

W8 LIHI Recertification Application



Prepared for:

Winooski Hydroelectric Co.

Prepared by
Mathew Rubin

11/1/16

W8 LIHI Recertification Application

10/28/16

Contents

- 1. Introduction.....3
- 2. Facility Description4
- 3. Standards Matrices7
- 4. Supporting Information.....9
- 5. Sworn Statement and Waiver.....22
- 6. Applicant Contacts Form.....23

- Appendix A LIHI Certification Report 10/3/201124
- Appendix B FERC License Order P-6470-000 Aug, 1983.....25
- Appendix C FERC Order P-6470-001 Approving As-Built Exhibits Dec, 1986..... 26
- Appendix D Water Quality Certification, P.L. 92-500, Section 401 issued Dec , 198228
- Appendix E Winooski River Watershed Water Quality and Aquatic Habitat Report April, 2008..32
- Appendix F1 State of VT ANR letter Dec, 1985.....33
- Appendix F2 FERC Form 80 Recreation Report Feb, 2004.....34
- Appendix F3 FERC Inspection Report July, 2004.....36
- Appendix F4 State of VT ANR Compliance letter Jan, 2011; LIHI correspondence June, 2011.....38
- Appendix G1 Winooski 8 Powerhouse photo.....41
- Appendix G2 Winooski 8 Aerial photo of Zones 2 and 3.....42
- Appendix G3 Winooski 8 Aerial photo of Zones 1, 2, and 3.....43
- Appendix H1 Winooski 8 Survey of project property.....44
- Appendix H2 Winooski 8 Map of project area.....45
- Appendix H3 Winooski 8 Map of Winooski River drainage area.....46
- Appendix I Project Mean daily flows: monthly and yearly averages.....47
- Appendix J Local, State and Federal Agency Contacts.....48
- Appendix K Local non-government stakeholder Contacts.....50

Introduction

This is an application to the Low Impact Hydropower Institute (LIHI) for recertification of Winooski 8, presently holder of LIHI Certificate No. 77, effective Feb 28, 2011.

There have been no material changes in the facility design or operation since the most recent LIHI review that was completed on 10/3/2011, included in this application as Appendix A. The facility continues to be operated in run-of-river mode. There continue to be no migratory fish in the project zones, on account of power dams on the Winooski River which block their passage .

There also have been no material changes in the environmental conditions in the project vicinity since that most recent LIHI review. The only material changes that have occurred recently are in the revised LIHI certification criteria described in the 2016 version of LIHI's certification handbook.

The information provided in this recertification application provides an update to support a new LIHI certification.

2. Facility Description

The Winooski 8 hydroelectric project was reconstructed in 1985. The project is the same as was described in the LIHI Certification Report of October, 2011, except that the impoundment elevation (with flashboards) is 615.0, the entire dam is 227 feet long, and the tailrace is 300’ long. Please refer to Appendix C, paragraph (A).

The project is operated in strict run-of-river mode.

There are no migratory fish in any of the project Zones.

Facility Description Information for Winooski 8 (LIHI Certification # 77)

Information Type	Variable Description	Response (and reference to further details)
Name of the Facility	Facility name (use FERC project name if possible)	Winooski 8
Location	River name (USGS proper name)	Winooski River Dam at river mile 59.7
	River basin name	Winooski River Basin
	Nearest town, county, and state	E. Montpelier, Washington, VT
	River mile of dam above next major river	1.4 miles above Stevens Branch
	Geographic latitude	44 deg 14’ 18.06” N
	Geographic longitude	72 deg 31’ 29.22” W
Facility Owner	Application contact names (IMPORTANT: you must also complete the Facilities Contact Form):	Mathew Rubin
	- Facility owner (individual and company names)	Winooski Hydroelectric Co.
	- Operating affiliate (if different from owner)	
	- Representative in LIHI certification	Mathew Rubin
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates	P-6470-000 Issued Aug 29, 1983, expires Aug 22, 2022 P-6470-001 Issued Dec 19, 1986
	FERC license type or special classification (e.g., “qualified conduit”)	Minor License
	Water Quality Certificate identifier and issuance date, plus source agency name	401 Water Quality Certificate issued Dec 30, 1982
	Hyperlinks to key electronic records on FERC e-library website (e.g., most recent Commission Orders, WQC, ESA documents, etc.)	DNA

Power Plant Characteristics	Date of initial operation (past or future for operational applications)	Dec, 1985
	Total name-plate capacity (MW)	890 KW Name-plate
	Average annual generation (MWh)	3,500 MWh
	Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit	3 Flygt Submersible propeller turbines: TG1 (55cm) QMIN 27 cfs fixed TG2 (85 cm) 120 cfs max; 20 cfs min TG3 (120 cm) 240 cfs max; 60 cfs min
	Modes of operation (run-of-river, peaking, pulsing, seasonal storage, etc.)	Strict Run-of-river
	Dates and types of major equipment upgrades	None
	Dates, purpose, and type of any recent operational changes	None
	Plans, authorization, and regulatory activities for any facility upgrades	None
Characteristics of Dam, Diversion, or Conduit	Date of construction	1985
	Dam height	26' max
	Spillway elevation and hydraulic capacity	615' MSL 14,000 cfs
	Tailwater elevation	582.5' MSL at 890 KW
	Length and type of all penstocks and water conveyance structures between reservoir and powerhouse	None
	Dates and types of major, generation-related infrastructure improvements	1985
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power generation
	Water source	Winooski River
	Water discharge location or facility	Winooski 8 project tailrace
Characteristics of Reservoir and Watershed	Gross volume and surface area at full pool	45 acre-feet volume 7.5 acres surface
	Maximum water surface elevation (ft. MSL)	615' MSL
	Maximum and minimum volume and water surface elevations for designated power pool, if available	45 acre-ft with flashboards 15 acre-ft w/o flashboards
	Upstream dam(s) by name, ownership, FERC number (if applicable), and river mile	Marshfield #6 (Green Mountain Power) river mile 80.8
	Downstream dam(s) by name, ownership, FERC number (if applicable), and river mile	Middlesex #2 (Green Mountain Power) river mile 49.1

	Operating agreements with upstream or downstream reservoirs that affect water availability, if any, and facility operation	None
	Area inside FERC project boundary, where appropriate	8.23 acres
Hydrologic Setting	Average annual flow at the dam	309 cfs mean daily flow
	Average monthly flows	Refer to Appendix I
	Location and name of relevant stream gauging stations above and below the facility	None above Below: Montpelier USGS #04286000, Drainage area 397 sq mi. Data from 1915-2015
	Watershed area at the dam	199 Sq mi
Designated Zones of Effect	Number of zones of effect	Three
	Upstream and downstream locations by river miles	Zone 1 58.30 to 59.66 river miles Zone 2 59.66 to 59.70 river miles Zone 3 59.70 to 60.20 river miles
	Type of waterbody (river, impoundment, by-passed reach, etc.)	Zone 1 Regulated riverine reach Zone 2 Tailrace bypass reach Zone 3 Impoundment
	Delimiting structures	Dam Crest at river mile 59.7
	Designated uses by state water quality agency	Hydropower generation
Additional Contact Information	Names, addresses, phone numbers, and e-mail for local state and federal resource agencies	Refer to Appendix J
	Names, addresses, phone numbers, and e-mail for local non-governmental stakeholders	Refer to Appendix K
Photographs and Maps	Photographs of key features of the facility and each of the designated zones of effect	Refer to Appendices G1, G2, and G3
	Maps, aerial photos, and/or plan view diagrams of facility area and river basin	Refer to Appendices H1, H2, and H3

3. Matrix of Alternative Standards Templates:

Facility Name: Winooski 8

Zone of Effect: Zone 1 Regulated Riverine Reach

Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes	X				
B	Water Quality	X				
C	Upstream Fish Passage		X			
D	Downstream Fish Passage	X				
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection	X				
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources	X				

Facility Name: Winooski 8

Zone of Effect: Zone 2 Tailrace Bypass Reach

Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes		X			
B	Water Quality	X				
C	Upstream Fish Passage		X			
D	Downstream Fish Passage	X				
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection	X				
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources	X				

Facility Name: Winooski 8

Zone of Effect: Zone 3 Impoundment

Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes	X				
B	Water Quality	X				
C	Upstream Fish Passage		X			
D	Downstream Fish Passage	X				
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection	X				
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources	X				

4. Supporting Information

A. Ecological Flow Regimes:

Zone 1

Criterion	Standard	Instructions
A	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none"> Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility. If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located. For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – NOTE: this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

- Refer to Appendices G1 and G3. The only bypassed reach is the tailrace (Zone 2).

Refer to Appendix H1 and Appendix H2.

- The project is operated in a strict Run-of-River mode. The required 25 cfs minimum flow in the bypassed reach (from the toe of the dam to the confluence of the tailrace and river channel) is provided by the minimum flow turbine, which has a flow of 27 cfs at normal impoundment elevation of 615.0. The site is operated by computer which monitors impoundment level to an accuracy of 1”.

The two larger turbine/generators are semi-Kaplans, which allow the adjustable blades to follow variations in flow to maintain the impoundment at 615.0’ Out of tolerance operation results in automatic callout with an alarm to the operator(s). The project operates in compliance with its

Water Quality Certification. Refer to Appendices D and F4.

- There is no conduit.
- There is no impoundment in Zone 1. The Winooski River is narrow and runs along riffle until it Joins the Stevens Branch. Refer to Appendix G3.

Zone 2

Criterion	Standard	Instructions
A	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic in stream flow variations).

- Refer to Appendix D, Water Quality Certification issued Dec, 1982.
- Refer in particular to Appendix D, page 3, paragraphs 7-10. The ANR recommendation was for a minimum flow of 7Q10.
- Refer to Appendix D. There are no migratory fish in Zone 2. Refer also to Appendix F4.
- Refer to Appendix E, Winooski River Watershed Water Quality and Aquatic Habitat Report of April, 2008, pages 5-13.

Zone 3

Criterion	Standard	Instructions
A	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none"> • Confirm the location of the powerhouse relative to other dam/ diversion structures to establish that there are no bypassed reaches at the facility. • If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained • In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located. • For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – NOTE: this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

- Refer to Appendix G2. The only bypassed reach is the tailrace (Zone 2). Refer to Appendix H1 and Appendix H2.
- The project is operated in a strict Run-of-River mode. The required 25 cfs minimum flow in the bypassed reach (from the toe of the dam to the confluence of the tailrace and river channel) is provided by the minimum flow turbine, which has a flow of 27 cfs at normal impoundment elevation of 615.0. The site is operated by computer which monitors impoundment level to an accuracy of 1”.

The two larger turbine/generators are semi-Kaplans, which allow the adjustable blades to follow variations in flow to maintain the impoundment at 615.0’ Out of tolerance operation results in automatic callout with an alarm to the operator(s). Refer to Appendix F4.

- There is no conduit.
- Refer to Appendix E, Winooski River Watershed Water Quality and Aquatic Habitat Report of April, 2008, pages 5-13. There has been no evaluation and management of fish of wildlife habitat in the area specific to Zone 3.

B. Water Quality:

Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	1	<p>Not Applicable/De Minimis Effect:</p> <ul style="list-style-type: none"> The facility does not alter the physical, chemical, or biotic water characteristics necessary to support fish and wildlife resources or human water uses (e.g., water supply or recreation)

- Refer to Appendix A, Appendix D, Appendix E (pages 5-13), and Appendix F4.

Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	1	<p>Not Applicable/De Minimis Effect:</p> <p>The facility does not alter the physical, chemical, or biotic water characteristics necessary to support fish and wildlife resources or human water uses (e.g., water supply or recreation)</p>

- Refer to Appendix A, Appendix D, Appendix E (pages 5-13), and Appendix F4.

Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	1	<p>Not Applicable/De Minimis Effect:</p> <p>The facility does not alter the physical, chemical, or biotic water characteristics necessary to support fish and wildlife resources or human water uses (e.g., water supply or recreation)</p>

- Refer to Appendix A, Appendix D, Appendix E (pages 5-13), and Appendix F4.

C. Upstream Fish Passage:

Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none"> The facility is in compliance with science-based fish passage recommendations from appropriate resource agency(ies) which have been issued for the facility and which include provision for appropriate monitoring and effectiveness determinations.

- There are no populations of migratory fish in the project area. Migration from Lake Champlain is blocked by hydropower dams at Bolton Falls in Duxbury and Middlesex #2 in Middlesex.

To date there has been no correspondence with any State or Federal Agency regarding fish passage. None is anticipated.

Zone 2

<i>Criterion C</i>	<i>Standard</i>	<i>Instructions</i>
C	2	<p><u>Agency Recommendation:</u></p> <p>The facility is in compliance with science-based fish passage recommendations from appropriate resource agency(ies) which have been issued for the facility and which include provision for appropriate monitoring and effectiveness determinations.</p>

- There are no populations of migratory fish in the project area. Migration from Lake Champlain is blocked by hydropower dams at Bolton Falls in Duxbury and Middlesex #2 in Middlesex.

To date there has been no correspondence with any State or Federal Agency regarding fish passage. None is anticipated.

Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	2	<p><u>Agency Recommendation:</u></p> <p>The facility is in compliance with science-based fish passage recommendations from appropriate resource agency(ies) which have been issued for the facility and which include provision for appropriate monitoring and effectiveness determinations.</p>

- There are no populations of migratory fish in the project area. Migration from Lake Champlain is blocked by hydropower dams at Bolton Falls in Duxbury and Middlesex #2 in Middlesex.

To date there has been no correspondence with any State or Federal Agency regarding fish passage. None is anticipated.

D. Downstream Fish Passage:

Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
D	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <ul style="list-style-type: none"> • The facility does not create a barrier to downstream passage, or there are no migratory fish in the vicinity of the facility; if migratory fish had been present historically, the Facility is not responsible for extirpation of such species; the Facility does not contribute adversely to the sustainability of riverine fish populations or to their access to habitat necessary for the completion of their life cycles.

- There are no populations of migratory fish in the project area. Migration from Lake Champlain is blocked by hydropower dams at Bolton Falls in Duxbury and Middlesex #2 in Middlesex.

Fish migration effectively ceased on the Winooski River with the construction of the first dam on the river in Burlington by Ethan Allen in the early 19th century.

The Facility does not contribute adversely to the sustainability of riverine fish populations or to habitat necessary for the completion of their life cycles. Refer to Appendix E (pages 5-13).

To date there has been no correspondence with any State or Federal Agency regarding fish passage. None is anticipated.

Zone 2

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

- There are no populations of migratory fish in the project area. Migration from Lake Champlain is blocked by hydropower dams at Bolton Falls in Duxbury and Middlesex #2 in Middlesex.

Fish migration effectively ceased on the Winooski River with the construction of the first dam on the river in Burlington by Ethan Allen in the early 19th century.

The Facility does not contribute adversely to the sustainability of riverine fish populations or to habitat necessary for the completion of their life cycles. Refer to Appendix E (pages 5-13).

To date there has been no correspondence with any State or Federal Agency regarding fish passage. None is anticipated.

Zone 3

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

- There are no populations of migratory fish in the project area. Migration from Lake Champlain is blocked by hydropower dams at Bolton Falls in Duxbury and Middlesex #2 in Middlesex.

Fish migration effectively ceased on the Winooski River with the construction of the first dam on the river in Burlington by Ethan Allen in the early 19th century.

The Facility does not contribute adversely to the sustainability of riverine fish populations or to habitat necessary for the completion of their life cycles. Refer to Appendix E (pages 5-13).

To date there has been no correspondence with any State or Federal Agency regarding fish passage. None is anticipated.

E. Shoreline and Watershed Protection:

Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <ul style="list-style-type: none"> There are no lands associated with the facility under ownership and control of the applicant that have significant ecological value for protecting water quality, aesthetics, or low-impact recreation, and there has been no Shoreline Management Plan (SMP) or similar protection required at the facility; or the facility has no direct or indirect project-related land ownership, excluding lands used for power generation and transmission, flowage rights and required developed recreational amenities.

- There are no lands associated with the facility under ownership and control of the applicant that have significant ecological value for protecting water quality, aesthetics, or low-impact recreation.

There has been no Shoreline Management Plan (SMP) or similar protection required at the facility. The facility has no direct or indirect project-related land ownership, excluding lands used for power generation and transmission, flowage rights and required developed recreational amenities.

Refer to Appendices G3, H1, H2, and H3.

Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <p>There are no lands associated with the facility under ownership and control of the applicant that have significant ecological value for protecting water quality, aesthetics, or low-impact recreation, and there has been no Shoreline Management Plan (SMP) or similar protection required at the facility; or the facility has no direct or indirect project-related land ownership, excluding lands used for power generation and transmission, flowage rights and required developed recreational amenities.</p>

- There are no lands associated with the facility under ownership and control of the applicant that have significant ecological value for protecting water quality, aesthetics, or low-impact recreation.

There has been no Shoreline Management Plan (SMP) or similar protection required at the facility. The facility has no direct or indirect project-related land ownership, excluding lands used for power generation and transmission, flowage rights and required developed recreational amenities.

Refer to Appendices G3, H1, H2, and H3.

Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <p>There are no lands associated with the facility under ownership and control of the applicant that have significant ecological value for protecting water quality, aesthetics, or low-impact recreation, and there has been no Shoreline Management Plan (SMP) or similar protection required at the facility; or the facility has no direct or indirect project-related land ownership, excluding lands used for power generation and transmission, flowage rights and required developed recreational amenities.</p>

- There are no lands associated with the facility under ownership and control of the applicant that have significant ecological value for protecting water quality, aesthetics, or low-impact recreation.

There has been no Shoreline Management Plan (SMP) or similar protection required at the facility. The facility has no direct or indirect project-related land ownership, excluding lands used for power generation and transmission, flowage rights and required developed recreational amenities.

Refer to Appendices G3, H1, H2, and H3.

F. Threatened and Endangered Species:

Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <ul style="list-style-type: none"> There are no listed species present in the facility area or downstream reach, and the facility was not responsible for the extirpation of the listed species if they were previously there.

- There are no listed species present in the facility area or downstream reach, and the facility was not responsible for the extirpation of the listed species if they were previously there. The question has never been raised as an issue by any State or Federal agency.

Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <p>There are no listed species present in the facility area or downstream reach, and the facility was not responsible for the extirpation of the listed species if they were previously there.</p>

- There are no listed species present in the facility area or downstream reach, and the facility was not responsible for the extirpation of the listed species if they were previously there. The question has never been raised as an issue by any State or Federal agency.

Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <p>There are no listed species present in the facility area or downstream reach, and the facility was not responsible for the extirpation of the listed species if they were previously there.</p>

- There are no listed species present in the facility area or downstream reach, and the facility was not responsible for the extirpation of the listed species if they were previously there. The question has never been raised as an issue by any State or Federal agency.

G. Cultural and Historic Resources:

Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <ul style="list-style-type: none"> There are no cultural or historic resources present on facility lands that can be potentially threatened by construction or operations of the facility, or facility operations have not negatively affected those that are present, either recently or in the past.

- There are no cultural or historic resources present on facility lands that can be potentially threatened by construction or operations of the facility, or facility operations have not negatively affected those that are present, either recently or in the past.

There has been no mention of this issue since the issuance of the FERC License in 1983.

Refer to Appendix B and F1.

Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <p>There are no cultural or historic resources present on facility lands that can be potentially threatened by construction or operations of the facility, or facility operations have not negatively affected those that are present, either recently or in the past.</p>

- There are no cultural or historic resources present on facility lands that can be potentially threatened by construction or operations of the facility, or facility operations have not negatively affected those that are present, either recently or in the past.

There has been no mention of this issue since the issuance of the FERC License in 1983.

Refer to Appendix B and F1.

Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <p>There are no cultural or historic resources present on facility lands that can be potentially threatened by construction or operations of the facility, or facility operations have not negatively affected those that are present, either recently or in the past.</p>

- There are no cultural or historic resources present on facility lands that can be potentially threatened by construction or operations of the facility, or facility operations have not negatively affected those that are present, either recently or in the past.

There has been no mention of this issue since the issuance of the FERC License in 1983.

Refer to Appendix B and F1.

H. Recreational Resources:

Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <ul style="list-style-type: none"> • The facility does not occupy lands or waters to which the public can be granted access and does not otherwise impact recreational opportunities in the vicinity of the facility.

- The project has an access road to which the public has pedestrian access. There are no FERC or VT agency requirements or stakeholder recommendations.

Notwithstanding, the project provides public access to the project area at no charge to the public, including annual spring kayak races, fishing opportunities, and cross-country skiing.

Refer to Appendix F2.

Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <p>The facility does not occupy lands or waters to which the public can be granted access and does not otherwise impact recreational opportunities in the vicinity of the facility.</p>

- The project has an access road to which the public has pedestrian access. There are no FERC or VT agency requirements or stakeholder recommendations.

Notwithstanding, the project provides public access to the project area at no charge to the public, including annual spring kayak races, fishing opportunities, and cross-country skiing.

Refer to Appendix F2.

Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	1	<p><u>Not Applicable/De Minimis Effect:</u></p> <p>The facility does not occupy lands or waters to which the public can be granted access and does not otherwise impact recreational opportunities in the vicinity of the facility.</p>

- The project has an access road to which the public has pedestrian access. There are no FERC or VT agency requirements or stakeholder recommendations.

Notwithstanding, the project provides public access to the project area at no charge to the public, including annual spring kayak races, fishing opportunities, and cross-country skiing.

Refer to Appendix F2.

5. Sworn Statement and Waiver

As an Authorized Representative of Winooski Hydroelectric Co., the Undersigned attests that the material be 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 the the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The undersigned further acknowledges that if certification of the applying facility is issued, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified.

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

A handwritten signature in cursive script that reads "Mathew Rubin". The signature is written in black ink and is positioned above a solid horizontal line.

Mathew Rubin, General Partner

6. Applicant Contacts Form

1. Facility Contacts

Project Owner	
Name and Title	Mathew Rubin General Partner
Company	Winooski Hydroelectric Co
Phone	802-223-7141
Email Address	m@mrubin.biz
Mailing Address	26 State St, Montpelier, VT 05602
Project Operator (if different from Owner)	
Name and Title	AS ABOVE
Company	
Phone	
Email Address	
Mailing Address	
Consulting Firm/ Agent for LIHI Program (if different from above):	
Name and Title	AS ABOVE
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	AS ABOVE
Company	
Phone	
Email Address	
Mailing Address	
Party responsible for accounts payable:	
Name and Title	AS ABOVE
Company	
Phone	
Email Address	
Mailing Address	

Appendix A

LIHI Certification Report

10/3/2011

Link to Winooski 8 Final Cert Review

http://lowimpacthydro.org/wp-content/uploads/2011/10/Winooski_Final_Cert_Review_10_03_2011.pdf

Appendix B

FERC License Order P-6470

Aug, 1983

Link to Winooski 8 FERC License in LIHI project file.

<http://www.lowimpacthydro.org/assets/files/Winooski%208/FERC%20Lic%20Order%208-29-83063%202.pdf.zip>

Appendix C FERC Order P-6470-001 Approving As-Built Exhibits Dec, 1986

Winooski Hydroelectric Company, 37 FERC P 62243 (1986)

37 FERC P 62243 (F.E.R.C.), 1986 WL 79371
**1 Office Director Orders

Winooski Hydroelectric Company

Project No. 6470-001
Order Approving As-Built Exhibits A, F, and G
(Issued December 19, 1986)

*63263 Fred E. Springer, Director, Division of Project Management.

On August 7, 1986, October 10, 1986, and November 3, 1986, Winooski Hydroelectric Company filed for approval of "as-built" exhibits A, F, and G.

The revised exhibits show that the licensee has constructed an open flume powerhouse with 3 small turbines in lieu of a powerhouse having one 550 kV unit and a short penstock. The height of the wooden flashboards has been increased by 1.5 feet to 4.8 feet. This development will better utilize the flow of the Winooski River than the previously authorized configuration. The maximum hydraulic capacity of the units is 390 cfs, which is substantially the same as the authorized development.

The revised exhibit F drawings show the actual physical elevations, volumes and surface areas of the impoundment on the Winooski River. The revised exhibits conform to the Commission's Rules and Regulations.

Approval of the revised exhibits is an administrative matter involving **no** change in operation of the **project** and, therefore, is not a major Federal action significantly affecting the quality of the human environment.

The Director orders:

(A) Ordering Paragraph (B) (2) of the license issued August 29, 1983 [24 FERC P 62,234], should be revised to read as follows:

Project works consisting of: (a) a rehabilitated concrete gravity dam, 227 feet long with a maximum height of 26 feet (30.8 feet with flashboards); (b) an impoundment with an area of 7.5 acres and capacity of 45 acre feet at elevation 615.0 feet m.s.l.; (c) a 25-foot-wide by 300-foot-long tailrace; (d) a 1078-square-foot open flume type powerhouse containing three Kaplan turbines with a combined capacity of 810 kW operating under a head of 32.5 feet; (e) the 4.16-kV generator leads and the 750-kVA transformer; (f) a 13-kV transmission line 2,500 feet long; and (g) appurtenant facilities.

(B) The last sentence of Article 25 should be revised to read as follows:

The authorized installed capacity for that purpose is 1080 horsepower

(C) The revised Exhibit A filed with the Commission on November 3, 1986 shall supersede Exhibit A previously approved and made a part of the License.

(D) The following Exhibit F and G drawings are approved and made a part of the license for **Project 6470**, superseding the Exhibit F and G drawings noted.

Exhibits	FERC No.	Showing	Superseding FERC No.
----------	----------	---------	----------------------

WestlawNext

Appendix C (CONTINUED)

Winooski Hydroelectric Company, 37 FERC P 62243 (1986)

F-1	6470- 6 Site Plan	6470-1
F-2	6470- 7 Dam Restoration—Plan and Profile	6470-2
F-2A	6470- 8 Sections	New Drawing
F-3	6470- 9 Tailrace—Profile and Sections	6470-3
F-4	6470-10 Plan at Elev. 620	6470-4
F-4A	6470-11 Plan at Elev. 590	New Drawing
F-4B	6470-12 Sections A & B	New Drawing
F-4C	6470-13 Section C	New Drawing
F-4D	6470-14 Sections D & E	New Drawing
G-1	6470-15 Project Map	6470-5

*63264 (E) The superseded Exhibit F and G drawings are eliminated from the license.

(F) Within 90 days of the date of issuance of this order, the licensee shall file an original of the approved Exhibit F and G drawings reproduced on silver or gelatin 35 mm microfilm mounted on Type D (3-1/4" x 7-3/8") aperture cards. In addition, the licensee shall file two diazo-type duplicate aperture cards. The original set and one duplicate set of aperture cards should be filed with the Secretary of the Commission. The remaining duplicate set of aperture cards should be filed with the Commission's New York Regional Office. The FERC drawing number shall be shown in the margin below the title block of the microfilmed drawings, and also in the upper right corner of each aperture card.

**2 (G) This order is issued under authority delegated to the Director and is final unless appealed to the Commission under rule 1902 within 30 days from the date of this order.

Federal Energy Regulatory Commission
 37 FERC P 62243 (F.E.R.C.), 1986 WL 79371

End of Document

© 2015 Thomson Reuters. No claim to original U.S. Government Works.

WestlawNext

Appendix D Water Quality Certification, P.L. 92-500, Section 401 issued Dec , 1982

WATER QUALITY CERTIFICATION
(P.L. 92-500, Section 401)

COPY

In the matter of: Winooski Hydroelectric Company
26 State Street
Montpelier, Vermont 05602
Application for Winooski #8 Hydroelectric Project

The Water Quality Division of the Vermont Department of Water Resources and Environmental Engineering (the Department) has examined the Water Quality Certification application and the FERC license application Exhibit E filed by Winooski Hydroelectric Company (the applicant) and makes the following findings:

1. The applicant proposes to develop the site of an existing dam located on the Winooski River in the Town of East Montpelier and presently under the ownership of the Green Mountain Power Corporation. The Winooski #8 project would include the construction of a 200 foot penstock and a new powerhouse approximately 750 square feet in area. The powerhouse would be located on the right (north) bank. The site is about 1.4 miles upstream of the confluence of the Stevens Branch and the Winooski River.

2. The dam, a gravity, reinforced concrete structure was constructed by the Corry-Deavitt-Frost Electric Company in 1908-1909. From 1927 to 1970, the hydroelectric facility was operated by Green Mountain Power Corporation, utilizing a powerhouse located approximately 2900 feet downstream. The dam has a length of 227 feet, 152 feet of which constitutes the spillway crest. It is 20 feet high. The forebay is on the right end of the dam, and some desilting in that area will be necessary in order to improve entrance conditions.

3. The crest elevation is 610.2' NGVD. The pond surface area at that elevation is about 4 acres, and the backwater extends about 1500 feet upstream. Flashboards 3.3 feet in height are to be installed across the crest, raising the pool to 613.5' NGVD. That will result in an increase in surface area of about 3 acres and an extension of the backwater about 700 feet. The gross storage with the flashboards in place would be 34-acre feet.

Appendix D (CONTINUED)

7. The Vermont Water Resources Board has designated the Winooski River from Plainfield downstream as Class C waters. Class C waters are considered suitable for recreational boating; irrigation of crops not used for consumption without cooking; habitat for wildlife and for common food and game fishes indigenous to the region; and such industrial uses as are consistent with other Class uses. The Water Management Type is I or II, and the associated dissolved oxygen (D.O.) standard would be 6 mg/l. A D.O. level of 7 mg/l may be required at and near spawning areas.

8. The applicant took two sets of D.O. samples on August 19 and August 30, 1982 when river flow was estimated at 85 cfs, or roughly three times 7Q10. All samples were at or near saturation. Photosynthetic oxygen production may be responsible for the higher D.O. measurements.

The Department has sampled the river at the U.S. Route 2 bridge about 0.4 mile upstream of the Stevens Branch confluence. All samples exhibited high D.O. values, all above minimum standards. An excellent set of riffles exists between the site and the sampling location.

9. In order to insure that the section of river between the dam and the tailrace will continue to meet standards when the project is operating, a minimum flow of 7Q10 must be spilled at the dam.

10. A sizeable relatively deep plunge pool is located at the base of the dam. The pool is considered to be an important refuge and habitat area for salmonids. It is a very popular fishing spot. Passage of 7Q10 over the dam will preserve the quality of the pool; however, it may be necessary to construct a low flow channel along the right bank to connect the tailrace and the pool. The channel would maintain the capability of upstream migrants to negotiate the bypassed section of stream with adequate depth of water.

A detailed topographic survey of the bypassed section of river shows that neither the pool depth nor area will be significantly reduced by the passage of lower-than-natural flows.

Appendix D (CONTINUED)

CONDITIONS

The Department certifies that the Winooski #8 hydroelectric project will meet Vermont Water Quality Standards with the following conditions:

A. The hydroelectric facility will be operated in a strict run-of-the-river manner, with instantaneous flows below the tailrace maintained equivalent to instantaneous inflows. The one exception to this is when storage is being replaced following a maintenance operation such as the reinstallation of flashboards. In such cases, a flow of 100 cfs, or greater shall be maintained below the tailrace.

B. A flow of 25 cfs, or greater shall be passed at the dam at all times when available from instantaneous inflow to the impoundment. When the project is not operating, all inflows shall be released at the dam, except during the aforementioned maintenance operations. The applicant shall provide the Department with a description and plans detailing how releases will be made at the dam for review and approval before construction may commence.

C. Following project completion, the Department may order the construction of a low flow channel in the bypassed section of river if it is found that fish migration has been impeded by the change in flow regime.

D. During the final engineering phase or earlier, the applicant shall file a comprehensive erosion and sediment control plan with the Department. The plan shall cover temporary and permanent measures to limit adverse impacts on water quality from turbidity and sedimentation with regard to construction activities. It is recommended that the applicant consult with the Department for input during the development of the plan.

E. The applicant shall insure that every reasonable precaution is taken during construction to prevent the discharge of petro chemicals, wet concrete and debris to state waters.

F. Any debris removed from the project area during construction and later operation shall be disposed of properly.

Appendix D (CONTINUED)

G. Any significant changes to the project including the operational scheme must be submitted to the Department.

H. Upon completion of the project, the applicant shall provide the Department with an as-built set of plans for the record.

I. No construction may commence until the Department has issued written approval for Conditions B, D, and G. Operational changes made after project completion are subject to Condition G and must be approved prior to effecting the change.

For Reginald A. LaBore
John R. Ponsetto, Commissioner
Department of Water Resources
and Environmental Engineering

Dated at Montpelier, Vermont this
29th day of Dec., 1982.

JRC/rh

**Appendix E Winooski River Watershed Water Quality and Aquatic Habitat
Assessment Report April, 2008**

http://www.lowimpacthydro.org/assets/files/Winooski%20/Winooski%20Water%20Qual_report.pdf

Appendix F1 State of VT ANR letter Dec, 1985



State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION

Montpelier, Vermont 05602
OFFICE OF THE SECRETARY

Department of Fish and Wildlife
Department of Forests, Parks, and Recreation
Department of Water Resources & Environmental Engineering
State Geologist
Natural Resources Conservation Council

December 16, 1985

Mr. John Warshow
Mr. Mathew Rubin
Winooski Hydroelectric Company
26 State Street
Montpelier, Vermont 05602

Messrs. Warshow and Rubin,

The Agency of Environmental Conservation is extremely pleased by the care in construction and design which you have displayed in the development of the Winooski 8 hydroelectric project.

As you know, this Agency takes a hard-line view of proposed hydroelectric development. Given the limited number of economically viable hydroelectric sites in the state, and the natural and social resources which rivers represent, I feel that hydroelectric development faces some of the hardest environmental hurdles any form of development must deal with in Vermont.

Given that background, it is extremely gratifying to see a project which goes beyond basics to produce an attractive, well designed project.

I hope your efforts will inspire other hydroelectric developers to design attractive projects.

Yours very truly,

Leonard U. Wilson
Secretary

LW:psp

cc: Governor Kunin
Cmr. Jonathan Lash
Cmr. Steve Wright
Cmr. Mollie Beattie
Cmr. Gerald Terrant

Appendix F2 FERC Form 80 Recreation Report Feb, 2004

Unofficial FERC-Generated PDF of 20040205-0231 Received by FERC OSEC 02/05/2004 in Docket#: P-6470-000

Federal Energy Regulatory Commission (FERC) FERC Form 80

Licensed Hydropower Development Recreation Report

Page 2 of 3

7. Enter data for each Recreational Resource Type (a). For Facility Capacity (e), compare the amount of weekend use for this season reported on Schedule 1, Item (5) with the facility's capacity to handle such use and enter a percentage that indicates overuse, underuse, or ideal use. Do not consider peak weekend use (see Glossary). For example, if Boat Ramps are used to half capacity during a non-peak weekend day, enter 50%. For Boat Ramps that are used beyond their capacity, enter the appropriate percentage above 100.

Resource Type	Count	Capacity	Use %
BOATING			
Access Areas. (No Facilities). Unimproved but well-drained riparian sites which can be used to reach development waters (including waters below a dam) without trespassing on other property. Such waters are used for landing boats, fishing, swimming, or other water recreational purposes.	2	1	100%
Boat Ramps. Improved areas having one or more boat launching lanes, and which (a) are usually marked with signs, (b) have compacted gravel or concrete surfaces, and (c) usually have adjacent parking lots.	—	—	—
Boat Launching Lanes. The areas at the boat ramp from which boats may be launched into the development waters. The number of lanes at a boat ramp are determined by the number of boats that can be launched safely at the boat ramp at one time.	—	—	—
Marinas. Public or private facilities provided on or adjacent to development waters for the docking, loading, repair, and storage of boats, and which may rent boats and equipment, or sell bait or food. Facilities may be private or public.	—	Acres	—
White Water Boating. Access areas below a dam that can be used for rafting/canyoning.	1	Miles	10%
Canoe Portages. Area located above or below a dam, diversion or other obstruction where persons can launch canoes, and the improved, designated, and maintained trails connecting such sites.	1	Miles	10%
Tailwater Fishing Facilities. Ramps, walkways, or similar structures to facilitate take-out fishing.	—	—	—
Fishing Piers. Structures extending or extending into development waters which are constructed and maintained specifically for fishing. (This code excludes Tailwater Fishing).	—	—	—
FISHING			
Parks. Designated areas which usually contain multiple use facilities (picnics, playgrounds, swimming beaches, and boat ramps). Individual facilities within each park shall be reported using the appropriate resource type (e.g., playground areas, swimming areas, picnic areas, etc.).	—	Acres	—
Playground Areas. Have playground equipment, game courts/fields, jogging tracks, etc.	—	Acres	—
Trails. Improved pathways used for non-motorable recreational travel which (a) can be located on a reference map, and (b) are designated according to type of use (hiking, biking, trailbikes, snowshoes, cross-country skiing). This category excludes Canoe Portages.	1	Miles	10%
PARKS			
Swimming Areas. Sites providing access to development waters where swimming facilities (such as beaches, lifeguard swimming areas, parking, and sanitation facilities) are located.	—	Acres	—
Picnic Areas. Areas designed and maintained for picnicking and which contain one or more picnic sites, each of which includes a picnic table and in some cases a cooking grill, trash receptacles, and a parking area.	—	Acres	—
Wildlife Areas. Neced areas and reserves specifically created and managed for the protection and propagation of wildlife and the viewing of wildlife in their habitat.	—	Acres	—
Visitor Centers. Facilities located in a building, pavilion or similar structure from which persons may obtain information about the development, its operation, recreational facilities, and related areas of interest.	—	Acres	—
Interpretive Displays. Historic or prehistoric objects, structures, sites and areas, including associated facilities (exhibits and museums) which describe or preserve archaeological, historic or prehistoric activities, artifacts and materials.	—	Acres	—
Overlooks. Public areas to view natural areas/project features (e.g., pull-offs, vistas).	—	Acres	—
Hunting Areas. Public or private areas open to the general public for hunting purposes.	—	Acres	—
Golf Courses. All types of golf areas, except miniature golf.	—	Acres	—
Cottage/Cabin Sites. Recreational dwellings which are seasonally rented by the public for recreational purposes.	—	Acres	—
Camping Areas. (Campinggrounds). Areas containing two or more campsites, tent sites, or tables/recreational vehicles (RV) sites which accommodate overnight camping equipment.	—	Acres	—
Tent/Trailer/RV Sites. The total number of sites with Camping Areas that have been specifically developed for tent, trailer, or RV use. Such sites do not include Group Camps.	—	Acres	—
Organizational Camps. Camping areas that are maintained and operated by a specific entity but which may be used by other persons or groups (scout camps, military base recreation camps, church camps, handicapped children's camps).	—	Acres	—
Group Camps. Camping areas which are equipped with facilities to accommodate use by the general public. Such areas usually require registration or advance reservation.	—	Acres	—
Winter Sports. Any facility providing snow, the skiing, sledding, ice skating or ice fishing.	—	Acres	—
Other (Specify):	—	Acres	—

Respondent Certification: The undersigned certifies that he/she has examined the accompanying data; and that to the best of his/her knowledge, information and belief, all historical and estimated data provided herein and appended hereto are true, complete, and accurate.

Signature: John Lewis Warshaw Title: Partner, Authorized Agent Area Code/Phone No.: 202/223/7141
 Signature: [Handwritten Signature] Date Signed: Feb 4th 2004 Reporting Year Ending: Dec 31st 2002

Title 18 U.S.C. 1001 makes it a crime for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious or fraudulent statement or misrepresentation as to any matter within its jurisdiction.

Reset Form

Go To Page 1

Appendix F2 (CONTINUED)

official FERC-Generated PDF of 20040205-0231 Received by FERC OSEC 02/05/2004 in Docket#: P-6470-UUU

ORIGINAL

Federal Energy Regulatory Commission (FERC) FERC Form 80

Licensed Hydropower Development Recreation Report

FILED
OFFICE OF THE SECRETARY
FEB -5 A 11:27
FEDERAL ENERGY REGULATORY COMMISSION
Form Approved OMB No. 1902-0106 Expires: 08/31/2004 Estimat: 3.0 hours

This form collects data on recreational facilities at projects licensed by the Federal Energy Regulatory Commission under the Federal Power Act (16 USC 791a-825r). This form must be submitted by licensees of all projects except those specifically exempted under 18 CFR 8.11 (c). Submit this form on or before April 1, 2003. Submit subsequent filings of this form on or before April 1, every 6th year thereafter (for example, 2009, 2015, etc.). Submit an original and three copies of the form to the Commission's Regional Office (specified in the cover letter to this form). The public burden estimated for this form is three hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the collection of information. Please send your comments about this burden estimate, or any other aspect of this collection of information, including suggestions to reduce the burden, to: Director, Division of Hydropower Administration and Compliance, Federal Energy Regulatory Commission, 888 First Street NE, Washington, D.C. 20426 and the Office of Information and Regulatory Affairs, Desk Officer-FERC, Office of Management and Budget, Washington, D.C. 20503.

Failure to comply with this collection of information will not result in a penalty, if you were unaware that a valid control number assigned by the Office of Management and Budget must be displayed on this collection of information.

Go to Page 1

Schedule 1. Public Use Information: Please read the instructions and glossary before completing this form

1. Instructions:
 1.1 All data reported on this form must represent recreational facilities and services located within the development boundary.
 1.2 To insure a common understanding of terms, please refer to the Glossary on page 3.
 1.3 Report actual data for each item. If actual data are unavailable, then please estimate.

2.1 Licensee Name: WINOOSKI HYDROELECTRIC CO
 2.2 Project Name: WINOOSKI NO. 8
 2.21 Project Number: 6470
 2.3 Development Name: Winooski No 8
 2.4 States Project Traverses (abbreviated):
 2.41 State #1: VT (List State(s) with largest to smallest area within the Development boundary)
 2.42 State #2: _____
 2.5 Type of Project License: Major _____ Minor X
 (Check One)

3.1 Name of Stream: WINOOSKI
 3.2 Reservoir Surface Acres: less than 10
 3.3 Shoreline Miles at Normal Pool Elevation: less than 1
 3.4 Name of Nearest City with a Population of 40,000 or More: Burlington
 3.41 Distance: From This City to the Dam: 45
 3.42 Population of This City: 50,000
 3.5 Estimated Population Within 100 mile Radius from the Dam: 400,000
 3.6 Percent of Shoreline Safely Accessible to the General Public by Land Travel Without Trespassing: 50%

For the previous calendar year, enter only the licensee's annual recreational construction, operation, and maintenance costs for the development (project). Also enter the corresponding annual recreation revenues in whole dollars.

Item	Licensee's Annual Recreation Costs and Revenues (In Whole Dollars)	
	Construction, Operation and Maintenance Costs	Recreation Revenues for Calendar Year
4. Dollar Values:	<u>\$500</u>	

5. Length of Recreation Season
 Summer: From (MM/DD): 04/01 To: 11/01 Winter: From (MM/DD): _____ To: _____

Enter the number of visits to all recreational areas at development (in Recreation Days)

Period	Number of Recreation days	
	Annual Total	Peak Weekend Average
6.1 Daytime	<u>2000</u>	<u>10</u>
6.2 Nighttime		

Appendix F3 FERC Inspection Report July, 2004

Unofficial FERC-Generated PDF of 20040817-0085 Issued by FERC OSEC 07/29/2004 in Docket#: P-6470-000

**FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF ENERGY PROJECTS
DIVISION OF DAM SAFETY AND INSPECTIONS
NEW YORK REGIONAL OFFICE
19 West 34th Street - Suite 400
New York, New York 10001**

Office No. (212) 273-5900

FAX No. (212) 631-8124

In reply refer to:
P-6470-VT
NATDAM ID No. VT83018

Operation Inspection Follow-up
Winooski No. 8

July 29, 2004

Mr. John Warshow
Winooski Hydro Co.
26 State Street
Montpelier, VT 05602

Dear Mr. Warshow:

An operation inspection of your Winooski No.8 Project was conducted on July 22, 2004 by Mr. Francis Lee of this office, accompanied by your staff. The assistance and cooperation extended to Mr. Lee during the inspection is appreciated.

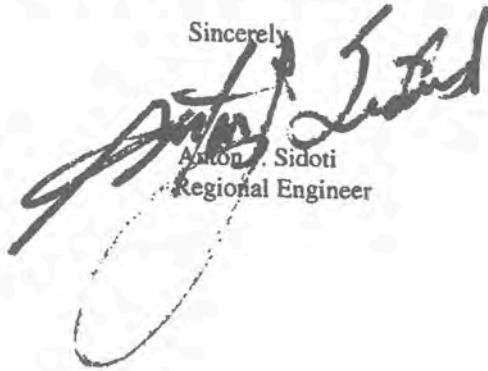
The project which includes the dam, power plant and other appurtenant facilities appeared to be adequately maintained and in satisfactory condition. No deficiencies or safety concerns were observed during the inspection that would require remedial action at this time. Please be advised that you will be provided at a later date with any additional comments that develop as a result of our preparation of the inspection report.

Appendix F3 (CONTINUED)

Unofficial FERC-Generated PDF of 20040817-0085 Issued by FERC OSEC 07/29/2004 in Docket#: P-6470-000

Your cooperation and continued interest in dam safety are appreciated. If you have any questions, you may contact Mr. Lee at (212) 273-5954.

Sincerely,

A handwritten signature in black ink, appearing to read "Anton Sidoti", is written over the typed name and title.

Anton Sidoti
Regional Engineer

Appendix F4 State of VT ANR Compliance letter Jan, 2011; LIHI correspondence June, 2011

From: "John Warshow" <jwarshow@sover.net>
Subject: FW: LIHI Certification - Winooski-8 and Slack Dam
Date: January 10, 2011 10:59:08 AM EST
To: "Fred Ayer" <fayer@lowimpacthydro.org>
Cc: "Mathew Rubin" <mrubin@sover.net>

John Warshow

From: Fitzgerald, Brian [mailto:Brian.Fitzgerald@state.vt.us]
Sent: Monday, January 10, 2011 10:22 AM
To: John Warshow (jwarshow@smdhydro.com)
Cc: Kim, Rich; McMenemy, Jay
Subject: LIHI Certification - Winooski-8 and Slack Dam

John,

You called recently and indicated that you are applying for Low Impact Hydropower Institute certification for the Winooski-8 and Slack Dam projects. You requested that the Agency document compliance with the projects' water quality certifications and whether the projects are located on impaired waters, i.e., the state 303(d) list.

Winooski-8: This project is operating under a water quality certification issued on Dec. 29, 1982 and amended on April 5, 1984. Generally, the project operates in compliance with the conditions of the certification. This reach of the Winooski River is not listed on the most recent (2008) list of impaired waters.

Slack Dam: This project is operating under a water quality certification issued on Jan. 31, 1985 and amended on March 10, 1986. Generally, the project operates in compliance with the conditions of the certification. This reach of the Black River is not listed on the most recent (2008) list of impaired waters.

Please let me know if you need additional information.

BT

Brian T. Fitzgerald
Vermont Agency of Natural Resources
Department of Environmental Conservation
Water Quality Division
103 South Main Street, 10 North
Waterbury, VT 05671-0408

802.241.3468
802.793.0454 (cell)
brian.fitzgerald@state.vt.us
<http://www.vtwaterquality.org>

Conservation is a cause that has no end. There is no point at which we will say our work is finished.
- Rachel Carson

Please consider the environment before printing this e-mail

Appendix F4 (CONTINUED)

Draft Report to the Low Impact Hydropower Institute on
Winooski No. 8 Hydroelectric Project Certification

RECORD OF CONTACTS

Date of Conversation: 6/13/2011
Application Reviewer: Jackie Dingfelder, Consultant
Person Contacted: Brian Fitzgerald, Vermont Dept. of Environmental Conservation
Telephone/email: 802.241.3468/brian.fitzgerald@state.vt.us
Areas of Expertise: Streamflow Protection Coordinator

Jackie,

Thanks for your voicemail and email.

Compliance with water quality certification conditions at both projects includes meeting flow requirements, so both projects are in compliance with respect to flows.

For comments specifically on fisheries impacts, you should contact the appropriate district fisheries biologist in the Vt. Department of Fish and Wildlife:

Slack Dam: Jay McMenemy, or 802.885.4429
Winooski-8: Rich Kirn, or 802.465.7566

Please let me know if you need additional information.

BT

Brian T. Fitzgerald
Streamflow Protection Coordinator

Vermont Agency of Natural Resources
Department of Environmental Conservation
Water Quality Division
103 South Main Street, 10 North
Waterbury, VT 05671-0408

802.241.3468
802.793.0454 (cell)

brian.fitzgerald@state.vt.us

Date of Conversation: 8/26/2011
Application Reviewer: Jackie Dingfelder, Consultant
Person Contacted: Brian Fitzgerald, Vermont Dept. of Environmental Conservation
Telephone/email: 802.241.3468/brian.fitzgerald@state.vt.us

Appendix F4 (CONTINUED)

*Draft Report to the Impact Hydropower Institute on
Winooski No. 8 Hydroelectric Project Certification*

Areas of Expertise: Streamflow Protection Coordinator

Jackie:

Fred Ayer requested confirmation of compliance with Vermont's quantitative water quality standards for the Winooski-8 (Winooski River) and Slack Dam (Black River) hydroelectric projects. Based on available information, there is reasonable assurance that the waters at these facilities and in the downstream reaches are in compliance.

Please contact me if you have questions.

BTF

Brian T. Fitzgerald
Streamflow Protection Coordinator

Vermont Agency of Natural Resources
Department of Environmental Conservation
Water Quality Division
103 South Main Street, 10 North
Waterbury, VT 05671-0408

802.241.3468
802.793.0454 (cell)

www.vermont.gov

Appendix G1 Winooski 8 Powerhouse photo



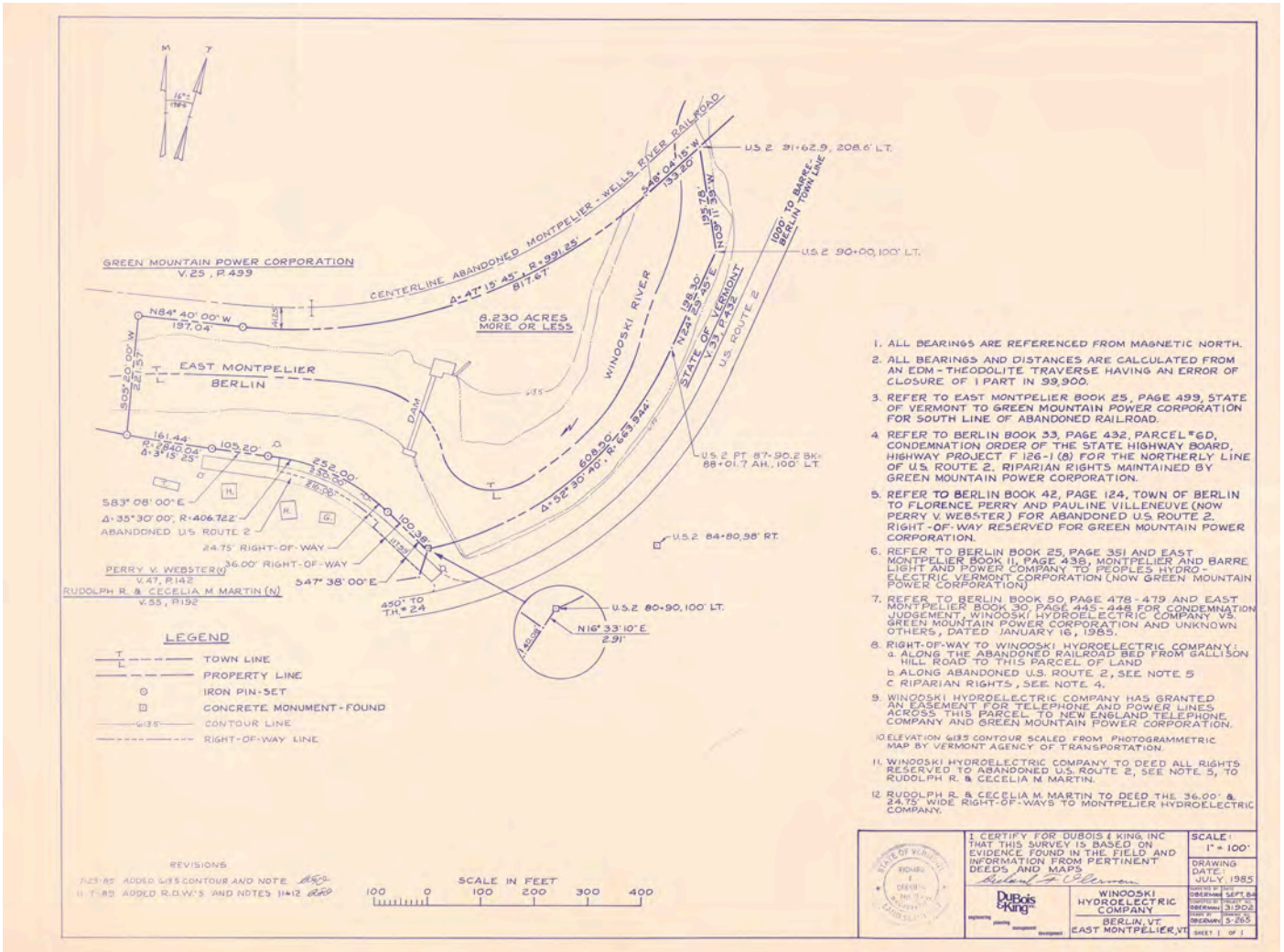
Appendix G2 Winooski 8 Aerial photo of Zones 2 and 3



Appendix G3 Winooski 8 Aerial photo of Zones 2, and 3

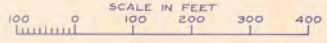


Appendix H1 Winooski 8 Survey of project property



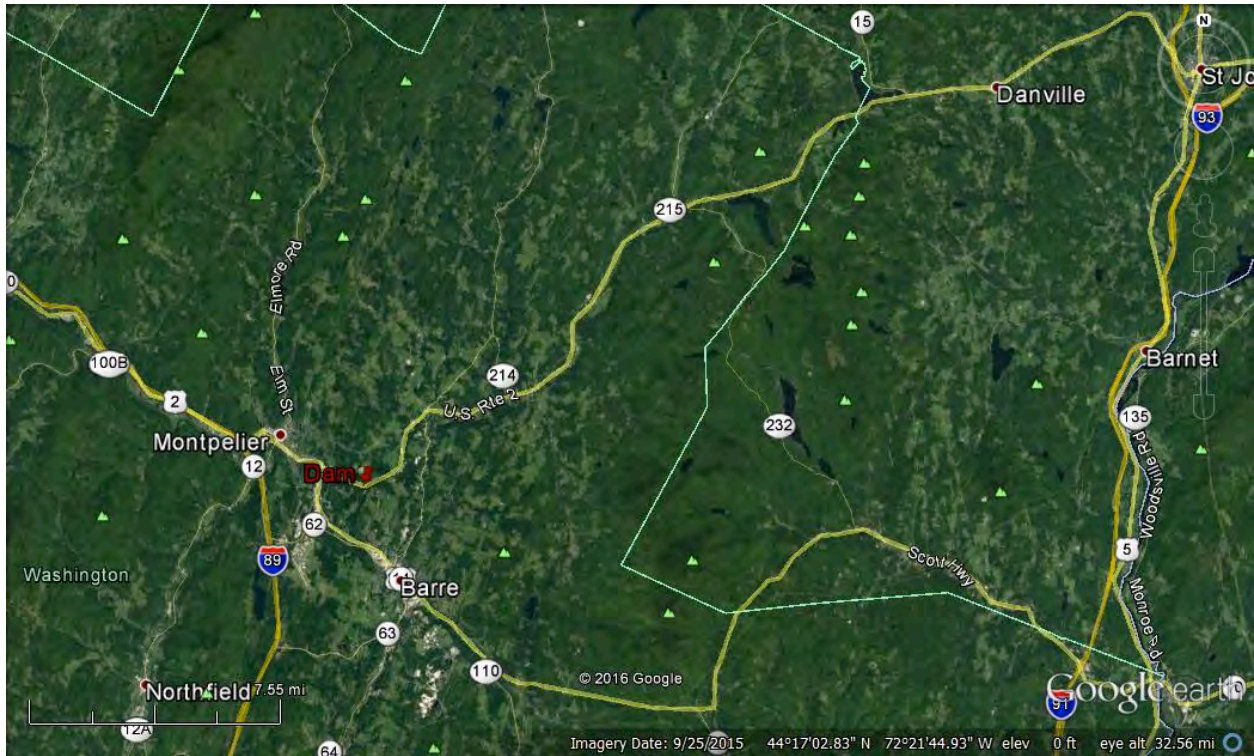
1. ALL BEARINGS ARE REFERENCED FROM MAGNETIC NORTH.
2. ALL BEARINGS AND DISTANCES ARE CALCULATED FROM AN EDM - THEODOLITE TRAVERSE HAVING AN ERROR OF CLOSURE OF 1 PART IN 39,900.
3. REFER TO EAST MONTPELIER BOOK 25, PAGE 499, STATE OF VERMONT TO GREEN MOUNTAIN POWER CORPORATION FOR SOUTH LINE OF ABANDONED RAILROAD.
4. REFER TO BERLIN BOOK 33, PAGE 432, PARCEL *G.D., CONDEMNATION ORDER OF THE STATE HIGHWAY BOARD, HIGHWAY PROJECT F 126-1 (6) FOR THE NORTHERLY LINE OF U.S. ROUTE 2. RIPARIAN RIGHTS MAINTAINED BY GREEN MOUNTAIN POWER CORPORATION.
5. REFER TO BERLIN BOOK 42, PAGE 124, TOWN OF BERLIN TO FLORENCE PERRY AND PAULINE VILLENEUVE (NOW PERRY V. WEBSTER) FOR ABANDONED U.S. ROUTE 2. RIGHT-OF-WAY RESERVED FOR GREEN MOUNTAIN POWER CORPORATION.
6. REFER TO BERLIN BOOK 25, PAGE 351 AND EAST MONTPELIER BOOK II, PAGE 438, MONTPELIER AND BARRE LIGHT AND POWER COMPANY TO PEOPLES HYDRO-ELECTRIC VERMONT CORPORATION (NOW GREEN MOUNTAIN POWER CORPORATION).
7. REFER TO BERLIN BOOK 50 PAGE 478 - 479 AND EAST MONTPELIER BOOK 30, PAGE 445 - 448 FOR CONDEMNATION JUDGEMENT, WINOOSKI HYDROELECTRIC COMPANY VS. GREEN MOUNTAIN POWER CORPORATION AND UNKNOWN OTHERS, DATED JANUARY 16, 1965.
8. RIGHT-OF-WAY TO WINOOSKI HYDROELECTRIC COMPANY, a. ALONG THE ABANDONED RAILROAD BED FROM GALLISON HILL ROAD TO THIS PARCEL OF LAND b. ALONG ABANDONED U.S. ROUTE 2, SEE NOTE 5 c. RIPARIAN RIGHTS, SEE NOTE 4.
9. WINOOSKI HYDROELECTRIC COMPANY HAS GRANTED AN EASEMENT FOR TELEPHONE AND POWER LINES ACROSS THIS PARCEL TO NEW ENGLAND TELEPHONE COMPANY AND GREEN MOUNTAIN POWER CORPORATION.
10. ELEVATION 613'S CONTOUR SCALED FROM PHOTOGRAMMETRIC MAP BY VERMONT AGENCY OF TRANSPORTATION.
11. WINOOSKI HYDROELECTRIC COMPANY TO DEED ALL RIGHTS RESERVED TO ABANDONED U.S. ROUTE 2, SEE NOTE 5, TO RUDOLPH R. & CECELIA M. MARTIN.
12. RUDOLPH R. & CECELIA M. MARTIN TO DEED THE 36.00' & 24.75' WIDE RIGHT-OF-WAYS TO MONTPELIER HYDROELECTRIC COMPANY.

REVISIONS
 7/23/85 ADDED W/S'S CONTOUR AND NOTE *ASD*
 11/7/85 ADDED R.O.W.'S AND NOTES 11-12 *ASD*

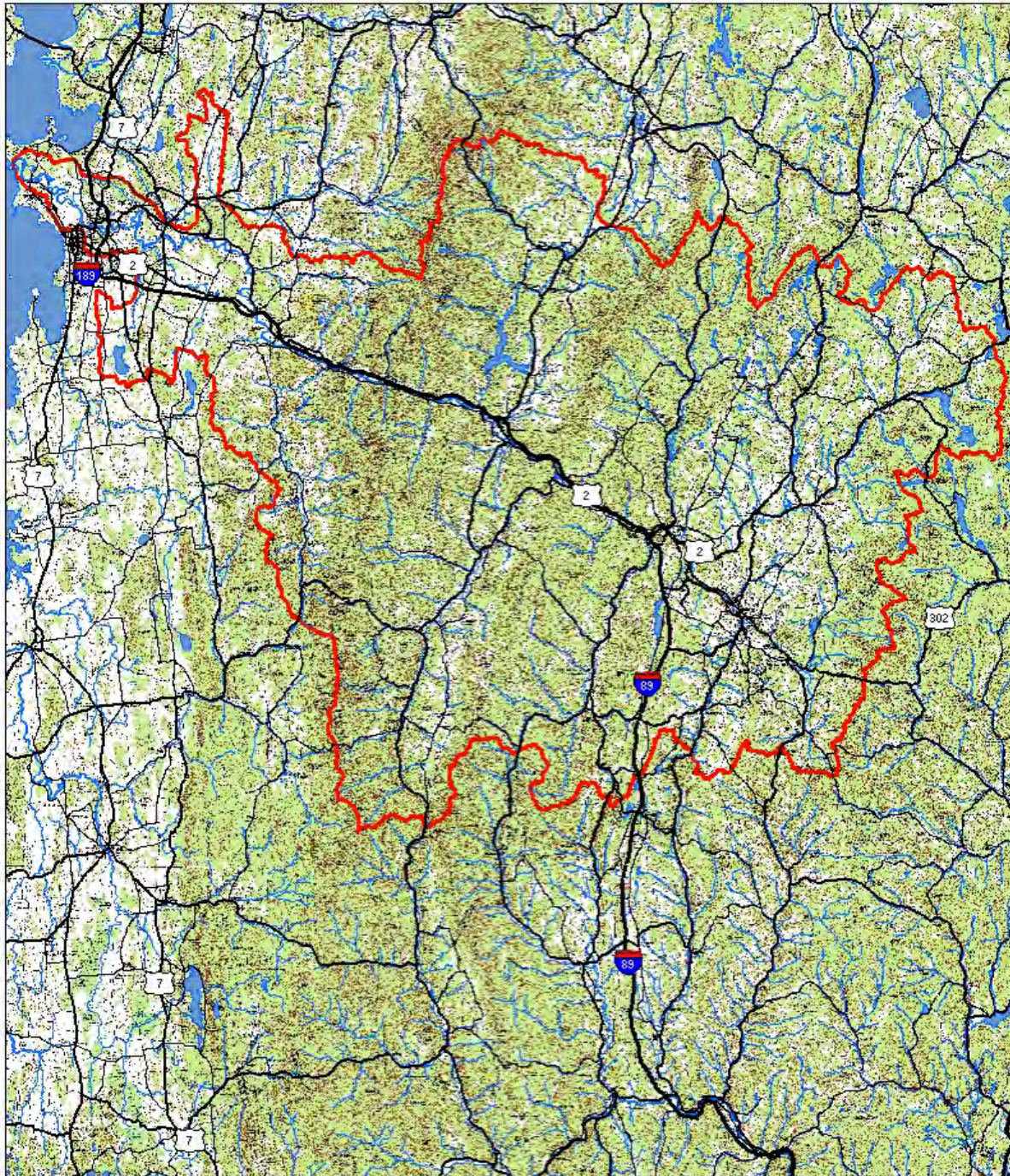


	I CERTIFY FOR DUBOIS KING, INC. THAT THIS SURVEY IS BASED ON EVIDENCE FOUND IN THE FIELD AND INFORMATION FROM PERTINENT DEEDS AND MAPS. <i>Richard A. O'Brien</i> DUBOIS KING WINOOSKI HYDROELECTRIC COMPANY BERLIN, VT EAST MONTPELIER, VT	SCALE: 1" = 100' DRAWING DATE: JULY 1985
	SHEET 1 OF 1	SHEET 1 OF 1

Appendix H2 Winooski 8 Map of project area



Appendix H3 Winooski 8 Map of Winooski River drainage area



Winooski River watershed

Appendix I Project Mean daily flows: monthly and yearly averages

Mean Daily Flows at Winooski 8

Site Drainage Area 199 Sq mi

USGS Gage Montpelier, VT #04286000

Gage Drainage area 397 sq mi.

Period of Continuous Record: 1928-2015

Month	Q cfs
Jan	229
Feb	197
Mar	448
Apr	930
May	480
Jun	259
Jul	160
Aug	133
Sep	120
Oct	211
Nov	273
Dec	267
Avg	309

Appendix J Local, State and Federal Agency Contacts

Agency Contact (check area of concern: Flows <u>x</u> , Water Quality <u>x</u> , Fish/Wildlife Resources <u>x</u> , Watersheds <u>x</u> , T/E Spp <u>x</u> , Cultural/Historic Resources <u>x</u> , Recreation <u> </u>):	
Agency Name	VT Department of Environmental Conservation
Name and Title	Jeff Crocker
Phone	802-490-6151
Email address	Jeff.crocker@Vt.gov
Mailing Address	1 National Life Drive Main 2 Montpelier, VT 05620

Agency Contact (check area of concern: Flows <u> </u> , Water Quality <u> </u> , Fish/Wildlife Resources <u> </u> , Watersheds <u> </u> , T/E Spp <u> </u> , Cultural/Historic Resources <u>x</u> , Recreation <u> </u>):	
Agency Name	VT Department of Historic Preservation
Name and Title	Laura Treischmann, VT Historic Preservation Director
Phone	802-828-3222
Email address	Laura.Treischmann@Vt.gov
Mailing Address	One National Life Drive Montpelier, VT 05620

Agency Contact (check area of concern: Flows <u>x</u> , Water Quality <u> </u> , Fish/Wildlife Resources <u>x</u> , Watersheds <u> </u> , T/E Spp <u> </u> , Cultural/Historic Resources <u> </u> , Recreation <u> </u>):	
Agency Name	US Fish and Wildlife Service-NE Field Office
Name and Title	Melissa Grader, Fish and Wildlife Biologist
Phone	413-548-8002 x8124
Email address	melissagrader@fws.gov
Mailing Address	103 E. Plumtree Rd Sunderland, MA 01375

Agency Contact (check area of concern: Flows <u>x</u> , Water Quality <u>x</u> , Fish/Wildlife Resources <u>x</u> , Watersheds <u> </u> , T/E Spp <u> </u> , Cultural/Historic Resources <u> </u> , Recreation <u> </u>):	
Agency Name	Division of Ecological Restoration, MA Department of Fish and Game
Name and Title	Cindy Delpapa
Phone	617-626-1500
Email address	Cind.delpapa@state.ma.us
Mailing Address	251 Causeway St. Suite 400 Boston, MA 02114

Appendix J (CONTINUED)

Agency Contact (check area of concern: Flows_, Water Quality_, Fish/Wildlife Resources_ <input checked="" type="checkbox"/> , Watersheds_ <input checked="" type="checkbox"/> , T/E Spp_ <input checked="" type="checkbox"/> , Cultural/Historic Resources_ <input checked="" type="checkbox"/> , Recreation_ <input checked="" type="checkbox"/>):	
Agency Name	Massachusetts Department, Division of Watershed Management
Name and Title	Robert Kubit
Phone	508-767-2854
Email address	robert.kubit@state.ma.us
Mailing Address	627 Main Street Worcester, MA 01608

Appendix K Local non-government stakeholder Contacts

Contact (check area of concern: Flows <input checked="" type="checkbox"/> , Water Quality <input checked="" type="checkbox"/> , Fish/Wildlife Resources <input checked="" type="checkbox"/> , Watersheds <input checked="" type="checkbox"/> , T/E Spp <input checked="" type="checkbox"/> , Cultural/Historic Resources <input checked="" type="checkbox"/> , Recreation <input checked="" type="checkbox"/>):	
Org. Name	Friends of the Winooski
Name and Title	Ann Smith, Executive Director
Phone	802-882-8276
Email address	www.winooskiriver.org
Mailing Address	Box 777 Montpelier, VT 05601

Contact (check area of concern: Flows <input type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input checked="" type="checkbox"/> , Watersheds <input checked="" type="checkbox"/> , T/E Spp <input checked="" type="checkbox"/> , Cultural/Historic Resources <input checked="" type="checkbox"/> , Recreation <input checked="" type="checkbox"/>):	
Org. Name	North Branch Nature Center
Name and Title	Chip Darmstadt, Executive Director
Phone	802-229-6208
Email address	www.northbranchnaturecenter.org
Mailing Address	713 Elm Street Montpelier,VT 05602

Contact (check area of concern: Flows <input type="checkbox"/> , Water Quality <input checked="" type="checkbox"/> , Fish/Wildlife Resources <input checked="" type="checkbox"/> , Watersheds <input checked="" type="checkbox"/> , T/E Spp <input checked="" type="checkbox"/> , Cultural/Historic Resources <input checked="" type="checkbox"/> , Recreation <input checked="" type="checkbox"/>):	
Org. Name	VT Public Interest Group
Name and Title	Paul Burns, Executive Director
Phone	802-223-5221
Email address	www.vpirg.org
Mailing Address	141 Main Street Montpelier, VT 05602

Contact (check area of concern: Flows <input type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp <input type="checkbox"/> , Cultural/Historic Resources <input checked="" type="checkbox"/> , Recreation <input checked="" type="checkbox"/>):	
Org. Name	Cross Vermont Trail Association
Name and Title	Greg Western, Executive Director
Phone	802-498-0079
Email address	greg@crossvermont.org
Mailing Address	29 Main Street Montpelier, VT 05601

Appendix K (CONTINUED)

Contact (check area of concern: Flows___, Water Quality_ <u>x</u> , Fish/Wildlife Resources_ <u>x</u> , Watersheds_ <u>x</u> , T/E Spp___, Cultural/Historic Resources_ <u>x</u> , Recreation___):	
Org. Name	Renewable Energy VT
Name and Title	Olivia Campbell Anderson, Executive Director
Phone	802-229-0099
Email address	www.revermont.org
Mailing Address	33 Court Street Montpelier, VT 05602