occupied by NLEB. We conclude that licensing the project with tree-removal restrictions from April 1 through October 31 for trees equal to or greater than 3 inches DBH is not likely to adversely affect the NLEB.

The Town proposes minimal tree clearing for development of the non-project pocket park and would conduct any tree clearing following protocols from the Vermont ANR and the FWS. Therefore, construction of the pocket park may affect but is unlikely to adversely affect NLEB.

Proposed Species

Project maintenance activities that could affect the tricolored bat are the same as those noted for the NLEB. Avoiding the removal of trees with diameters that are equal to or greater than 3 inches at breast height from April 1 through October 31, would limit project effects on any bats present at the project. We conclude that relicensing the project is not likely to jeopardize the continued existence of the tricolored bat.

Candidate Species

Project operation and maintenance at the Center Rutland Project may affect monarch butterfly or its habitat. Habitat is seasonal and must be present at the time vegetation management activities occur to be affected. Vegetation management activities within the project boundary, including periodic mowing and trimming, are not conducted on a set schedule, and areas within the project boundary that are potentially suitable to support monarch butterfly habitat are not unique compared to areas outside the project boundary in the surrounding vicinity. Therefore, we conclude that any project effect on monarch butterflies would be minor and insignificant.

The Town proposes to remove invasive plant species from the non-project pocket park, and continued park maintenance could require periodic vegetation management that may affect monarch butterfly or its habitat; however, effects would be temporary and localized. Therefore, we conclude that the any effect of the construction and operation of the pocket park by the Town on monarch butterflies would be minor and insignificant.

3.3.4 Land Use, Recreation, and Aesthetics

3.3.4.1 Affected Environment

Land Use

The project is located within the most developed area of the Otter Creek watershed. Land use in the immediate project vicinity is industrial, commercial, and residential (Vermont CGI, 2018). Land cover in the immediate vicinity is predominately developed areas and forest, with areas dominated by wetlands and cultivated crops occurring upstream and downstream of the

project (MRLC, 2021). Current uses of Otter Creek water include hydroelectric power generation, wastewater assimilation, and recreation.

The current project boundary encompasses approximately 11.2 acres (Figure 2) and encloses: (1) approximately 11 acres of land and water in and around the impoundment up to an elevation 507.4 feet; and (2) the project facilities listed above in section 2.1.1. No federal land exists within or adjacent to the project boundary.

Statewide Recreation Plan

The 2019-2023 Vermont Statewide Comprehensive Outdoor Recreation Plan (SCORP) assesses outdoor recreation needs and priorities in the state and sets forth a plan of action for achieving outdoor recreation goals. The SCORP recommends enhancing and expanding recreation programs and participation by emphasizing the health benefits of recreation, opportunities for public recreation access on private lands, and the tourism and economic benefits of protecting natural and cultural heritage (Vermont ANR, 2019).

Regional Recreation Opportunities

Otter Creek is the longest river in Vermont, traveling northward and terminating into Lake Champlain from southern Vermont. The Otter Creek watershed contains numerous opportunities for public recreation, many of which wholly exist or are accessible from within 10 miles of the project.

Within a relatively short drive of the project, there are extensive recreational opportunities. The project is located approximately five miles west of the Green Mountain National Forest (GMNF), Vermont's largest contiguous public land area, with more than 400,000 acres and over 900 miles of mixed-use trails, recreational areas, wilderness areas, downhill and cross-country skiing areas, camping, picnicking, fishing, non-motorized boating, swimming, and wildlife viewing (USFS, no date). A portion of the National Park Service's 14-state, 2,190-mile-long, Appalachian National Scenic Trail is approximately 6 miles southeast of the project boundary. The State of Vermont also operates and maintains a plethora of public recreation areas, wilderness areas, and forests with recreational opportunities within 10 miles of the project, including year-round recreational trails for walking, hiking, biking, horseback riding, snowshoeing, skiing, and/or snowmobiling; swimming, camping, wildlife viewing, boating, paddling, hunting, and trapping. Additionally, the Nature Conservancy manages several publicly accessible conservation parcels within the watershed, which include opportunities for hiking and fishing.

The Town of Rutland operates and maintains several recreational areas and sports fields within 10 miles of the project (Rutland RPD, no date), which include opportunities for ice skating, fishing, walking, hiking, bicycling, picnicking, arboretum, sports fields and courts, playgrounds, and fields. The Town operates and maintains Northwood Park, located approximately four miles northeast of the project and adjacent to the Rutland City Reservoir, which includes hiking and biking trails, tennis courts, basketball court, disc golf course, and pool (The Town of Rutland, Vermont, 2019; Google Earth, 2022). The Town of West Rutland owns,

operates, and maintains the West Rutland Recreation Area and Town Forest, located approximately four miles southwest of the project, which includes a playground, basketball court, baseball field, fields, and dog park (West Rutland Town, 2019; Google Earth, 2022).

Project Recreation Use and Access

There are no formal project recreational facilities; however, GMP allows public use and access of the project land and water for recreation. The public accesses the Otter Creek shoreline via two user-created, informal tailwater access trails. Anglers, hand-carry boaters, and swimmers access Otter Creek by crossing project land, below Old Falls Road on the north bank of Otter Creek, just below the powerhouse. The informal trail, which GMP periodically maintains by trimming vegetation, is an approximately five-foot-wide and 38-feet-long dirt trail that connects an informal parking area to the shoreline of Otter Creek.[22] Additionally, anglers, hand-carry boaters, and swimmers access Otter Creek on the south shoreline, downstream of the dam, via a second user-created trail that starts from a gravel turn off along Simons Avenue (Figure B-2). For safety purposes, all project structures are behind fences and gates to restrict public access. GMP also annually installs a boat barrier upstream of the project dam to warn boaters to exit the river.

Over the term of the current license, GMP documented a significant increase in recreation use at the project, recording 100 recreation days in 2002, and 299 recreation days in 2014. In 2014, GMP also reported that the downstream tailwater access was at 50% capacity utilization.[23] Article 407 of the 1993 license required GMP to develop a recreation plan that included provisions for installing an off-street parking area, signage, landscaping, and a marked footpath to Otter Creek, to be located on land owned by GMP, on the south bank of the river, downstream of the project dam.[24] To date, none of these facilities have been constructed.

Aesthetics

The Center Rutland dam is located on top of the historic Mead Falls, also known as Gookin Falls or Center Rutland Falls. Mead Falls is a natural, 24-foot-high and 60-foot-long ledge and natural rock outcropping spanning the width of Otter Creek. Mead Falls was named for John Mead, who established grist and sawmills in the area and operated a ferry on Otter Creek at the location of the project. The bedrock outcrop below the dam creates a natural waterfall, as the veil of flow over the dam cascades over the natural large boulders into a deep pool at the base of the falls.

From June 1 through October 15 annually, GMP provides a minimum flow of 80 cfs over the spillway, which provides a continuous veiled flow over the natural rock falls. The northern

[22] GMP occasionally maintains the trail as part of its vegetation management practices to trim vegetation back to a minimum of 15 feet from project structures.

[23] *See* Omya 2003, GMP 2015

[24] *See* Omya, Inc., 62 FERC ¶ 62,224 (1993).

shoreline of the impoundment is surrounded by trees and is bordered by residential and industrial development, and the southern shore is surrounded by trees and an old mill building. The wooded banks of the impoundment generally limit visibility from the shoreline to the project water.

Vermont has ten designated scenic byways, three of which pass through Rutland County. Of those three, the Crossword of Vermont Byway, which spans 50 miles and runs from Hartford, Vermont, to West Rutland, Vermont, passes by the Center Rutland Project on U.S. Route 4 (Elm Street). The Center Rutland Project is located in a suburban area, just south of U.S. Route 4 and Vermont Route 3, which are heavily trafficked commuter routes into and out of the Town of Rutland. The Delaware and Hudson Railroad bridge, which is an active Vermont Rail System railroad trestle, crosses perpendicularly over Otter Creek, approximately 15 feet above the project's dam.

The concrete and stone gravity dam and stone and masonry powerhouse are visible downstream of the dam. The dam is partially visible from portions of the northern bank of Otter Creek, and is fully visible to pedestrians on the southern bank of Otter Creek, where GMP and the Town are proposed to develop the non-project pocket park. The project dam is also minimally visible from the U.S. Route 4 (Elm Street) vehicular bridge, which crosses Otter Creek approximately 700 feet downstream of the dam.

3.3.4.2 Environmental Effects

Recreation Use and Access

Currently, GMP allows public use and access of project land and water for recreation. The project's bypassed reach is a popular fishing location, as anglers use the two user-created, informal tailwater access trails to fish downstream of the dam. Swimmers and hand-carry boaters also access Otter Creek downstream of the dam. Anglers, boaters, and swimmers use two informal trails to access Otter Creek, one on the north bank and one on the south bank. The informal tailwater access trail located immediately downstream of the project's powerhouse, along Old Falls Road on the north bank of Otter Creek, is wide enough to transport a hand-carry boat to the shoreline, and GMP periodically maintains the path by trimming vegetation. Anglers and swimmers access the south bank of Otter Creek via a second user-created, informal tailwater access trail that starts at a gravel turn-off along Simons Avenue, downstream of the dam.

GMP's documented increase in informal recreational use and access to the south bank of Otter Creek prompted GMP and the Town to collaborate on the design and development of a small, publicly accessible park (pocket park) on GMP and Town properties located between Simons Avenue and Otter Creek (Figure B-2). In order to accommodate development of the pocket park, GMP proposes to transfer ownership of 1.9 acres of land that is adjacent to the project boundary, to the Town. The land where the park would be located includes the location of the informal tailwater access trail on the south bank of Otter Creek (Figure B-1). GMP states that the park will be designed, constructed, and managed by the Town; therefore, GMP is not proposing the park as a designated project recreation facility. The Town obtained a municipal planning grant from the State of Vermont in 2020 to develop plans for construction of the park

and conducted stakeholder and public meetings to solicit input on design in 2021 and 2022. The preliminary pocket park design includes two parking areas, a hand carry boat put-in, walking trails, beach access, observation areas, a picnic area, and historic and informational signage.

Additionally, GMP proposes to develop and install an informational kiosk featuring cultural heritage information next to the parking area of the Town's non-project pocket park. GMP proposes to collaborate with the Vermont Division of Historic Preservation, the Abenaki Nation, and the Stockbridge Munsee Band of the Mohicans to provide accurate regional cultural information for the storyboard-style kiosk.

Vermont ANR's certification condition F specifies that GMP continue to: (1) provide public access to project land and water; (2) provide access to and maintain the hand-carry put-in/fishing access area located on the north bank, downstream of the powerhouse; and (3) establish an agreement with the Town for a pocket park.

Our Analysis

Article 407 of the 1993 license required GMP to develop a recreation plan that included provisions for installing an off-street parking area, signage, landscaping, and a marked footpath to Otter Creek, all to be located on land owned by GMP on the south bank of the river, downstream of the project dam.[25] Additionally, the license required GMP to explore the feasibility of providing a canoe portage route along the south bank of Otter Creek near Simons Avenue, which traverses lands owned by GMP, Vermont ANR, and the Town. On April 15, 2004, the Commission approved GMP's proposed recreation plan, filed on July 29, 2002,[26] which included plans for installation of a picnic area, kiosk, viewing platform, signs, guard rails, chain link fence, footpath, and a 10-space parking lot with one universally accessible space, as required by Article 407. The recreation plan did not include plans to develop a canoe portage route along the south bank, as required by the license; however, Commission staff determined that the existing informal access trail on the north bank of the river was adequate for canoe access to the project tailwaters. On June 21, 2006, GMP filed a request to amend the approved recreation plan. The amendment, approved by Commission staff on April 10, 2007, still included the construction of a picnic area, small off-street parking area, signage, landscaping, and a marked footpath to the river on the south bank of Otter Creek, but removed the requirement to install a kiosk and viewing platform because GMP was unable to secure the appropriate land use and access from the Town in order to construct and install these facilities.

To date, however, none of the facilities proposed have been constructed. Instead, GMP proposes to transfer 1.9 acres of GMP-owned land to the Town for the development of a non-project pocket park on the southern shoreline, downstream of the project. The proposed pocket

[25] *See* Omya, Inc., 62 FERC ¶ 62,224 (1993).

[26] *See* Omya, Inc., 107 FERC ¶ 62,042 (2004).

park would be in the same area as the facilities proposed, but never constructed, in the recreation plan approved pursuant to Article 407 of the current the license.

The documented ongoing, informal recreational use of the southern shoreline of Otter Creek, at the location of the proposed pocket park, suggests a need for formal recreational facilities to meet recreational demand in the vicinity of the project. The proposed pocket park would improve the recreational experience over existing conditions by providing formalized and maintained recreational access to Otter Creek's southern shoreline, downstream of the project dam, for hand-carry boaters, anglers, swimmers, and passive recreationists. It also would provide new amenities in the form of a picnic area, beach access, observation points, and historic and cultural signage. Improved recreational access to Otter Creek and new recreational amenities would satisfy the need for recreational facilities at the project and in Otter Creek, which has been demonstrated by documented recreational use of the project. As proposed, GMP's pocket park design, operation, and maintenance would be executed by the Town, which has obtained a municipal planning grant from the state of Vermont and started soliciting input and developing plans for the pocket park design. While it would not be a project facility, the Town's ownership of the land would ensure it remained publicly accessible even if the pocket park amenities were not built.

To confirm that recreational needs at the project are being met throughout the term of any license issued, it would be beneficial to periodically assess recreational demand at the project and the adequacy of existing recreational features to meet that demand. Further, the development of the proposed pocket park and its associated amenities would create new and expanded recreational access and opportunities at the project. As a result, it is reasonable to expect that recreational demand at the project, and at the proposed pocket park, may increase over the term of any new license issued.

Regular monitoring of recreational use at the project would ensure that the existing informal access along the northern bank and the proposed pocket park on the southern bank continue to meet current and future recreation needs for angling, boating, and swimming in Otter Creek. Developing a recreation monitoring plan would ensure that recreational use data is captured at reasonable and regular intervals and that the data clearly describes existing recreational use at the project. Conducting recreation use monitoring within five years after completion of the proposed pocket park would be beneficial to evaluate and determine the adequacy of the newly completed recreational amenities and access at the park. A good recreation monitoring plan should collect the following recreation use data, at a minimum: (1) number of recreational users, (2) types of recreational use observed, (3) duration of time recreational users spend at the site, (4) adequacy of amenities and access to meet recreational demand, and (5) a description of the methods used to collect use data. A good plan would also include provisions for consulting with stakeholders and the process for identifying the need for any additional recreational facilities. After performing an initial monitoring report, the plan could also specify how stakeholders would be consulted to determine the frequency of subsequent recreational use monitoring efforts at the project.

GMP also proposes to develop and install an informational kiosk featuring cultural heritage information at the pocket park. According to the proposal, the kiosk would detail the

history of the falls and surrounding area and would be located within the proposed pocket park's boundary, on the south bank of Otter Creek. While GMP would design and construct the proposed kiosk, the kiosk would be maintained by the Town. Installation of the kiosk would improve the recreational user experience by providing historic significance and cultural context of the area to visitors.

Vermont ANR's certification condition F specifies that GMP continue to provide public access to the project's land and water, which GMP currently provides and proposes to continue to provide in any subsequent license. Vermont ANR's certification condition F also specifies that GMP continue to provide access and maintain the hand-carry put-in/fishing access area located downstream of the powerhouse, which GMP also proposes to continue to provide in any subsequent license. Finally, Vermont ANR's certification condition F specifies that GMP establish an agreement with the Town for a pocket park, which is similar to GMP's proposal.

Land Use

No issues related to land use were identified during scoping and GMP does not propose any measures regarding land use, nor does GMP propose any changes to the project boundary.

Our Analysis

Project boundaries should enclose "only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources." Although GMP is not proposing changes to the project boundary, it is proposing to not reinstall the flashboards, which are included in the project facilities under the current license, and which have not been installed since 2012. The wooden flashboards were 2-foot-3-inches high by 174-feet-long and held the impoundment at a normal pool of 507.4 feet. Without the flashboards in place, the impoundment is currently held at a normal pool elevation of 505.05 feet.

With the proposal to make the removal of the flashboards permanent, the impoundment would be maintained at an elevation of 505.05 feet when a seasonal minimum flow of 80 cfs is being released over the spillway. The existing project boundary around the impoundment, however, assumes the presence of flashboards and follows a contour elevation of 507.4 feet, which results a net increase of approximately 1.2 acres of shoreline around the project impoundment. Consequently, the existing project boundary around the impoundment would require revisions to exclude land above the 505.05 feet contour. With the removal of the flashboards, the inclusion of this land within the project boundary does not appear to be warranted, and removal of this land from the project boundary would not affect project uses or substantially affect land use.

As GMP is not proposing any changes to the management of land within the proposed project boundary, continued operation of the project would have no effect on land use resources.

Aesthetics

GMP is not proposing any new construction or changes to project facilities; however, to enhance and protect both aquatic and aesthetic resources, GMP proposes to continue operating the project in a run-of-river mode and providing a minimum flow of 80 cfs, or inflow, whichever is less, over the spillway and into the bypassed reach from June 1 through October 15. To improve aquatic and aesthetic resources, GMP also proposes to implement a minimum flow of 40 cfs, or inflow, whichever is less, over the spillway and into the bypassed reach from October 16 through May 31. Currently, there are no minimum flow requirements from October 16 through May 31.

Vermont ANR certification condition B would require GMP to release a year-round minimum flow of 60 cfs, or inflow, whichever is less, into the bypassed reach.

Our Analysis

As part of the previous licensing process, the Vermont Marble Company (the applicant at the time), Kleinschmidt Associates (Vermont Marble Company's consultants), and Vermont ANR conducted a flow demonstration study for aesthetics and fish habitat in the project's bypassed reach. The results of the 1992 study, which evaluated flows of 0, 20, 40, 60, 80, and 100 cfs, indicate that at 40 cfs some minor falls were visible; at 60 cfs the minor falls widened and much more coverage of the rock chutes was evident; at 80 cfs the chutes were well covered with white water and provided what was considered an optimum veil of water over the spillway; and at 100 cfs, little additional coverage was noticeable, but the depth of the chutes and volume of the minor falls increased slightly. The study results also state that there was no significant change in the acoustics of the fall volume from 60 to 100 cfs.

On December 8, 2021, GMP, Vermont ANR, and Vermont Fish and Wildlife Department agreed to study five aesthetic flows of 20, 40, 60, 80, and 100 cfs during the spring 2022 study season. However, on October 3, 2022, GMP reported that it was unable to conduct the aesthetic flow study as planned, due to extreme low flow conditions. Therefore, GMP utilized the results of the 1992 study to develop the proposed flow volume that would be most beneficial for aesthetic resources at the project. The bypassed reach is only 100-feet in length, and consists of bedrock and boulders, which is unlikely to have changed significantly in structure, quantity, or quality since 1992. Therefore, the 1992 flow demonstration study results are sufficient to adequately determine the characteristics and benefits of a variety of flow ranges in the bypassed reach.

GMP's proposal to continue to maintain the seasonal minimum flow of 80 cfs, or inflow, whichever is less, over the spillway from June 1 through October 15 would result in no change in aesthetic resources compared to existing conditions. It would ensure existing visual and sound aesthetics at the project are maintained by providing a consistent veil of water over the spillway through the peak recreation season and would provide sufficient water levels to continue supporting boating and angling in the bypassed reach. The proposed seasonal minimum flow of 80 cfs would continue to provide a continuous veil of water over the spillway, a pleasing sound in the project vicinity, and an improved recreational experience for recreationists downstream of the dam.

GMP's proposal to release a minimum flow of 40 cfs, or inflow, whichever is less, from October 16 through May 31 would provide some added visual and sound benefits compared to the existing conditions, because there is no required minimum flow during this period. The 1992 flow demonstration study found that from October 16 through May 31, flows in Otter Creek exceed the project's maximum hydraulic capacity of 190 cfs 93% of the time, resulting in frequent flow releases over the crest of the Center Rutland Project's spillway. In the months of April and May, the maximum hydraulic capacity of the project is exceeded 99.74% of the time and 98.70% of the time, respectively. In addition, the 1992 flow demonstration study describes a 40 cfs flow as providing negligible flow over the spillway, but states that it is enough flow for the tailrace and deep pool to remain hydraulically connected. Nevertheless, the proposed 40 cfs minimum flow from October 16 through May 31 would be an overall improvement to the visual aesthetics at the project by providing a continuous, regular flow over the spillway and into the bypassed reach. Additionally, the sound aesthetics in the bypassed reach would be improved by providing a 40 cfs minimum flow compared to existing conditions when there could be little or no flow passing over the spillway and through the bypassed reach under certain flow and project operation conditions.

Vermont ANR's certification condition B specifies that GMP release a year-round minimum flow of 60 cfs to the bypassed reach, which is 20 cfs less than GMP's proposed seasonal minimum flow release of 80 cfs from June 1 through October 15. Currently, GMP provides a minimum flow of 80 cfs, or inflow, whichever is less, into the bypassed reach to protect water quality, fish and wildlife resources, and aesthetic resources. As determined by the 1992 flow demonstration study, study participants determined that 80 cfs was the preferred flow because it protected aquatic resources by maintaining interconnected aquatic habitat, improved water quality, and improved aesthetics for summer months, when project recreation use is highest. At 80 cfs, chutes in the bypassed reach were well covered with white water and it provided an optimum veil of water over the spillway. Vermont ANR's certification specification would reduce the minimum flow volume, which would result in a reduction in the overall quality of the visual and sound aesthetics for recreational users at the project. Additionally, a lower minimum flow during peak recreation season would reduce wetted areas in the bypassed reach, and impact recreational boating and angling downstream of the dam.

Vermont ANR's certification specification that GMP release a year-round minimum flow of 60 cfs to the bypassed reach would also be 20 cfs more than GMP's proposed seasonal minimum flow of 40 cfs from October 16 through May 31. A 20 cfs increase from GMP's proposed minimum flow in the bypassed reach would slightly enhance visual and sound aesthetics at the project by maintaining a consistent, fuller veil of water over the spillway and onto the rocks in the bypassed reach through the fall and winter months. However, these benefits would be minimal because portions of the falls and bypassed reach are likely to be covered in ice during this period, reducing the effects of any visual and sound aesthetics. Vermont ANR's certification specification would provide minimal enhancements to the visual aesthetics by only slightly increasing wetted areas in the bypassed reach and whitewater over the spillway. Further, providing a 60 cfs minimum flow in the off-season would offer negligible benefits to visitors and recreationists at the project, as "winter access to viewing locations is unlikely."

3.3.5 Cultural Resources

3.3.5.1 Affected Environment

Section 106 of the NHPA requires that the Commission take into account the effects of its actions on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. Historic properties are those that are listed or eligible for listing on the National Register. The regulations implementing section 106 of the NHPA also require that the Commission seek concurrence with the SHPO on any finding involving effects or no effects on historic properties, and consult with interested Indian Tribes or Native Hawaiian organizations that attach religious or cultural significance to historic properties that may be affected by an undertaking. In this document, we also use the term "cultural resources" for properties that have not been determined eligible for listing on the National Register. Cultural resources represent things, structures, places, or archaeological sites that can be either prehistoric or historic in origin. In most cases, cultural resources less than 50 years old are not considered historic.

Area of Potential Effect

Pursuant to section 106 of the NHPA, the Commission must take into account whether any historic properties within the proposed project's area of potential effect (APE) could be affected by the issuance of a license for the project. The Advisory Council on Historic Preservation defines an APE as the geographic area or areas in which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 C.F.R. § 800.16(d)).

GMP defines the APE as including: (1) the project boundary and/or lands located with 10-meters (32.8 feet) of the edge of the riverbank; (2) two GMP-owned parcels at the northwestern portion of the APE; (3) three houses located across Old Falls Road; (4) the area for the proposed pocket park downstream of the dam; and (5) all infrastructure associated with the project.[27] On September 24, 2020, the Vermont SHPO concurred with GMP's APE.[28]

Pre-Contact Period

The pre-contact history of the Northeast is generally characterized by the Paleoindian, Archaic, and Woodland periods. The earliest known archaeological remains in Vermont date to the Paleoindian period. These sites were created by small groups of hunter-gatherers who colonized the recently deglaciated sections of the state during the eleventh millennium before present (BP) (Deller and Ellis, 1992; Stork, 1997 and 2004). Paleoindian people living in the

[27] *See* December 23, 2021, final license application at E-4-91.

[28] Documentation of concurrence with the APE was filed with GMP's February 6, 2023 response to the Commission's November 23, 2022 Additional Information Request.

region were highly mobile hunters and gatherers reliant mainly on caribou that were abundant at that time (Spiess et al., 1998).

The Archaic period represents the longest cultural period in the region. The Archaic period is subdivided in to at least three sub periods, the Early (10,000 to 7500 BP), Middle (7500 to 6000 BP), and Late Archaic (6000 to 3000 BP). These sub-periods are largely demarcated by changes in projectile point styles. The Early Archaic was contemporaneous with a climatic warming trend. The draining of the Champlain Sea and post-glacial lakes down to their current elevations created drastic changes in Vermont's landscape, with the creation of substantial wetlands, the opening of major river valleys and floodplains, and an increase in forest cover. Sites of the Archaic period onwards tend to be found close to significant water sources.

The Woodland period is marked by the introduction of ceramic technology about 3,000 years ago. The largest sites did not occur until the later portion of the Woodland period and are most often located in the lower reaches of Vermont's major river valleys. During the Middle Woodland period, areas along the lower reaches of rivers were used for large gatherings of people who fished, harvested nuts, and hunted. Throughout the Northeast, the Late Woodland period is associated with the introduction of horticulture, particularly the importation of domesticated maize. Although maize was adopted throughout New England, there is little evidence of the development of large sedentary villages based on maize horticulture (Petersen and Cowie, 2002). Rather, archaeological evidence indicates that people remained mobile hunter-gatherers who only used maize as a dietary supplement. The Late Woodland period ended with European contact in approximately 1600 Common Era (CE).

Post-Contact Period

The initial settlement around the area of present-day Town of Rutland started in the mid-18th century. In 1770, the James Mead family became the first permanent family to settle in Rutland (Henry, 1988). The family settled about one-half mile west of the Center Rutland falls. Within a few years, James Mead built the first mills (both saw and grist) to take advantage of the waterpower at the falls, which were later named after Mead. By the 1820s, many Rutland farmers were raising sheep for wool, and between 1830 and 1850 the town had the largest sheep population in the country (Vermont Division for Historic Preservation, 2018). Agriculture remained important in the second half of the 19th century as farmers gradually shifted their emphasis from raising sheep to dairying.

Marble quarrying on a large scale began in the area in the late 1830s and 1840s (Henry, 1988). In the 1850s, Rutland became the railroad center of Vermont. Railroad lines from Rutland ran north and south and west and southeast. Arrival of the railroad aided in the growth of the marble industry and by 1870, Rutland was located at the center of the world's largest marble business. After 1880, the marble industry was overwhelmingly dominated by the Vermont Marble Company based out of the Town of Proctor, located just downstream of the Center Rutland dam (Rutland Historical Society, No Date).

After James Mead built the first grist and sawmills at Mead Falls, William and Richard Gookin acquired the land surrounding the falls and proceeded to develop other small water-powered industries, including a fulling mill on the south side of the falls and a paper mill, as well as a grist mill, on the north side (Henry, 1988). Dr. James Porter subsequently acquired part of

the Gookin property at the falls. Dr. Porter and William F. Barnes established the first marble mill situated on the north side of the dam near the present-day powerhouse. In about 1850, the first railroad reached Mead Falls (then referred to as Gookin Falls) and crossed the Otter Creek on a multi-span, wood-truss bridge constructed directly over the falls. The introduction of vastly improved transport likely induced Charles Clement and William Gilmore to purchase land on the south side of the river and construct a second marble mill at the falls (Henry, 1988).

The 1870s brought enormous expansion of the Rutland marble industry, accompanied by major corporate consolidation (Henry, 1988). The many small firms that had emerged at the middle of the century were rapidly absorbed into an even smaller number of ever larger and more powerful companies. The Clement firm disappeared at the beginning of 1877 and was bought by the Rutland Marble Company (Henry, 1988). The corporate consolidation of the Rutland marble industry culminated in 1880 with the merging of the Rutland Marble Company and its principal competitor, the Sutherland Falls Marble Company, into Vermont Marble Company with headquarters located at Sutherland Falls in nearby Proctor. Through this merger, the Vermont Marble Company acquired both marble mills, the dam, and the related property at the Center Rutland falls (Henry, 1988).

The project's stone masonry dam was originally constructed by the Clement, Gilmore & Co. marble firm circa 1850 for the first marble mill (Henry, 1988). The dam was rebuilt in 1928. The existing marble block and rubble project powerhouse was originally built circa 1878 by the Rutland Marble Company for a hydromechanical system. The powerhouse was enlarged circa 1900 by the Vermont Marble Company after a new turbine and penstock had been installed (Henry, 1988). The powerhouse building was then reconstructed in 1914 to accommodate the installation of hydroelectric generating equipment. The generating equipment originally installed in 1914 was partly rebuilt in 1940 but retains the original casings and continues to represent early 20th century hydroelectric generating technology (Henry, 1988).

Project facilities remain virtually intact from 1914 when the Vermont Marble Company initiated electric generation at the site. Furthermore, it retains the layout and engineering design of the predecessor hydromechanical station dating from circa 1898 and incorporates some structural elements of the original development at this hydraulic setting from circa 1878 (Henry, 2018).

Previously Identified Historic Properties

Several project and non-project facilities have been previously identified as a historic district eligible for the National Register. The Center Rutland Hydroelectric Station Historic District (Historic District) includes the project dam, powerhouse and generating equipment, penstock, marble retaining wall, intake structure, marble pumphouse, former pumphouse, transformer yard, stream gaging station, the Delaware and Hudson Railroad bridge, the former Route 4 bridge abutments, Clement Mill ruins, and the Clarendon and Pittsford Railroad bridge.[29] The Historic District is considered historically significant because it includes both

[29] The Delaware and Hudson Railroad bridge and Clarendon and Pittsford Railroad bridge are not project facilities and are not owned by GMP. The Delaware and Hudson Railroad

industrial buildings and engineering structures that embody the distinctive characteristics of an early 20th century hydroelectric generating station and a contemporary hydromechanical-powered marble sawing mill.

Cultural Resources Investigations

GMP conducted an Archaeological Resources Assessment (ARA), Phase IB Survey Report (Phase IB), and subsequent Phase II Evaluation (Phase II) at one pre-contact archaeological site.[30]

The ARA identified six Archaeologically Sensitive Areas (ASAs) within and adjacent to the project's APE. Four of the identified ASAs contain portions of previously identified archaeological sites (VT-RU-0265, VT-RU-0267, VT-RU-0674, and VT-RU-0266).[31] Two ASAs were not found to contain any previously identified archaeological sites, and two ASAs were determined sensitive for post-contact Euro American resources and for pre-contact Native America resources. The ARA recommended a Phase I survey for the three identified ASAs that were determined sensitive for pre-contact archaeological sites given their location along alluvial riverside terraces. The Vermont SHPO concurred with this report and recommendation on October 28, 2020.

The Phase IB was conducted in November 2020. The Phase IB survey identified pre- and post-contact artifacts within the APE and previously identified site VT-RU-0266. The Phase IB survey report recommended that VT-RU-0266 undergo a Phase II archaeological evaluation as it was threatened by erosion and is located within the project's APE. Further Phase II evaluation was not recommended for VT-RU-0674, VT-RU-0267, and VT-RU-0265 as no project effects were identified. GMP recommended that VT-RU-0674, VT-RU-0267, and VT-RU-0265 undergo Phase II evaluation if any future project-related activities might result in project effects to the sites. The Vermont SHPO concurred with this report and recommendation on March 3, 2021.

GMP conducted a Phase II archaeological evaluation of the one archaeological site that was identified during the Phase IB (VT-RU-0266). The Phase II evaluation included additional archival research and fieldwork at the identified site. Site VT-RU-0266 is characterized as a multi-component pre- and post-contact era archaeological site. The post-contact portion of the site was recommended as eligible for listing on the National Register under Criterion D for the

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bridge crosses perpendicularly over Otter Creek, approximately 15 feet above the project dam, and the Clarendon and Pittsford Railroad bridge is located approximately 500 feet upstream of the project dam. Both bridges are located within the project boundary.

[30] *See* December 23, 2021 final license application, at Appendix E (privileged).

[31] Any information containing location, character, and ownership information about archaeological sites is considered privileged information and cannot be disclosed in this EA.

potential to yield important information about the Clement family.[32] The Clements played a major role in the early development of the marble, railroad, and banking industries, as well as late-nineteenth and early-twentieth century politics in Vermont.

3.3.5.2 Environmental Effects

Article 408 of the current license requires the licensee to implement provisions of the Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the Vermont Division of Historic Preservation for the Management of Historic Properties Affected by the Continued Operation of the Center Rutland Hydroelectric Project executed on April 12, 1993. Pursuant to Article 408 of the current license, a Cultural Resources Management Plan (CRMP) was filed on July 28, 1999. In a letter filed on May 21, 2019, the Vermont SHPO states that compliance with the terms of the CRMP has been sporadic, resulting in an incomplete record of activities affecting cultural resources.

GMP proposes to continue operating the project in a run-of-river mode, such that outflow from the project approximates inflow. GMP also proposes to develop an HPMP in consultation with the Vermont SHPO to protect historic properties that are eligible for or listed on the National Register.

The Vermont SHPO recommended that GMP consult with the Stockbridge Munsee Band of Mohicans. GMP consulted with the Stockbridge Munsee Band of Mohicans on July 24, 2019, and on July 25, 2019, the Tribe responded that there are no anticipated concerns related to cultural resources because no ground disturbance is proposed.

On January 11, 2022, the Vermont SHPO filed comments stating that it commissioned a study, entitled *Run-of-River Hydroelectric Dam Bank Erosion and Cultural Resources in Vermont*, to examine how run-of-river operation affects riverbank erosion and deposition, and to assess the potential impact of run-of-river operation on cultural resources.[33] Based on the study results, the Vermont SHPO concluded that the project's run-of-river operation could affect archaeological resources in the floodplains and low alluvial terraces along the impoundment shoreline. As described in section 3.3.2.2, *Terrestrial Resources, Environmental Effects, Shoreline Erosion*, the SHPO's report concludes that the observed erosion along the shoreline of the impoundment is caused by: (1) the presence of the dam; (2) the accumulation of sediment in the impoundment; (3) water level fluctuations associated with project operation; and (4) local groundwater and sediment/soil pore pressures. The report states that the shoreline erosion could impact buried cultural resources and that the shoreline should be surveyed for cultural remains.

[32] Per 36 C.F.R. § 60.4, National Register Criterion D is defined as having yielded, or may be likely to yield, information important in prehistory or history.

[33] *See* the Vermont SHPO's January 11, 2022 Comments on Cultural Resource Studies and Run-of-River Hydroelectric Dam Bank Erosion and Cultural Resources in Vermont. This filing was submitted under several proceedings in Vermont, including the Center Rutland Project.

In addition, the report recommends mitigating the effects of shoreline erosion, but does not provide any specific measures.

Our Analysis

Area of Potential Effect (APE)

The APE for the project should include all land enclosed by the project boundary and land or properties outside of the project's boundary where project construction and operation or project-related recreational development or other enhancements may cause changes in the character or use of historic properties, if any historic properties exist.

GMP's APE includes the current project boundary and all infrastructure associated with the project, a 10-meter (32.8 feet) buffer around the project impoundment, two GMP-owned parcels at the northwestern portion of the APE, the area for the proposed pocket park, and three houses located across Old Falls Road.

According to public records, the three residential buildings across Old Falls Road are over fifty years old and it is possible, due to age, that the buildings are eligible for listing on the National Register based on criteria listed under 36 CFR § 60.4.[34] However, these buildings are not owned by GMP and are not used for any project purposes. GMP is not proposing any project related construction that would visually or physically impact these residential buildings, and continued operation and maintenance of the project would not have any reasonably foreseeable effects on the residential buildings. Additionally, GMP does not provide information regarding potential project effects on the three residential buildings. Therefore, the three residential buildings should not be included in the APE.

GMP's APE also includes the area of the proposed pocket park. As discussed in section 3.3.4.2, *Land Use, Recreation, and Aesthetics, Environmental Effects*, the proposed pocket park is being developed by GMP and the Town through an off-license agreement. The park would not be considered a project facility and the land proposed to be developed is not currently part of the FERC-licensed project boundary. Therefore, any development of the proposed pocket park would not be considered project-related construction. Although GMP and the Town are still proposing to consult with the Vermont SHPO and Tribes on the development of the proposed pocket park, because it would be a non-project facility, the area should not be included in the APE.

As discussed in section 3.3.4, *Land Use*, the existing project boundary around the impoundment assumes the presence of flashboards and follows a contour elevation of 507.4 feet. GMP is proposing to not reinstall the flashboards, which would result in the impoundment being maintained between 504.8 (elevation of the spillway crest) and 505.05 feet. GMP has been

[34] In accordance with NHPA regulations, if there are potential project effects to project facilities over 50 years in age, they must be evaluated for eligibility for listing on the National Register.

operating the project without the flashboards since 2012. The change in impoundment elevation from 505.05 feet to 507.4 feet would result in a net increase of approximately 1.2 acres of shoreline around the project impoundment. While land above the 505.05-foot contour would not be needed for project purposes and therefore removed from the project boundary, due to the possibility of archaeological resources along the impoundment shoreline, this land should remain in the APE.

Shoreline Erosion

As discussed in section 3.3.2.2, *Terrestrial Resources, Environmental Effects, Shoreline Erosion*, the project operates in a run-of-river mode and does not fluctuate impoundment levels for peaking operation or flood mitigation. GMP proposes to continue operating the project in a run-of-river mode such that project outflow approximates inflow, and to not reinstall the flashboards.

Continuing to operate the project in a run-of-river mode, and to not reinstall the flashboards, would maintain stable impoundment levels and minimize project effects on erosion and cultural resources along the impoundment shoreline. Therefore, project-induced erosion would not be an adverse project effect on cultural resources.

Effects to Historic Properties

The Historic District is eligible for listing on the National Register, including contributing resources that are part of the project (i.e., the project dam, powerhouse and generating equipment, penstock, marble retaining wall, and intake structure). Continued operation and maintenance of the project could have adverse effects on the historic properties identified above if there are no protective measures in place. Specifically, adverse effects could occur in the event repairs are needed to maintain the structure and function of the project facilities that are contributing resources of the Historic District. Other contributing resources to the district include a marble pumphouse, former pumphouse, transformer yard, stream gaging station, the Delaware and Hudson Railroad bridge, the former Route 4 bridge abutments, Clement Mill ruins, and the Clarendon and Pittsford Railroad bridge. These resources are not project facilities; however, any alterations and/or continued operation and maintenance of the project facilities could diminish the visual integrity of the non-project contributing resources, which would result in an adverse effect to the Historic District. Additionally, Vermont ANR's certification specifies that GMP begin preparing a plan to provide upstream eel passage at the project. If the installation of an upstream eel passage facility is located at the dam, it may have an adverse effect on the project dam. Installation of the eel ramp could diminish the visual or physical integrity of the dam, or other contributing resources to the Historic District.

GMP's archaeological studies conclude that there are archaeologically sensitive areas within the APE for the project, as well as National Register-eligible site VT-RU-0266. Any maintenance activities during the term of any license could also require ground disturbance that could adversely affect archaeological resources. For safety purposes, GMP maintains the two user-created tailwater access trails at the project. Use and maintenance of the tailwater access trails has the potential to adversely affect cultural resources as a result of soil disturbance and

vegetation management as GMP conducts occasional mowing and trimming activities. Additionally, as discussed in section 3.3.4.2, *Land Use, Recreation, and Aesthetics, Environmental Effects*, GMP allows public use of project land and water for recreation. Trampling and looting that are sometimes associated with recreation access also have the potential to damage cultural resources.

GMP would need to consult with the Vermont SHPO and federally recognized Tribes prior to any ground disturbance to determine the effects of the activities and the need for any cultural resource measures. It is also possible that unknown historic properties may be discovered during project operation, or other project-related activities that require ground disturbance.

GMP proposes to develop an HPMP in consultation with the Vermont SHPO to protect historic properties that are eligible for or listed on the National Register. Developing and implementing an HPMP, in consultation with the Vermont SHPO, would ensure that measures are in place to protect historic properties in the APE from adverse effects related to the operation and maintenance of project facilities and potential adverse effects related to recreation enhancements. An HPMP would also ensure that any previously undiscovered archaeological resources within the APE are not adversely affected by the project during the term of any new license.

To meet the requirements of section 106 of the NHPA, the Commission intends to execute a Programmatic Agreement (PA) with the Vermont SHPO for the proposed project to protect historic properties. The terms of the PA would require GMP to develop and implement an HPMP to ensure that the proposed project does not adversely affect historic properties in the APE.

3.3.6 Environmental Justice

In conducting NEPA reviews of hydroelectric projects, the Commission follows Executive Orders 12898 and 14096, which direct federal agencies to identify, analyze, and address disproportionate and adverse human health or environmental effects of their actions on environmental justice communities.[35] Executive Order 14008 also directs agencies to develop programs, policies, and activities to address the disproportionate and adverse "human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."[36] Environmental justice is "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of

[35] Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994); Exec. Order No. 14,096, 88 Fed. Reg. 25251 (Apr. 21, 2023).

[36] Exec. Order No. 14,008, 86 Fed. Reg. 7619, at 7629 (Jan. 27, 2021).

environmental laws, regulations, and policies."[37] The term "environmental justice community" includes communities that have been historically marginalized and overburdened by pollution.[38]

Commission staff used *Promising Practices for EJ Methodologies in NEPA Reviews* (*Promising Practices*),[39] which provides methodologies for conducting environmental justice analyses throughout the NEPA process for this project. Additionally, consistent with EPA recommendations, Commission staff used EPA's Environmental Justice Screening and Mapping Tool (EJScreen) as an initial screening tool to better understand locations that require further review or additional information regarding minority and/or low-income populations; potential environmental quality issues; environmental and demographic indicators; and other important factors.[40]

Consistent with *Promising Practices*, and Executive Orders 12898 and 14096, we reviewed the project to determine if its resulting impacts would be disproportionate and adverse on minority and low-income populations and also whether impacts would be significant.[41] *Promising Practices* provides that agencies can consider any of a number of conditions in this

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[37] *See* EPA, EJ 2020 Glossary (Feb. 2024), https://www.epa.gov/system/files/documents/2024-02/ej-2020-glossary.pdf. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. *Id.* Meaningful involvement of potentially affected environmental justice community residents means: (1) people have an appropriate opportunity to participate in decisions about a proposed activity that may affect their environment and/or health; (2) the public's contributions can influence the regulatory agency's decision; (3) community concerns will be considered in the decision-making process; and (4) decision makers will seek out and facilitate the involvement of those potentially affected. *Id.*

[38] Environmental justice communities include, but may not be limited to minority populations, low-income populations, or indigenous peoples. *See* EPA, EJ 2020 Glossary (Feb. 2024), https://www.epa.gov/system/files/documents/2024-02/ej-2020-glossary.pdf.

[39] Federal Interagency Working Group on Environmental Justice & NEPA Committee, *Promising Practices for EJ Methodologies in NEPA Reviews* (Mar. 2016) (*Promising Practices*), https://www.epa.gov/sites/default/-files /2016-08/documents/nepa_promising_practices_document_2016.pdf.

[40] EPA, *Purposes and Uses of EJScreen* (Jan. 9, 2024) https://www.epa.gov/ejscreen/purposes-and-uses-ejscreen ("Screening tools should be used for a 'screening-level' look. Screening is a useful first step in understanding or highlighting locations that may be candidates for further review.").

[41] An agency may determine that impacts are disproportionate and adverse, but not significant within the meaning of NEPA and in other circumstances an agency may determine that an impact is *both* disproportionate and adverse and significant within the meaning of NEPA. *See Promising Practices* at 33.

determination and the presence of any of these factors could indicate a potential disproportionate and adverse impact.[42] For this project, a disproportionate and adverse effect on an environmental justice community means the adverse effect is predominantly borne by such population. Relevant considerations include the location of project facilities and the project's human health and environmental impacts on identified environmental justice communities, including direct, indirect, and cumulative impacts.

3.3.6.1 Affected Environment

Meaningful Engagement and Public Involvement

In addition to the information provided above, the Council on Environmental Quality's (CEQ) Environmental Justice Guidance Under the National Environmental Policy Act (CEQ, 1997) and *Promising Practices*, recommend that federal agencies provide opportunities for effective community participation in the NEPA decision-making process by: identifying potential effects and mitigation measures in consultation with affected communities; improving accessibility of public meetings, crucial documents, and notices; and using adaptive approaches to overcome potential barriers to effective participation. In addition, Executive Orders 13985 and 14096, strongly encourage independent agencies to "consult with members of communities that have been historically underrepresented in the Federal Government and underserved by, or subject to discrimination in, Federal policies and programs,"[43] and "provide opportunities for the meaningful engagement of persons and communities with environmental justice concerns who are potentially affected by Federal activities."[44]

The opportunities for public involvement during the Commission's review process are described in section 1.4, *Public Review and Comment*.

All documents that form the administrative record for this proceeding, with the exclusion of privileged or critical energy infrastructure information, are available to the public electronically on the FERC's website (https://elibrary.ferc.gov/eLibrary/search). We recognize that not everyone has internet access or is able to file electronic comments. Anyone may comment to FERC about the proceeding, either in writing or electronically.[45] All substantive

[42] There are various approaches for determining whether an impact will cause a disproportionate and adverse impact, and one recommended approach is to consider whether an impact would be "predominantly borne by minority populations or low-income populations." *See id.* at 44-46.

[43] Exec. Order No. 13985, 86 Fed. Reg. 7009, at 7011 (Jan. 20, 2021).

[44] Exec. Order No. 14,096, 88 Fed. Reg. 25254 (Apr. 21, 2023).

[45] The Office of Public Participation (OPP) provides members of the public, including environmental justice communities, landowners, Tribal citizens, and consumer advocates, with assistance in FERC proceedings—including navigating Commission processes and activities

environmental comments received prior to issuance of this EA have been addressed within this document. No entity provided comments or recommendations regarding the effects of the project on environmental justice communities in response to the Commission's notice that the application was ready for environmental analysis.

Identification of Environmental Justice Communities

According to CEQ's *Environmental Justice Guidance* and *Promising Practices*, minority populations are those groups that include: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. Following the recommendations set forth in *Promising Practices*, FERC uses the **50 percent** and the **meaningfully greater analysis** methods to identify minority populations. Using this methodology, minority populations are defined in this EA where either: (a) the aggregate minority population of the block groups in the affected area exceeds 50 percent; or (b) the aggregate minority population in the block group affected is 10 percent higher than the aggregate minority population percentage in the county. The guidance also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices'* **low-income threshold criteria** method, low-income populations are identified as census block groups where the percent low-income population in the identified block group is equal to or greater than that of the county. Here, Commission staff selected Rutland County, Vermont, in which the project action is located, as the comparable reference community to ensure that affected environmental justice communities are properly identified.

Table C-4 identifies the minority populations (by race and ethnicity) and low-income populations within the county affected by the relicense application (Rutland County, Vermont), and U.S. census block groups[46] within the vicinity of the project site. For this project, staff chose a 1-mile radius around the project boundary (Figure B-4). Staff determined that a 1-mile radius is sufficient to encompass and address any potential impacts that may arise from the proposed action given the limited scope of the proposed relicensing, including limited construction activities and the concentration of project-related effects within the project boundary. To ensure we are using the most recent available data, we use U.S. Census American

relating to the project. For assistance with interventions, comments, requests for rehearing, or other filings, and for information about any applicable deadlines for such filings, members of the public are encouraged to contact OPP directly at 202-502-6595 or OPP@ferc.gov for further information.

[46] Census block groups are statistical divisions of census tracts that generally contain between 600 and 3,000 people. U.S. Census Bureau. 2022. Glossary: Block Group. Available online at: https://www.census.gov/programs-surveys/geography/about/glossary.html#par_textimage_4. Accessed January 2024.

Community Survey File# B03002 for the race and ethnicity data and Survey File# B17017 for poverty data at the census block group level.[47]

Within the study area, staff identified three block groups that qualify as environmental justice communities with low-income populations (Census Tract 962600, Block Group 1; Census Tract 963200, Block Group 4; and Census Tract 963300, Block Group 4); and two block groups qualify as environmental justice communities with minority and low-income populations (Census Tract 963100, Block Group 2; and Census Tract 963200, Block Group 3).

3.3.6.2 Environmental Effects

The actions and PM&E measures proposed by GMP are described in section 2.2, *Applicant's Proposal,* and staff's recommended alternative is described in section 2.3, *Staff Alternative*.

No entity provided comments or recommendations regarding the effects of the project on environmental justice communities in response to the Commission's notice that the application was ready for environmental analysis.

Our Analysis

Staff evaluated the effects of continued project operation on aquatic resources, terrestrial resources, threatened and endangered species, land use, aesthetics, recreation resources, and cultural resources in sections 3.3.1 through 3.3.5 above.

GMP's proposal to continue operating the project in a run-of-river mode would result in stable impoundment elevations that would protect fish spawning habitat and mussel beds from becoming dewatered, and limit project-related erosion along the impoundment shoreline. GMP's proposal to provide a minimum flow during the period from October 16 through May 31, during which there is currently no required minimum flow, would marginally improve aquatic habitat, provide enough flow for the tailrace and deep pool to remain hydraulically connected, and increase visual and sound aesthetics at the project during the off-peak recreation season. GMP's proposal to transfer 1.9 acres of land to the Town to develop the non-project pocket park would enhance recreational opportunities by providing formal, maintained, recreational access to the project tailwater for angling, swimming, and boating in Otter Creek, but has the potential to adversely affect cultural resources as a result of soil disturbance and vegetation management.

Considering the included census data, the limited scope of the proposed project, the lack of a significant effect on environmental justice communities, and the environmental protection

[47] U.S. Census Bureau, American Community Survey 2022 ACS 5-Year Estimates Detailed Tables, File# B17017, *Poverty Status in the Past 12 Months by Household Type by Age of Householder*, https://data.census.gov/cedsci/table?q=B17017; File #B03002 *Hispanic or Latino Origin By Race*, https://data.census.gov/cedsci/table?q=b03002.

and enhancement measures for aquatic and recreation resources, continuing to operate the project would not result in a disproportionate and adverse impact on environmental justice populations.

4.0 DEVELOPMENTAL ANALYSIS

In this section, we look at the project's use of Otter Creek for hydropower generation to see what effect various proposed or recommended environmental measures would have on the cost to operate and maintain the project and on the project's power generation. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corporation*,[48] the Commission compares the current cost to produce project power to an estimate of the cost to provide the same amount of energy and capacity for the region using the most likely alternative source of power (cost of alternative power). In keeping with the policy described in *Mead Corporation*, our economic analysis is based on current electric power cost conditions and does not anticipate or estimate changes in fuel costs that could occur during a project's license term.

For each of the licensing alternatives, our analysis includes an estimate of: (1) the annualized cost of providing the individual measures considered in the EA; (2) the cost of the most likely alternative source of project power; (3) the total annual project cost (i.e., for construction, operation, maintenance, and environmental measures); and (4) the difference between the cost of the current alternative source of project power and the total annual project cost. If the difference between the cost to produce an equivalent amount of power from an alternative source and the total annual project cost is positive, the project produces power at a cost less than the cost of producing power from the most likely least-cost source of alternative power. If the difference between the alternative source of power's annual cost and the total annual project cost is negative, the project costs more to produce power than the cost to produce an equivalent amount of power from the most likely least-cost source of alternative power. This estimate helps support an informed decision concerning what is in the public interest with respect to a proposed license. However, project economics is only one of many public interest factors the Commission considers in determining whether, and under what conditions, to issue a license.

The power and economic benefits of the Center Rutland Project, and the comparison of the cost of each alternative for the project, are discussed in Appendix G. Appendix H presents the cost of the environmental enhancement measures considered in our analysis.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 COMPREHENSIVE DEVELOPMENT AND RECOMMENDED ALTERNATIVE

Sections 4(e) and 10(a)(1) of the FPA require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of

[48] *See Mead Corp.*, 72 FERC ¶ 61,027 (July 13, 1995). In most cases, electricity from hydropower would displace some form of fossil-fueled generation, in which fuel cost is the largest component of the cost of electricity production.

recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued shall be, in the Commission's judgment, best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. This section contains the basis for, and a summary of, our recommendations for relicensing the project. We weigh the costs and benefits of our recommended alternative against other proposed measures.

Based on our independent review of agency and public comments filed on the project and our evaluation of the environmental and economic effects of the proposed project and alternatives, we selected the staff alternative as the preferred alternative for the Center Rutland Project. We recommend this alternative because: (1) issuing a subsequent license for the project would allow GMP to continue operating the project as a dependable source of electrical energy; (2) the 275 kW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution; (3) the public benefits of the staff alternative would exceed those of the no-action alternative; and (4) the recommended measures would protect and enhance aquatic resources, terrestrial resources, federally listed species, recreation and aesthetic resources, and cultural resources.

In the following section, we make recommendations as to which environmental measures proposed by GMP, or recommended by agencies, should be included in any subsequent license issued for the project. We also recommend additional environmental measures to be included in any license issued for the project.

For the reasons outlined below, staff do not recommend certain of Vermont ANR's preliminary conditions. The measures we are not recommending include: (1) operate the project in an instantaneous run-of-river mode whereby outflow from the project equals inflow to the project at all times; and (2) release a year-round minimum flow of 80 cfs or inflow, whichever is less, to the bypassed reach.

5.1.1 Measures Proposed by GMP

Based on our environmental analysis of GMP's proposal in section 3, *Environmental Analysis,* and the costs presented in section 4, *Developmental Analysis*, and the accompanying appendices, we conclude that the following environmental measures proposed by GMP would protect and enhance environmental resources and would be worth the cost. Therefore, we recommend including these measures in any license issued for the project.

- To protect aquatic habitat, continue operating the project in a run-of-river mode, such that outflow from the project approximates inflow.

- To protect and enhance aquatic habitat and aesthetic resources, continue to provide a minimum flow over the spillway into the bypassed reach of 80 cfs, or inflow, whichever is less, from June 1 through October 15; and provide a minimum flow over the spillway into the bypassed reach of 40 cfs, or inflow, whichever is less, from October 16 through May 31.

- Develop an operation compliance monitoring plan within 6 months of any license issued for the project and in consultation with Vermont DEC. The plan would define

run-or-river operations and operational data to be monitored in order to maintain compliance, specify operational protocols under normal and adverse conditions, and specify requirements for consultation and record keeping.

- To protect the federally endangered NLEB, avoid the removal of trees that are equal to or greater than 4 inches in DBH from April 15 through October 31.

- To enhance recreation, establish a land transfer or similar agreement with the Town of Rutland for the Town's development of a non-project pocket park downstream of the dam that would include two parking areas, a hand carry boat put-in, walking trails, beach access, observation area, picnic area, historic and informational signage.

- To enhance recreation and awareness to the regional history, develop and install a cultural heritage informational kiosk for the Town of Rutland's non-project pocket park;

- Develop an HPMP in consultation with the Vermont SHPO to protect historic properties that are eligible for or listed on the National Register.

5.1.2 Additional Measures Recommended by Staff

Under the staff alternative, the project would be operated with GMP's proposed measures identified above, and the following additions and modifications. We discuss the basis for the staff-recommended measures and the rationale for modifying GMP's proposal in Appendix I.

- Implement an impoundment refill procedure following emergency and maintenance drawdowns, whereby 90% of inflow is passed downstream and 10% of inflow is used to refill the impoundment, to protect aquatic resources in the downstream reach.
- To protect NLEB, avoid the removal of trees that are equal to or greater than 3 inches DBH from April 1 through October 31, instead of GMP's proposal to avoid the removal of trees that are equal to or greater than 3 inches DBH from April 15 through October 31 (condition E).

- Develop a recreation monitoring plan to evaluate and ensure recreation needs at the project are met over the term of any new license.

5.1.3 Conclusion

Based on our review of the agency and public comments filed for the project and our independent analysis pursuant to sections 4(e), 10(a)(1), and 10(a)(2) of the FPA, we conclude that licensing the Center Rutland Project, as proposed by GMP with the additional staff-recommended measures, would be best adapted to a plan for improving the Otter Creek Basin.

5.2 UNAVOIDABLE ADVERSE EFFECTS

Although fish kills have not been documented at the project, some resident fish could attempt to pass downstream through the project's turbine and could be injured or killed;

however, we would not expect any long-term effects on the aquatic community from this unavoidable project effect.

5.3 FISH AND WILDLIFE AGENCY RECOMMENDATIONS

Under the provisions of section 10(j) of the FPA, each hydroelectric license issued by the Commission shall include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, or enhancement of fish and wildlife resources affected by the project.

Section 10(j) of the FPA states that whenever the Commission finds that any fish and wildlife agency recommendation is inconsistent with the purposes and the requirements of the FPA or other applicable law, the Commission and the agency shall attempt to resolve such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of the agency.

No agency filed recommendations under section 10(j).

5.4 CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA, 16 U.S.C. § 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Appendix J lists the comprehensive plans that are applicable to the Center Rutland Project. No inconsistencies were found.

6.0 FINDING OF NO SIGNIFICANT IMPACT

If the Center Rutland Project is issued a subsequent license, as proposed with the staff-recommended measures, the project would continue to operate as it does today, while providing protection and enhancements for water quality, fish and wildlife resources, recreation and aesthetic resources, federally listed species, and cultural resources in the project area.

Based on our independent analysis, issuance of a subsequent license the Center Rutland Project, with the staff-recommended environmental measures, would not constitute a major federal action significantly affecting the quality of the human environment.

7.0 LITERATURE CITED

The literature cited in this EA is presented in Appendix K.

8.0 LIST OF PREPARERS

The list of preparers of this EA is presented in Appendix L.

APPENDIX A

GLOSSARY OF TERMS

Capacity benefit: The benefit a project receives for providing capacity to the grid, which may be in the form of a dependable capacity credit or credit for monthly capacity provided.

Census block groups: Statistical divisions of census tracts that generally contain between 600 and 3,000 people (U.S. Census Bureau, 2021).

Diameter at breast height: Tree diameter as measured at 4.5 feet above the ground.

Dissolved oxygen: The amount of oxygen present in water.

Environmental justice: The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (EPA, 2021a).

Environmental justice community: Disadvantaged communities that have been historically marginalized and overburdened by pollution. The term also includes, but may not be limited to, minority populations, low-income populations, or indigenous peoples (EPA, 2021b).

Fall-swarming: The time between summer and winter hibernation. The purpose of swarming behavior may include the introduction of juveniles to potential hibernacula, copulation, and gathering at stop-over sites on migratory pathways between summer and winter regions.

Hibernacula: Where bats hibernate over the winter, such as caves. Minority: Individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic (CEQ, 1997 at 25).

Minority population: Block groups within the area of study where: (1) the aggregate minority population of the block group in the affected area exceeds 50%; or (2) the aggregate minority population in the block group affected is 10% higher than the aggregate minority population percentage in the county.

Pup season: The period of time when bats birth and nurse their young.

Spring-staging: The time period between winter hibernation and migration to summer habitat. During this time, bats begin to gradually emerge from hibernation and exit the hibernacula to feed but re-enter the same or alternative hibernacula to resume daily bouts of torpor (i.e., a state of mental or physical inactivity).

Swim speeds: Researchers use several metrics to quantify the swimming performance of fish: sustained swim speed, prolonged swim speed, critical swim speed, and burst swim speed. The sustained swim speed is the speed a fish can maintain indefinitely without becoming

fatigued. The prolonged swim speed is the speed a fish can maintain for a specific period of time (e.g., up to 200 minutes) that varies among studies. The critical swim speed is a subset of the prolonged swim speed: the duration researchers use to evaluate the critical speed also varies among studies. The burst swim speed is the fastest swimming speed, which can only be maintained for approximately 20 seconds.

Subsequent license: A license for a waterpower project that is issued under Part I of the FPA after the expiration of a minor license that is not subject to sections 14 and 15 of the FPA. 18 C.F.R. § 16(2)(d) (2020).

Undertaking: A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval. 36 C.F.R. § 800.16. For purposes of this NEPA document, the undertaking is the potential issuance of a subsequent license for the Center Rutland Project.

White-nose syndrome: A fungal infection that agitates hibernating bats, causing them to rouse prematurely and burn fat supplies. Mortality results from starvation or, in some cases, exposure.

APPENDIX B

FIGURES

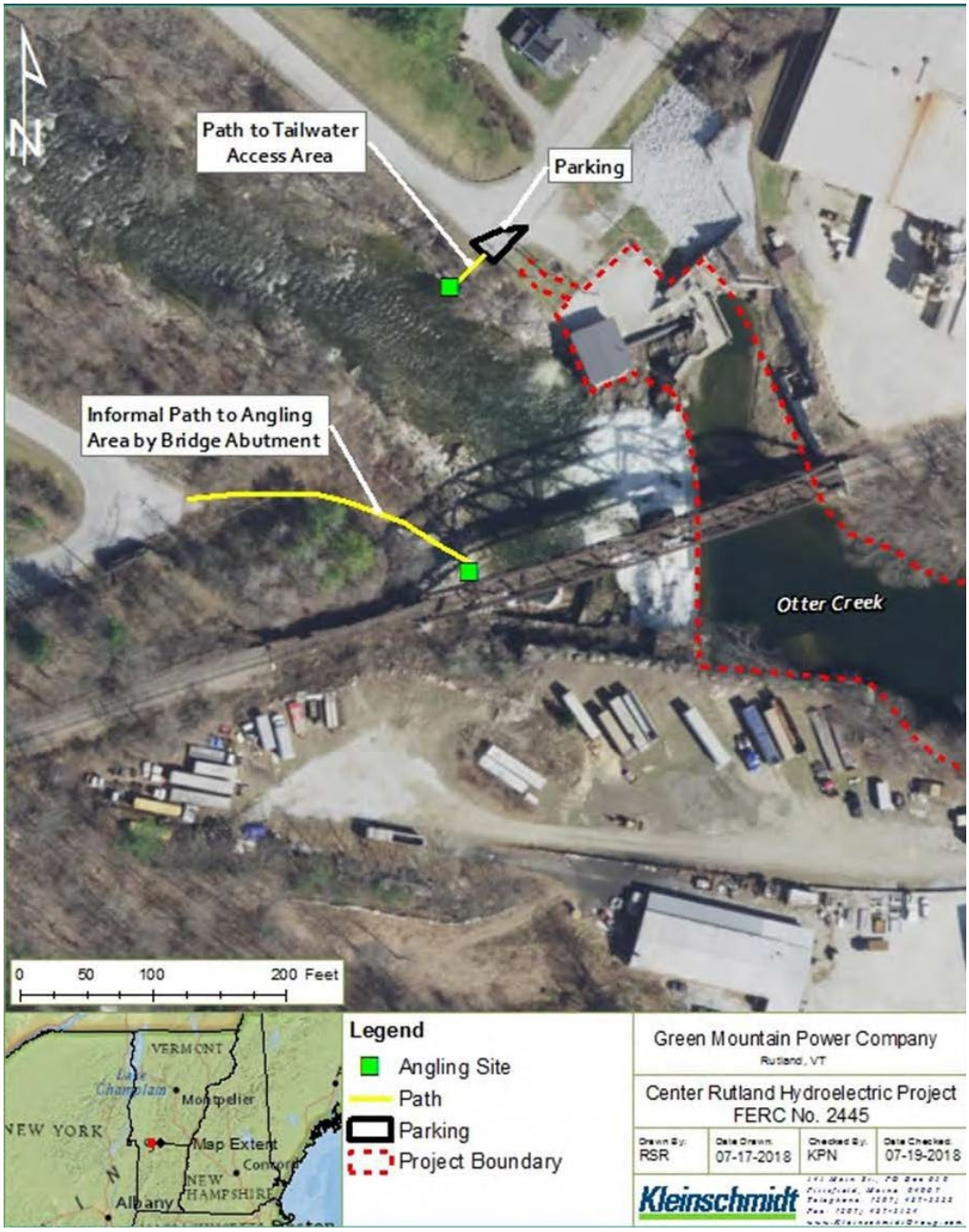

Figure B- 1. Existing informal recreational areas at the project (source: GMP).

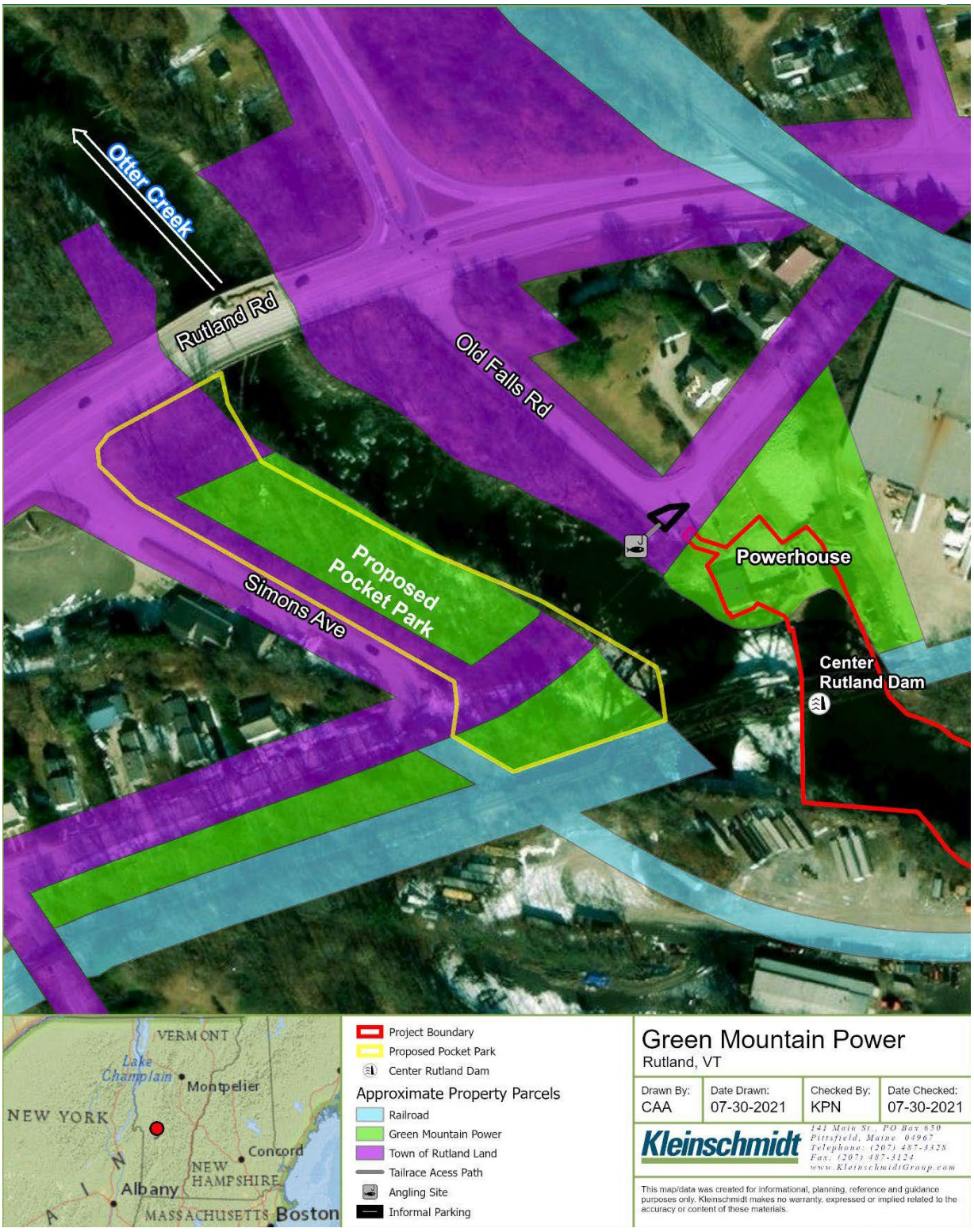

Figure B- 2. Proposed pocket park location and land ownership (source: GMP).

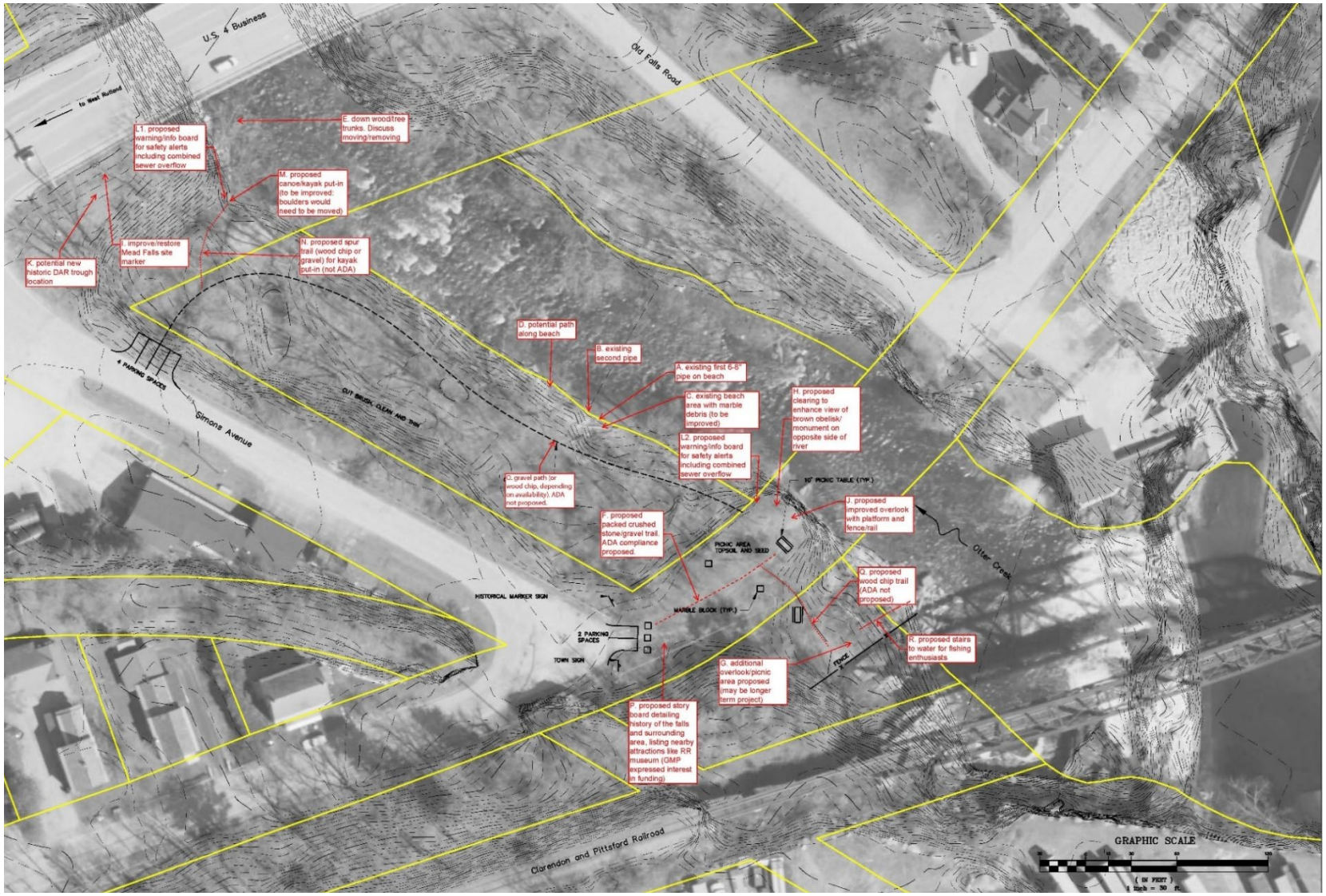

Figure B- 3. Proposed pocket park design (source: GMP).

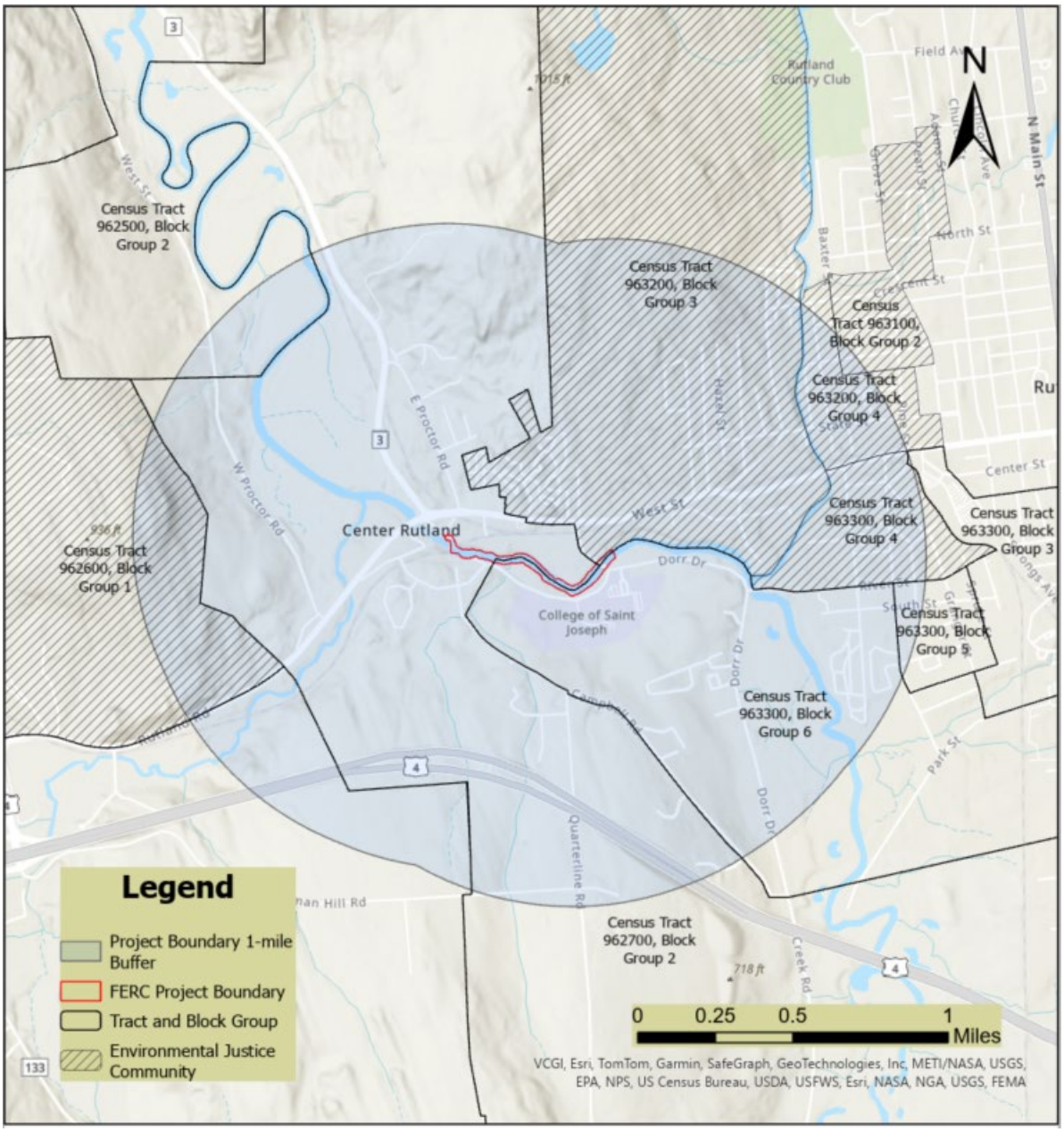

Figure B-4. Block Groups and Environmental Justice Communities within 1-mile of the project boundary (source: Staff).

APPENDIX C

TABLES

Table C-2. Dams on Otter Creek.

Dam/Project Name	FERC No.	FERC Project Type	River Mile	Generation Capacity (MW)	Dam Height (feet)
Emerald Lake	NA	NA	100	NA	X
Ripley Mills	NA	NA	72	NA	X
Center Rutland	**2445**	**License**	**71**	**0.275**	**14**
Proctor*	2558	License	64	10.2	13
Middlebury Lower	2737	License	27	2.25	30
Beldens Falls*	2558	License	23	5.8	15/24 (2 dams)
Huntington Falls*	2558	License	21	6.7	31
Weybridge	2731	License	20	3	30
Vergennes	2674	License	8	2.6	10

NA: Not applicable.
*Hydro developments that are part of GMP's Otter Creek Project (FERC Project No. 2558)
(Source: GMP, 2021, as modified by Staff).

Table C-3. Mean, Maximum, and Minimum Flows at the Center Rutland Project from 1991 to 2020.

Month	Mean Flow (cfs)	Maximum Flow (cfs)	Minimum Flow (cfs)
January	616	6,200	62
February	520	4,490	90
March	828	5,630	119
April	1,417	7,020	225
May	765	4,440	167
June	500	2,700	72
July	369	3,980	57
August	306	13,500	38
September	223	2,890	39
October	469	3,960	55
November	579	2,750	110
December	676	4,640	84
Annual	606	13,500	38

(Source: GMP, 2021, as modified by Staff).

Table C-4. Burst Speeds of Fish Species Likely to Occur in the Project Impoundment.

Fish Species	Life Stage	Burst Swim Speed (fps)	Length (inches)
Smallmouth bass	Adult[(a)]	3.5 – 5.6	9.4 – 15.0
	Juvenile[(b)]	2.6 – 3.6	3.6 – 3.7
Northern Pike [(c)]	Adult	1.25	7.9 – 19.7
Brook[(d)] Trout	Adult	7.0 – 12.7	6.0 – 14.0
	Juvenile	0.1 – 2.0	3.0 – 5.0
Brown Trout	Adult[(e)]	3.5	5.9
	Juvenile[(f)]	4.5	5.1
Rainbow Trout[(g)]	Adult/ Juvenile	2.75	5.9 – 11.8

[(a)] New York Power Authority, 2019.
[(b)] Appalachian Power Company, 2022.
[(c)] Keeyask, 2012.
[(d)] New York Power Authority, 2017.
[(e)] Katopodis and Gervais, 2016.
[(f)] Beamish, 1978.
[(g)] Blank et. al., 2020.

Table C-5. Environmental Justice Community Data for the Center Rutland Project (Source: U.S. Census Bureau, as modified by staff).

Geographic Area	Total Population	White Alone, not Hispanic (%) [a]	African American/ Black (%) [a]	American Indian/ Alaska Native (%) [a]	Asian (%) [a]	Native HI & Other Pacific Islander (%) [a]	Some Other Race (%) [a]	Two or More Races (%) [a]	Hispanic Origin (any race) (%) [a]	Total Minority Population (%) [a]	Households in Poverty (%) [b]
VERMONT	**643,816**	**91.4%**	**1.2%**	**0.2%**	**1.7%**	**>0.1%**	**0.2%**	**3.2%**	**2.1%**	**8.6%**	**10.6%**
Rutland County	**60,585**	**93.8%**	**0.6%**	**>0.1%**	**0.8%**	**0.0%**	**>0.1 %**	**3.1%**	**1.7%**	**6.2%**	**12.5%**
Census Tract 962500, Block Group 2	1243	97.5%	0.0%	0.0%	0.0%	0.0%	0.6%	1.9%	0.0%	2.5%	1.1%
Census Tract 962600, Block Group 1	1296	97.6%	0.6%	0.0%	0.0%	0.0%	0.0%	1.8%	0.0%	2.4%	13.8%
Census Tract 962600, Block Group 2	1079	96.8%	0.0%	0.0%	0.0%	0.0%	0.5%	2.1%	0.6%	3.2%	4.2%
Census Tract 962700, Block Group 2	824	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.9%
Census Tract 963100, Block Group 2	1272	86.5%	2.7%	0.0%	1.3%	0.0%	0.0%	9.3%	0.2%	13.5%	15.6%
Census Tract 963200, Block Group 3	778	89.7%	0.4%	0.4%	1.9%	0.0%	0.3%	2.8%	4.5%	10.3%	17.4%
Census Tract 963200, Block Group 4	719	97.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	0.0%	2.4%	54.2%

Census Tract 963300, Block Group 3	243	99.2%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%
Census Tract 963300, Block Group 4	1003	93.2%	4.1%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	6.8%	50.0%
Census Tract 963300, Block Group 5	349	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.6%
Census Tract 963300, Block Group 6	1437	99.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	7.7%

[a] Percent of Total Population (Table B03002 – Hispanic or Latino Origin by Race. 2022 ACS 5-Year Estimates Detailed Tables. U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates. Accessed December 11, 2023. https://data.census.gov/table?d=ACS+5-Year+Estimates+Detailed+Tables&tid=ACSDT5Y2022.B03002).

[b] Percent of Households (Table B17017 – Poverty Status in the Past 12 Months by Household Type and Age of Householder. 2022 ACS 5-Year Estimates Detailed Tables. U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates. Accessed December 11, 2023. https://data.census.gov/cedsci/table?d=ACS%205-Year%20Estimates%20Detailed%20Tables&tid=ACSDT5Y2022.B17017).

Note: Gray shading denotes an Environmental Justice community.

APPENDIX D

STATUTORY AND REGULATORY REQUIREMENTS

Federal Power Act

Section 18 Fishway Prescriptions

Section 18 of FPA, 16 U.S.C. § 811, states that the Commission is to require construction, operation, and maintenance by a licensee of such fishways as may be prescribed by the Secretaries of the U.S. Department of Commerce or the U.S. Department of the Interior.

On April 12, 2023, Interior requested that the Commission include a reservation of authority to prescribe fishways under section 18 in any license issued for the project.

Section 10(j) Recommendations

Under section 10(j) of the FPA, 16 U.S.C. § 803(j)(1), each hydroelectric license issued by the Commission must include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, or enhancement of fish and wildlife resources affected by the project. The Commission is required to include these conditions in any subsequent license unless it determines that they are inconsistent with the purposes and requirements of the FPA or other applicable law.

Before rejecting or modifying an agency recommendation, the Commission is required to attempt to resolve any such inconsistency with the agency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agency.

No agency filed recommendations under section 10(j) of the FPA.

Clean Water Act

Under section 401(a)(1) of the Clean Water Act (CWA), 33 U.S.C. § 1341(a)(1), a license applicant must obtain either a water quality certification from the appropriate state pollution control agency verifying that any discharge from the project would comply with applicable provisions of the CWA, or a waiver of such certification. A waiver occurs if the state agency does not act on a request for certification within a reasonable period of time, not to exceed one year after receipt of such request.

On April 12, 2023, GMP applied to the Vermont Department of Environmental Conservation (Vermont DEC) for a section 401 certification for the Center Rutland Project. Vermont DEC received the request on April 12, 2023.[49] Vermont ANR (on behalf of Vermont

[49] *See* Notice of Reasonable Period of Time for Water Quality Certification Application, issued by the Commission on April 21, 2022.

DEC) issued certification for the project on March 29, 2024. The conditions of the certification are included as Appendix M of this EA for informational purposes and are analyzed in the appropriate resource sections.

Endangered Species Act

Section 7 of the Endangered Species Act (ESA), 16 U.S.C. § 1536, requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. According to the U.S. Fish and Wildlife Service's (FWS) Information for Planning and Consultation (IPaC) database, the federally endangered northern long-eared bat (NLEB; *Myotis septentrionalis*) could occur in project vicinity.[50] No critical habitat has been designated for the NLEB.

The IPaC database indicates that the tricolored bat, proposed for listing as endangered or threatened under the ESA, and the monarch butterfly, a candidate species for listing under the ESA, may occur in the vicinity of the project.

Our analysis of project impacts on the NLEB, tricolored bat, and monarch butterfly is presented in Appendix E, *Biological Assessment,* and our recommendations are included in section 5.1, *Comprehensive Development and Recommended Alternative*. Avoiding the removal of trees with diameters that are equal to or greater than 3 inches at breast height from April 1 through October 31 would reduce the likelihood of disturbing NLEB and their newly born pups. We conclude that licensing the project with tree-removal restrictions from April 1 through October 31 may affect, but is not likely to adversely affect, the NLEB.

Coastal Zone Management Act

Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), 16 U.S.C. § 1456(c)(3)(A), the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA Program, or the agency's concurrence is conclusively presumed by its failure to act within 180 days of its receipt of the applicant's certification.

The state of Vermont does not have a Coastal Zone Management Program. Therefore, a coastal zone consistency review is not required.

National Historic Preservation Act

Section 106 of the NHPA, 54 U.S.C. § 306108, requires that a federal agency "take into account" how its undertakings could affect historic properties. Historic properties are districts, sites, buildings, structures, traditional cultural properties, and objects significant in American

[50] *See* Interior's official list of threatened and endangered species, accessed by staff using the IPaC database (https://ipac.ecosphere.fws.gov/) on March 26, 2024, and placed into the record for Docket No. P-2445-028 on March 26, 2024.

history, architecture, engineering, and culture that are eligible for inclusion in the National Register.

In response to the licensee's request, the Commission designated it as the non-federal representative for carrying out consultation pursuant to section 106 of the NHPA. GMP initiated consultation with the Vermont State Historic Preservation Officer (SHPO) on December 21, 2018, to identify historic properties, determine the eligibility of cultural resources for listing on the National Register of Historic Places (National Register), and assess potential adverse effects on historic properties within the project's area of potential effects (APE). In response, the Vermont SHPO recommended that GMP consult with the Stockbridge-Munsee Band of Mohicans (Stockbridge-Munsee Tribe). GMP consulted with the Stockbridge-Munsee Tribe via letter sent on July 24, 2019. On July 25, 2019, the Stockbridge-Munsee Tribe responded that there are no anticipated concerns related to cultural resources because no ground disturbance was proposed. On September 19, 2022, Commission staff invited consultation with the St. Regis Mohawk Tribe. The St. Regis Mohawk Tribe did not respond to the initial consultation letter or file any comments on the record of the proceeding.

Our analysis of the project's effects on historic properties is presented in section 3.3.5.2, *Cultural Resources, Environmental Effects*. Historic properties have been identified in the project's APE, including the Center Rutland Hydroelectric Station Historic District (Historic District). The Historic District includes the project dam, powerhouse and generating equipment, penstock, marble retaining wall, intake structure, marble pumphouse, former pumphouse, transformer yard, stream gaging station, the Delaware and Hudson Railroad bridge, the former Route 4 bridge abutments, Clement Mill ruins, and the Clarendon and Pittsford Railroad bridge.[51] Additionally, there are archaeologically sensitive areas within the APE for the project, as well as a National Register-eligible archaeological site (VT-RU-0266).

We conclude that continuing to operate the project could result in adverse effects on historic properties. For example, adverse effects could occur in the event repairs are needed to maintain the structure and function of the project facilities that are contributing resources to the Historic District. Additionally, installation of an upstream eel passage facility at the dam, as discussed in detail in section 3.3.1, *Aquatic Resources*, may have an adverse effect on the dam by diminishing the visual or physical integrity of the dam, or other contributing resources to the Historic District. Adverse effects could also include any introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features or changes to the setting or feel of the historic property.

Developing and implementing an Historic Properties Management Plan (HPMP), in consultation with the Vermont SHPO, would ensure that measures are in place to protect historic properties in the APE from adverse effects related to the operation and maintenance of project facilities and potential adverse effects related to recreation enhancements. An HPMP would also ensure that any previously undiscovered archaeological resources within the APE are not

[51] Contributing resources that are project facilities are the project dam, powerhouse and generating equipment, penstock, marble retaining wall, and intake structure.

adversely affected by the project during the term of any new license. To meet the requirements of section 106 of the NHPA, we intend to execute a PA with the Vermont SHPO for the protection of historic properties from the effects of proposed project modifications, operation, and maintenance. Federally recognized Tribes and GMP will be invited to concur with the terms of the PA. The terms of the PA would ensure that GMP protect all historic properties identified within the project's APE through the implementation of the HPMP.

APPENDIX E

BIOLOGICAL ASSESSMENT

Affected Environment

Northern Long-eared Bat

The NLEB was reclassified from a federally threatened species to a federally endangered species under the ESA on March 31, 2023.[52] The traditional range for the NLEB includes most of the central and eastern U.S., as well as the southern and central provinces of Canada, coinciding with the greatest abundance of forested areas. The NLEB, whose habitat includes large tracts of mature, upland forests, typically feeds on moths, flies, and other insects. These bats are flexible in selecting roost sites, choosing roost trees that provide cavities and crevices, with a diameter equal to or greater than 3 inches at breast height. Human-made structures, such as buildings, barns, bridges, and bat houses also can be considered potential summer habitat. However, trees in predominately unforested urban areas (e.g., street trees, downtown areas) and individual trees greater than 1,000 feet from forested areas are not suitable NLEB habitat (FWS, 2023b). In Vermont, NLEB are generally active within forested habitat from April 15 through October 31, and hibernate over the winter season (FWS, 2023a). Winter hibernation typically occurs in caves, and areas within 5 miles of the hibernaculum are used for fall-swarming and spring-staging. NLEB are most vulnerable to tree removal activities during cool spring months (when bats enter torpor), or summer and early fall when flightless pups or inexperienced flying juveniles are present (FWS, 2022b).

White-nose syndrome was confirmed in Rutland County, where the project is located, during the 2007-2008 hibernation period. While there is no documented NLEB roost trees or hibernacula within the project boundary or surrounding 1 mile, including the non-project pocket park, the riparian forested areas within the project boundary and forested areas immediately adjacent to the project boundary and within the proposed pocket park may provide suitable habitat for NLEB summer roosting and foraging activities. No critical habitat has been designated for this species.

Tricolored Bat

The tricolored bat has been proposed by the FWS for listing under the ESA as endangered,[53] due to the range-wide impacts of white-nose syndrome which have caused estimated declines of more than 90% in affected colonies. Critical habitat is not being proposed for the species.

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[52] 88 Fed Reg. 4908 (Jan. 26, 2023).

[53] 87 Fed. Reg. 56381 (Sept. 14, 2022).

Tricolored bats are known to occur in 39 states, including all the central and eastern United States, including Vermont.[54] During the spring, summer, and fall (non-hibernating seasons), tricolored bats disperse and primarily roost among live and dead leaf clusters of live or recently dead deciduous hardwood trees. Female tricolored bats exhibit high site fidelity, returning year after year to the same summer roosting locations. The female bats form maternity colonies and switch roost trees regularly (e.g., between 1.2 days and 7 days at roost trees in Indiana), typically giving birth to two pups between May and July (FWS, 2021a). Wooded uplands within the project boundary contain suitable habitat for tricolored bat summer roosting and foraging activities.

Monarch Butterfly

The monarch butterfly is a candidate for listing as a threatened or endangered species under the ESA.[55] Monarch butterflies migrate thousands of miles across North America in the spring and fall. In eastern North America, the monarch butterflies migrate between Mexico and Canada over a period of two to three successive generations. In Vermont, the monarch butterfly may be present during the summer months.

Adult monarch butterflies are dependent on nectar-bearing flowers for food. The monarch butterfly breeding season occurs during the summer when the butterflies lay their eggs exclusively on milkweed (genus *Asclepias*) plants. Larvae emerge from eggs in 2 to 5 days and then feed on milkweed over a period of 9 to 18 days. The larva then pupates into a chrysalis, emerging 6 to 14 days later as an adult butterfly. Because of the monarch butterfly larva's dependence on milkweed, loss of milkweed host plants due to herbicide use and habitat loss have been identified as contributing factors in the decline of the monarch butterfly (FWS, 2021b).

The project is located within the range of the monarch butterfly. Although there is no documentation of monarch butterfly at the project, numerous nectar-bearing plants and nine species of milkweed are known to occur in Rutland County, Vermont (Kartesz, 2015). Land within and immediately adjacent to the project boundary consists of land cover types that could contain milkweed plants that provide habitat for monarch butterfly reproduction and nectar-bearing plants that provide foraging habitat.

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[54] FWS, *Species Status Assessment Report for the Tricolored Bat* (*Perimyotis subflavus*), Version 1.1. December 2021. Hadley, MA., https://www.fws.gov/sites/default/files/documents/Tricolored_Bat_SSA.pdf.

[55] 85 Fed. Reg. 81813 (Dec. 17, 2020). Although candidate species are provided no special protection under the ESA, we nevertheless provide an analysis of the proposed action on monarch butterfly because FWS's Information for Planning and Consultation database has identified the species as potentially occurring within the project boundary and the species may become federally listed during the term of a subsequent license.

Environmental Effects

Northern Long-eared Bat

GMP proposes to continue mowing and trimming vegetation around project facilities during the growing season. GMP's proposal does not include any ground-disturbing or tree-clearing activities within the project boundary that would affect potential NLEB summer roosting and foraging habitat. Vermont ANR certification condition E specifies that GMP avoid tree-trimming or removal of trees 3 inches in diameter at breast height (DBH) or greater between April 1 and October 31.

Our Analysis

Although no tree-clearing activities are proposed by GMP, project maintenance activities during the term of any license issued could require periodic tree removal that may affect NLEB habitat. While no maternity roost trees are known to occur within 1 mile of the project, no surveys have been conducted to verify the absence of maternity roost trees.

NLEB choose roost trees with a diameter of 3 inches or greater at breast height (FWS, 2014). Land within and adjacent to the project boundary contains some forested land cover that could provide roosting and foraging habitat for NLEB. GMP has not proposed any ground-disturbing or tree-clearing activities that would remove potential NLEB roosting or foraging habitat within the project boundary. GMP's practice of trimming vegetation back to a minimum of 15 feet from project structures may affect NLEB if trimming disturbs roosting bats. However, no known roost trees or hibernacula occur within the project boundary and surrounding 1 mile, and vegetation trimming is infrequent, only occurring once or twice a year. The Town of Rutland proposes minimal tree clearing for development of the proposed non-project pocket park and would conduct any tree clearing following protocols from Vermont ANR and FWS.

While NLEB are not known to occur within the project boundary, avoiding the removal of trees 3 inches DBH from April 1 through October 31 would reduce the likelihood of disturbing NLEB in the vicinity of the project boundary and ensure that any tree removed within the project boundary is not actively occupied by NLEB. Tree removal in the cooler winter months, specifically November 1 through March 31, would coincide with the period when NLEB are likely hibernating in caves. With the implementation of tree-removal restrictions, staff conclude that relicensing the Center Rutland Project may affect but is not likely to adversely affect the NLEB.

Tricolored Bat

As noted above, GMP proposes to continue mowing and trimming vegetation around project facilities during the growing season. GMP has not proposed any ground-disturbing or tree-clearing activities that would affect potential tricolored bat summer roosting and foraging habitat. GMP does not propose any measures for the protection of the tricolored bat, and no stakeholders filed comments, recommendations, terms, or conditions regarding the tricolored bat.

Our Analysis

Project maintenance activities that may affect the tricolored bat are the same as those noted above for the NLEB. Although no tree-clearing activities are proposed by GMP, project maintenance activities during the term of any license could require periodic tree removal that may affect tricolored bat habitat. Restricting tree removal within the project boundary between April 1 through October 31 to protect NLEB would also minimize project effects on tricolored bats, including during the tricolored bat pup season which generally overlaps with that of NLEB. Therefore, we conclude that relicensing the Center Rutland Project with tree-removal restrictions from April 1 through October 31 is not likely to jeopardize the continued existence of the tricolored bat.

Monarch Butterfly

GMP does not propose any measures for the protection of the monarch butterfly, and no stakeholders filed comments, recommendations, terms, or conditions regarding the monarch butterfly.

Our Analysis

Due to the variety of milkweed and nectar-bearing species present in Rutland County, there is potential for monarch butterfly breeding and foraging habitat to exist seasonally within the project boundary and surrounding areas. GMP's occasional mowing and trimming of vegetation surrounding the dam, intake, and powerhouse area, and periodical trimming of the informal tailwater access trail that leads from the informal parking area to the shorelines below the powerhouse may temporarily affect milkweed or nectar-bearing plants, if these plants are present within the project boundary at the time that vegetation management occurs. In addition, vegetation management at the project could affect monarch butterfly eggs, larvae, and chrysalides, if present at the time and location that vegetation management occurs. GMP does not conduct vegetation management activities at the project on a set schedule, and areas within the project boundary that are potentially suitable to support monarch butterfly habitat are not unique compared to areas outside the project boundary in the surrounding vicinity. Therefore, any project effects to monarch butterflies would be localized and insignificant.

The Town of Rutland's proposal to remove invasive species from the pocket park and park maintenance that could require periodic vegetation management may temporarily affect milkweed or nectar-bearing plants and affect monarch butterfly eggs, larvae, and chrysalides, if present within the park at the time that vegetation management occurs. Areas within the pocket park that are potentially suitable to support monarch butterfly habitat are not unique compared to areas outside the park in the surrounding vicinity. Therefore, any effects of the construction and maintenance of the pocket park on monarch butterflies would be localized and insignificant.

APPENDIX F

ALTERNATIVE CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

Project decommissioning was considered as an alternative to the project but has been eliminated from further analysis because it is not reasonable in the circumstances of this case.

As the Commission has previously held, decommissioning is not a reasonable alternative to relicensing a project in most cases.[56] Decommissioning can be accomplished in different ways depending on the project, its environment, and the particular resource needs.[57] For these reasons, the Commission does not speculate about possible decommissioning measures at the time of relicensing, but rather waits until an applicant actually proposes to decommission a project, or a participant in a relicensing proceeding demonstrates that there are serious resource concerns that cannot be addressed with appropriate license measures and that make decommissioning a reasonable alternative.[58]

GMP does not propose decommissioning, nor does the record to date demonstrate there are serious resource concerns that cannot be mitigated if the project is relicensed. As such, there is no reason, at this time, to include decommissioning as a reasonable alternative to be evaluated and studied as part of staff's NEPA analysis.

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[56] *See*, *e.g.*, *Eagle Crest Energy Co.*, 153 FERC ¶ 61,058, at P 67 (2015); *Pub. Util. Dist. No. 1 of Pend Oreille Cty.*, 112 FERC ¶ 61,055, at P 82 (2005); *Midwest Hydro*, *Inc.*, 111 FERC ¶ 61,327, at PP 35-38 (2005).

[57] In the event that the Commission denies relicensing of a project or a licensee decides to surrender an existing project, the Commission must approve a surrender "upon such conditions with respect to the disposition of such works as may be determined by the Commission." 18 C.F.R. § 6.2. This can include simply shutting down the power operations, removing all or parts of the project (including the dam), or restoring the site to its pre-project condition.

[58] *See generally Project Decommissioning at Relicensing; Policy Statement*, FERC Stats. & Regs., Regulations Preambles (1991-1996), ¶ 31,011 (1994); *see also City of Tacoma, Washington*, 110 FERC ¶ 61,140 (2005) (finding that unless and until the Commission has a specific decommissioning proposal, any further environmental analysis of the effects of project decommissioning would be both premature and speculative).

APPENDIX G

DEVELOPMENTAL RESOURCES

Power and Economic Benefits

Table G-1 summarizes the assumptions and economic information used in the analysis. Most of this information is provided by the applicant in its license application. Some is developed by Commission staff. The values provided by the applicants are typically reasonable for the purposes of our analysis. If they are not, it is noted below. Cost items common to all alternatives include taxes and insurance, estimated capital investment required to develop the project or major modifications for relicensing, licensing costs, normal operation and maintenance cost, and Commission fees. All costs are adjusted to current year dollars.

Table G-1. Parameters for the Economic Analysis of the Center Rutland Project.

Parameter	Value
Installed Capacity	0.275 MW
Average annual generation	541.7 MWh
Period of analysis	30 years
Federal income tax rate	Included in the O&M[a] cost
Local tax rate	Included in the O&M cost
Insurance rate	Included in the O&M cost
Interest rate	5.5%
Construction cost [b]	$0
Application cost [c]	$203,500
Operation and maintenance [c]	$60,079
Estimated Commission annual charges [d]	$0
Alternative source of power's cost (2023) [e]	
1) Energy cost	$71.42/MWh
2) Capacity benefit cost	$179.08/kW-year

(Source: GMP, and Staff).

[a] Operation and maintenance.
[b] Excludes protection, mitigation, and enhancement measures and licensing cost.
[c] Cost escalated to 2023 dollars.
[d] Under the regulations currently in effect, projects with an authorized installed capacity of less than or equal to 1,500 kW will not be assessed an annual charge.
[e] The alternative source of power's cost is based on the current cost of providing the same amount of generation and capacity from a natural gas-fired combined cycle plant, as reported by the U.S. Energy Information Administration (EIA), Annual Energy Outlook 2023, for the

Division 1, New England Region (EIA, 2023). The alternative source of power cost reported in Table G-2 is a combination of the cost of energy and capacity benefit.

Comparison of Alternatives

Table G-2 summarizes the installed capacity, annual generation, capacity benefit, alternative source of power's cost, estimated total project cost, and difference between the alternative source of power's cost and total project cost for each of the alternatives considered in this EA: no-action, the applicants' proposal, the staff alternative, and the staff alternative with mandatory conditions.

Table G-2. Summary of the Annual Cost of Alternative Power and Annual Project Cost for the Three Alternatives for the Center Rutland Project.

	No Action	Applicants' Proposal	Staff Alternative	Staff Alternative with Mandatory Conditions
Installed capacity	0.275 MW	0.275 MW	0.275 MW	0.275 MW
Annual generation	542 MWh	538 MWh	538 MWh	537 MWh
Capacity benefit [a]	0.195 MW	0.195 MW	0.195 MW	0.195 MW
Current alternative source of power's cost [b]	$73,695	$73,402	$73,402	$73,038
Total annual project cost (2021) [c]	$159,708	$160,527	$160,527	$160,527[d]
Difference between the alternative source of power's cost and total annual project cost [e]	($86,013)	($87,125)	($87,923)	($88,287)

(Source: Staff).

[a] Staff estimated the capacity benefit based on the ratio of the median flow available for generation for each of 12 months, and the hydraulic capacity of the project. This ratio is multiplied by the authorized installed capacity to determine the capacity benefit.

[b] The alternative source of power cost for the Center Rutland Project is based on the alternative source of power cost in the New England Region, as identified in Table G-1 above.

[c] Project costs include the cost of environmental measures listed in Appendix H, and the costs identified in Table G-1. All project costs were adjusted to 2023 dollars.

[d] The annual project cost under the staff alternative with mandatory conditions does not include a cost for developing a plan to install upstream eel passage within 1 year of

installation of upstream eel passage at the Otter Creek because the measure is based on a future, uncertain event that lacks specificity needed to estimate a cost.

[e] A number in parentheses denotes that the difference between the alternative source of power cost and total project cost is negative, thus the project's cost to produce power is greater than the alternative source of power cost.

No-Action Alternative

Under the no-action alternative, the project would have an installed capacity of 0.275 MW, a capacity benefit of 0.195 MW, and an average annual generation of 542 MWh. The alternative source of power's current cost to produce the same amount of energy and provide the same capacity benefit is $73,695. The total annual project cost is $159,708. Subtracting the total annual project cost from the alternative source of power's current cost, the project's cost to produce power and capacity is $86,013 more than that of the alternative source of power's cost.

Applicant's Proposal

Under the applicant's proposal, the project would have a total installed capacity of 0.275 MW, a capacity benefit of 0.6 MW, and an average annual generation of 538 MWh. The alternative source of power's current cost to produce the same amount of energy and provide the same capacity benefit would be $73,402. The total annual project cost would be $160,527. Subtracting the total annual project cost from the alternative source of power's current cost, the project's cost to produce 538 MWh of power and 0.6 MW of capacity would be $87,125 more than that of the alternative source of power's cost.

Staff Alternative

Under the staff-recommended alternative, the project would have a total installed capacity of .0275 MW, a capacity benefit of 0.195 MW, and an average annual generation of 538 MWh. The alternative source of power's current cost to produce the same amount of energy and provide the same capacity benefit would be $73,402. The total annual project cost would be $160,527. Subtracting the total annual project cost from the alternative source of power's current cost, the project's cost to produce 538 MWh of power and 0.195 MW of capacity would be $87,923 more than that of the alternative source of power's cost.

Staff Alternative with Mandatory Conditions

Under the staff-recommended alternative with mandatory conditions, the project would have a total installed capacity of 0.275 MW and a capacity benefit of 0.195 MW, and an average annual generation of 537 MWh. The alternative source of power's current cost to produce the same amount of energy and provide the same capacity benefit would be $73,038. The total annual project cost would be $160,527. Subtracting the total annual project cost from the alternative source of power's current cost, the project's cost to produce 537 MWh of power and provide a 0.195 MW capacity would be $88,287 more than that of the alternative source of power's cost.

Cost of Environmental Measures

Appendix H presents the cost of each environmental enhancement measure considered in our analysis for the Center Rutland Project. All costs are in 2023 dollars. We convert all costs to equal annual (levelized) values over a 30-year period of analysis to give a uniform basis for comparing the benefits of a measure to its cost.

APPENDIX H

COSTS OF ENVIRONMENTAL MEASURES

Table H-1. The Cost of Environmental Measure Considered in Assessing the Environmental Effects of Operating the Center Rutland Project.

Enhancement/Mitigation Measure	Entity	Capital Cost (2023$)	Annual Cost[a] (2023$)	Levelized Annual Cost[b] (2023$)
Project Operation				
Continue operating the project in a run-of-river mode, such that outflow approximates inflow at all times.	GMP, Staff	$0	$0	$0
Operate the project in an instantaneous run-of-river mode, such that outflow to the project equals inflow at all times.	Vermont ANR	Unknown	Unknown	Unknown[c]
Develop an operation compliance monitoring plan to document compliance with run-of-river operation, impoundment levels, minimum bypassed reach flows, and aesthetic flows.	GMP, Vermont ANR, Staff	$5,400	$0	$372
Aquatic Resources				
Continue to release a minimum flow of 80 cfs over the spillway, or inflow, whichever is less, from June 1 through October 15.	GMP, Staff	$0	$0	$0
Release an additional minimum flow of 40 cfs over the spillway, or inflow, whichever is less, from October 16 through May 31.	GMP, Staff	$0	$0[d]	$0

Enhancement/Mitigation Measure	Entity	Capital Cost (2023$)	Annual Cost[a] (2023$)	Levelized Annual Cost[b] (2023$)
Release a minimum flow of 60 cfs over the spillway, or inflow, whichever is less, year-round.	Vermont ANR	$0	$0[e]	$0
Develop a plan to install upstream eel passage within 1 year of installation of upstream eel passage at the Otter Creek.	Vermont ANR	Unknown – recommendation based on a future, uncertain event that lacks specificity needed to estimate a cost.	Unknown – recommendation based on a future, uncertain event that lacks specificity needed to estimate a cost.	Unknown – recommendation based on a future, uncertain event that lacks specificity needed to estimate a cost.
Implement an impoundment refill procedure following emergency and maintenance drawdowns, whereby 90% of inflow is passed downstream, and the impoundment is refilled on the remaining 10% of inflow to the project.	Staff	$0	$0	$0
Threatened and Endangered Species				
Avoid the removal of trees with a 3-inch DBH from April 1 through October 31 to protect NLEB.	Staff	$0	$0	$0

Enhancement/Mitigation Measure	Entity	Capital Cost (2023$)	Annual Cost[a] (2023$)	Levelized Annual Cost[b] (2023$)
Recreation Resources				
To enhance recreation, establish a land transfer or similar agreement with the Town of Rutland for the Town's development of a non-project pocket park downstream of the dam that would include two parking areas, a hand carry boat put-in, walking trails, beach access, observation area, picnic area, historic and informational signage.	GMP, Staff	$0	$0	$0
Develop a recreation monitoring plan, to be conducted every five years, to evaluate and ensure recreation needs at the project are met over the term of any new license.	Staff	$5,000	$2,500[f]	$800
To enhance recreation and awareness to the regional history, develop and install a non-project cultural heritage informational kiosk for the Town of Rutland's non-project pocket park.	GMP, Staff	$1,100[g]	$0	$76
Cultural Resources				
Develop an HPMP in consultation with the Vermont SHPO to protect historic properties that are eligible for or listed on the National Register of Historic Places.	GMP, Staff	$5,400[h]	$0	$372

(Source: GMP, and Staff).

[a] Annual costs typically include operational and maintenance costs and any other costs that occur on a yearly basis.

[b] All capital and annual costs are converted to equal annual costs over a 30-year period to give a uniform basis for comparing costs.

[c] Costs related to any required new or upgraded equipment and expenses incurred due to compliance violations cannot be accurately estimated.

[d] Although there are no capital and annual costs for providing the additional minimum flow, there is an additional opportunity cost. The proposed changes would reduce generation by about 4.1 MWh/year. Using an energy cost of $71.42/MWh from Table G-1 as a proxy for the value of foregone generation, 4.1 MWh of foregone generation would be valued at about $293/year.

[e] Although there are no capital and annual costs for providing the 60-cfs minimum flow year round, there is an additional opportunity cost relative to the current opportunity cost for a seasonal 80-cfs minimum flow . The proposed change would result in a net reduction in generation of about 5.1 MWh/year. Using an energy cost of $71.42/MWh from Table G-1 as a proxy for the value of foregone generation, 5.1 MWh of foregone generation would be valued at about $364/year.

[f] The annual cost of this measure is discounted to account for the implementation schedule.

[g] Although GMP did not include a cost for this measure, staff estimates that there would be a capital cost of approximately $1,100 to develop and install a cultural heritage information kiosk for the Town of Rutland's off-license pocket park.

[h] GMP estimated that it would cost $20,000 to develop an HPMP. However, based on the cost to develop an HPMP at other hydropower projects within New England, a capital cost of $5,400 is a more reasonable estimate for the cost of this measure.

APPENDIX I

COMPREHENSIVE DEVELOPMENT

This appendix discusses the basis for the staff-recommended measures presented in section 5.1.2, *Additional Measures Recommended by Staff*, and the rationale for modifying Green Mountain Power's (GMP's) proposal.

Measures Recommended by Staff

Mode of Operation

GMP proposes to continue operating the project in a run-of-river mode such that project outflow approximates inflow to the impoundment at any time, and the surface elevation of the impoundment is maintained at 505.05 feet NGVD 29 (corresponding to the spillway crest gate elevation of 504.8 feet plus approximately 3 inches of spill over the crest gate of the dam).

Vermont ANR's certification condition B specifies that GMP operate the project in an instantaneous run-of-river mode, whereby outflow from the project equals inflow at all times.

As discussed in section 3.3.1.2, *Environmental Effects, Mode of Operation,* Vermont ANR has not demonstrated that the project is capable of operating in an instantaneous run-of-river mode, with total outflow from the project equaling inflow on an instantaneous basis. The project is currently operated in a run-of-river mode using an automatic pond level control system. This system measures changes to the surface elevation of the impoundment, thus providing an indirect measure of changes to inflow. As inflow increases or decreases, a certain amount of time elapses before the impoundment elevation changes, depending on the rate and magnitude of the change in inflow. Once the change in inflow affects the impoundment elevation, the pond level control system automatically adjusts turbine flow. Based on these technical limitations and the delay associated with adjusting project outflow to match inflow, it would not be possible to match outflows and inflows on an instantaneous basis, as specified by Vermont ANR. Moreover, Vermont ANR has not described how operating the project in an instantaneous run-of-river mode would provide additional protection or benefits to aquatic resources compared to current run-of-river operation.

Continuing to operate the project such that the total outflow from the project *approximates,* rather than equals, inflow at any point in time would result in stable impoundment elevations, which in turn would help protect fish spawning areas and freshwater mussel beds from becoming dewatered and limit project-related erosion along the impoundment shoreline. Operating the project in this manner would likewise ensure that downstream flows are not affected by project operation. Therefore, operating the project in run-of-river mode – defined as the sum of all outflows approximating the sum of all inflows at any given point in time – would provide the same level of benefits to aquatic resources upstream and downstream of the project as Vermont ANR's instantaneous run-of-river mode of operation, and is operationally feasible.

As discussed in section 5.1.1, *Measures Proposed by GMP*, staff recommends GMP's proposal to continue operating the project in a run-of-river mode, such that outflow from the project approximates inflow to the project impoundment. Based on the technical limitations of the project described above, staff does not recommend operating the project in an instantaneous run-of-river mode, whereby outflow from the project equals inflow on an instantaneous basis, as specified by Vermont ANR.

Minimum Bypassed Reach Flow Releases

Under the current license, GMP releases a minimum flow of 80 cubic feet per second (cfs), or inflow, whichever is less, over the spillway and into the bypassed reach from June 1 through October 15. The rest of the year, flow spills into the bypassed reach only when flow volume is less than 60 cfs or greater than 190 cfs, the project's minimum and maximum hydraulic capacity, respectively.

GMP proposes to continue to provide a minimum flow of 80 cfs, or inflow, whichever is less, over the spillway and into the bypassed reach from June 1 through October 15. GMP also proposes to release a minimum flow of 40 cfs, or inflow, whichever is less, over the spillway and into the bypassed reach from October 16 through May 31.

Vermont ANR's certification condition B specifies that GMP release a year-round minimum flow of 60 cfs, or inflow if less, from the spillway into the bypassed reach. The bypassed reach is 100 feet long and includes a 60-foot-long bedrock falls with virtually no aquatic habitat value, and a 40-foot-long and 3- to 20-foot-deep pool at the downstream end of the bedrock falls. The deep pool is backwatered by, and hydraulically connected to, the tailrace outflow at all flows 40 cfs and greater. The bypassed reach is fully visible from the southern shoreline of Otter Creek downstream of the dam, and minimally visible from the U.S. Route 4 (Elm Street) bridge, further downstream of the project.

Aquatic Habitat

As discussed in section 3.3.1.2, *Environmental Effects, Minimum Flow Releases*, the current minimum flow of 80 cfs is based on a 1992 flow demonstration study, and the benefits to aquatic habitat are well-supported during the period from June 1 through October 15, when a flow of 80 cfs creates good cover and feeding habitat for fish in the deep pool at the downstream end of the bedrock falls. A flow of 80 cfs enhances the habitat by resulting in a mixing and complexity of flows within the deep pool.

However, during the period from October 16 through May 31, the deep pool is covered in ice much of the time; therefore, cover and feeding habitat is less critical. Fish do not require as much flow complexity for feeding and cover in overwintering habitat because they have the cover of ice and are also not feeding as much as during the open water season when water temperatures are higher and fish are more active. GMP's proposal to release a minimum flow of 40 cfs, or inflow, whichever is less, from October 16 through May 31 would provide some additional habitat benefits compared to the existing conditions, where there is no required minimum flow during this period. A flow of 40 cfs provides negligible flow mixing within the

deep pool, but would provide enough flow for the tailrace and deep pool to remain hydraulically connected.

Vermont ANR's condition B specifying a year-round 60-cfs minimum flow, or inflow if less, would increase the base level of flow mixing and complexity within the deep pool during the period from October 16 through May 31, compared to both current conditions and GMP's 40 cfs proposal. However, as stated above, the benefits of these changes in overwintering habitat for fish are not clear. From June 1 through October 15, Vermont ANR's specified minimum flow of 60 cfs would provide marginally less flow mixing and complexity benefits than both current conditions and GMP's proposed 80 cfs minimum flow.

Aesthetic Resources

As discussed in section 3.3.4.2, *Environmental Effects, Aesthetics*, the current minimum flow of 80 cfs is based on the findings of the 1992 flow demonstration study, and the benefits to aesthetic resources are well-supported for the peak recreation season of June 1 through October 15, when a flow of 80 cfs is considered the optimum flow for increasing wetted areas in the bypassed reach, enhancing visual aesthetics by creating an ideal veil of water over the spillway, improving sound aesthetics by increasing the amount of whitewater splashing over the spillway and falls, and enhancing recreational angling and boating downstream of the project in Otter Creek.

However, the period from October 16 through May 31 is the off-peak season for recreation and public enjoyment at the project, resulting in a significant decrease in recreation and public visits to the project, and a period when portions of the Otter Creek bypassed reach are covered in ice. The 1992 flow demonstration study found that from October 16 through May 31, flows in Otter Creek exceed the project's maximum hydraulic capacity of 190 cfs 93% of the time, resulting in frequent flow releases over the crest of the Center Rutland Project's spillway. In the months of April and May, the maximum hydraulic capacity of the project is exceeded 99.74% of the time and 98.70% of the time, respectively. Therefore, providing additional flow is not necessary for enhancing the visitor experience from October 16 through May 31.

GMP's proposal to release a minimum flow of 40 cfs, or inflow, whichever is less, from October 16 through May 31 would provide some additional aesthetic benefits compared to existing conditions, where there is no required minimum flow during this period. As determined by the 1992 flow demonstration study, 40 cfs is the minimum acceptable aesthetic flow, as it provides a veil across the entire top of the dam and there is sufficient water over the falls for the scale of the site.

As discussed in section 3.3.4.2, *Environmental Effects, Aesthetic,* Vermont ANR's certification condition B specifies that GMP provide a minimum flow of 60 cfs, or inflow if less, to the bypassed reach year-round. Vermont ANR's specification would require GMP to release 20 cfs more than GMP's proposed seasonal minimum flow release of 40 cfs from October 16 through May 31. A 20-cfs increase in the minimum flow would slightly enhance visual and sound aesthetics at the project by maintaining a consistent, fuller veil of water over the spillway and onto the rocks in the bypassed reach through the fall and winter months. However, these benefits would be minimal because portions of the falls and bypassed reach are likely to be

covered in ice during this period, reducing the effects of any visual and sound aesthetics. Additionally, providing a 60 cfs minimum flow in the off-season would offer negligible benefits to visitors and recreationists at the project because visitation to the project is limited during this time. Further, during winter months, the flow in Otter Creek exceeds the project's maximum hydraulic capacity of 190 cfs approximately 93 % of the time, resulting in higher volumes passing over the crest of the dam. In April and May, Otter Creek flows exceed the maximum hydraulic capacity 99.7 % of the time and 98.7 % of the time, respectively.

Vermont ANR's certification condition B specification is also 20 cfs less than GMP's proposed seasonal minimum flow release of 80 cfs from June 1 through October 15. Currently, GMP provides a minimum flow of 80 cfs, or inflow, whichever is less, into the bypassed reach to protect water quality, fish and wildlife resources, and aesthetic resources. As determined by the 1992 aesthetic flow study, study participants determined that 80 cfs was the preferred flow to protect aquatic resources, improve water quality, and improve aesthetics in the summer months when recreation at the project is highest. Reducing the minimum flow during peak recreation season to 60 cfs would reduce wetted areas in the bypassed reach and could impact recreational boating and angling downstream of the dam.

Summary

As discussed above, Vermont ANR's certification condition B specification of a year-round minimum flow of 60 cfs, or inflow if less, could minimally improve fish habitat, and slightly increase the visual and sound aesthetics at the project from October 16 through May 31, compared to GMP's proposal of 40 cfs; however, the benefits to aquatics and aesthetics would be minimal. Although the additional opportunity costs associated with Vermont ANR's certification condition B and GMP's proposed minimum flows are essentially the same ($293 versus $264), Vermont ANR's certification condition B flow would adversely affect aquatic, aesthetic, and recreation resources from June 1 through October 15, as described above. Because the additional benefits to overwintering fish habitat, visual and sound aesthetics, and recreation resources during the period October 16 through May 31 would be marginal, they are not justified by the cost to fishery, aesthetic, and recreation resources during the summer and early fall period of June 1 through October 15. Therefore, pursuant to sections 4(e) and 10(a) of the FPA, we conclude that the most appropriate balance among the use of flow for project generation, fishery resources, aesthetics, and recreation is provided by GMP's minimum flow release proposal, and accordingly, we recommend GMP's flow proposal instead of Vermont ANR's certification condition B

Operation Compliance Monitoring Plan

GMP proposes to develop an operation compliance monitoring plan within 6 months of any license issued for the project and in consultation with Vermont DEC. The plan would define run-or-river operation and operational data to be monitored in order to maintain compliance, specify operational protocols under normal and adverse conditions, and specify requirements for consultation and record keeping. Vermont ANR's certification condition C specifies that GMP develop an operation compliance monitoring plan to document compliance with run-of-river operation and flow releases, including methods for continuously monitoring flow releases,

impoundment levels, and inflows; and provisions for flow data to be available on a "near real-time basis," if requested.

As discussed in section 3.3.1.2, *Environmental Effects, Operation Compliance Monitoring*, an operation compliance monitoring plan would help GMP document compliance with the operational provisions of any subsequent license for the project and provide a mechanism for reporting deviations. An operation compliance monitoring plan would also help the Commission verify that the project is operating in a run-of-river mode, maintaining an impoundment elevation within 3 inches of crest elevation of 505.05 feet NGVD 29, and releasing required minimum bypassed reach flows, thereby facilitating administration of the license and avoiding misunderstandings.

We recommend that the plan include: (1) a detailed description of how GMP will maintain, monitor, and document compliance with the operational requirements of any license issued for the project; (2) a description of the gages and other measuring devices that would be used to monitor compliance with license requirements; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled and unscheduled facility shutdowns; and (5) a schedule for installing monitoring equipment needed to document compliance with the operational requirements of the license. In addition, notifying the Commission and resource agencies of planned and unplanned deviations from run-of-river, impoundment level, and flow requirements would ensure adequate information flows from GMP to the Commission and resource agencies during the term of the license. We recommend that GMP develop an operation compliance monitoring plan with these components and conclude that the benefits of an operation compliance monitoring plan with these components would outweigh the estimated annual levelized cost of $372.

Impoundment Drawdown and Refill Procedure

Periodically, GMP may need to draw down the project impoundment for maintenance and emergencies. During these times, run-of-river operation would be temporarily interrupted. As discussed in section 3.3.1.2, *Environmental Effects, Impoundment Refill Procedure,* retaining all inflows to refill the impoundment after an impoundment drawdown would adversely affect aquatic resources by dewatering aquatic habitat in the bypassed and downstream reaches, potentially stranding fish, mussels, and other aquatic organisms. On the other hand, releasing all flows to the downstream reach would adversely affect aquatic life in the impoundment by sustaining the dewatered conditions. Releasing 90% of the project impoundment's inflow during impoundment refilling would minimize the length of time the impoundment is drawn down and that flows are reduced downstream, which would help to maintain the existing aquatic habitat for fish and other aquatic species, as well as wetlands. Implementing this procedure would have no cost and we recommend that it be included in any subsequent license issued for the project.

Northern Long-Eared Bat Protection

GMP proposes to avoid the removal of trees that are equal to or greater than 4 inches in diameter at breast height (DBH) from April 15 through October 31 to protect the northern long-eared bat (NLEB) during operation and maintenance of the Center Rutland Project.

As discussed in section 3.3.3, *Threatened and Endangered Species*, and Appendix E, *Biological Assessment,* the federally endangered NLEB has the potential to occur in the project boundary. NLEB could be affected by vegetation maintenance activities at the project if removal of trees equal to or greater than 3 inches DBH were to occur during the bat's active season. Trees equal to or greater than 3 inches DBH provide roost sites for adult NLEB throughout their active season, maternity colonies during the summer, and inexperienced flying juveniles during the late summer and early fall. Implementing a seasonal restriction for the removal of trees with diameters that are equal to or greater than 3 inches at breast height from April 1 through October 31, as specified in Vermont ANR's certification condition E, would reduce the likelihood of disturbing any roosting NLEB. These measures would benefit NLEB by protecting it from project-related activities, at no additional cost to GMP, and staff recommends it.

NLEB select trees with a diameter equal to or greater than 3 inches DBH for roosts (FWS, 2014). GMP's proposed seasonal tree-removal restriction applies to trees equal to or greater than 4 inches DBH. Therefore, staff does not recommend GMP's proposal to implement a tree-clearing restriction that only includes trees with a 4-inch or greater DBH.

Recreation Resources

GMP proposes to establish a land transfer or similar agreement with the Town of Rutland for the Town's development of a non-project pocket park downstream of the dam, which would include two parking areas, a hand carry boat put-in, walking trails, beach access, observation area, picnic area, historic and informational signage.

As discussed in section 3.3.4.2 *Recreation Resources, Environmental Effects*, the documented increase in recreation use at the project demonstrates the local demand for recreational access to Otter Creek at the project. Establishing a land transfer for the Town of Rutland's development of a pocket park, as proposed by GMP and specified in Vermont ANR's certification F, would provide continued access and new recreational amenities for anglers, hand-carry boaters, swimmers, passive recreation, and nature viewing on the south shoreline of Otter Creek, downstream of the project. As proposed, the pocket park's design, operation, and maintenance would be executed by the Town, which has obtained a municipal planning grant from the state of Vermont and started soliciting input and developing plans for the pocket park design. While the proposed pocket park would not be a project facility, there is every indication that the Town would construct the park as proposed. Further, the Town's ownership of the land would ensure it remained publicly accessible even if the pocket park amenities were not constructed. Given that the proposed pocket park would meet recreational demand in the vicinity of the project and access to Otter Creek downstream of the project would not cease over the term of a subsequent license for the project, it does not appear to be necessary to make the proposed pocket park a project facility. Further, because the Town and GMP have an agreement for GMP to transfer the land necessary to develop and maintain the proposed pocket park to the

Town, there is no need to require GMP to construct the facility. Because we do not recommend that GMP develop the pocket park, and because the land to be transferred is non-project land, there is no basis to require the land transfer.

However, to ensure recreational needs at the project are met throughout the term of any license issued, staff recommends GMP develop a recreation monitoring plan to evaluate recreational demand and the adequacy of recreational amenities to meet that demand. Regular monitoring of recreational use at the project would help ensure that the proposed pocket park and informal access along the northern bank continue to meet existing demand and future recreational needs, such as access for angling, boating, and swimming in Otter Creek. As discussed in 3.3.4.2 *Recreation Resources, Environmental Effects*, to be effective for the project, the recreation monitoring plan would need to include the following, at a minimum: (1) number of recreational users, (2) types of recreational use observed, (3) duration of time recreational users spend at the site, (4) adequacy of amenities and access to meet recreational demand, and (5) a description of the methods used to collect use data. An effective project-specific plan would also need to include provisions for consulting with stakeholders and the process for identifying the need for any additional recreational facilities. Conducting an initial use monitoring survey within the first five years following completion of the proposed pocket park would ensure the adequacy of the newly completed recreation amenities and access at the park to meet recreational demand. After performing an initial monitoring report, the plan could specify how stakeholders would be consulted to determine the frequency of subsequent recreational use monitoring efforts at the project. Conducting periodic monitoring surveys throughout the term of any license issued would ensure that the recreational use data is captured at reasonable and regular intervals and that the data clearly describes the recreational use at the project. Further, it would help Commission staff monitor whether the pocket park has been constructed and whether it is meeting the recreational needs of the project. Staff estimates that the recreation monitoring plan would have an annualized cost of $800 and find that the benefits are worth the cost.

GMP also proposes to collaborate with the Town of Rutland and stakeholders to develop and install a cultural heritage information kiosk for the Town of Rutland's non-project pocket park to bring awareness to the regional and cultural history. As discussed in section 3.3.4.2 *Recreation Resources, Environmental Effects*, the installation of an informational kiosk at the proposed non-project pocket park would improve the recreational user experience by providing the lengthy historic significance and cultural context of the falls, hydropower, and cultural significance of the lands and Otter Creek the area to visitors. GMP proposes to design and construct the kiosk; however, maintenance would be the responsibility of the Town. Implementing this proposal would have a minimal, one-time cost of approximately $1,100 and we recommend that it be included in any subsequent license issued for the project.

Cultural Resources

As discussed in section 3.3.5.2, *Cultural Resources, Environmental Effects*, the project's area of potential effects (APE) includes the Center Rutland Hydroelectric Station Historic District (Historic District). The Historic District includes the project dam, powerhouse and generating equipment, penstock, marble retaining wall, intake structure, marble pumphouse, former pumphouse, transformer yard, stream gaging station, the Delaware and Hudson Railroad

bridge, the former Route 4 bridge abutments, Clement Mill ruins, and the Clarendon and Pittsford Railroad bridge.[59] The APE also includes archaeologically sensitive areas within the area of potential effects (APE) for the project, as well as a site (VT-RU-0266) that is eligible for listing on the National Register of Historic Places (National Register). Finally, the installation of an upstream eel passage facility at the dam, as discussed above in *Upstream Eel Passage*, could have an adverse effect on the dam by diminishing the visual or physical integrity of the dam, or other contributing resources to the Historic District. Adverse effects to historic properties could occur in the event repairs are needed to maintain the structure and function of the dam, or to fix structural damage that occurs in the course of project operation. It is also possible that unknown historic resources may be discovered during project operation.

GMP proposes to consult with the Vermont State Historic Preservation Office (SHPO) to develop an Historic Properties Management Plan (HPMP) to protect historic properties at the project that are eligible for or listed on the National Register. Developing and implementing an HPMP, in consultation with the SHPO, would ensure that measures are in place to protect historic properties in the APE from adverse effects related to the project. An HPMP would also ensure that any previously undiscovered archaeological resources within the APE are not adversely affected by the project during the term of any subsequent license. We estimate that the levelized annual cost of developing an HPMP would be $370, and conclude that the benefits of an HPMP outweigh the cost. Accordingly, we recommend GMP's proposal to develop and implement an HPMP in consultation with the Vermont SHPO and federally recognized Tribes to protect historic properties that are eligible, or potentially eligible, for listing on the National Register.

Measures Not Recommended by Staff

The following discussion includes the basis for staff's conclusion not to recommend such measures.

Upstream Eel Passage

Although American eel are not present in the project area, they are present in Lake Champlain. Vermont ANR's certification condition D specifies that GMP begin preparing a plan to provide upstream eel passage at the project within 1 year of installation of upstream eel passage at the Otter Creek Hydroelectric Project (FERC No. 2588), the most upstream development on Otter Creek, located at River Mile 64, 7 miles downstream of the Center Rutland Project. Condition D states that the plan could include either trap and truck or an eel ramp as possible methods for providing upstream eel passage at the project.

If American eel are present in the project area in the future, then upstream passage for juvenile American eel at the project could be beneficial by allowing American eel to efficiently move upstream past the project. The magnitude of the potential benefit to American eel

[59] Contributing resources that are project facilities are the project dam, powerhouse and generating equipment, penstock, marble retaining wall, and intake structure.

populations would depend on the number of juvenile eels reaching the Center Rutland Project after passage at the Otter Creek Project, and the amount of habitat available for American eel between the two projects and upstream of the Center Rutland Project. The conditional aspect of Vermont ANR's future eel passage plan, and the fact that the plan contemplates two different methods for providing upstream eel passage make the estimated cost unknown. Therefore, because we cannot weigh the benefits versus the costs of the measure, we have no basis for recommending the plan under sections 10(a) of the FPA.

APPENDIX J

LIST OF COMPREHENSIVE PLANS

Forest Service. 1993. Green Mountain National Forest land and resource management plan. Department of Agriculture, Rutland, Vermont. December 1993.

Lake Champlain Fish and Wildlife Management Cooperative. 2020. Strategic Plan for Lake Champlain Fisheries. Essex Junction, Vermont. July 2020.

National Park Service. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. 1993.

U.S. Fish and Wildlife Service. n.d. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

Vermont Agency of Environmental Conservation. 1986. Vermont Rivers Study. Waterbury, Vermont.

Vermont Agency of Natural Resources. 1986. The waterfalls, cascades, and gorges of Vermont. Waterbury, Vermont. May 1986.

Vermont Agency of Natural Resources. 1988. Hydropower in Vermont: an assessment of environmental problems and opportunities. Waterbury, Vermont. May 1988.

Vermont Agency of Natural Resources. 1988. Wetlands component of the 1988 Vermont recreation plan. Waterbury, Vermont. July 1988.

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APPENDIX K

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APPENDIX L

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Steve Kartalia – Project Coordinator, Aquatic Resources (Fish Biologist, B.S. Biology, M.S. Fisheries Biology).

Erin Kimsey – Recreation, Land Use, and Aesthetics (Outdoor Recreation Planner; B.L.A, Landscape Architecture).

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APPENDIX M

VERMONT AGENCY OF NATURAL RESOURCES WATER QUALITY CERTIFICATION

A. Compliance with Conditions. The Applicant shall operate and maintain this Project consistent with the findings and conditions of this certification. The Applicant shall not make any changes to the Project or its operations that would have a significant or material effect on the findings, conclusions, or conditions of this Certification without approval of the Department.

See finding 133 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-101.

B. Flow Management. The Project shall be operated in instantaneous run-of-river mode. Instantaneous run-of-river mode means no utilization of impoundment storage and that outflow from the facility is equal to inflow to the impoundment on a near instantaneous basis except for short term, unavoidable deviations.

The Applicant shall provide a conservation flow of 60 cfs, or inflow if less, to the bypassed reach year-round. The conservation flow shall be provided via spillage over the dam, unless otherwise described in the flow management and monitoring plan or approved by the Department. When the Project is not operating, all flow shall be spilled at the dam.

See findings 141, 144, and 146 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-304 & § 29A-306 (b)(3)(B) & § 306 (c)(3)(B)(i).

C. Flow Management and Monitoring Plan. The Applicant shall develop, within 180 days of the effective date of the FERC license, a flow management and monitoring plan detailing how the Project will operate in instantaneous run-of-river mode and comply with the conservation flow requirements. The plan will also include a method for continuous monitoring and reporting of flow releases (e.g. conservation flow, spillage, and turbine discharge) at the Project, impoundment levels, and inflow. The plan shall include provisions for the flow data to be available on a near real-time basis to allow for records to be furnished upon request.

The plan will include procedures for reporting deviations from prescribed operating conditions to the Department. Reports shall be made within 15 days after a deviation and will include, if possible, the cause, severity, and duration of the deviation, observed or reported adverse environmental impacts from the incident, pertinent data, and measures to be taken to avoid recurrences.

The plan shall be subject to Department approval. The Department reserves the right to review and approve any material changes made to the plan.

See finding 133 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-304 & § 29A-306(b).

D. American Eel Passage. Within 1 year of upstream American eel passage having been installed at the Otter Creek Hydroelectric Project (FERC No. 2558), the Applicant shall initiate plan development for American eel passage. Before developing the plan, the Applicant shall consult with the Vermont Agency of Natural Resources and the U.S. Fish and Wildlife Service. The plan shall be reviewed and approved by the Vermont Agency of Natural Resources and the U.S. Fish and Wildlife Service before implementation. In addition to the method of passage, the plan shall include an implementation schedule. The plan can include, but is not limited to, a trap and truck program or eel ramp installation, or other appropriate measures.

See finding 154 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-306(b)(3)(A).

E. Northern Long-eared Bat Protection. The Applicant shall avoid tree trimming and removal of trees 3- inch diameter breast height or greater in the project boundary between April 1st and October 31st to avoid any roost disruption of the Northern long-eared bat, except when necessary to protect public safety or respond to emergency conditions. In case of a public safety issue or emergency where tree trimming or removal are required during the seasonal protective period, the Applicant will consult with the Department as soon as practical after conducting the trimming or removal.

See finding 158 for a statement of necessity. 10 V.S.A. § 5403.

F. Recreation. The Applicant shall continue to: (1) provide public access and use of Project lands and waters; (2) provide access to and maintain the hand carry put-in/fishing access area located downstream of the powerhouse; and (3) establish an agreement with the Town of Rutland for a pocket park pending appropriate approvals.

See finding 162 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 §29A- 303(d-f).

G. Debris Disposal. Debris associated with Project operations shall be disposed of in accordance with the Standards and applicable state laws and regulations.

See findings 164 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-303(1).

H. Maintenance and Repair Work. The Applicant shall consult with the Department prior to conducting Project maintenance or repair work that necessitates a deviation from the conditions that assure compliance with water quality requirements (e.g., water level or flow management). Such maintenance and repair work shall be subject to review and approval by the Department.

See findings 149 and 151 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § 29A-304(d) and § 29A-306(b).

I. Compliance Inspection by Department. The Applicant shall allow the Department to inspect the Project area at any time to monitor compliance with certification conditions.

See findings 2 and 133 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § § 29A-104(a).

J. Posting of Certification. A copy of the certification shall be prominently posted within the Project powerhouse.

See findings 2 and 133 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § 29A-104(a).

K. Modification of Certification. The conditions of this certification may be altered or amended by the Department to assure compliance with the Vermont Water Quality Standards and to respond to any changes in classification of management objectives for the waters affected by the Project, when authorized by law, and, if necessary, after notice and opportunity for hearing.

See findings 2 and 133 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § 29A-104(a).

189 FERC ¶ 62,140
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Green Mountain Power Corporation Project No. 2445-028

ORDER ISSUING SUBSEQUENT LICENSE

(Issued December 26, 2024)

INTRODUCTION

1. On December 23, 2021, Green Mountain Power Corporation (GMP) filed, pursuant to Part I of the Federal Power Act (FPA),[1] an application for a subsequent license to continue operating and maintaining the 275-kilowatt (kW) Center Rutland Hydroelectric Project No. 2445 (Center Rutland Project or project). The project is located on Otter Creek in Rutland County, Vermont.[2] The project does not occupy federal land.

2. As discussed below, this order issues a subsequent license for the Center Rutland Project.

BACKGROUND

3. The Commission issued the original license for the project on August 19, 1965, with an effective date of April 1, 1962, and an expiration date of December 31, 1993.[3] The Commission issued a subsequent license for the project on March 31, 1993, with an effective date of January 1, 1994, and an expiration date of December 31, 2023.[4] Since

[1] 16 U.S.C. §§ 791a-825r.

[2] Because the project is located on a stream over which Congress has jurisdiction under the Commerce Clause; affects interstate commerce through its connection to an interstate power grid; and was constructed after 1935, it is required to be licensed pursuant to section 23(b)(1) of the FPA. *Id*. § 817(1).

[3] *See Vermont Marble Co.*, 34 F.P.C. 540 (1965).

[4] *OMYA, Inc.*, 62 FERC ¶ 62,224 (1993). On November 23, 2010, the Commission approved the transfer of the license from Vermont Marble Power, Division of Omya Inc., to Central Vermont Public Service Corporation. *Vermont Marble Power*, 133 FERC ¶ 62,171 (2010). On September 13, 2012, the Commission approved the

the expiration date, GMP has operated the project pursuant to section 16.21 of the Commission's regulations, pending the disposition of its application.[5]

4. On February 17, 2023, the Commission issued a public notice that was published in the *Federal Register*, accepting the application for filing, indicating the application was ready for environmental analysis, and setting April 18, 2023, as the deadline for filing motions to intervene, protests, comments, recommendations, terms and conditions, and fishway prescriptions.[6] On April 12, 2023, the U.S. Department of the Interior (Interior) filed a request that the Commission include a reservation of authority for Interior to prescribe fishways under FPA section 18 in any license issued for the project.[7] On April 18, 2023, Vermont Agency of Natural Resources (Vermont ANR) filed a timely notice of intervention,[8] comments and recommendations, and preliminary terms and conditions. No parties oppose relicensing the project.

5. Pursuant to the National Environmental Policy Act of 1969 (NEPA),[9] Commission staff issued an environmental assessment (EA) on April 24, 2024, analyzing the effects of the proposed project and alternatives to it, and setting a 45-day deadline for comments of

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transfer of the license from Central Vermont Public Service Corporation to GMP. *Cent. Vermont Pub. Serv. Corp.*, 140 FERC ¶ 62,191 (2013).

[5] 18 C.F.R. § 16.21 (2024). *See* January 10, 2024 Notice of Authorization for Continued Project Operation.

[6] 88 Fed. Reg. 11,906 (Feb. 24, 2023).

[7] 16 U.S.C. § 811.

[8] Under Rule 214(a)(2) of the Commission's Rules of Practice and Procedure, Vermont ANR became a party to the proceeding upon the timely filing of the notice of intervention. 18 C.F.R. § 385.214(a)(2).

[9] 42 U.S.C. §§ 4321 *et seq*. *See also* 18 C.F.R. pt. 380 (2024) (Commission's regulations implementing NEPA). The Commission is aware of the November 12, 2024, decision in *Marin Audubon Society v. Federal Aviation Administration*, 121 F.4th 902 (D.C. Cir. 2024), holding that the Council on Environmental Quality (CEQ) regulations implementing NEPA are not judicially enforceable or binding. It is noted that section 380.1 of the Commission's regulations, 18 C.F.R. § 380.1, provides that the Commission will comply with the relevant CEQ regulations to the extent they are not inconsistent with the Commission's statutory requirements. The Commission is continuing to review the *Marin Audubon Society* decision and may take such further action as is appropriate. *Power Authority of the State of New York*, 189 FERC ¶ 61,217, at P 8 n.14 (2024).

June 10, 2024.[10] The Vermont State Historic Preservation Office (SHPO) filed comments on the EA on June 7, 2024.

6. The intervention, comments, and recommendations have been fully considered in determining whether, and under what conditions, to issue the license.

PROJECT DESCRIPTION

A. Project Area

7. The Otter Creek watershed has a drainage area of approximately 936 square miles. Otter Creek is approximately 100 miles long from its headwaters in Dorset, Vermont, to its mouth, located in Lake Champlain in Ferrisburgh, Vermont. The Center Rutland Project is located at river mile (RM) 71 on Otter Creek.[11] In addition to the project dam, there are six other dams on Otter Creek that are used for hydropower generation.[12]

B. Project Facilities

8. The existing Center Rutland Project includes a 190-foot-long, 14-foot-high concrete and stone masonry dam that comprises the following sections: (1) a 174-foot-long spillway section with a crest elevation of 504.8 feet National Geodetic Vertical Datum of 1929 (NGVD 29);[13] and (2) a 16-foot-long non-overflow section. The project also includes a 13-foot-long, 7- to 30-foot-wide forebay; and a 39.58-foot-wide, 18-foot-high concrete and marble masonry intake structure with a 6.7-foot-wide, 6.5-foot-high

[10] Because the 45-day filing deadline fell on a Saturday (i.e., June 8, 2024), the filing deadline was extended until the close of business on Monday, June 10, 2024. 18 C.F.R. § 385.2007(a)(2).

[11] River miles are measured herein as the upstream distance from the mouth, located at Lake Champlain in Ferrisburgh, Vermont, to a specific point on the river.

[12] The other six dams are associated with the Otter Creek Project No. 2558 - Proctor Development (RM 64); the Middlebury Lower Project No. 2737 (RM 27); the Otter Creek Project No. 2558 - Beldens Falls Development (RM 23); the Otter Creek Project No. 2558 - Huntington Falls Development (RM 21); the Weybridge Project No. 2731 (RM 20); and the Vergennes Project No. 2674 (RM 8).

[13] The prior license specified elevations in mean sea level. However, in the license application, GMP indicated that all elevations in are expressed in NGVD 29. Therefore, all elevations described in this order are expressed in NGVD 29.

steel headgate and a 30-foot-wide, 12-foot-high trashrack with 9/16-inch clear bar spacing.

9. The 1993 license authorized the use of 27-inch-high flashboards on top of the spillway and describes an impoundment surface elevation of 507.4 feet when the flashboards are in place. However, GMP states that the flashboards have not been installed since at least 2012, when it acquired the project. Without the flashboards installed, the impoundment surface elevation is 504.8 feet.

10. From the impoundment, water flows through the intake structure to a 6-foot-diameter, 75-foot-long steel penstock that provides water to a 275- kW horizontal Francis turbine-generator unit located in a 40-foot-long, 33-foot-wide stone and marble masonry powerhouse. Water is discharged from the turbine through a draft tube directly into Otter Creek. The project creates an approximately 100-foot-long bypassed reach.

11. The project generator unit connects to a 480-volt/12.47-kilovolt (kV) transformer and an 80-foot-long, 12.47-kV transmission line that interconnects with the local distribution grid.

12. There are no project recreation facilities. A more detailed description of the project is contained in ordering paragraph (B)(2).

C. Project Boundary

13. The current project boundary encloses 11.2 acres, including: (1) approximately 11 acres of land and water in and around the impoundment, and (2) 0.2 acre of land underlying the project structures. Around the impoundment, the current project boundary follows a contour elevation of 507.4 feet, corresponding with the elevation of the top of the flashboards authorized by the prior license, plus 0.25 feet for providing seasonal minimum flows over the spillway to the bypassed reach.

14. GMP is not proposing changes to the project boundary; however, as discussed below, GMP's proposal to no longer use flashboards requires changes to the project boundary to remove land that is no longer needed for project purposes (i.e., land that was formerly but no longer will be inundated on account of flashboard use).

D. Current Project Operation

15. GMP operates the project in a run-of-river mode using a pond level control system, such that outflow from the project approximates inflow to the impoundment at any given point in time. The surface elevation of the impoundment is maintained at 0.25 feet above the spillway crest elevation of 504.8 feet when providing the seasonal minimum flow noted below, and at the spillway crest elevation when minimum flows are not required. From June 1 through October 15, GMP provides a minimum flow of

80 cubic feet per second (cfs) or inflow to the impoundment, whichever is less, over the spillway and into the bypassed reach for the protection of aquatic and aesthetic resources. When refilling the impoundment following a drawdown for maintenance or emergencies, the 1993 license requires a minimum flow release of 154 cfs or 90% of inflow to the impoundment, whichever is less, downstream of the powerhouse.

16. The turbine-generator unit has a minimum and maximum hydraulic capacity of 60 cfs and 190 cfs, respectively. When inflow to the impoundment is less than the minimum hydraulic capacity of the turbine plus the seasonal minimum flow, water is released over the spillway to the bypassed reach. When generating, GMP withdraws 60 to 190 cfs from the impoundment to generate electricity and releases it into Otter Creek. When inflow exceeds the maximum hydraulic capacity plus the seasonal minimum flow, GMP continuously operates the turbine-generator unit and releases excess flow from the spillway. The project's average annual generation is approximately 541 megawatt-hours (MWh). Generation at the project occurs on a year-round basis and is typically highest during the spring season (March through May) when river flow is highest.

E. Proposed Operation and Environmental Measures

17. To protect aquatic habitat, GMP proposes to continue operating the project in a run-of-river mode, such that outflow from the project approximates inflow at any given point in time.

18. To protect and enhance aquatic habitat and aesthetic resources, GMP proposes to continue to provide a minimum flow of 80 cfs or inflow, whichever is less, over the spillway into the bypassed reach from June 1 through October 15; and provide a minimum flow of 40 cfs or inflow, whichever is less, over the spillway into the bypassed reach from October 16 through May 31.

19. GMP proposes to develop an operation compliance monitoring plan within 6 months of any license issued and in consultation with Vermont ANR. The plan would identify the operational data to be monitored for compliance purposes, specify operational protocols under normal and adverse conditions, and specify requirements for consultation and record keeping.

20. To protect the federally endangered northern long-eared bat, GMP proposes to avoid the removal of trees that are equal to or greater than 4 inches in diameter at breast height from April 15 through October 31.

21. To enhance recreation and awareness to the regional history, GMP proposes to install a cultural heritage information kiosk for the Town of Rutland's (Town) non-project pocket park. [14]

22. To protect cultural resources, GMP proposes to develop an historic properties management plan (HPMP) in consultation with the Vermont SHPO to protect historic properties that are eligible for or listed on the National Register of Historic Places (National Register).

SUMMARY OF LICENSE REQUIREMENTS

23. This license, which authorizes 275 kW of renewable energy generation capacity, requires the proposed measures noted above except for: (1) the requirement for a 40-cfs seasonal minimum flow; and (2) the tree removal restriction for the protection of northern long-eared bat.[15] The license also requires the staff-recommended measures described below and the conditions in Vermont ANR's water quality certification (certification) (Appendix A). Combined, these measures will protect or enhance aquatic resources, water quality, federally listed species, and cultural resources at the project.

24. To protect aquatic resources in the downstream reach, this license requires GMP to implement an impoundment refill procedure following emergency and maintenance drawdowns, whereby 90% of inflow is passed downstream and 10% of inflow is used to refill the impoundment.

25. To protect northern long-eared bats and tricolored bats, this license requires GMP to avoid the removal or trimming of non-hazardous trees of any diameter at breast height from April 1 through October 31.

26. To evaluate and ensure recreation needs at the project are met over the term of the license, this license requires GMP to develop a recreation monitoring plan.

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[14] A pocket park is a small, publicly accessible recreational space, usually in an urban area.

[15] The proposed measure requiring a 40-cfs seasonal minimum flow in the project's bypassed reach conflicts with a mandatory condition in Vermont ANR's water quality certification, which requires a year-round minimum bypassed reach flow of 60 cfs.

WATER QUALITY CERTIFICATION

27. Under section 401(a)(1) of the Clean Water Act (CWA),[16] the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency has either issued a certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification must become a condition of any federal license for the project.[17]

28. On April 12, 2023, GMP applied to the Vermont ANR for a certification for the Center Rutland Project, which Vermont ANR received on the same day. On March 29, 2024, Vermont ANR issued a certification that includes 11 conditions. Five of the conditions (A and H through K) are general or administrative in nature and are not discussed herein. The remaining conditions require GMP to:

(1) operate the project in a run-of river mode whereby outflow from the project equals inflow on a near-instantaneous basis and release a minimum flow from the spillway into the bypassed reach of 60 cfs year-round (condition B);[18]

(2) develop a flow management and monitoring plan (condition C);

(3) begin preparing a plan to provide upstream eel passage at the project within 1 year of installation of upstream eel passage at the Otter Creek Hydroelectric Project, FERC No. 2588 (Otter Creek Project) (condition D);

(4) implement measures to protect northern long-eared bat (condition E);

(5) provide public access and use of project land and water, provide access to and maintain the hand carry put-in/fishing access area located downstream of the powerhouse, and establish an agreement with the Town for a pocket park pending appropriate approvals (condition F); and

(6) dispose of debris in accordance with state laws (condition G).

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[16] 33 U.S.C. § 1341(a)(1).

[17] *Id.* § 1341(d).

[18] For purposes of license compliance and based on the use of the term "near-instantaneous" in the condition, we interpret condition B to require that outflow from the project approximates inflow to the project at any given point in time.

29. The 11 conditions of the certification are set forth in Appendix A of this order and incorporated into the license by ordering paragraph (E).

COASTAL ZONE MANAGEMENT ACT

30. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),[19] the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state coastal zone management agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within six months of its receipt of the applicant's certification.

31. The State of Vermont does not have a Coastal Zone Management Program. Therefore, a coastal zone consistency review is not required.

SECTION 18 FISHWAY PRESCRIPTION

32. Section 18 of the FPA[20] provides that the Commission must require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of Commerce or the Secretary of the Interior, as appropriate.

33. On April 12, 2023, Interior filed a letter requesting that the Commission reserve authority to prescribe fishways. Consistent with Commission policy, Article 404 of this license reserves the Commission's authority to require fishways that may be prescribed by Interior for the Center Rutland Project.

THREATENED AND ENDANGERED SPECIES

34. Section 7(a)(2) of the Endangered Species Act of 1973 (ESA)[21] requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species or result in the destruction or adverse modification of their designated critical habitat.

35. Based on the U.S. Fish and Wildlife Service's (FWS) Information for Planning and Consultation (IPaC) website, the endangered northern long-eared bat (*Myotis septentrionalis*) and the tricolored bat (*Perimyotis subflavus*), a species proposed for

[19] 16 U.S.C. § 1456(c)(3)(A).

[20] 16 U.S.C. § 811.

[21] 16 U.S.C. § 1536(a).

listing as endangered under the ESA,[22] have the potential to occur at the project.[23] There is no proposed or designated critical habitat for either species in the project area.

36. In the EA,[24] Commission staff determined that the northern long-eared bat could be affected by project maintenance activities such as tree trimming and periodic tree removal. Staff found that GMP's proposal to avoid the removal of trees that are equal to or greater than 4 inches in diameter at breast height and only from April 15 through October 31 could still disturb northern long-eared bats during their active season.[25] Therefore, staff recommended extending the proposed seasonal tree trimming and removal restriction for non-hazardous trees to greater than or equal to 3 inches in diameter at breast height and to the period April 1 through October 31 to cover the entirety of the active season.

37. With the staff-recommended seasonal tree trimming and removal restriction measure in place, staff concluded that relicensing the project is not likely to adversely affect the northern long-eared bat.[26] Commission staff sought concurrence on its finding of not likely to adversely affect by using the *Northern Long-eared Bat Rangewide Determination Key* available through IPaC. On May 13, 2024, FWS concurred with staff's determination and confirmed that consultation for the species was complete.[27]

38. Consistent with Commission staff's recommended seasonal tree trimming and removal restriction, Vermont ANR's certification condition E requires that GMP avoid tree trimming and removal of trees 3 inches in diameter at breast height or greater in the project boundary between April 1 and October 31 to avoid any roost disruption of the

[22] 87 Fed. Reg. 56,381 (Sept. 14, 2022). FWS's proposal was based primarily upon the range-wide impacts of white nose syndrome that have caused declines in affected colonies. *Id*. at 56,385.

[23] *See* Commission staff's August 1, 2024 Memorandum on FWS's Updated List of Threatened, Endangered, Candidate, and Proposed Species.

[24] EA at E-3.

[25] *Id.* at I-6.

[26] *Id.* at E-3.

[27] *See* Commission staff's May 14, 2024 Memorandum on Streamlined Consultation for the Northern Long-Eared Bat Using the Northern Long-eared Bat Rangewide Determination Key.

northern long-eared bat, except when necessary to protect public safety or respond to emergency conditions.

39. Although the tree-cutting restriction included in both the staff recommendation and Vermont ANR's certification condition E would protect the northern long-eared bat, tricolored bats, which, as noted above, are likely to occur in the project area, could still be disturbed. Tricolored bats roost in leaf clusters of woody plants, including those smaller than 3 inches in diameter, making them vulnerable to disturbance during any tree-clearing activities, regardless of tree size.[28] Therefore, to adequately protect tricolored bats, the removal of all sizes of non-hazardous trees would need to be avoided during the active period noted above. Relative to the proposal to avoid removal of trees equal to or greater than 4 inches in diameter at breast height or the Vermont ANR requirement to avoid removal of trees equal to or greater than 3 inches in diameter at breast height, there is no additional cost associated with avoiding the removal of non-hazardous trees of any size diameter from April 1 through October 31. Such a measure would ensure that relicensing the project is not likely to jeopardize the continued existence of the tricolored bat.[29] Therefore, for the protection of both northern long-eared and tricolored bats, Article 405 of this license requires avoiding the removal or thinning of all non-hazardous trees and woody vegetation from April 1 through October 31. With the inclusion of this license condition, no further action under the ESA is required for the northern long-eared and tricolored bats.[30]

HISTORICAL AND CULTURAL RESOURCES

A. National Historic Preservation Act

40. Under section 106 of the National Historic Preservation Act (NHPA),[31] and its implementing regulations,[32] federal agencies must consider the effect of any proposed

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[28] FWS, *Species Status Assessment Report for the Tricolored Bat (Perimyotis subflavus),* Version 1.1. (Dec. 2021), https://ecos.fws.gov/ServCat/DownloadFile/221212.

[29] EA at E-4.

[30] For species proposed for listing, like the tricolored bat, a federal agency must confer with FWS only when the agency determines that its action would likely jeopardize the continued existence of the proposed species or destroy or adversely modify proposed critical habitat. 16 U.S.C. § 1536(a)(4).

[31] 54 U.S.C. § 306108.

[32] 36 C.F.R. pt. 800 (2024).

undertaking on properties listed or eligible for listing in the National Register, defined as historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the SHPO to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

41. On December 21, 2018, GMP provided the Vermont SHPO with the notice of intent and pre-application document for the project's relicensing. On February 19, 2019, Commission staff initiated consultation with the Vermont SHPO and designated GMP as its non-federal representative for carrying out informal consultation pursuant to section 106 of the NHPA.[33] GMP consulted with the Vermont SHPO to identify historic properties, determine the eligibility of cultural resources for listing on the National Register, and assess potential adverse effects on historic properties within the project's area of potential effects (APE).

42. As discussed in the EA,[34] the APE for the project includes all land enclosed by the project boundary and land or properties outside of the project's boundary where project construction and operation or project-related recreational development or other enhancements may cause changes in the character or use of historic properties, if any historic properties exist. Specifically, the APE includes the proposed project boundary and land around the project impoundment up to a contour elevation of 507.4 feet NGVD 29.[35] The APE also includes the entirety of archaeological site VT-RU-266, two

[33] *See* Commission staff's February 19, 2019 Notice of Intent to File License Application, Filing of Pre-Application Document, Approving Use of the Traditional Licensing Process.

[34] EA at 41.

[35] The current project boundary (i.e., the project boundary authorized under the 1993 license for the project) follows a contour elevation of 507.4 feet NGVD 29 around the project's impoundment. The contour elevation of 507.4 feet corresponds to the elevation of the top of the flashboards authorized under the 1993 license, plus 0.25 feet for providing seasonal minimum flows over the spillway to the bypassed reach. However, GMP has been operating the project without the flashboards since 2012, potentially exposing land that was formerly inundated when the flashboards were installed. GMP is proposing to continue operating the project without the flashboards. Because there is still the possibility that archaeological resources occur on the land exposed by the lowering of the reservoir and because those resources could be adversely affected by the continued exposure of previously inundated archaeological sites, or project-related activities, such as recreation, the APE includes the land between elevations 505.05 feet NGVD 29 and 507.4 feet NGVD 29. EA at 41 and 42.

existing informal tailwater access trails, and the site of the proposed cultural heritage kiosk.[36]

43. Historic properties within the APE include the Center Rutland Hydroelectric Station Historic District (Historic District). Contributing resources to the Historic District include the project dam, powerhouse and generating equipment, penstock, marble retaining wall, intake structure, marble pumphouse, former pumphouse, transformer yard, stream gaging station, the Delaware and Hudson Railroad bridge, the former Route 4 bridge abutments, Clement Mill ruins, and the Clarendon and Pittsford Railroad bridge.[37] Additionally, there are archaeologically sensitive areas within the APE for the project, as well as a National Register-eligible archaeological site (VT-RU-0266).

44. In the EA,[38] Commission staff concluded that relicensing the project as proposed could have an adverse effect on the project dam. Adverse effects could occur: (1) from the installation of upstream eel passage facilities at the dam required by Vermont ANR's certification condition D; (2) in the event any repairs are needed to maintain the structure and function of the contributing resources; or (3) in the event project operation causes structural damage to historic properties.[39]

45. Commission staff issued a draft Programmatic Agreement (PA) for the project on April 24, 2024, that included stipulations for developing an HPMP to ensure that project-related adverse effects on historic properties or previously undiscovered archaeological resources would be adequately addressed over the term of a subsequent license. On June 7, 2024, the Vermont SHPO filed comments requesting clarification on the APE,

[36] The cultural heritage kiosk would not be included in the project boundary; however, installation of the kiosk would require ground-disturbing activities that could adversely affect cultural resources, so staff recommended that the site of the proposed kiosk, where ground disturbance would occur, be included in the APE.

[37] The Delaware and Hudson Railroad bridge and Clarendon and Pittsford Railroad bridge are not project facilities and are not owned by GMP. The Delaware and Hudson Railroad bridge crosses perpendicularly over Otter Creek, approximately 15 feet above the project dam, and the Clarendon and Pittsford Railroad bridge is located approximately 500 feet upstream of the project dam. Both bridges are located within the project boundary.

[38] EA at 42-43 and D-3.

[39] *Id.*

specifically whether the non-project pocket park was included in the APE.[40] On August 15, 2024, staff issued a final PA. In the final PA, staff clarified that the non-project pocket park was not included in the APE. The Vermont SHPO signed the PA on September 27, 2024. GMP concurred on September 16, 2024. The PA requires the licensee to prepare an HPMP for the project and, upon Commission approval, implement the HPMP for the term of the subsequent license.[41] Executing the PA demonstrates the Commission's compliance with section 106 of the NHPA. Article 409 requires GMP to implement the PA and to file its HPMP for Commission approval within one year of license issuance.

B. Tribal Consultation

46. On December 21, 2018, GMP provided the notice of intent and pre-application document for the project's relicensing to the federally recognized St. Regis Mohawk Tribe and the Stockbridge-Munsee Tribe.[42] At the request of the Vermont SHPO, on July 24, 2019, GMP sent a separate consultation letter to the Stockbridge-Munsee Tribe.[43] On July 25, 2019, the Stockbridge-Munsee Tribe responded that there are no anticipated concerns related to cultural resources because no ground disturbance was proposed.

47. On September 19, 2022, and September 29, 2022, respectively, Commission staff sent letters to the St. Regis Mohawk Tribe and the Stockbridge-Munsee Tribe (Tribes) and invited them to consult on the project. On April 24, 2024, Commission staff sent the draft PA to the Tribes and requested comments. On August 15, 2024, Commission staff sent the final PA to the Tribes and invited them to become concurring parties to the PA. The Tribes did not respond to the initial consultation letter or the final PA and did not file any comments in the record of the proceeding.

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[40] On July 22, 2024, Commission staff met with representatives from the Vermont SHPO and GMP to discuss the APE. *See* Commission staff's July 25, 2024 Technical Meeting Summary.

[41] *See* Commission staff's September 30, 2024 transmittal of the executed PA.

[42] GMP also provided the documents to the following state-recognized Tribes in Vermont: Elnu Tribe of Abenaki, Abenaki Nation of Missisquoi, Nulhegan Band of Coosuk Abenaki-Nation, and Koasek of the Koas of the Abenaki Nation.

[43] EA at D-3.

ENVIRONMENTAL JUSTICE

48. In conducting NEPA reviews of proposed hydropower projects, the Commission follows Executive Orders 12898 and 14096, which direct federal agencies to identify, analyze, and address disproportionate and adverse human health or environmental effects of their actions on communities with environmental justice concerns.[44] Executive Order 14008 also directs agencies to develop programs, policies, and activities to address the disproportionate and adverse "human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."[45] Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The term "communities with environmental justice concerns" includes communities that have been historically marginalized and overburdened by pollution, including minority populations, low-income populations, or indigenous peoples.[46]

49. Commission staff used *Promising Practices for EJ Methodologies in NEPA Reviews* (*Promising Practices*),[47] which provides methodologies for conducting environmental justice analyses throughout the NEPA process for this project. Additionally, consistent with U.S. Environmental Protection Agency (EPA) recommendations, Commission staff used EPA's Environmental Justice Screening and Mapping Tool (EJScreen) as an initial screening tool to better understand locations that require further review or additional information regarding minority and/or low-income populations; potential environmental quality issues; environmental and demographic indicators; and other important factors.[48]

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[44] Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994); Exec. Order No. 14,096, 88 Fed. Reg. 25251 (Apr. 21, 2023).

[45] Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

[46] 18 CFR § 380.2(f).

[47] EPA, *Promising Practices for EJ Methodologies in NEPA Reviews* (Mar. 2016) (*Promising Practices*), https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

[48] EPA, *Purposes and Uses of EJScreen* (Jan. 9, 2024), https://www.epa.gov/ejscreen/purposes-and-uses-ejscreen ("Screening is a useful first step in understanding or highlighting locations that may be candidates for further review.").

50. Consistent with the Council on Environmental Quality's (CEQ)[49] and the EPA's[50] guidance and recommendations, the Commission's methodology for assessing environmental justice impacts considers: (1) whether communities with environmental justice concerns (e.g., minority or low-income populations)[51] exist in the project area; (2) whether impacts on communities with environmental justice concerns are disproportionate and adverse and also whether impacts would be significant; and (3) possible mitigation measures. As recommended in *Promising Practices*, the Commission uses the 50% and the meaningfully greater analysis methods to identify minority populations.[52] Specifically, a minority population is present where either: (1) the aggregate minority population of the block groups in the affected area exceeds 50%; or (2) the aggregate minority population in the block group affected is 10% higher than the aggregate minority population percentage in the county.[53]

51. CEQ's *Environmental Justice Guidance* also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census

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[49] CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* 4 (Dec. 1997) (CEQ's *Environmental Justice Guidance*), https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf. . CEQ offers recommendations on how federal agencies can provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices. There were multiple opportunities for public involvement during the Commission's environmental review processes. *See, e.g.*, June 6, 2022 Notice Soliciting Scoping Comments; February 17, 2023 Notice of Application Accepted for Filing; April 28, 2023 Notice of Intent to Prepare Environmental Assessment; and April 24, 2024 Notice of Availability of Environmental Assessment.

[50] *See generally Promising Practices*.

[51] *See generally* Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994). Minority populations are those groups that include: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. CEQ's *Environmental Justice Guidance* at 25.

[52] *See Promising Practices* at 21-25.

[53] Here, Commission staff selected Rutland County as the reference community to ensure that affected communities with environmental justice concerns are properly identified. *See* EA at 46.

Bureau.[54] Using *Promising Practices'* low-income threshold criteria method, low-income populations are identified as block groups where the percent of low-income populations in the identified block group is equal to or greater than that of the county.

52. To identify potential communities with environmental justice concerns during preparation of the EA, Commission staff used 2022 U.S. Census American Community Survey data[55] for the race, ethnicity, and poverty data at the block group level.[56]

53. Once Commission staff collected the block group level data, as discussed in further detail below, staff conducted an impacts analysis for the identified communities with environmental justice concerns and evaluated health or environmental hazards; the natural physical environment; and, associated social, economic, and cultural factors to determine whether impacts were disproportionate and adverse on communities with environmental justice concerns and also whether those impacts were significant.[57] Commission staff assessed whether impacts on a community with environmental justice concerns were disproportionate and adverse based on whether those impacts were predominately borne by that community, consistent with EPA's recommendations in *Promising Practices.*[58]

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[54] CEQ's *Environmental Justice Guidance* at 26.

[55] U.S. Census Bureau, American Community Survey 2022 ACS 5-Year Estimates Detailed Tables, File# B17017, Poverty Status in the Past 12 Months by Household Type by Age of Householder, https://data.census.gov/cedsci/table?q=B17017; File #B03002 Hispanic or Latino Origin By Race, https://data.census.gov/cedsci/table?q=b03002.

[56] For this project, Commission staff determined the appropriate unit of geographic analysis for assessing project impacts on communities with environmental justice concerns is a 1-mile radius around the project boundary. This distance is sufficient considering the limited scope of the project proposal and the concentration of project-related effects within the project boundary.

[57] An agency may determine that impacts are disproportionate and adverse, but not significant within the meaning of NEPA and in other circumstances an agency may determine that an impact is both disproportionate and adverse and significant within the meaning of NEPA. *See Promising Practices* at 33.

[58] There are various approaches to determining whether an action will cause a disproportionate adverse impact. One recommended approach is to consider whether an impact would be "predominantly borne by minority populations or low-income populations." *See id*. at 44-46.

54. There were multiple opportunities for public involvement during the Commission's environmental review process as described above in the Background section.[59] No entity provided comments or recommendations regarding the effects of the project on communities with environmental justice concerns.

55. In the EA, Commission staff identified five communities with environmental justice concerns within a 1-mile radius of the project: three census block groups exceeded the defined meaningfully greater threshold for low income (Census Tract 962600, Block Group 1; Census Tract 963200, Block Group 4; and Census Tract 963300, Block Group 4); and two census block groups exceeded both the low income and minority threshold (Census Tract 963100, Block Group 2; and Census Tract 963200, Block Group 3).[60]

56. Operating the project in a run-of-river mode would result in stable impoundment elevations that would protect fish spawning habitat and mussel beds from becoming dewatered, and limit project-related erosion along the impoundment shoreline. These measures help preserve natural resources that communities with environmental justice concerns may rely on for recreation or subsistence fishing. Consistent with Vermont ANR's certification condition B, implementing a year-round bypass flow of 60 cfs, including during the winter when no minimum flow is currently required, would enhance aquatic habitat, sustain the hydraulic connection of the tailrace and deep pool, and improve visual and sound aesthetics at the project during the off-peak recreation season. GMP's proposal to install a cultural heritage information kiosk would enhance the recreational experience and increase awareness of the regional and project history at Otter Creek but has the potential to adversely affect cultural resources as a result of soil disturbance and vegetation management.[61]

57. The EA concluded that because of the limited scope of the project and the environmental protection and enhancement measures for aquatic and cultural resources, relicensing the project would not result in disproportionate and adverse impacts on the identified environmental justice populations.[62] Therefore, the project as licensed herein

[59] *See supra* PP 3-6.

[60] *See* EA at 47. Commission staff used 2022 U.S. Census American Community Survey data for the race, ethnicity, and poverty data at the state, county, and block group level. *Id*.

[61] EA at 47.

[62] *Id.* at 45-47.

will not result in disproportionate and adverse impacts on the identified communities with environmental justice concerns.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES PURSUANT TO SECTION 10(j) OF THE FPA

58. Section 10(j)(1) of the FPA[63] requires the Commission, when issuing a license, to include conditions based on recommendations submitted by federal and state fish and wildlife agencies pursuant to the Fish and Wildlife Coordination Act,[64] to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

59. No section 10(j) recommendations were filed.

SECTION 10(a)(1) OF THE FPA

60. Section 10(a)(1) of the FPA[65] requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

A. Minimum Bypassed Reach Flow Releases

61. The prior license required GMP to release a minimum flow of 80 cfs or inflow, whichever is less, over the spillway and into the bypassed reach from June 1 through October 15. The rest of the year, flow spilled into the bypassed reach only when inflow to the project was less than 60 cfs or greater than 190 cfs, the project's minimum and maximum hydraulic capacity, respectively.

62. GMP proposes to continue to provide a minimum flow of 80 cfs or inflow, whichever is less, over the spillway and into the bypassed reach from June 1 through October 15. GMP also proposes to release a minimum flow of 40 cfs or inflow, whichever is less, over the spillway and into the bypassed reach from October 16 through May 31. Vermont ANR's certification condition B specifies that GMP release a year-

[63] 16 U.S.C. § 803(j)(1).

[64] *Id.* §§ 661 *et seq.*

[65] 16 U.S.C. § 803(a)(1).

round minimum flow of 60 cfs, or inflow if less, from the spillway into the bypassed reach.

63. In the EA,[66] staff explained that the bypassed reach is 100 feet long and includes a 60-foot-long bedrock falls with virtually no aquatic habitat value, and a 40-foot-long and 3- to 20-foot-deep pool at the downstream end of the bedrock falls. The deep pool is backwatered by, and hydraulically connected to, the tailrace outflow at all flows 40 cfs and greater. The bypassed reach is fully visible from the southern shoreline of Otter Creek downstream of the dam, and minimally visible from the U.S. Route 4 (Elm Street) bridge, further downstream of the project.

64. In the EA,[67] staff concluded that due to ice cover during the winter and low recreational use during the non-summer months, GMP's proposal for a 40-cfs minimum bypassed reach flow and Vermont ANR's certification condition B for a higher 60-cfs minimum bypassed reach flow would only marginally improve fish habitat and aesthetics from October 16 through May 31, with very minimal difference in benefits between the two flows.

65. GMP's proposal to maintain the current minimum flow of 80 cfs (or inflow if less) in the bypassed reach from June 1 through October 15 would continue to benefit aquatic habitat by keeping pools and chutes connected and providing adequate fish cover and feeding areas in the bypassed reach.[68] Moreover, 80 cfs would continue to benefit recreation and aesthetic resources during the summer months by ensuring that chutes in the bypassed reach would be well covered with white water and providing an optimum veil of water over the spillway.[69] However, the EA concluded that Vermont ANR's required minimum flow of 60 cfs would reduce these benefits to aquatic, aesthetic, and recreation resources from June 1 through October 15 compared to the current conditions.[70]

66. With respect to the effects that the minimum flow alternatives would have on project generation, the EA concluded that GMP's proposed 80-cfs/40-cfs seasonal

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[66] EA at 17.

[67] *Id.* at 18 and 35.

[68] *Id.* at 18.

[69] *Id.* at 35.

[70] *Id.* at 18, 35, and I-4.

minimum bypassed reach flow and Vermont ANR's required 60-cfs year-round minimum flow would similarly reduce average annual generation by around 4 to 5 MWh.[71]

67. In considering the benefits and costs of the two flow alternatives as summarized above, in the EA, staff concluded, pursuant to sections 4(e) and 10(a) of the FPA, that the most appropriate balance among the use of flow for project generation, fishery resources, aesthetics, and recreation would be provided by GMP's minimum flow release proposal, which staff recommended over Vermont ANR's certification condition B.

68. Because (1) the staff-recommended flow of 80 cfs from June 1 through October 15 would not conflict with Vermont ANR certification condition B's requirement for a minimum flow of 60 cfs for the same period, (2) there would be no incremental cost to continue releasing a minimum flow of 80 cfs (or inflow if less) during the period relative to current conditions,[72] and (3) continuing to release the minimum flow of 80 cfs would continue the benefits summarized above for aquatic, recreation, and aesthetic resources, Article 402 requires the staff-recommended 80-cfs (or inflow if less) minimum bypassed reach flow from June 1 through October 15.

69. As noted above, a 60-cfs minimum flow as required by Vermont ANR certification condition B for the period October 16 through May 31 would provide minimal to no incremental benefits relative to the 40-cfs minimum flow recommended by staff. Whereas the average annual generation loss under staff's recommended 40-cfs minimum flow for the period would be 4.1 MWh,[73] the average annual generation loss would be 7.6 MWh under the 60-cfs minimum flow required by Vermont ANR's condition B.[74] Because there would be minimal to no incremental benefits in going from the proposed 40-cfs to the required 60-cfs minimum flow, the additional generation loss of the 60-cfs flow is not justified. However, because Vermont ANR's certification stipulates a 60-cfs minimum flow from October 16 through May 31 and the condition is mandatory, it is included in the license in Appendix A, rather than the staff-recommended 40-cfs minimum flow for the same period.

[71] *Id*. at H-4.

[72] *Id.* at H-1 and H-4.

[73] *Id.* at H-1 and H-4.

[74] This calculation was not included in the EA but was calculated for this order using the same methodology as the generation losses reported in the EA for the other flow alternatives.

B. Impoundment Surface Elevation.

70. The prior license authorized the licensee to install flashboards on the dam and maintain a normal impoundment elevation of 507.4 feet, corresponding with the elevation of the top of the flashboards. However, GMP no longer proposes to use the flashboards, and this subsequent license does not authorize their use. As a result, the normal high-water mark of the impoundment would be maintained at an elevation of 505.05 feet (i.e., 0.25 feet above the dam spillway crest elevation of 504.8 feet). Accordingly, Article 402 requires the licensee to target an impoundment surface elevation of 505.05 feet, during normal operating conditions.[75]

C. Operation Compliance Monitoring

71. In the EA,[76] staff analyzed several measures either proposed by GMP or identified by staff, that would have beneficial effects on aquatic resources, both in the impoundment and downstream of the project dam. These measures include operating in a run-of-river mode, releasing minimum flows to the bypassed reach, developing an impoundment refill procedure, and developing an operation compliance monitoring plan. Vermont ANR's certification conditions B and C cover most of these measures consistent with staff's recommendations; however, condition C (Flow Management and Monitoring Plan) does not include certain staff-recommended components and also does not specify a procedure for refilling the impoundment following planned or emergency drawdowns.

72. In the EA,[77] staff recommended that the plan include the measures required by certification condition C, but add the following components: (1) a detailed description of how GMP will maintain, monitor, and document compliance with the operational requirements of this license; (2) a description of the gages and other measuring devices that would be used to monitor compliance with license requirements; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled and unscheduled facility shutdowns; and (5) a schedule for installing monitoring equipment needed to document compliance with the operational requirements of the license. In addition, staff recommended that, following emergency and maintenance drawdowns, GMP implement a refill procedure whereby 90% of inflow would be released downstream of the dam and 10% of the inflow would be used to refill the impoundment,

[75] For compliance purposes, normal operating conditions are defined as non-flooding conditions where the project has the capability to hold the impoundment surface elevation at or near 505.05 feet.

[76] EA at 16-20.

[77] *Id.* at I-4.

concluding that this requirement would provide a benefit to aquatic resource protection in the impoundment and downstream of the project dam at reasonable cost.

73. Article 403 requires an operation compliance monitoring plan that is consistent with the flow management and monitoring plan required by certification conditions B and C and includes these additional staff recommended provisions.

D. Upstream Eel Passage

74. Although American eel are not present in the project area, they are present in Lake Champlain, into which Otter Creek flows. Vermont ANR's certification condition D specifies that GMP begin preparing a plan to provide upstream eel passage at the project within 1 year of the installation of upstream eel passage at the Otter Creek Project, located at RM 64, 7 miles downstream of the Center Rutland Project. Condition D states that the plan could include a provision for using either a trap-and-truck approach or an eel ramp as possible methods for providing upstream eel passage at the project.

75. In the EA,[78] staff concluded that if American eel are present in the project area in the future, then upstream passage for juvenile American eel at the project could be beneficial by allowing American eel to efficiently move upstream past the project. Staff also concluded that due to the conditional aspect of condition D, and the fact that the plan contemplates two different methods for providing upstream eel passage, staff could not weigh the benefits versus the costs of the measure and, therefore, could not recommend it under10(a) of the FPA. Nevertheless, this license includes the upstream eel passage plan requirement in Vermont ANR's certification condition D, as mandatory under the CWA (Appendix A).

E. Recreation

76. There are no recreation facilities required at the Center Rutland Project; however, GMP allows public use and access of project land and water for fishing, swimming, and hand-carry boating along the shoreline and downstream of the project. There are two informal tailwater access trails at the project: (1) an approximately 5-foot-wide and 38-foot-long dirt trail on the northern shoreline that leads from the informal parking area down to the shoreline below the powerhouse; and (2) an approximately 3-foot-wide and 155-foot-long dirt footpath on the southern shoreline that connects a gravel parking area along Simons Avenue to Otter Creek below the dam. In addition,[79] the Town is developing a non-project pocket park approximately 285 feet downstream of the dam, outside of the project boundary, that would include two parking areas, a hand carry boat

[78] EA at I-8.

[79] EA at 31- 33.

put-in, walking trails, beach access, observation area, picnic area, and historic and informational signage.[80] GMP proposes to install an informational kiosk featuring cultural heritage information, including details on the history of the falls and surrounding area, on the south bank of Otter Creek, next to the parking area of the Town's pocket park. GMP proposes to collaborate with the Vermont SHPO, the Abenaki Nation, and the Stockbridge Munsee Tribe to develop a storyboard-style kiosk that provides accurate regional cultural information. Finally, Vermont ANR's certification condition F requires that GMP provide public access and use of project land and water; provide access to, and maintain, the hand carry put-in/fishing access area located downstream of the powerhouse; and establish an agreement with the Town for a pocket park pending appropriate approvals, which is similar to GMP's proposal.

77. As described in the EA,[81] there is documented informal recreational use of the southern shoreline of Otter Creek, at the location of the Town's proposed pocket park, which suggests a need for formal recreational facilities to meet recreational demand in the vicinity of the project. In the EA,[82] staff concluded that the Town's pocket park would meet this need; therefore, there is no justification to require GMP to develop the pocket park as a project facility. Further, because staff did not recommend that GMP develop the pocket park, and because the land to be transferred is non-project land, there is no basis to require a land transfer, as proposed by GMP and required by Vermont ANR's certification condition F. However, Vermont ANR's certification condition F is included in this license because it is mandatory under section 401 of the CWA.

78. To ensure recreational needs at the project are met throughout the term of any license issued, staff recommended that GMP develop a recreation monitoring plan to evaluate recreational demand and the adequacy of project recreational opportunities to meet recreational demand at the project. The recommended plan would monitor, at a minimum, the following: (1) number of recreational users on project land, (2) types of recreational use observed on project land, (3) duration of time recreational users spend on project land, and (4) adequacy of nearby amenities, and access to meet recreational demand at the project. Staff stated that an effective plan would include a description of the methods used to collect use data and an implementation schedule. Finally, staff concluded that conducting periodic recreational monitoring would ensure that

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[80] In order to accommodate the development of the park, GMP has agreed to transfer ownership of 1.9 acres of its non-project land to the Town. This land is located outside of the project boundary on the south shoreline of Otter Creek, just downstream of the project's dam.

[81] EA at 31 - 33.

[82] EA at I-6 through I-7.

recreational use data is captured at reasonable and regular intervals, the data clearly describes recreational use at the project, and information is available to determine if recreational needs at the project are being met over the term of a new license. Therefore, Article 407 requires GMP to develop a recreation monitoring plan for the project. In addition, Article 408 of this license requires GMP to notify the Commission if the Town's pocket park is not constructed or ceases operation and reserves the Commission's right to require additional recreational measures at the project in the future.

79. Regarding GMP's proposed cultural heritage informational kiosk, staff concluded that installation of the kiosk would improve the recreational user experience at the project by providing visitors with the historical significance and cultural context of the project area.[83] Therefore, Article 406 requires GMP to file documentation showing the completed kiosk, including photographs that reflect the as-built condition.

F. Project Boundary

80. Project boundaries enclose the project works that are to be licensed and should enclose "only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources."[84]

81. Around the impoundment, the existing project boundary follows a contour elevation of 507.4 feet, corresponding with the elevation of the top of the flashboards authorized by the prior license. Because GMP no longer proposes to use the flashboards and this subsequent license does not authorize their use, the land that was formerly inundated due to flashboard use is no longer needed for project purposes. Therefore, the Exhibit G drawings must be revised to reflect the normal high water mark of the impoundment at 505.05 feet (i.e., 0.25 feet above the dam spillway crest elevation of 504.8 feet when providing the seasonal minimum flow). Article 204 of this license requires GMP to file revised Exhibit G drawings that removes land above the 505.05 feet contour and shows the impoundment boundary drawn along the 505.05-foot contour.

ADMINISTRATIVE PROVISIONS

A. Annual Charges

82. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of these funds for administration of the

[83] EA at I-7.

[84] 18 C.F.R. § 4.41(h)(2) (2024).

FPA. Under the regulations currently in effect,[85] projects with an authorized installed capacity of less than or equal to 1.5 megawatts, like this project, are not assessed an annual charge.

B. Reservation of Authority to Require Financial Assurance Measures

83. To confirm the importance of licensees maintaining sufficient financial reserves, Article 202 reserves the Commission's authority to require future measures to ensure that the licensee maintains sufficient financial reserves to carry out the terms of the license and Commission orders pertaining thereto.

C. Exhibit F and G Drawings

84. Commission regulations require that licensees file sets of approved drawings in electronic format. Article 203 requires the filing of these drawings.

85. As discussed above, the Exhibit G map filed on May 20, 2022, includes 1.2 acres of land above the 505.05-foot contour that do not serve a project purpose. Therefore, the Exhibit G map does not conform to the Commission's regulations and is not approved. Article 204 requires the licensee to file a revised Exhibit G map that only includes land necessary for operation and maintenance of the project. The revised Exhibit G must meet the requirements of sections 4.39 and 4.41(h) of the Commission's regulations.

D. As-Built Exhibits

86. Where new construction or modifications to the project are involved (e.g., new eel passage facilities), the Commission requires licensees to file revised exhibits of project features as-built. Article 205 requires the licensee to file these as-built exhibits.

E. Modifications of Project Facilities

87. Article 301 requires the licensee to consult with the Commission's Division of Dam Safety and Inspections – New York Regional Engineer on any proposed modifications resulting from environmental requirements that would affect project works, dam safety, or project operation.

[85] *Id*. § 11.1(b)(1).

F. Commission Approval of Resource Plans, Notification, and Filing of Amendments

88. In Appendix A of this order, there are certification conditions that do not require the licensee to file certain plans or reports with the Commission, or that contemplate future changes to project facilities or operations without the opportunity for prior Commission review. Article 401 requires the licensee to file the plans and reports with the Commission for approval, notify the Commission of planned and unplanned deviations from the license requirements, and file amendment applications prior to making changes to project facilities or operations, as appropriate.

G. Use and Occupancy of Project Lands and Waters

89. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 409 allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

STATE AND FEDERAL COMPREHENSIVE PLANS

90. Section 10(a)(2)(A) of the FPA,[86] requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.[87] Under section 10(a)(2)(A), Commission staff identified and reviewed 15 comprehensive plans relevant to this project.[88] No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

91. In accordance with section 10(a)(2)(C) of the FPA[89] and the Commission's regulations, Commission staff evaluated GMP's record as a licensee with respect to the following: (A) need for power; (B) safe management, operation, and maintenance of the

[86] 16 U.S.C. § 803(a)(2)(A).

[87] Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19.

[88] The list of applicable plans can be found in Appendix J of the EA.

[89] 16 U.S.C. § 803(a)(2)(C).

project; and (C) conservation efforts.[90] This order accepts staff's findings in each of the following areas.

A. Need for Power

92. To assess the need for power from the project, staff looked at the needs in the operating region in which the project is located, which is the Northeast Power Coordinating Council's (NPCC) New England region of the North American Electric Reliability Corporation (NERC). NERC annually forecasts electrical supply and demand in the nation and the region for a 10-year period. NERC's most recent report indicates the net internal demand in the NPCC's New England region is projected to increase at an annual rate of 3.46% from 2023 through 2033. Therefore, the project's power will continue to help meet the regional need for power.

B. Safe Management, Operation, and Maintenance of the Project

93. Commission staff reviewed GMP's record of management, operation, and maintenance of the Center Rutland Project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines. Staff concludes that the dam and other project works are safe, and that there is no reason to believe that GMP cannot continue to safely manage, operate, and maintain these facilities under a subsequent license.

C. Conservation Efforts

94. Section 10(a)(2)(C) of the FPA[91] requires the Commission to consider the electricity consumption improvement program of the applicant, including its plans, performance, and capabilities for encouraging or assisting its customers in conserving electricity cost-effectively, and taking into account the published policies, restrictions, and requirements of state regulatory authorities. GMP is a regional electric utility and power producer that delivers the project's energy directly into its distribution system.

95. Our review of publicly available information indicates that GMP promotes energy conservation practices for both residential and commercial/industrial customers and has undertaken several programs, including energy storage programs, to improve efficiency and promote energy conservation. GMP also conserves energy by performing frequent

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[90] Order No. 513 exempts licenses of minor projects, such as the Center Rutland Project, whose licenses waive sections 14 and 15 of the FPA, from the information requirements of 18 C.F.R. § 16.10. *See* 54 Fed. Reg. 23,756 (June 2, 1989) and 55 Fed. Reg. 10,768 (Mar. 23, 1990).

[91] 16 U.S.C. § 803(a)(2)(C).

preventive maintenance on its project equipment and by encouraging its customers to conserve energy. These programs show that GMP is making an effort to conserve electricity and has made a satisfactory good faith effort consistent with section 10(a)(2)(C) of the FPA.

PROJECT ECONOMICS

96. In determining whether to issue a subsequent license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,[92] the Commission uses current costs to compare the costs of the project with the costs of the likely alternative source of power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

97. In applying this analysis to the Center Rutland Project, Commission staff considered three options: a no-action alternative, GMP's proposal, and the project as licensed herein.[93]

98. Under the no-action alternative, the project would continue to operate as it does now. The project currently has an installed capacity of 275 kW, a capacity benefit of 195 kW, and generates an average of 542 MWh of electricity annually.[94] The average annual project cost is about $159,708. The alternative source of power's annual cost to produce the same amount of energy and provide the same capacity benefit is $73,695, in 2023 dollars.[95] To determine whether the proposed project is currently economically

[92] 72 FERC ¶ 61,027 (1995).

[93] Details of Commission staff's economic analysis for the project as licensed herein, and for the other two alternatives, are included in Appendix G of the EA.

[94] The term "capacity benefit" is used to describe the benefit a project receives for providing capacity to the grid, which may be in the form of a dependable capacity credit or credit for monthly capacity provided.

[95] The energy portion of the power cost is $71.42/MWh and is based on natural gas energy prices from the *Annual Energy Outlook 2022* published by the Energy Information Administration in March 2023. The capacity portion of the power cost is based on the annual cost of the hydro-equivalent natural gas-fired combined-cycle capacity, which staff estimates to be about $179.08/kW-year.

beneficial, the project's total annual cost is subtracted from the alternative source of power's cost. Therefore, the project costs $86,013 more than the alternative source of power's cost.

99. As proposed by GMP, the levelized annual cost of operating the project is $160,527. The proposed project would have an installed capacity of 275 kW, a capacity benefit of 195 kW, and generate an average of 538 MWh of energy annually. The alternative source of power's cost to produce the same amount of energy and provide the same capacity benefit is $73,402, in 2023 dollars. Therefore, the project would cost $87,125 more than the alternative source of power's cost.

100. As licensed herein with mandatory conditions and Commission staff's measures, the levelized annual cost of operating the project is $161,325. The proposed project will have an installed capacity of 275 kW, a capacity benefit of 195 kW, and generate an average of 537 MWh of energy annually. The alternative source of power's cost to produce the same amount of energy and provide the same capacity benefit is $73,330, in 2023 dollars. Therefore, the project will cost $87,995 more than the alternative source of power's cost.

101. Although our analysis shows that the project as licensed herein will cost more to operate than the likely alternative source of power, it is the applicant who must decide whether to accept this license and any financial risk that entails.

102. In considering public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include the ability to help maintain the stability of a power system, such as by quickly adjusting power output to respond to rapid changes in system load; and to respond rapidly to a major utility system or regional blackout by providing a source of power to help restart fossil fuel-based generating stations and put them back online. Additionally, although Commission staff's analysis does not explicitly account for the effects inflation may have on the future cost of electricity, the fact that hydropower generation is a renewable resource and relatively insensitive to fuel costs and associated inflationary pressures compared to fossil-fueled generators is an important economic consideration for power producers and the consumers they serve. This is one reason project economics is only one of the many public interest factors the Commission considers in determining whether, and under what conditions, to issue a license.

COMPREHENSIVE DEVELOPMENT

103. Sections 4(e) and 10(a)(1) of the FPA[96] require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued must be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

104. The EA for the project contains background information, analysis of effects, and support for related license articles. Based on the record of this proceeding, including the EA and the comments thereon, licensing the Center Rutland Project as described in this order will not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of the license.

105. Based on our independent review and evaluation of the Center Rutland Project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, the project as licensed herein is selected, and found to be best adapted to a comprehensive plan for improving or developing Otter Creek.

106. This alternative is selected because: (1) issuing a subsequent license will serve to maintain a beneficial and dependable source of electric energy; (2) the required environmental measures will protect and enhance aquatic resources, water quality, federally listed species, recreation resources, and cultural resources; and (3) the 275 kW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

107. Section 15(e) of the FPA[97] provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years.

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[96] 16 U.S.C. §§ 797(e), 803(a)(1).

[97] *Id*. § 808(e).

108. On October 19, 2017, the Commission established a 40-year default license term policy for licenses, effective as of October 26, 2017.[98] The License Term Policy Statement provides for exceptions to the 40-year default license term under certain circumstances: (1) establishing a shorter or longer license term if necessary to coordinate license terms for projects located in the same river basin; (2) deferring to a shorter or longer license term explicitly agreed to in a generally-supported comprehensive settlement agreement; and (3) establishing a longer license term upon a showing by the license applicant that substantial voluntary measures were either previously implemented during the prior license term, or substantial new measures are expected to be implemented under the subsequent license.

109. Because none of the above exceptions apply in this case, a 40-year license for the Center Rutland Project is appropriate.

The Director orders:

(A) This license is issued to Green Mountain Power Corporation (licensee) to operate and maintain the Center Rutland Hydroelectric Project for a period of 40 years, effective the first day of the month in which this order is issued. The license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, described in the project description and the project boundary discussion of this order.

(2) Project works consisting of: (1) a 190-foot-long, 14-foot-high concrete and stone masonry gravity dam that includes: (a) a 174-foot-long spillway section with a crest elevation of 504.8 feet National Geodetic Vertical Datum of 1929 (NGVD 29); and (b) a 16-foot-long non-overflow section; (2) an impoundment with a surface area of 11 acres at an elevation of 504.8 feet NGVD 29; (3) a 13-foot-long, 7- to 30-foot-wide forebay; (4) a 39.58-foot-wide, 18-foot-high concrete and marble masonry intake structure with a 6.7-foot-wide, 6.5-foot-high steel headgate and a 30-foot-wide, 12-foot-high trashrack with 9/16-inch clear bar spacing; (5) a 6-foot-

[98] *See Policy Statement on Establishing License Terms for Hydroelectric Projects*, 161 FERC ¶ 61,078, at P 3 (2017) (citing *City of Danville, Virginia*, 58 FERC ¶ 61,318, at 62,020 (1992)).

diameter, 75-foot-long steel penstock; (6) a 40-foot-long, 33-foot-wide stone and marble masonry powerhouse containing one 275-kilowatt horizontal-shaft turbine-generator unit; (7) a 480-volt/12.47-kilovolt (kV) transformer and an 80-foot-long, 12.47-kV transmission line that interconnects with the local distribution grid; and (8) appurtenant facilities

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A: Pages A-4 through A-18, of the Exhibit A filed on May 20, 2022.

Exhibit F: The following drawings filed on May 20, 2022:

Exhibit F Drawing	**FERC Drawing No. P-2445-**	**Drawing Title**
F-1	1001	Site plan
F-2	1002	Plan and Sections of Dam
F-3	1003	Plan View and Sections
F-4	1004	Profile Elevation, Trash Rack Details, Saddle Section

(C) The Exhibits A and F described above are approved and made part of the license. The Exhibit G drawings filed on May 20, 2022, do not conform to Commission regulations and are not approved.

(D) The following sections of the FPA are waived and excluded from the license for this minor project:

Sections 4(b), except the second sentence; 4(e), insofar as it relates to approval of plans by the Chief of Engineers and the Secretary of the Army; 6, insofar as it relates to public notice and to the acceptance and expression in the license of terms and conditions of the FPA that are waived here; 10(c), insofar as it relates to depreciation reserves;

10(d); 10(f); 14, except insofar as the power of condemnation is reserved; 15; 16; 19; 20; and 22.

(E) This license is subject to the conditions submitted by the Vermont Agency of Natural Resources under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1), as those conditions are set forth in Appendix A to this order.

(F) This license is also subject to the articles set forth in Form L-12 (Oct. 1975), entitled, "Terms and Conditions of License for Constructed Minor Project Affecting the Interests of Interstate or Foreign Commerce" (*see* 54 F.P.C. 1792, *et seq.*), as reproduced at the end of this order, and the following additional articles:

Article 201. *Administrative Annual Charges*. The licensee must pay the United States annual charges, effective the first day of the month in which the license is issued, and as determined in accordance with the provisions of the Commission's regulations in effect from time to time, for the purposes of reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 275 kilowatts (kW). Under the regulations currently in effect, projects with an authorized installed capacity of less than or equal to 1,500 kW will not be assessed an annual charge.

Article 202. *Reservation of Authority to Require Financial Assurance Measures*. The Commission reserves the right to require future measures to ensure that the licensee maintains sufficient financial reserves to carry out the terms of the license and Commission orders pertaining thereto.

Article 203. *Exhibit F Drawings*. Within 45 days of the date of issuance of this order, as directed below, the licensee must file the approved exhibit drawings in electronic file format.

The licensee must prepare digital images of the approved exhibit drawings in electronic format. Prior to preparing each digital image, the licensee must add the FERC Project-Drawing Number (i.e., P-2445-1001 through P-2445-1004) in the margin below the title block of the corresponding approved drawing. The licensee must **label and file the Exhibit F drawings as Critical Energy Infrastructure Information (CEII) material under 18 CFR § 388.113.** The submission should consist of: (1) a public portion consisting of a cover letter; and (2) a CEII portion containing only the Exhibit F drawings. Each drawing must be a separate electronic file, and the file name must include: FERC Project-Drawing Number, FERC Exhibit Number, Filename Drawing Title, date of this order, and file extension in the following format [P-2445-1001, F-1, Site Plan, MM-DD-YYYY.TIFF]. All digital images of the exhibit drawings must meet the following format specification:

IMAGERY: black and white raster file

FILE TYPE:	Tagged Image File Format (TIFF), CCITT Group 4 (also known as T.6 coding scheme)
RESOLUTION:	300 dots per inch (dpi) desired, (200 dpi minimum)
DRAWING SIZE:	22” x 34” (minimum), 24” x 36” (maximum)
FILE SIZE:	less than 1 megabyte desired

Article 204. *Exhibit G Drawings*. Within 90 days of the issuance date of this license, the licensee must file, for Commission approval, revised Exhibit G drawings to exclude 1.2 acres of land above the 505.05-foot contour, because the acreage does not serve a project purpose. The Exhibit G drawings must comply with sections 4.39 and 4.41(h) of the Commission’s regulations.

Article 205. *As-built Exhibits*. Within 90 days of completion of construction of the facilities authorized by this license (e.g., new eel passage facilities), the licensee must file, for Commission approval, revised Exhibits A, F, and G, as applicable, to describe and show those project facilities as built.

Article 301. *Project Modification Resulting from Environmental Requirements.* If environmental requirements under this license require modifications that may affect the project works or operations, the licensee must consult with the Commission’s Division of Dam Safety and Inspections – New York Regional Engineer. Consultation must allow sufficient review time for the Commission to ensure that the proposed work does not adversely affect the project works, dam safety, or project operation.

Article 401. *Commission Approval, Reporting, Notification, and Filing of Amendments.*

(a) *Requirements to File Plans for Commission Approval*

Certain conditions of Vermont Agency of Natural Resources’ (Vermont ANR) Clean Water Act section 401 water quality certification (certification) in Appendix A require the licensee to prepare plans in consultation with other entities for approval, and to implement specific measures without prior Commission approval. The following plans must be submitted to the Commission for approval by the deadlines specified below:

Vermont ANR Certification Condition	**Plan Name**	**Commission Due Date**
C	Flow Management and Monitoring Plan	June 30, 2025
D	Plan to develop American Eel Passage	Within 1 year of eel passage installation at the Otter Creek Project No. 2558

With each plan filed with the Commission, the licensee must include documentation that it developed the plan in consultation with Vermont ANR and the U.S. Fish and Wildlife Service (FWS), as appropriate, and provide copies of any comments received, as well as its response to each comment. The licensee must allow a minimum of 30 days for the agencies to comment on the plans before filing the plans with the Commission. The Commission reserves the right to make changes to any plan filed. Upon Commission approval, the plan becomes a requirement of the license, and the licensee must implement the plan, including any changes required by the Commission. Any changes to the above schedule or plans require approval by the Commission before implementing the proposed change.

(b) *Requirement to Notify the Commission of Planned, Temporary Modifications to Mandatory Condition Requirements*

The licensee may deviate from the flow and impoundment management requirements of Vermont ANR's condition B for short periods of time, of up to 3 weeks, without prior Commission approval after concurrence from the conditioning agency. The licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the onset of the deviation. Each report must include: (1) the reasons for the deviation and whether operations were modified; (2) the duration and magnitude of the deviation; (3) any environmental effects; and (4) documentation of approval from the conditioning agency. For deviations from the mandatory conditions exceeding 3 weeks, the licensee must file an application and receive Commission approval prior to implementation.

(c) *Requirement to Notify the Commission of Unplanned Deviations from Mandatory Condition Requirement(s) Lasting More than 3 Hours or Resulting in Environmental Effects*

If there is any unplanned deviation from the flow and impoundment management requirements of Vermont ANR's condition B that lasts longer than 3 hours ***or*** results in observed or reported environmental effects such as a fish kill, the licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the incident. Each report must describe the incident, including: (1) the cause of the event; (2) the duration and magnitude; (3) any pertinent operational and/or monitoring data; (4) a timeline of the incident and the licensee's response; (5) any environmental effects; (6) documentation that the conditioning agency was notified and any comments received, or, affirmation that no comments were received; and (7) any measures to be implemented to prevent similar incidents in the future.

(d) *Requirement to Notify the Commission of Unplanned Deviations from Mandatory Condition Requirement(s) Lasting 3 Hours or Less with No Environmental Effects*

For unplanned deviations from the flow and impoundment management requirements of Vermont ANR's condition B lasting 3 hours or less that do not result in environment effects, the licensee must file an annual report by January 31, describing each incident up to 1 month prior to the reporting date, including: (1) the cause of the event; (2) the duration and magnitude of the deviation; (3) any pertinent operational and/or monitoring data; (4) a timeline of the incident and the licensee's response; (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies; and (6) a description of measures implemented to prevent similar deviations in the future. Any deviations that occur within the month prior to the reporting date should be included in the following year's report.

(e) *Requirement to File Amendment Applications*

Certain Vermont ANR conditions in Appendix A contemplate unspecified or conditional long-term changes to project operation or facilities for the purpose of mitigating environmental impacts, such as condition D, which specifies the development of a plan to implement American eel passage measures within 1 year of upstream American eel passage having been installed at the Otter Creek Hydroelectric Project (FERC No. 2558). These changes may not be implemented without prior Commission authorization granted after the filing of an application to amend the license. In any amendment request, the licensee must identify related project requirements and request corresponding amendments or extensions of time as needed to maintain consistency among requirements.

Article 402. *Project Operation*. While operating the project run-of-river in accordance with Vermont Agency of Natural Resources' Clean Water Act section 401 water quality certification condition B (Appendix A), the licensee must target an impoundment surface elevation of 505.05 feet during normal operating conditions.

In addition to the minimum flow requirements specified in condition B of Vermont Agency of Natural Resources' water quality certification condition B (Appendix A), the licensee must also provide, from June 1 through October 15, a minimum flow of 80 cubic feet per second (cfs) or inflow to the project's impoundment, whichever is less, over the project's spillway and into the bypassed reach of Otter Creek for the protection of aquatic and aesthetic resources.

Planned Deviations

The project operation requirements of this article and Condition B of Appendix A may be temporarily modified for short periods, of up to 3 weeks, after mutual agreement among the licensee and the U.S. Fish and Wildlife Service and the Vermont Agency of Natural Resources (collectively, resource agencies). After concurrence from the agencies, the licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the onset of the planned deviation. Each report must include: (1) the reasons for the deviation and how project operations were modified, (2) the duration and magnitude of the deviation, (3) any observed or reported environmental effects, and (4) documentation of consultation with the agencies. For planned deviations exceeding 3 weeks, the licensee must file an application for a temporary amendment of the applicable operational requirements of this license and receive Commission approval prior to implementation.

Unplanned Deviations

The project operation requirements of this article and Condition B of Appendix A may be temporarily modified if required by operating emergencies beyond the control of the licensee (i.e., unplanned deviations). For any unplanned deviation that lasts longer than 3 hours ***or*** results in observed or reported environmental effects, such as a fish kill, turbidity plume, bank erosion, or downstream flooding, the licensee must file a report as soon as possible, but no later than 14 days after each such incident. The report must include: (1) the cause of the deviation, (2) the duration and magnitude of the deviation, (3) any pertinent operational and/or monitoring data, (4) a timeline of the incident and the licensee's response, (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies, (6) documentation of any observed or reported environmental effects, and (7) a description of measures implemented to prevent similar deviations in the future.

For unplanned deviations lasting 3 hours or less that do not result in observed or reported environmental effects, the licensee must file an annual report, by March 1, describing each incident that occurred during the prior January 1 through December 31 time period. The report must include for each 3 hours or less deviation: (1) the cause of the deviation, (2) the duration and magnitude of the deviation, (3) any pertinent operational and/or monitoring data, (4) a timeline of the incident and the licensee's response to each deviation, (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies, and (6) a description of measures implemented to prevent similar deviations in the future.

Article 403. *Operation Compliance Monitoring Plan.* Within six months of license issuance, the licensee must file, for Commission approval, an operation compliance monitoring plan that is consistent with Article 402 and the requirements of

conditions B and C of Vermont Agency of Natural Resources' (Vermont ANR) water quality certification (Appendix A), with the following additional components: (1) a detailed description of how the licensee will maintain, monitor, and document compliance with the operational requirements of this license; (2) a description of the gages and other measuring devices that would be used to monitor compliance with license requirements; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled and unscheduled facility shutdowns; (5) a schedule for installing monitoring equipment needed to document compliance with the operational requirements of the license; and (6) procedures for refilling the impoundment following emergency and maintenance drawdowns whereby 90% of inflow is passed downstream and 10% of inflow is used to refill the impoundment.

The licensee must prepare the plan after consultation with Vermont ANR. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to Vermont ANR, and specific descriptions of how Vermont ANR's comments are accommodated by the plan. The licensee must allow a minimum of 30 days for Vermont ANR to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project specific information.

The Commission reserves the right to require changes to the plan. The licensee must not begin implementing the plan until the Commission notifies the licensee that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 404. *Reservation of Authority to Prescribe Fishways*. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of such fishways as may be prescribed by the Secretary of the Interior pursuant to section 18 of the Federal Power Act.

Article 405. *Protection of Northern Long-Eared and Tricolored Bats.* To protect northern long-eared bats and tricolored bats, the licensee must avoid removing trees on project lands from April 1 through October 31. Tree removal includes cutting, harvesting, destroying, trimming, or any other form of manipulation of non-hazardous trees, saplings, snags, or woody vegetation. Tree removal is not prohibited if it is needed to ensure public or project safety. If emergency tree removal is necessary, the licensee must notify the Vermont Agency of Natural Resources and the U.S. Fish and Wildlife Service as soon as practical after conducting the trimming or removal.

Article 406. *Informational Kiosk.* Within one year of license issuance, the licensee must design, construct, and install a cultural heritage information kiosk for the Town of Rutland (Town), to be located at the Town's non-project pocket park, located

downstream of the project's dam. The licensee must develop the kiosk in coordination with the Town, the Vermont Division of Historic Preservation, the federally recognized St. Regis Mohawk Tribe and Stockbridge Munsee Tribe, and the following state-recognized Tribes in Vermont: Elnu Tribe of Abenaki, Abenaki Nation of Missisquoi, Nulhegan Band of Coosuk Abenaki-Nation, and Koasek of the Koas of the Abenaki Nation. Within 90 days of completion installation, the licensee must file documentation showing the completed kiosk, including photographs that reflect the as-built condition and a description of how they took stakeholder comments into account during development.

Article 407. *Recreation Monitoring Plan.* Within one year of license issuance, the licensee shall file, for Commission approval, a recreation monitoring plan that describes how the licensee will evaluate recreational use and demand at the project. The plan must include, at a minimum:

(1) A description of how recreation at the project will be monitored, including the proposed methods that will be used to collect data.

(2) A description of the data to be collected, including, at a minimum: the locations within the project boundary where recreational users are accessing the project, the number of recreational users on project land, the types of recreational use observed on project land, and the duration of time recreational users spend on project land.

(3) A discussion of how the licensee will use the results of the survey to assess the adequacy of project recreational access to meet recreational demand.

(4) An implementation schedule that includes provisions for conducting an initial monitoring survey within five years of the completion of the Town of Rutland's non-project pocket park and determining the frequency of ongoing monitoring throughout the license term.

(5) A provision to consult with the Town of Rutland and other interested stakeholders on the results of each monitoring survey.

(6) A provision to file a report with the Commission, within six months of each monitoring survey, that provides a summary of the results of the survey, the data collected, a summary of consultation with the Town of Rutland, and an analysis of the adequacy of project recreational opportunities to meet recreational demand at the project.

The licensee must prepare the plan after consultation with the Town of Rutland. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Town of Rutland, and specific descriptions of how the Town of Rutland's comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the Town of Rutland to comment and to make recommendations before filing

the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan including any changes required by the Commission.

Article 408. *Future Recreation*. The licensee must notify the Commission if the Town of Rutland's pocket park is not constructed or ceases operation. Authority is reserved to the Commission to require the licensee to implement additional recreation measures if in the public interest.

Article 409. *Programmatic Agreement and Historic Properties Management Plan*. The licensee must implement the "Programmatic Agreement Among the Federal Energy Regulatory Commission and the Vermont State Historic Preservation Office for Managing Historic Properties that May be Affected by Issuing a Subsequent License to Green Mountain Power Corporation for the Continued Operation of the Center Rutland Hydroelectric Project in Rutland County, Vermont (FERC No. 2445-028)," executed on September 30, 2024, and including, but not limited to, the historic properties management plan (HPMP) for the project. Pursuant to the requirements of this Programmatic Agreement (PA), the licensee must file, for Commission approval, an HPMP within one year of issuance of this order. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license. If the PA is terminated prior to Commission approval of the HPMP, the licensee must obtain approval from the Commission and the Vermont State Historic Preservation Officer, before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the project's area of potential effects.

Article 410. *Use and Occupancy*. (a) In accordance with the provisions of this article, the licensee must have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee must also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee must take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if

necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee must require multiple use and occupancy of facilities for access to project lands or waters. The licensee must also ensure that, to the satisfaction of the Commission's authorized representative, the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee must: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kilovolts or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee must file with the Commission a copy of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed. No report filing is required if no conveyances were made under paragraph (c) during the previous calendar year.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is 5 acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must file a letter with the Commission, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Commission's authorized representative, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee must consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee must determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources of an Exhibit E; or, if the project does not have an approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed must not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee must take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the

scenic, recreational, and environmental values of the project; and (iii) the grantee must not unduly restrict public access to project lands and waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project must be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article must not apply to any part of the public lands and reservations of the United States included within the project boundary.

(G) The licensee must serve copies of any Commission filing required by this order on any entity specified in the order to be consulted on matters relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(H) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 825*l*, and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2022). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order. The licensee's failure to file a request for rehearing constitutes acceptance of this order.

for
Terry L. Turpin
Director
Office of Energy Projects

Form L-12
(October, 1975)

FEDERAL ENERGY REGULATORY COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED MINOR PROJECT AFFECTING THE INTERESTS OF INTERSTATE OR FOREIGN COMMERCE

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works shall be in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, shall be subject to the inspection and

supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights or occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage,

and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 7. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 8. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 9. The operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Commission may prescribe for the purposes hereinbefore mentioned.

Article 10. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts

thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 11. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 12. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 13. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such

portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 14. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon the request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 15. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 16. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 17. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new

license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 18. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

APPENDIX A

Water Quality Certificate Conditions
Issued by the Vermont Agency of Natural Resources
Filed March 29, 2024

CERTIFICATION CONDITIONS

A. Compliance with Conditions. The Applicant shall operate and maintain this Project consistent with the findings and conditions of this certification. The Applicant shall not make any changes to the Project or its operations that would have a significant or material effect on the findings, conclusions, or conditions of this Certification without approval of the Department.

See finding 133 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-101.

B. Flow Management. The Project shall be operated in instantaneous run-of-river mode. Instantaneous run-of-river mode means no utilization of impoundment storage and that outflow from the facility is equal to inflow to the impoundment on a near instantaneous basis except for short term, unavoidable deviations.

The Applicant shall provide a conservation flow of 60 cfs, or inflow if less, to the bypassed reach year-round. The conservation flow shall be provided via spillage over the dam, unless otherwise described in the flow management and monitoring plan or approved by the Department. When the Project is not operating, all flow shall be spilled at the dam.

See findings 141, 144, and 146 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-304 & § 29A-306 (b)(3)(B) & § 306 (c)(3)(B)(i).

C. Flow Management and Monitoring Plan. The Applicant shall develop, within 180 days of the effective date of the FERC license, a flow management and monitoring plan detailing how the Project will operate in instantaneous run-of-river mode and comply with the conservation flow requirements. The plan will also include a method for continuous monitoring and reporting of flow releases (e.g. conservation flow, spillage, and turbine discharge) at the Project, impoundment levels, and inflow. The plan shall include provisions for the flow data to be available on a near real-time basis to allow for records to be furnished upon request.

The plan will include procedures for reporting deviations from prescribed operating conditions to the Department. Reports shall be made within 15 days after a deviation and will include, if possible, the cause, severity, and duration of the deviation, observed or reported adverse environmental impacts from the incident, pertinent data, and measures to be taken to avoid recurrences.

The plan shall be subject to Department approval. The Department reserves the right to review and approve any material changes made to the plan.

See finding 133 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-304 & § 29A-306(b).

D. American Eel Passage. Within 1 year of upstream American eel passage having been installed at the Otter Creek Hydroelectric Project (FERC No. 2558), the Applicant shall initiate plan development for American eel passage. Before developing the plan, the Applicant shall consult with the Vermont Agency of Natural Resources and the U.S. Fish and Wildlife Service. The plan shall be reviewed and approved by the Vermont Agency of Natural Resources and the U.S. Fish and Wildlife Service before implementation. In addition to the method of passage, the plan shall include an implementation schedule. The plan can include, but is not limited to, a trap and truck program or eel ramp installation, or other appropriate measures.

See finding 154 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-306(b)(3)(A).

E. Northern Long-eared Bat Protection. The Applicant shall avoid tree trimming and removal of trees 3- inch diameter breast height or greater in the project boundary between April 1st and October 31st to avoid any roost disruption of the Northern long-eared bat, except when necessary to protect public safety or respond to emergency conditions. In case of a public safety issue or emergency where tree trimming or removal are required during the seasonal protective period, the Applicant will consult with the Department as soon as practical after conducting the trimming or removal.

See finding 158 for a statement of necessity. 10 V.S.A. § 5403.

F. Recreation. The Applicant shall continue to: (1) provide public access and use of Project lands and waters; (2) provide access to and maintain the hand carry put-in/fishing access area located downstream of the powerhouse; and (3) establish an agreement with the Town of Rutland for a pocket park pending appropriate approvals.

See finding 162 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 §29A- 303(d-f).

G. Debris Disposal. Debris associated with Project operations shall be disposed of in accordance with the Standards and applicable state laws and regulations.

See findings 164 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12 030 026 § 29A-303(1).

H. Maintenance and Repair Work. The Applicant shall consult with the Department prior to conducting Project maintenance or repair work that necessitates a deviation from the conditions that assure compliance with water quality requirements (e.g., water level or flow management). Such maintenance and repair work shall be subject to review and approval by the Department.

See findings 149 and 151 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § 29A-304(d) and § 29A-306(b).

I. Compliance Inspection by Department. The Applicant shall allow the Department to inspect the Project area at any time to monitor compliance with certification conditions.

See findings 2 and 133 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § § 29A-104(a).

J. Posting of Certification. A copy of the certification shall be prominently posted within the Project powerhouse.

See findings 2 and 133 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § 29A-104(a).

K. Modification of Certification. The conditions of this certification may be altered or amended by the Department to assure compliance with the Vermont Water Quality Standards and to respond to any changes in classification of management objectives for the waters affected by the Project, when authorized by law, and, if necessary, after notice and opportunity for hearing.

See findings 2 and 133 for a statement of necessity. 10 V.S.A § 1258 & Vt. Code R. 12 0330 026 § 29A-104(a).

ATTACHMENT D

PRIVILEGED CULTURAL INFORMATION

(SUBMITTED SEPARATELY – NOT FOR PUBLIC USE)

This Material is Privileged Information (CUI//PRIV).
Members of the Public may Obtain Nonpublic or Privileged Information by Submitting a Freedom of Information Act (FOIA) Request.