

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D.C. 20426

November 13, 2008

OFFICE OF ENERGY PROJECTS

Project No. 11475 and 11478- VT and NY
Carver Falls and Silver Lake Hydroelectric Projects
Central Vermont Public Service Corporation

Mr. Michael Bartlett
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087

**Reference: Biological Assessment and Request for Concurrence with
Endangered Species Act Determination**

Dear Mr. Bartlett:

On March 13, 1997, Commission staff issued Environmental Assessments (EAs) on applications for licensing the existing and operating Carver Falls and Silver Lake Hydroelectric Projects. The EAs concluded that licensing the Carver Falls Project would not affect threatened and endangered species and their habitat, and that licensing the Silver Lake Project, with staff recommended measures, would not affect threatened and endangered species and their habitats.

In 2002, Commission staff requested an updated species list from the U. S. Fish and Wildlife Service's (FWS) New England Field Office. FWS replied that the federally listed endangered Indiana bat (*Myotis sodalis*) is likely to occur at the Carver Falls and Silver Lake Projects and provided recommendations for avoiding adverse effects to this species. Because the Indiana bat was not considered in the 1997 EAs, the attached biological assessment is provided in accordance with Section 7 of the Endangered Species Act (ESA).

This biological assessment considers the measures recommended in the EAs as well as additional conservation measures consistent with draft water quality certifications issued by the Vermont Agency of Natural Resources on

October 23, 2008. Staff conclude that licensing the projects, with the staff recommended measures, is "not likely to adversely affect" the Indiana bat.

Please tell us in writing within 30 days from the date of receipt of this letter if you agree with our assessment. If you do not agree, consider this letter a request to initiate formal consultation under section 7 of the ESA. Please give us your biological opinion on our finding no later than 135 days from receipt of this request. If we don't hear from you within 30 days, we will assume that you have sufficient information to initiate consultation and will provide us with your biological opinion by March 27, 2008. A timely response from the FWS on this matter would be greatly appreciated given how long these cases have been pending at the Commission while awaiting water quality certification.

Please file your response (an original and eight copies) with Kimberley D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street, NE, Washington 20426. Please include the docket numbers, P-11475 and P-11478, on the first page of your response. Alternatively, your response may be filed electronically via the Internet in lieu of paper. The Commission strongly encourages electronic filings. See 18 C.F.R. 385.200(a)(1)(iii) and the instructions on the Commission's website (<http://www.ferc.gov>) under the "e-filing" link.

If you have any questions, please call Kristen Murphy at (202)502-6236 or email at Kristen.Murphy@ferc.gov.

Sincerely,

Vince Yearick, Chief
Hydro East Branch 1

Attachment A: Biological Assessment for Indiana Bat
Attachment B: Consultation letters

Cc: Mailing List
Public Files

Attachment A: Biological Assessment
Carver Falls and Silver Lake Hydroelectric Projects
New York and Vermont
FERC Project No. 11475 and 11478

I. Background and Summary

On April 25, 1994, and May 9, 1994, respectively, Central Vermont Public Service Corporation (CVPSC) filed applications with the Federal Energy Regulatory Commission (FERC or Commission) for original licenses to operate the existing, unlicensed 1.85-megawatt (MW) Carver Falls Hydroelectric Project, and the 2.2-MW Silver Lake Hydroelectric Project. The Carver Falls project is located on the Poultney River in the Town of Hampton, Washington County, New York and the Town of West Haven, Rutland County, Vermont. The Silver Lake project is located on Sucker Brook in Addison County, Vermont. Neither project is located on federal lands.

On March 13, 1997, Commission staff issued an Environmental Assessment (EA) for each project. The EAs addressed threatened and endangered species at the projects, but the analysis was brief due to the lack of the presence of listed species in the projects' vicinity. The U.S. Department of Interior (Interior)¹ noted that no federally listed or proposed threatened and endangered species had been observed within the Carver Falls Project area, and no further consultation under Section 7 of the Endangered Species Act occurred.

For the Silver Lake Project, Interior² stated that there were no federally listed or proposed listed species within the project area, with the exception of occasional transient individuals, and no further consultation pursuant to Section 7 of the Endangered Species Act (ESA) was required. The application states that Interior had previously noted, in August of 1991, that habitat for transient bald eagles (*Haliaeetus leucocephalus*) and Peregrine falcons (*Falco peregrinus anatum*) may be present at the project. For the Silver Lake Project, the EA concluded that the proposed project operation would have no effect on peregrine falcons, which feed exclusively on birds in flight, while eagles would benefit by

¹ See letter filed May 14, 1996.

² See letter filed April 22, 1996.

the improved fishery habitat provided by the proposed minimum flows and conservation pool levels in Sugar Hill reservoir. Therefore, the EA found that the proposed project would have no effect on threatened and endangered species and their habitats.³

Since the EAs were issued in 1997, the Commission has been waiting resolution of Vermont's Section 401 Water Quality Certification process. However, draft certifications were issued by the Vermont Agency of Natural Resources (VANR) on October 23, 2008. Therefore, in anticipation of Vermont issuing certification in the coming months, the following Biological Assessment (BA) is submitted for consideration by the FWS. The impetus for this BA was additional information, filed by FWS on June 12, 2002, on the likely presence of the federally listed endangered Indiana bat (*Myotis sodalis*) at both projects. Staff review of federally listed species present in Addison and Rutland Counties, Vermont,⁴ and Washington, New York,⁵ confirm that the Indiana bat continues to be the only listed species likely to occur at the projects. Staff note that the federally threatened small whorled pogonia (*Isotria medeoloides*) historically existed in Washington County, New York, but is no longer extant within the state (FWS, 2008). This BA provides additional information regarding potential effects of licensing the projects, as proposed and with staff- and agency-recommended measures, on the Indiana bat and its habitat.

II. Description of the Proposed Projects

Carver Falls Project

The existing Carver Falls Project consists of: a reservoir with a surface area of 10 acres at normal pond elevation of 233.3 feet (USGS data); a 514-foot-long dam with a spillway elevation of 227.8 feet (USGS data) and 6-foot high wooden flashboards; a penstock and stone powerhouse; and a 250-foot-long bypassed reach. The project operates in a run-of-river mode when inflow meets or exceeds the station's hydraulic capacity. During reduced summer inflow, the project operates in a daily peaking mode, with impoundment drawdowns

³ The Peregrine falcon and bald eagle were delisted on August 25, 1999, and August 9, 2007, respectively, and are no longer subject to review under ESA.

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<http://www.fws.gov/northeast/newenglandfieldoffice/pdfs/VT%20species%20by%20town.pdf>

⁵ <http://www.fws.gov/northeast/nyfo/es/CountyLists/WashingtonDec2006.htm>

averaging two feet. During periods of extreme low inflow, these drawdowns may reach nine feet. Dam leakage at normal reservoir elevation provides a flow of approximately 9.5 cubic feet per second (cfs) to the bypassed reach.

CVPS proposes and the EA recommends several measures for the protection of water quality, fish and wildlife habitat, cultural resources, recreation, and aesthetics. These measures include operating the project in instantaneous run-of-river mode with minimum flows in the bypassed reach and development and implementation of a recreation plan. The plan would include improvements to access and recreational facilities at Carver Falls, as well as measures to control soil erosion and sedimentation during construction of a lower portage trail and river access area. The VANR's draft water quality certification conditions are consistent with these measures, but also require a monitoring plan for impoundment and flow management, turbine rating curve documentation, minimum flows during flashboard replacement, replacement of wooden flashboards with a new steel and wood flashboard system, and a restoration fund for the protection and restoration of aquatic habitat, certain fisheries, and riparian zones.

The recreation plan is the only recommended or proposed measure that could result in land clearing or ground-disturbing activities.

Activities to be performed under this plan would include:

- Improving the parking area located near the dam;
- Improving the existing take-out portage trail on the impoundment;
- Constructing a canoe portage trail/road to the Poultney River below the dam;
- Constructing cobble- and gravel-filled steps down a steep bank to the river at the canoe put-in area;
- Installing two picnic tables;
- Installing signs and trail registers; and
- Improving the existing overlook on the top of the penstock at the project, to include placement of gravel on the penstock trail, signage, and vegetation management.

Silver Lake Project

The existing Silver Lake Project includes: (1) the 74-acre Sugar Hill reservoir, created by Goshen dam (680-foot long with a spillway crest elevation of 1,768 feet USGS), and a 232-foot-long concrete conduit; (2) the Sucker Brook diversion dam with a 2-acre impoundment and a 7,000-foot-long penstock; and (3) the Silver lake impoundment with a 284-foot dam, 110-acre reservoir, a 60-foot

conduit and a 5,200-foot-long penstock extending from the Silver Lake outlet structure to the concrete and brick powerhouse.

CVPS operates the project in a seasonal storage mode to regulate annual flows and provide peaking power. Sugar Hill reservoir and Silver Lake capture the annual spring runoff and release water from storage to provide relatively consistent, year-round flow releases. Releases from the Sugar Hill reservoir travel down Sucker Brook to the project's diversion dam, where water is diverted to Silver Lake via a penstock. Water for generation is then transported from Silver Lake to the project's powerhouse via a second penstock. Water exiting the powerhouse passes through the tailrace, rejoins Sucker Brook, and continues on to Lake Dunmore, a large lake downstream from the project. A minimum flow of 2.5 cfs is currently released from Sugar Hill reservoir into Sucker Brook. No minimum flows are released from the Sucker Brook diversion dam or Silver Lake dam. When smelt are spawning, the project is run continuously to provide adequate flows to maintain spawning and incubation habitat in Sucker Brook downstream from the Silver Lake powerhouse.

CVPS proposes and the EA recommends several measures for the protection of water quality, fish and wildlife habitat, cultural resources, recreation, and aesthetics. These measures include restrictions on variation in reservoir pool levels at the Sugar Hill reservoir and Silver Lake, minimum flows below the Goshen and Sucker Brook dams, and recreational improvements with measures to control erosion. The VANR's draft water quality certification conditions are consistent with these measures, but also require a reservoir and flow management plan, documentation of turbine rating curves, a debris disposal plan, and a restoration fund for the protection and restoration of aquatic habitat, certain fisheries, and riparian zones.

The proposed and recommended recreation measures are likely to result in some land clearing or ground-disturbing activities. Activities to be performed under this plan would include:

- Improving recreational access at Sugar Hill reservoir by constructing a circular drive at the entrance to the site; grading and filling the existing access road to the boat launch; reconstructing the boat launch; planting native vegetation; and installing signage and trail registers
- Installing interpretive signs at the Sucker Brook diversion dam and at Silver Lake
- Improving the existing trail and viewing area at the Falls of Lana (located northwest of Silver Lake and within the project boundary) by replacing safety cables at the overlook, placing gravel on the penstock trail, improvements to trail drainage and signage, and removing and maintaining vegetation

obstructing views (in consultation with the nearby Green Mountain National Forest).

Additional Measures for Indiana Bat

Given the potential presence of foraging and roosting Indiana bat during nonhibernation, staff recommend the following measures relevant to the Indiana bat:

- During routine or recreation-based vegetation management at the project, refrain from tree removal activities from April 15-September 15.
- If tree removal must occur between April 15-September 15, conduct surveys prior to tree removal to determine if roost trees for Indiana bat are present and document the findings with the Commission and FWS. If roost trees are present, consult with FWS and the Commission prior to tree removal to determine an appropriate course of action.

III. Species Account

The Indiana bat was listed as in danger of extinction under the Endangered Species Preservation Act of 1966, and is currently listed as endangered under the Endangered Species Act of 1973, as amended. This is a migratory species found throughout much of the eastern half of the United States, hibernating colonially in caves, mines, and other underground areas (hibernacula) through the winter. The nonhibernation season includes spring emergence and migration, summer reproduction in maternity roosts, and fall migration, swarming,⁶ and mating.

As described in the 2007 Draft Recovery Plan for Indiana Bat (FWS, 2007), as of October 2006, approximately 281 hibernacula in 19 states were recorded, as were 269 maternity colonies in 16 states. The 2005 winter census estimate of the population was 457,000. Threats include modifications to and disturbance of hibernacula, and loss and degradation of forested habitat (used for swarming, migration, and summer habitat). Conservation efforts have had a strong focus on the protection of hibernacula, with some efforts to protect summer habitat.

Hibernation

During the winter, Indiana bats are restricted to suitable underground hibernacula. The vast majority of these sites are caves located in the karst areas of

⁶ Swarming is a behavior in which "large numbers of bats fly in and out of cave entrances from dusk to dawn, while relatively few roost in the caves during the day" (Cope and Humphrey, 1977, as cited in FWS, 2007).

the east-central United States, with Vermont and New York representing the northern extent of the winter range. However, Indiana bats also hibernate in other cave-like locations, including abandoned mines (FWS, 2007). FWS notes, in the June 2002 letter, that there is a known hibernaculum in Brandon, Vermont, approximately 7 miles (11.3 km) south of the Silver Lake Project. The 2007 Draft Recovery Plan notes that there are 12 hibernacula with extant winter populations in the State of New York, and 3 in Vermont.

In the late summer through fall, bats migrate back to the hibernacula and spend a period of several weeks swarming. Mating typically occurs towards the end of the swarming period, prior to hibernation.

Spring Roosting and Summer Maternity Roosting

In the northeastern United States, bats typically emerge from hibernation in mid-April (Britzke *et al.*, 2006). The bats leave the hibernacula and disperse widely; reproductive females migrate to wooded areas, while males and nonreproductive females may either remain near their hibernaculum or migrate to summer habitat. One study of female Indiana bats in the Lake Champlain Valley showed that they tended to roost in trees located from 14.6 to 40.0 km from the hibernacula during April-May (Britzke *et al.*, 2006). The bats roost in small colonies under loose bark, bark crevices, small holes, or dead limbs, switching roosts frequently. The FWS, in its June 2002 letter, noted that Indiana bats were located during spring telemetry studies (2001-2002) in Orwell, Vermont, approximately 20 miles from the Carver Falls Project, and in Whiting and Salisbury, Vermont, approximately 10 miles from the Silver Lake Project.

Bats migrate up to hundreds of kilometers from their hibernacula to reach their summertime habitat. Female Indiana bats gather in maternity colonies, where they bear and raise their young. These colonies typically occur under the exfoliating bark of large, often dead, trees or in tree cavities. Colony size varies greatly but is typically 100, or fewer, individuals. New York counties with recorded maternity colonies include Cayuga (1 colony), Dutchess (5), Essex (1), Jefferson (9), Onondaga (4), Orange (8), and Oswego (3). Vermont counties include Addison (6), and Chittenden (1). Males and nonreproductive females do not typically roost in colonies and may either remain near their hibernaculum or migrate to summer habitat.

Tree species used as roosts by female Indiana bats in New York and Vermont (April-May) include shagbark hickory (*Carya ovata*), American elm (*Ulmus americana*), quaking aspen (*Populus tremuloides*), sugar maple (*Acer saccharum*), black locust (*Robinia pseudoacacia*), white ash (*Fraxinus americana*), American beech (*Fagus grandifolia*), yellow birch (*Beula*

alleghaniensis), eastern hemlock (*Tsuga canadensis*), and red maple (*Acer rubrum*) (Britzke *et al.*, 2006). The FWS, in its June 2002 letter, also lists cottonwood, silver maple, oaks, and white pine as trees reported to be used as roosts in Vermont. Indiana bats typically move among different roost trees within a single season. Kurta *et al.* (1993) note that this may be the bats' way of adapting to occasional losses of roosting habitat, given its ephemeral nature (i.e. loose bark may fall off the tree).

Foraging

Indiana bats eat flying insects- particularly Coleoptera (beetles), Diptera (true flies), Lepidoptera (moths and butterflies), and Trichoptera (caddisflies)- and forage at night. Southern studies indicate that terrestrial-based prey (moths and beetles) are more common, while aquatic insects (flies and caddisflies) dominate the diet of northern bats. It is likely that northern bats, such as those found near the projects, tend to hunt more in wetlands or above streams and ponds (FWS, 2007).

Critical Habitat

Critical habitat for the Indiana bat was designated on September 24, 1976. It consists of 11 caves and two mines in six states: Illinois, Indiana, Kentucky, Missouri, Tennessee, and West Virginia. There is no designated critical habitat for the Indiana bat in Vermont or New York.

IV. Effects of the Commission Staff's Preferred Alternative

Licensing the projects under the staff alternative and as would be required per the draft certifications would benefit wildlife habitat in general by requiring more stable impoundment levels, thereby protecting project wetlands (aquatic beds, emergent and forested wetlands), and by improving water quality. VANR, in its comments on the Carver Falls EA, notes that elimination of drawdowns will result in expansion of aquatic bed wetlands; in its comments on the Silver Lake EA, VANR states that wetland values and functions could be substantially enhanced through stabilization of water levels, particularly at Sugar Hill. Because Indiana bats are likely to forage for flies and caddisflies above the projects' impoundments and streams, and within project wetlands, protecting this habitat would be beneficial.

Indiana bats require roosting trees for breeding and shelter outside of the hibernation period, so any activities at the projects that affect this habitat, such as routine vegetation management to maintain access to the project and tree removal for improvements to recreational facilities, could negatively affect this species.

Specific to the Carver Falls project, the construction and use of a new downstream canoe portage trail and river access could adversely affect vegetation through the clearing of trees. Vegetation clearing for viewpoints and parking lot, road, and canoe launch improvements at Silver Lake could also affect bat roosting habitat.

Felling an occupied roost tree may result in injury or death to the bats in the tree. The 2007 Draft Recovery Plan notes three recorded accounts of situations in which trees were cut (the presence of roosting bats being unknown), with some of the bats being killed or injured. Seasonal clearing restrictions at the Silver Lake and Carver Falls projects would eliminate the threat of this direct mortality to primary maternity roosts or other roosting bats. Forest management strategies to protect summer range habitat typically include preservation of snags and other potential roost trees. During vegetation clearing over the winter, selective cutting to preserve such habitat would benefit the bats through maintenance of their summertime roosting habitat. However, because it appears that CVPS' recreation measures would not result in excessive tree clearing, this measure is not recommended.

In the case that trees must be removed between April 15 and September 15, staff recommend that CVPS be required to survey for potential roosting trees first, and document this survey with FWS and FERC prior to any tree-removing activities. The survey results should note any shagbark hickory, American elm, quaking aspen, black locust, white ash, American beech, birches, eastern hemlock, maples (red, sugar, and silver), cottonwood, oaks, and white pine, as well as any dead, senescent, or severely injured (e.g. lightning-struck) trees that possess bark that springs away from the trunk upon drying (providing niches or crevices for roosting.)

V. Determination of Effect

Licensing the projects may affect Indiana bat through disturbance of summer roosting habitat during the clearing of vegetation for recreational improvements. The staff-recommended seasonal restrictions on tree removal would ensure that trees are not disturbed during the roosting time period, or that appropriate surveys and consultation are conducted previous to any summertime disturbance. As a result, staff conclude that licensing the projects, with the above staff-recommended measures, is not likely to adversely affect the Indiana bat.

VI. Literature Cited

- Britzke, E.R., A.C. Hicks, S.L. von Oettingen, and S.R. Darling. 2006. Description of spring roost trees used by female Indiana Bats (*Myotis sodalis*) in the Lake Champlain Valley of Vermont and New York. *American Midland Naturalist* 155:181-187.
- Cope, J.B. and S.R. Humphrey. 1977. Spring and autumn swarming behavior in the Indiana bat, *Myotis sodalis*. *Journal of Mammalogy* 58:93-95.
- Kurta, Allen; David King; Joseph A. Teramino; John M. Stribley; Kimberly J. Williams. 1993. Summer Roosts of the Endangered Indiana Bat (*Myotis sodalis*) on the Northern Edge of Its Range. *American Midland Naturalist*, 129:1. pp. 132-138.
- U.S. Fish and Wildlife Service (FWS). 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 258 pp.
- U.S. Fish and Wildlife Service (FWS). 2008. Small Whorled Pagonia (*Isotria medeoloides*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, New England Field Office. Concord, New Hampshire. 26 pp.

Attachment B: Consultation Letters

Document Content(s)

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