

Village of North Bennington
P.O. Box 427
North Bennington, Vermont 05257

FERC Preliminary Permit Application
Firehouse Dam Hydroelectric Project
The Village of North Bennington
January 30, 2017

VIA ELECTRONIC FILING

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

*Re: Preliminary Permit Application:
Firehouse Dam, Village of North Bennington, Vermont*

Dear Secretary Bose,

For your consideration please find attached an Application for a Preliminary Permit for the Firehouse Dam in the Village of North Bennington, Vermont on Paran Creek. After a recent public vote, the Village of North Bennington, Preliminary Permit Applicant and owner of the Firehouse Dam, decided to pursue development of the site.

Please let us know should you have any questions or require further discussion.

Respectfully,



William F. Scully

**FEDERAL ENERGY
REGULATORY COMMISSION
PRELIMINARY PERMIT APPLICATION**

**FIREHOUSE DAM
HYDROELECTRIC PROJECT
THE VILLAGE OF NORTH BENNINGTON, VERMONT**

APPLICANT:
The Village of North Bennington
PO Box 427
North Bennington, Vermont 05257

PREPARED BY:
Cleo Zars
&
William F. Scully
Recurrent Hydro
PO Box 338
North Bennington, Vermont 05257

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**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

APPLICATION FOR PRELIMINARY PERMIT

**FIREHOUSE DAM
HYDROELECTRIC PROJECT**

INITIAL STATEMENT

18 C.F.R. §4.81(a)

(1) The Village of North Bennington hereby applies to the Federal Energy Regulatory Commission (FERC) for a Preliminary Permit for development of the Firehouse Dam on Paran Creek in Bennington County, Vermont. The Village of North Bennington owns the Firehouse Dam and the appurtenant water rights. The Village of North Bennington intends to fund this project with a 20 to 30-year bond. Paran Creek is not a navigable waterway of the United States.

The Village of North Bennington has placed a minimum value of \$750,000 for the aggregated values of the dam, associated civil works, water rights and local socio-economic benefits from tourism, recreation, etc. In light thereof, the Village of North Bennington wishes to preserve those social and economic values and to maximize them through the dam's development for renewable power and additional recreational and education opportunities. Therefore, the Village of North Bennington pursuant to a public and open meeting on December 13th, 2016 has voted to proceed with exploring the development of the two municipal sites in the Village under the FERC's jurisdiction.

This application is made in order that the applicant may secure and maintain priority of application for a development application (license or exemption from licensing) for the Project under Part I of the Federal Power Act while obtaining the data and performing the acts required to determine the feasibility of the Project and to support a development application. It is the intent of the applicant to pursue an exemption from licensing under the permit, as it has sufficient development rights to an original exemption from licensing pursuant to a FERC order.

At this time, the Applicant intends to obtain and maintain only those rights and interests necessary to construct, operate, and maintain the proposed Project for hydropower development and energy production. The Applicant owns the site and appurtenant water rights.

(2) The Location of the Project is:

State: Vermont

County: Bennington

Nearest Town, etc.: The Village of North Bennington

River/Body of Water: Paran Creek

(3) The exact name and address of the applicant is:

The Village of North Bennington
Attention Lorine Elwell, Clerk
P.O. Box 427
North Bennington, Vermont 05257
Tel.: (802) 447-7450
email: lwelwell@hotmail.com

Project Description-- The project will consist of: (1) the Firehouse Dam, a concrete gravity structure with a total length of 40 feet, a height of 10 feet with a top elevation of 612.95 MSL; (2) the replacement of 1-foot high wooden flashboards and/or crest gate/rubber dam; (3) an impoundment with a surface area of 1.27 acres, storage capacity of 5 acre-feet, and a normal water surface elevation of 614.03 feet MSL; (4) an intake structure with trashracks; (5) a powerhouse of reinforced concrete and wood measuring 15 feet wide, 20 feet long, and, to be built on the west side of the dam, containing one hydro generating unit of the crossflow type, each rated at 36 kilowatts (kW); (6) electrical transformer and switching facilities; (7) a 75-foot-long, 12.47-kilovolt (kV) transmission line; and (8) appurtenant facilities.

The exact name and business address of the individuals authorized by the Village of North Bennington Board of Trustees to act as an agent in this application is:

William F. Scully
P.O. Box 338
North Bennington, Vermont 05257
Tel.: (802) 379-2469
email: wfscully@gmail.com

All communications and correspondence should be directed to Mr. Scully. Mr. Scully is the designee for service.

(4) The Applicant is not claiming preference under section 7(a) of the Federal Power Act.

(5) The proposal term of the requested permit is thirty-six (36) months.

(6) The existing dam, water rights and lands whereupon appurtenant works including intake, water conveyance structures, powerhouse and turbine/generator units will be located, are owned by:

The Village of North Bennington
PO Box 427
North Bennington, VT 05257

EXHIBIT 1
Project Description
18 C.F.R. §4.81(b)

1) Existing Facilities

The Firehouse Dam Hydroelectric Project would be constructed in the Village of North Bennington, Vermont, in the County of Bennington at the existing Firehouse Dam, located on Paran Creek. The dam, owned by the Village of North Bennington, is a 40-foot-wide vertical concrete gravity structure, with an initial 10 foot drop of water to pooling formed by rip-rap. The dam is equipped with pockets for flashboard pins, of which some failed pins remain in place. A 20-foot wall runs perpendicular to the dam on the west side.

By adopting the existing infrastructure and with the removal of the rip-rap at the bottom of the dam, the design gains an additional 2 feet. The proposed powerhouse would be located on the west side of the site between the existing 20-foot wall and the Firehouse. The design will utilize the existing wall in the development of the project, with water entering through a hole in the wall and exiting the powerhouse (20' x 10') at 45 degree angles relative to the direction of the river.

The drainage area of the Firehouse Dam is 15.4 square miles. The proposed new powerhouse designs (20' x 15') would house the generator, turbine and controls, and is located adjacent to the river right abutment for the dam. The required square footage of intake was determined by calculating the required spacing of trash racks (1.25 inches) and the steel thickness (0.25 inches). The area calculated must be no less than 30.5 square feet, required to achieve a flow speed of two feet per minute. The water exits the powerhouse at a 45° angle into the river with 12' of net head.

2) Reservoir

The Firehouse Dam impounds a reservoir with a surface area of 1.27 acres, storage capacity of 5 acre-feet, and a normal water surface elevation of 614.03 feet MSL.

3) Transmission Lines

Currently no power service is available at the Site. Proposed power transmission line location and connections to the existing electric grid will be analyzed as part of the proposed study plan as defined in *Exhibit 2*.

4) Generating Equipment, Project Operation and Generation

The installed capacity of the Plant would be 36 kW, the maximum hydraulic capacity would be 50 cubic feet per second (cfs), and the minimum operating hydraulic capacity would be about 4.8 cfs. The plant would be operated automatically in the run-of-river mode, based on sensing the reservoir water level. The average annual energy production is estimated to be 171,580 kilowatt hours (kWh) and is intended to be distributed through Vermont's Group Net Metering Program¹.

¹ Established under Vermont [Title 30 Section 219a](#)

5) No Federal Lands are known to exist within the project boundaries.

6) Additional Information – Project Justification

This application is being made to provide the Applicant with the necessary means to further investigate the feasibility of developing the hydropower potential at the Firehouse Dam site. The mission of The Project is to support the Village's long term stewardship of renewable water resources, clean contaminants to improve the aquatic and riverine habitat, establish North Bennington as a model for energy independence and form a sustainable, long term watershed management plan by revitalizing existing infrastructure. The main goal of this project is to develop a means by which the water self-funds its own health and resilience without raising cost to the taxpayers. Further, the successful completion of the Project will provide for a now non-existent long-term maintenance plan for the dam.

The Project is expected to have minimal negative effects on land and water resources within the project area. Environmental and/or cultural/historical impacts, if any, will be identified during the proposed studies, and the plans will be developed to minimize and/or mitigate the impacts. A list of potential contamination sites in the surrounding North Bennington and Shaftsbury area has been compiled, and should development of the Project move forward, Lake Paran could be tested for these potential contaminants.

The Project will be developed in coordination with all local, state, and federal agency guidelines. The Applicant will make every effort to address the concerns and requests of such agencies through the licensing process.

Ecological Benefits. The Applicant will assess the expected ecological benefits of the Project, including the assessment of facilities (*e.g.*, fish passage) that will facilitate areas upstream and downstream of the Project for spawning or rearing habitat for significant fishery resources that may be identified under the issued permit as well as habitat for insects, mussels, and riparian wildlife species.

Community Benefits. The Applicant will also consider the additional benefits that the Project's development will provide to the community such as the existing park facilities or their expansion, addressing flooding and drowning hazards, improving boating or fishing, consideration will also be given to additional amenities such as riverside walking trails and/or further park facilities, etc. The Project's development will also consider the site's unique coalitions including those that may affect the interests of local businesses, village and town planning commissions, conservation commissions, etc.

Dam and Land Ownership. The Village of North Bennington owns the dam, impoundment and flowage rights and adjacent areas as well including the adjacent public park. The dam is a key focus of the local community's character and significant contributor to the local ambience and character of the area.

Dam Uses. The Firehouse Dam and impoundment currently serve several significant purposes that warrant its maintenance, which would be facilitated by the development of the Project. These include a water supply for fire suppression, municipal water release, recreation, erosion control for to maintain a bridge and road and flood control.

Infrastructure. The Project's development will be incorporated into the existing electric infrastructure of Green Mountain Power. The Plant will be operated by the Village of North Bennington's Municipal Services. Under the direction of the Vermont Department of Natural Resources, the proper use of the Plant could assist with watershed management programs up and downstream.

EXHIBIT 2
Study Plan
18 C.F.R. §4.81(c)

1) Study Plan

A. Engineering Study

1. Complete deed research for project site.
2. Obtain all available environmental (state and federal) data for the site.
3. Prepare a topographic survey of the Project accurately delineating the horizontal and vertical relationships of all existing project features.
4. Develop site-specific, flow-duration data for the Project based on established USGS gauges and existing plan data.
5. Finalize a development plan which best optimizes project features and maximizes power generation, while minimizing environmental impacts.
6. Prepare plans depicting the optimal development scheme.
7. Prepare preliminary estimates of construction costs of the selected development scheme.

B. Environmental Study

1. Conduct visual inspections to determine the environmental characteristics of the project site.
2. Determine and/or conduct any in-stream studies to access the existing aquatic habitat affected by the Project.
3. Meet with personnel and review publications from the US Fish & Wildlife Services and the Vermont Agency of Natural Resources, etc., to discuss the potential environmental impacts of the Project.
4. Determine the need for any minimum flow release.
5. Prepare all documentation and studies required as part of an *Exhibit E* of a FERC license application for a minor water project or an exemption from licensing.
6. Consult with all agencies having review responsibilities under local, state, and federal regulations.

C. Socioeconomic Studies

1. Consult with State Historic/Archeological agency to determine locally sensitive areas, if any.
2. Develop an inventory of local recreational areas and activities to determine and mitigate negative impacts, if any.
3. Hold public hearing(s) to present and discuss the project with the local community.

D. Economic Studies

1. Determine internal and external electric load needs and future electrical requirements.
2. Establish an economic model for the use and sale of the power produced from the Project, as applicable.

E. Financial Studies

- A. Investigate financing methods and estimate the cost of money at the time of construction.
- B. Based on project costs, financing costs, and the value of the energy, determine the cost benefit and risks of undertaking the redevelopment of the site.
- C. File a License (or Exemption) Application with the Federal Energy Regulatory Commission.

2) New Roads

There will be no new roads built for the purpose of conducting studies. Existing roads will be utilized for access to the site. The vehicle(s) used for taking samples and borings will be all-terrain, as necessary.

3) New Dam Construction

No new dam construction is necessary for this proposed Project.

4) Waiver(s)

As no new dams are proposed, no waiver is being sought or requested as part of this Preliminary Permit application.

EXHIBIT 3
Statement of Costs and Financing
18 C.F.R. §4.81(d)

1) Estimated Cost of Studies

The estimated cost for undertaking the studies outlined in *Exhibit 2* are as follows:

Engineering Study \$29,500
Environmental Study \$5,000
Socioeconomic Studies \$1,000
Economic Study \$5,000
Financial Study \$7,500

**Total Estimated Cost of Studies
and Preparatory Work \$48,000**

2) Source(s) of Financing

All studies and preparatory work will be financed internally by the Applicant.

(3) Proposed Market for Power

The proposed market for the power generated by this project is the State of Vermont's Group Net Metering Program².

² Vermont Rule 5.100, established under [Title 30 Section 219a](#)

EXHIBIT 4
Project Maps
18 C.F.R. §4.81(d)

1) Figures and Drawings

See Appendix A:

Regional Map
Watershed Map
Local Map
Project Boundary Map
Existing Development Plan

- 2) The Proposed Hydroelectric Development Project Boundary for the Project is shown in the Appendix A, Project Boundary Map as a red line (G).
- 3) No areas within the proposed project boundary are subject to the Wilderness Act (i.e., designated, recommended for designation, or under study as a wilderness area).
- 4) No areas within the proposed boundary are included in, or designated for study inclusion in the National Wild and Scenic Rivers System.
- 5) No areas within the proposed project boundary are Federal or public lands or part of reservations of the United States.
- 6) According to the 2016 [Batten Kill Walloomsac Hoosic Final Tactical Basin Plan](#), no threatened or endangered species occupy the Project Boundary³.

³ VTANR Watershed Management Division 2016 [Batten Kill Walloomsac Hoosic Tactical Basin Plan](#)

SECTION 4.32 - INFORMATION

(a)(1) The Village of North Bennington, is the only entity that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, and maintain the Project.

(a)(2)(i) Bennington County is the only county in which any part of the Project would be located. The address is as follows:

Bennington County Regional Commission
111 South Street, Suite 203
Bennington, VT 05201

(a)(2)(ii)(A) All the Project's features will be located in The Village of North Bennington, Vermont (addresses provided below).

(a)(2)(ii)(B) The following political subdivisions have populations of 1,000 or more people within 15 miles of the Project:

Stuart Hurd
Town Manager
The Town of Bennington
PO Box 469
Bennington, Vermont 05201
802-442-1037
shurd@bennington.com

Ronald Bisson
Chair, Pownal Board of Selectmen
467 Center Street / P.O. Box 411
Pownal, VT 05261
802-823- 0132
pownallcs@comcast.net

Tim Scoggins
Chair, Shaftsbury Selectboard
Town of Shaftsbury
61 Buck Hill Road
Shaftsbury, Vermont 05262
(802) 442-4038
sbtim@jacksonresources.com

Keith Squires
Chair, Arlington Board of Selectmen
3828 VT-7A
Arlington, Vermont 25250
(802) 375-2332
arlmanage@comcast.net

Jim Sullivan
Executive Director
The Bennington County Regional
Commission
111 South Street, Suite 203
Bennington, VT 05201
802-442-0713 x5
jsullivan@bcrcvt.org

David Borge
Mayor
The Village of Hoosick Falls
24 Main Street
Hoosick Falls, NY 12090
(518) 686-7072
themayorhf@gmail.com

Robert E. Shay
Town Supervisor
Town of White Creek
28 Mountainview Dr
Cambridge, NY 12816
(518)-677-8545
(no email)

Alan Webster Sr.
Supervisor, Town of Petersburg
PO Box 130
65 Main Street
Petersburgh, NY 12138
(518)658-3777 x 13
Petersburgh@fairpoint.net

Catherine Fedler
Supervisor, Town of Cambridge Board
Cambridge Town Hall
846 County Route 59
Cambridge, NY 12816
Phone: 518-677-5532
info@townofcambridgeny.org

Peter L. Fohlin
Town Manager
Williamstown Municipal Building
31 North Street
Williamstown MA 01267
(413) 458-3500
pfohlin@williamstown.net

(a)(iii)(A) Every irrigation district, drainage district, or similar special purpose political subdivision:

(A) In which any part of the Project, and any Federal facilities that would be used by the Project, would be located; or

(B) That owns, operates, maintains, or uses any Project facilities or any Federal facilities that would be used by the Project;

None

(a)(iv) Every other political subdivision in the general area of the Project that there is reason to believe would likely be interested in, or affected by, the application; and

None

(a)(v) All Indian tribes that may be affected by the project.

None identified

VERIFICATION OF STATEMENT

This application is executed in the State of Vermont in the County of Bennington, by William F Scully and states that he is authorized to act on behalf of The Village of North Bennington. The undersigned has signed the application on this January 17, 2017

By:


William F Scully

Trustee, The Village of North Bennington Board of Trustees

STATE OF VERMONT

)

)SS.:

COUNTY OF BENNINGTON

)

William F Scully being first and duly sworn, deposes and says: That he is the duly authorized agent of The Village of North Bennington, the applicant for the Preliminary Permit, and is authorized to execute the Application on behalf of the Village; that he has read the foregoing Application and knows the contents thereof; that the same are true to the best of his knowledge and belief.


William F Scully

Trustee, The Village of North Bennington

Subscribed and Sworn before me

This January 17, 2017


(Notary or other authorized official)My Commission Expires: 2/10/19

APPENDIX A

**Regional Map
Project Locus Map
Watershed Map
Project Boundary Maps
Existing Site Plan**

Quebec, Canada



★ State Capitals

• Cities 10,000-49,999

• Cities 500-999

--- International Boundaries

--- State Boundaries

— Toll Roads and Bridges

— Interstate Highways

— U.S. Highways

— State Roads

— Major Rivers

— Intermediate Rivers

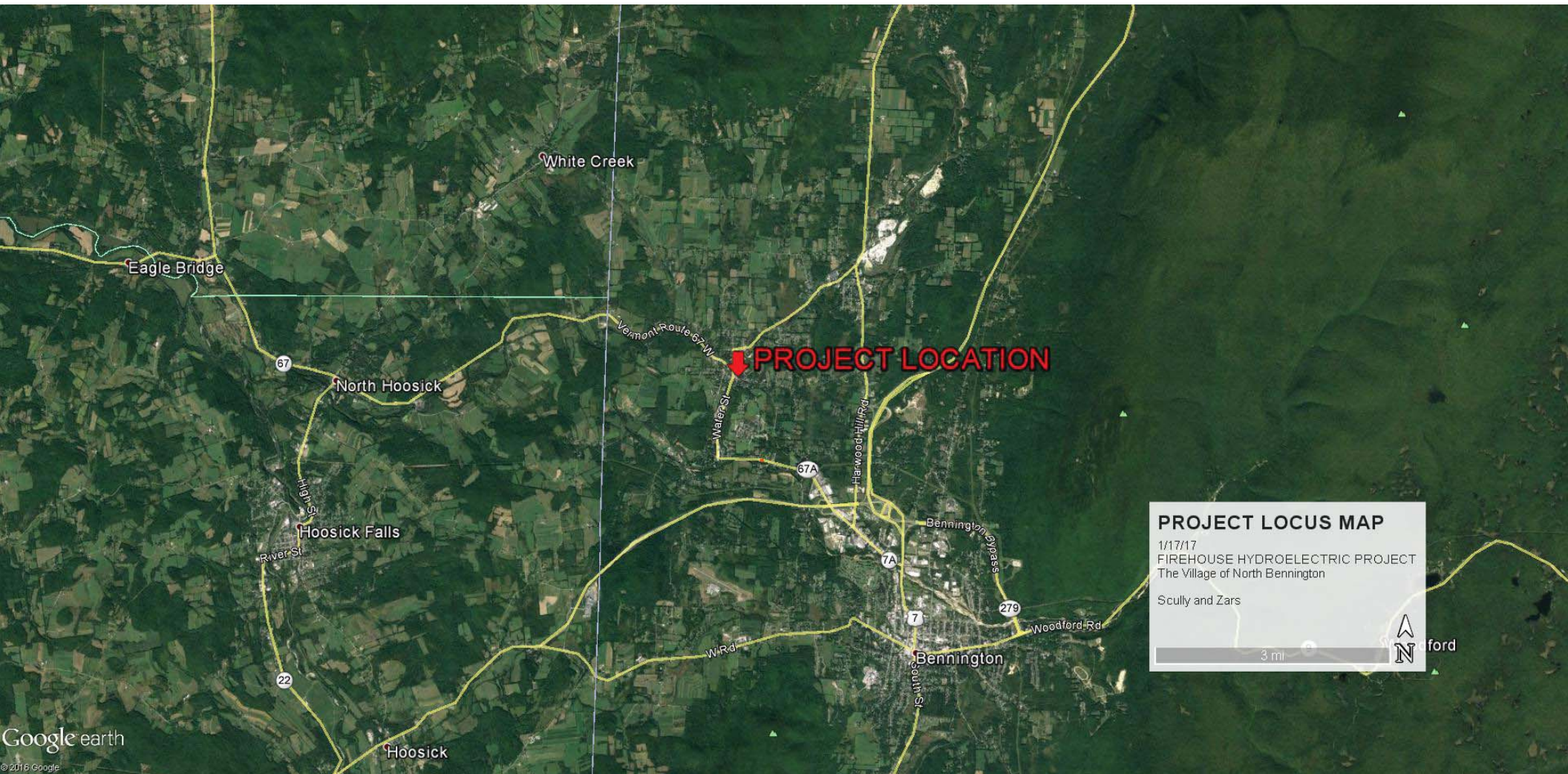
— Lakes

★ Airport

V e r m o n t

0 12 Miles 20 Miles 40 Miles

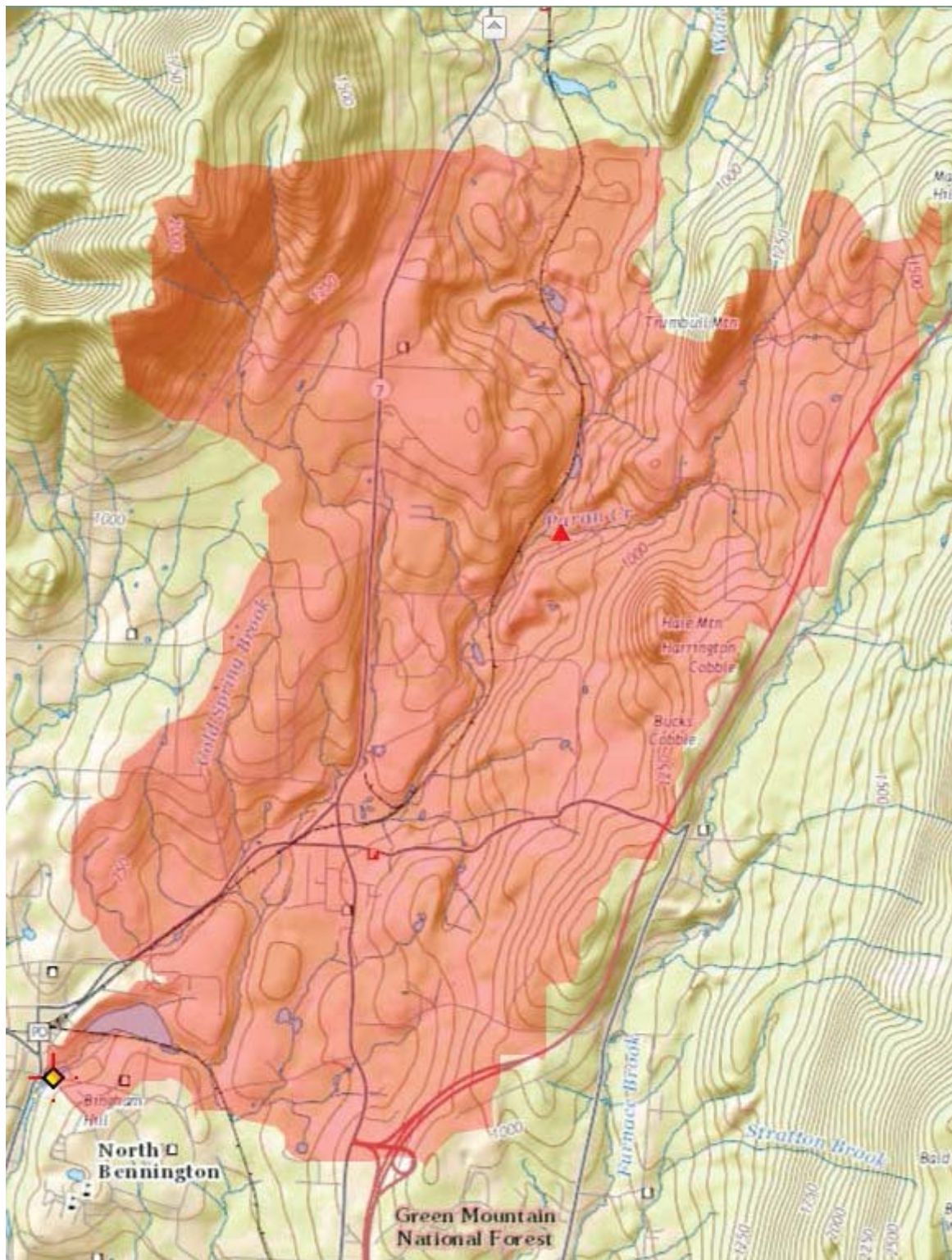
0 12 KM 20 KM 40 KM

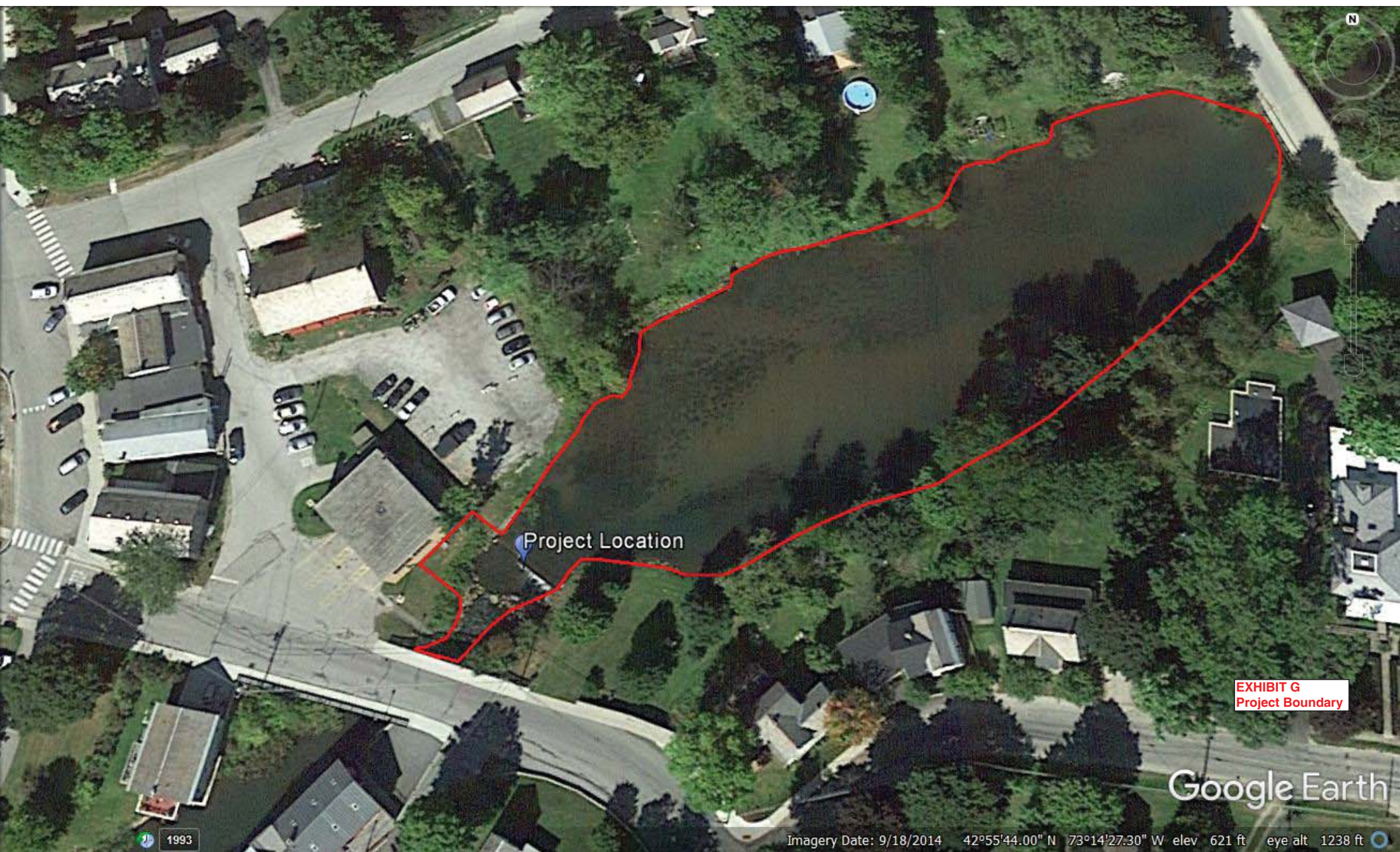


PROJECT LOCUS MAP
1/17/17
FIREHOUSE HYDROELECTRIC PROJECT
The Village of North Bennington
Scully and Zars

3 mi

N





Project Location

EXHIBIT G
Project Boundary

Google Earth

Imagery Date: 9/18/2014 42°55'44.00" N 73°14'27.30" W elev 621 ft eye alt 1238 ft

1993



Fire Department

powerhouse

existing wall

Paran Creek

Prospect Street

