BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION
APPLICATION FOR
10-MW EXEMPTION HYDROELECTRIC PROJECT

INTRODUCTORY STATEMENT

18 C.F.R. § 4.107(b) requires you to make an introductory statement as set forth below:

Water Street Land, LLC applies to the Federal Energy Regulatory Commission for an exemption for the **P-14680 Natick Pond Dam Hydroelectric Project**, a small hydroelectric power project that is proposed to have an installed capacity of 10 megawatts or less, from licensing under the Federal Power Act.

The location of the project is:

State or Territory:	Rhode Island
County:	Kent
Township or nearby town:	West Warwick / Warwick
Stream or nearby body of water:	Pawtuxet River

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

[Do not include the representative or consultant preparing the initial consultation document.]

Applicant's Name:	Water Street Land, LLC
Address:	P.O. Box 358 North Kingstown, RI 02852

The exact name and business address of each person authorized to act as agent for the applicant(s) in this initial consultation document is:

Name of Agent:	Robert A. Cioe
Address:	38 Burnside Avenue Narragansett, RI 02882 bcioe@JALhydro.com ph: 401.954.4178

Name of Agent:	Robert R. Cioe
Address:	12392 N. Fallen Shadows Drive Marana, AZ 85658 rob@JALhydro.com ph: 480.797.3077

Name of Agent:	Lon W. House, PhD
Address:	10645 N. Oracle Rd., Ste 121-216 Oro Valley, AZ 85737 lonwhouse@waterandenergyconsulting.com ph:530.409.9702

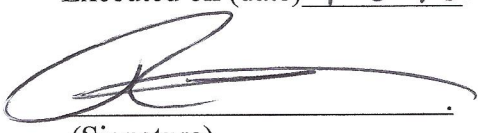
Water Street Land, LLC is a limited liability company established under the laws of the State of Rhode Island.

Pursuant to section 30 of the Federal Power Act, 16 U.S.C. § 823 (2006), exemption from all of Part I of the Federal Power Act is requested.

[*The Commission will not exempt applicants from certain provisions of the FPA, such as: (1) section 4(g), which states that if a condition of the exemption order is violated, then the Commission may revoke the exemption or take appropriate action for enforcement, forfeiture, or penalties under Part III of the FPA; (2) section 10(c), which states that the exemptee, and not the United States, is liable for all damages to another's property as a result of construction, maintenance, or operation of the exempted project; (3) section 30(c), which governs the issuance of conduit exemptions and subjects exemptions to terms and conditions set by federal and state fish and wildlife agencies; (4) section 31(a), which states that if the exemptee fails to comply with the exemption it may be subject to civil penalties, or revocation of the exemption*]

VERIFICATION STATEMENT

I declare under penalty of perjury that this document is true and correct.
Executed on (date) 7-8-16.



(Signature).
Notarized Verification Form Attached

EVIDENCE OF APPLICANT OWNERSHIP:

Water Street Land, LLC has all of the real property interests in the lands necessary to develop and operate the project, such as a deed, option, or lease. Specifically, **Water Street Land, LLC is the real property owner**. Exhibit G shows ownership/lease boundary line and Appendix _A_ contain documentary evidence of the applicant's interest in the lands, as required by 18 C.F.R. § 4.31(b)(2).

[*The deed or lease must be attached so that we may verify that you have sufficient interests in the property.*]

FEDERAL LANDS

The [*Project Name*] Natick Pond Dam Hydroelectric Project___ will or _X_ will not be located on federal lands of [*Name of Agency (i.e. Forest Service, Bureau of Reclamation, Bureau of Land Management, U.S. Army Corps)*]. If to be on federal land, please indicate how many acres of federal land: __0____ acres.

[*10-MW exemptions may be located on federal lands. If an exemption is granted, the exemptee will be given one year to obtain from the federal landowners, appropriate permits to occupy lands.*]

STATEMENT OF FEES REQUIRED TO DEVELOP SECTION 30(C) CONDITIONS:

The *U.S. Fish and Wildlife Service*:

____ has requested that the applicant submit $____ in fees to develop its section 30(c) conditions. The applicant has submitted payment for these fees to the Department of the Treasury pursuant to §§ 4.302(a) and (b) **[OR]**

_X_ has estimated that it will ~~not~~ be requesting fees in the amount of $2,000 in order to develop its section §30(c) conditions. A check payable to the United States Treasury for the amount of $1,000 for the Electric Consumers Protection Act of 1986 fees is attached.

The *Rhode Island Department of Environmental Management (RIDEM)* has already issued its Water Quality Certification for this project (included in Appendix B). The State has already been paid a sum of $5,400 for all identified work (including a remedial application fee that was paid).

The *Town of West Warwick* was also paid a total of $1,264 for review of the project yielding approvals granted by the Planning Board (approval found in Appendix B).

The *Rhode Island Department of Fish and Wildlife* did not request any 18 CFR §30(c) fees.

Documentation of the applicant's consultation regarding the statement of fees is included with the Consultation information in Appendix _B_(consultation.environmental).

EXHIBIT A

Exhibit A must describe the 10-MW project and proposed mode of operation with appropriate references to Exhibits F and G. The information in this exhibit may be submitted as a table. The following information must be included:

(1) A brief description of any existing dam and impoundment (or natural water feature) proposed to be used by the 10-MW project and any other existing or proposed project works, including: intake facilities, diversion structures, powerhouses, primary transmission lines, penstocks, pipelines, spillways, and any other structures associated with the hydroelectric project.

1.1. Existing Dam Conditions:

The Governor's Task Force on Dam Safety and Maintenance, Final Report, January 2001, listed the following dams as High Hazard:

DAM NAME (HIGH HAZARD)	STATE ID	NEAR-TOWN	RIVER	OWNER TYPE
PASCOAG RESERVOIR UPPER	016	BURRILLVILLE	BRANDY BROOK	PRIVATE
FLAT RIVER RESERVOIR	167	COVENTRY	PAWTUXET RIVER - SOUTH BRANCH	LOCAL GOVERNMENT
CRANSTON PRINT WORKS POND	172	CRANSTON	POCASSET RIVER	PRIVATE
PAWTUCKET RESERVOIR	078	CUMBERLAND	ABBOTT RUN	LOCAL GOVERNMENT
DIAMOND HILL RESERVOIR	077	CUMBERLAND	BURNT SWAMP BROOK	LOCAL GOVERNMENT
JAMES V TURNER RESERVOIR	407	EAST PROVIDENCE	TEN MILE RIVER	LOCAL GOVERNMENT
OLNEY POND	102	LINCOLN	THREADMILL BROOK	STATE
WOONSOCKET RESERVOIR #3	068	NORTH SMITHFIELD	CROOKFALL BROOK	LOCAL GOVERNMENT
WESTCONNAUG RESERVOIR	163	SCITUATE	WESTCONNAUG BROOK	LOCAL GOVERNMENT
GAINER MEMORIAL	161	SCITUATE	PAWTUXET RIVER - NORTH BRANCH	LOCAL GOVERNMENT
GEORGIAVILLE POND	126	SMITHFIELD	WOONASQUATUCKET RIVER	LOCAL GOVERNMENT
SPRAGUE UPPER RESERVOIR	120	SMITHFIELD	STILLWATER RIVER - TR	PRIVATE
STILLWATER RESERVOIR	108	SMITHFIELD	WOONASQUATUCKET RIVER	STATE
ARCTIC	148	WEST WARWICK	PAWTUXET RIVER - SOUTH BRANCH	PRIVATE
NATICK POND	145	WEST WARWICK	PAWTUXET RIVER	PRIVATE
HARRIS POND DAM	073	WOONSOCKET	MILL RIVER	LOCAL GOVERNMENT

Significant Hazard Dams were listed as:

DAM NAME (SIGNIFICANT HAZARD)	STATE ID	NEAR-TOWN	RIVER	OWNER TYPE
PRATT	062		BLACKSTONE RIVER	LOCAL GOVERNMENT
UNION MILL POND	015	BURRILLVILLE	PASCOAG RIVER	PRIVATE
CENTRAL FALLS	064	CENTRAL FALLS	BLACKSTONE RIVER	PRIVATE
VALLEY FALLS POND	063	CENTRAL FALLS	BLACKSTONE RIVER	PRIVATE
HAPPY HOLLOW POND	082	CENTRAL FALLS	ABBOTT RUN	LOCAL GOVERNMENT
MILL POND	152	COVENTRY	PAWTUXET RIVER - SOUTH BRANCH	PRIVATE
QUIDNICK POND UPPER	151	COVENTRY	PAWTUXET RIVER - SOUTH BRANCH	PRIVATE
WASHINGTON POND UPPER	153	COVENTRY	PAWTUXET RIVER - SOUTH BRANCH	PRIVATE
CURRAN LOWER RESERVOIR	198	CRANSTON	CLARKE BROOK	STATE
CURRAN UPPER RESERVOIR	166	CRANSTON	CLARKE BROOK	STATE
MANVILLE	059	CUMBERLAND	BLACKSTONE RIVER	LOCAL GOVERNMENT
GREENWICH BLEACHERY POND	403	EAST GREENWICH	MASKERCHUGG RIVER	STATE
CLARKVILLE POND	556	GLOCESTER	MARY BROWN BROOK	PRIVATE
BURLINGAME RESERVOIR UPPER	018	GLOCESTER	BRANDY BROOK	STATE
PONAGANSET RESERVOIR	165	GLOCESTER	PONAGANSET RIVER	LOCAL GOVERNMENT
WYOMING UPPER	216	HOPKINTON	WOOD RIVER	STATE
LOCUSTVILLE POND	262	HOPKINTON	BRUSHY BROOK	PRIVATE
ALMY RESERVOIR	169	JOHNSTON	DRY BROOK	LOCAL GOVERNMENT

ALBION	060	LINCOLN	BLACKSTONE RIVER	PRIVATE
WATSON, HAROLD E, RESERVOIR	485	LITTLE COMPTON	PACHET BROOK	LOCAL GOVERNMENT
BELLEVILLE POND	553	NORTH KINGSTOWN	ANNAQUATUCKET RIVER	LOCAL GOVERNMENT
WENSCOTT RESERVOIR	084	NORTH PROVIDENCE	WEST RIVER	LOCAL GOVERNMENT
GREYSTONE	131	NORTH PROVIDENCE/JOHNSTON	WOONASQUATUCKET RIVER	PRIVATE
SLATERSVILLE RESERVOIR UPPER	043	NORTH SMITHFIELD	BRANCH RIVER	PRIVATE
WOONSOCKET RESERVOIR #1	070	NORTH SMITHFIELD	CROOKFALL BROOK	LOCAL GOVERNMENT
FORESTDALE POND	048	NORTH SMITHFIELD	BRANCH RIVER	PRIVATE
SLATERSVILLE RESERVOIR MIDDLE	046	NORTH SMITHFIELD	BRANCH RIVER	PRIVATE
PAWTUCKET UPPER	065	PAWTUCKET	BLACKSTONE RIVER	PRIVATE
LAWTON VALLEY RESERVOIR	395	PORTSMOUTH	LAWTON VALLEY BROOK	LOCAL GOVERNMENT
CANADA UPPER POND	093	PROVIDENCE	WEST RIVER-TR	LOCAL GOVERNMENT
BARDEN RESERVOIR	164	SCITUATE	PONAGANSET RIVER	LOCAL GOVERNMENT
HOPE	160	SCITUATE	PAWTUXET RIVER - NORTH BRANCH	PRIVATE
SLACK RESERVOIR	115	SMITHFIELD	STILLWATER RIVER - TR	PRIVATE
WATERMAN LAKE	111	SMITHFIELD	STILLWATER RIVER	PRIVATE
STILLWATER POND	109	SMITHFIELD	WOONASQUATUCKET RIVER	PRIVATE
PEACE DALE POND	426	SOUTH KINGSTOWN	SAUGATUCKET RIVER	PRIVATE
FRUIT OF THE LOOM	144	WARWICK	PAWTUXET RIVER	PRIVATE
ARKWRIGHT POND	158	WEST WARWICK	PAWTUXET RIVER - NORTH BRANCH	PRIVATE
HARRIS POND	157	WEST WARWICK	PAWTUXET RIVER - NORTH BRANCH	PRIVATE
CENTERVILLE POND	149	WEST WARWICK	PAWTUXET RIVER	PRIVATE
WOONSOCKET FALLS	056	WOONSOCKET	BLACKSTONE RIVER	LOCAL GOVERNMENT

In 2010 Department of Environmental Management, Dam Safety Program, Annual Report to the Governor, 2010, states:
Dam number 145 (Natick) in Warwick/West Warwick
DEM received a report of a general concern with the dam. No problems beyond its general lack of maintenance were observed. (Pg. 17).

West Warwick has adopted a natural hazard risk strategy (" Strategy for Reducing Risks From Natural Hazards in West Warwick, Rhode Island: A Multi-Hazard Mitigation Strategy" Town of West Warwick, 2011). West Warwick has a total of 12 dams, with 8 of them located on the south branch of the Pawtuxet River. The dams that are of concern in West Warwick are the Arctic Dam, Natco Pond Dam, and the Centreville Pond Dam. The report noted that within the last decade both the Natick Pond Dam and the Riverpoint Pond Lower Dam (a low hazard dam at Bradford Soap Works) experienced gate failures causing the ponds to rapidly empty out. "*The only damage caused by the failure of the Riverpoint Pond Lower Dam was localized minor flooding at Bradford Soap Works. Exact damage amounts are not available. The Natick Pond Dam failure did not cause any flood damage. This has led town officials to believe that the depth of the mill ponds has been greatly reduced over the years, possibly due to soil deposits and other debris*" (page 24).

A Structural Assessment was completed on August 2013 by Fuss & O'Neill (see "20121867B10_DamInspectionReport.pdf" in Appendix C) for the Natick Pond Dam. This

updates the 2010 Inspection Report of Pare Corp ("Natick Pond RI Dam Safety Report 2010.pdf" in Appendix C). The report lists the Recommended Repairs that will be completed as part of project construction. Appendix C also includes a February 2014 Inflow Design Flood Analysis ("IDFMemorandum 20140214.pdf").

The Natick Pond Dam was found to be in generally fair conditions. The observed deficiencies in the structure were uncontrolled vegetation growing along the top of the left training wall, missing joint mortar and areas of tree and vegetation growth in both the left and right training wall, debris lodged on the spillway crest, missing sections of the timber sill on the spillway crest, a non-operable low level outlet structure, and few isolated locations of missing stone in the left embankment and training wall. Existing Site Conditions as well as Site Layout and Grading Plan can be found in Exhibit F and supporting Appendix F.

The Pawtuxet River flows over the Natick Pond Dam (NID# RI03801) from West to East (Figure A-1).

Figure A-1. Natick Pond Dam

The Dam is bordered on the northern bank by the granite foundations of an old mill building and on the southern bank by a steep rocky embankment (Figure A-2). The Dam with a drainage area of 182 square miles and was constructed in approximately 1886. Appendix C provides current Dam Inspection Reports.

Figure A-2. South Side of Dam

The northern bank features the remains of two former mill buildings and their associated hydropower intake canals and tailraces. Currently the entire northern bank is heavily overgrown with small trees and brush (Figure A-3). Immediately abutting the northern edge of the Dam is a granite foundation of the first former mill building. This foundation has what appears to be a small circular turbine pit on the south east corner. Additionally there appears to be an intake channel either for the turbine pit, or a low level outlet that is controlled by a non-functional gate hoist. There is no intention to re-use this structure for future hydropower generation.

Figure A-3. North Side of Dam

An intake canal used to exist on the northern side of the granite mill foundation that fed the second mill. The top of the southern masonry block wall of the canal is still visible for about 100 feet downstream, but the canal has been filled with large rocky debris and is heavily overgrown. Based on historic documents, it is believed that the canal extended about 400 feet downstream to the location of a second, larger mill building. The remains of one wall and the outlet arches can be seen at the start of the existing tailrace. The existing tailrace parallels the main channel for about 735 feet before rejoining the Pawtuxet River. The existing tail race will not be re-used.

1.2 Proposed Project Works and Facilities:
The Proposed Project would implement two new Archimedes Screw Generators (ASG's). The Proposed Project would utilize the existing head between the upstream and downstream water levels.

The ASG's would be contained within a new concrete housing structure. A concrete powerhouse would be constructed to house the Project gearbox, generator, and electrical controls. The dimensions of all relevant existing and proposed structures are summarized in Table A-1.

The Proposed Project would rehabilitate the initial stretch of the existing intake canal, and create a new turbine housing structure and tailrace turning back to the main river channel after 97 feet. The tailrace would rejoin the Pawtuxet River 163 feet downstream of the intake canal entrance. The configuration of these features can be found in Exhibit F and supporting Appendix F.

Details of construction dewatering, coffer dam locations, erosion control and mitigation measures are shown within the Exhibit F drawings. Pumping locations for dewatering and control and protective measures for suspend sediment control is also shown within Exhibit F and supporting Appendix F. It should be noted that as per the RIDEM wetlands permit an environmental consultant experienced in site assessments and measures necessary to protect sensitive aquatic environments or sensitive ecosystems must be employed during construction to monitor this project and ensure compliance.

Drilling Results can be seen in Appendix C (Drilling Results....pdf) and the corresponding bore hole locations in Exhibit F-9 "Existing Conditions.pdf" (labeled B-1, B-2, etc.).

The intake to each ASG would be controlled both by an electromechanical (accurate water height control) and by hydraulically powered (fast closing) sluice gates. This system will maintain a true run of river flow consumption. The intake sluice would be guarded by a trash rack. Table A-1 shows bars spaced every 6 inches (center to center) to allow fish and small debris to safely pass through the ASG's, an advantage of their design. The USFWS would not object to Water Street Land installing 6-inch-clear racks at the intakes to the ASG turbines with the stipulation that the rack spacing will be revisited once anadromous fish have access to the headpond (Appendix B Consultation.environmental "USFWS.012916.pdf"). If effectiveness studies required under Revised Preliminary Condition 13 indicate that the rack spacing reduces the effectiveness of the ASG as a downstream passage route then Water Street Land shall be required to address the issue.

The configuration of the proposed project can be seen in Exhibit F and supporting Appendix F. The Proposed Project Boundary is shown in Exhibit G and supporting Appendix G.

Structure	Existing / Proposed	Dimensions (feet)	Material
Dam	Existing	Length: 265' Height 41.25' Width 37'	Granite Block
Spillway	Existing	Length 166' Height 41.25' Width 37'	Granite Block
Granite Platform	Existing	Length: 45 Width: 38	Granite Block
Intake Channel (Filled)	Existing	Length: ~400 Width: ~20	Stone / Earth Filled
Trailrace	Existing	Length: 735 Width: 35	Partially Earth / Stone Filled
Earth Embankment	Existing	58' to 125.3' wide 0' to 28' deep	Sand, Gravel, Rock
Timber Cap Section	Existing	166' wide 0.5' high 1' deep	Wooden
South Training Wall	Existing	44' long 2-4' wide 4' to 20' high	Granite Block
North Training Wall	Existing	1244' long 2-3' wide 18ft to 41.25 tall	Granite Block, Cobble Stone
Low Level Outlet	Existing	4' wide 6' high	Granite Block
Powerhouse (1)	Proposed	Height: 20.83' Length: 23' 8" Width: 27' 8"	Concrete
Archimedes Screw Generators (2)	Proposed	Length: 42.7' Diameter: 9.18'	Steel A36
Screw Generator Concrete Foundation (1)	Proposed	Length: 113' Width: 28'	Concrete
Sluice Gate (4)	Proposed	Height: 7'6" Width: 11.13	Steel A36
Trash Rack (1)	Proposed	Height: 8.33' Width: 32.16' Clear Bar Spacing: 6"	Steel A36

Intake Channel (1)	Proposed	Length: 97' Width: 32.16' Depth: 6.6'	Stones, Concrete and Granite block
Trailrace	Proposed	Length: 43' Width: 29' Average Water Depth: 5'	Concrete / Granite Riverbed
Low Flow Notch	Proposed (only if required at a later time after live fish trials)	3' wide 1' deep	Granite Block
Fish Pass	Proposed (only if required at a later date)	297.75' (centerline length) 20' high 7.3'to 21.5' wide	Concrete
Eel Pass	Proposed	54' long 32' tall 4.5' wide	Aluminum 5052

Table A-1

Source: Greenbug Energy Inc.
and RIDEM Natick Pond Dam Safety Inspection Report, April 2010 (Appendix C).

1.3 Reservoir:

The existing Natick Pond is approximately 46 acres in size and impounds a reservoir with a maximum storage capacity of 700 acre-feet. No new impoundment will be created. The Dam presently channels the waterway within the existing embankments. Elevations of key elements of the Dam are reported in Table A-2.

Top of Training Walls (ft)	50.51 – 46.18
Tailrace (ft)	24.67 - 26.2
Spillway Crest (top of timber capping) (ft)	48.5

Table A-2 (NAVD 1988)

1.4 Transmission Line(s):

The Applicant will request interconnection of a new 220 linear-foot, 12.47 kV rated transmission line for the Proposed Project into the existing distribution system on Providence Street in West Warwick. See Appendix D for National Grid information and Exhibit F and G for locations of the new transmission line and electrical equipment.

The current status of the interconnection is:

1) Interconnection Application has been completed and accepted as complete by the National Grid.

2) The System Impact Study (SIS) has been completed. The electrical interconnection design has been approved and accepted by the National Grid in RI.

3) An application for a power purchase agreement (Feed in Tariff contract) under the National Grid's REG (Renewable Energy Growth Program) will be applied for.

1.5 Generating Equipment:

The Applicant proposes to install two new ASG's with a combined peak power output of 360 kW, operating with a maximum combined hydraulic capacity of 320cfs. The total estimated average annual energy production is 1,786,420 kWh, resulting in a capacity factor of 56%.

Each of the 2 proposed ASG's have the following design flow characteristics;

a) A minimum design flow of 22.5 cubic feet per second
b) A maximum design flow of 160 cubic feet per second.

The Entire System (both ASG's) has the following design flow characteristics;

a) A minimum system design flow of 22.5 cubic feet per second. This situation would occur when one ASG operating at minimum design flow and one ASG is not operating.
b) A maximum system design flow of 320 cubic feet per second. This situation would occur when both ASG's are operating at maximum design flow.

The Average Annual generation in kilowatt-hours was calculated based on the flow duration curve, head duration curve and performance characteristics of the proposed ASG's. Average annual kWh assumes 2% downtime for maintenance/power outages as well as ensuring the minimum 42 cfs hands off flow is maintained over the dam.

Turbine / Prime Mover Type	Archimedes Screw Generator (ASG)
Design Head	18.5 feet
Number of Proposed ASG's	2
ASG Min Flow (each)	22.5 cfs
ASG Peak Flow (each)	160 cfs
Generator Peak Power	360kw
Average Annual Energy Production (system total)	1,786,420 kWh
Generator Type	Induction

Table A-3 – Generating Equipment

1.6 Federal Lands or Tribal Lands

No Federal or Tribal lands are known to exist within the Project boundaries.

(2) The number of existing and proposed generating units, including auxiliary units, the capacity of each unit, and plans, if any, for future units, as well as any plans for retirement or rehabilitation of existing generating units: [for a 10-MW project there must be an increase in the existing generator capacity from existing conditions – MW not MWh]

There are no existing generating units. Two identical generators are proposed immediately, with no additional future units, each connected to one hydraulic turbine. The manufacturer's specifications for each generator are provided in the table A-4 immediately below: It should be noted that each of the two proposed 225kw (nameplate induction motors) will be used as 180kw maximum output induction generators.

Each Generator is provided with the following Electrical Control Panel.

Type	Grid Connected / PLC controlled / Fixed Speed
Frequency (Hz)	60
Voltage	480
Phase	3
Certifications	CSA / UL approved
Specifications	600 amp three phase, fixed speed, PLC controlled panel Digital Panel Meter for display of Kwh's, Kw's, Amps, Volts and pf Automatic restarting. In the event of a power failure, system will automatically restart after power is returned after a set period of time Interconnection is monitored by SEL 700GT relay for voltage and frequency faults as per IEEE 1547 and local Interconnection requirements Enerpro Soft Start. Duel SCR Thryistors. Automatic control of brake. Brake will close and stop generator in event of a detected fault Touch Safe Power and Terminal blocks ATDR fuses Fused Disconnect

Table A-4 Control Panel Details

Each generator is provided with the following specification;

Manufacturer	SEW Eurodrive
Nameplate Size (kw)	225
Type	Induction
Voltage	480

Phase	3
RPM	1800
Frequency (Hz)	60
IP	54
Efficiency	95.6%
Maximum Power Export (kw)	180

Table A-5 Generator Details

Each generator is also provided with a brake of the following specification;

Manufacturer	SEW Eurodrive
Type	DC operated electromagnetic disc brake, released by electricity, closed by spring force
Specifications	The brake is automatically applied in case of power failure
Additional Comments	Brake is rated to stop screw under max power rating

Table A-6 Brake Details

A gearbox with the following specifications connects the generator to the hydraulic turbine:

Manufacturer	SEW Eurodrive
Ratio	62.12
Type	Helical 3 Stage, solid flange coupling w/torque arm
Service Factor	1.91
Lubricant	Food Grade Synthetic

Table A-7 Gearbox Details

(3) The type of each hydraulic turbine:

Two identical Archimedes Screw Turbines are proposed, with the manufacturers specifications for each provided:

ASG Type	Concrete Cast in Place
Center to Center Head (Meters)	5.3
Maximum Design Flow (cfs)	160
Maximum Net Electrical Power (kw)	180
Installation Angle (deg)	24
Outside Diameter (m)	2.8
Bladed Length (m)	13.03
Inside Diameter (m)	1.37
Flights	4
RPM	29.3

Tip Speed (m/s)	4.3
Coating	PPG Amerlock 2
Color	Ocean Grey
Upper Bearing	Self-Aligning
Lower Bearing	Low Inertia, Food Grade Oil Lubricated

Table A-8 ASG Details

(4) A description of how the hydroelectric project is to be operated, manually or automatically, and whether the hydroelectric project is to be used for peaking or run of river operation:

The head pond water level control system will maintain run-of-river operation by measuring head pond water elevations every 5 seconds and making adjustments to the vertical position of the sluice gate blade according to maintain upstream water levels enough to provide a 42 cfs hands off flow over the dam.

All water available above the 42 cfs hands off flow will be used by the Archimedes Screw Generators (ASG's), up to their maximum capacity. Above the ASG's maximum capacity any additional water will pass over the dam in addition to the existing 42 cfs hands off flow.

Each sluice gate will be independently controlled by a Rugid Computer RUG3 RTU. The RTU as well as each sluice gate actuator are DC powered from a separate battery system. This ensures that the sluice gates will close during a power failure (or system stop) to ensure water passes over the weir.

When each ASG starts, the dc actuator will slowly open the sluice gate to let water into the ASG. As the water enters the ASG begins to rotate and the speed slowly increases until it begins to produce power. At the same time (and all the time) there is a High Accuracy Submersible Level Transmitter connected to the RTU that will read water level and temperature information and correspondingly open (rise) or close (lower) the electromechanical sluice gates based on upstream water levels to maintain the required 42 cfs hands off flow over the dam every 5 seconds. The submersible level transmitters that will be used are Acculevel model by Keller America. If upstream water levels are lower than required to maintain hands off flow or the temperature of the water exceeds 26 deg C, the sluice gates will close and generator will cease until both temperature is below 26 deg C and head pond elevations are sufficient to start the ASG's and provide the minimum required Hands off Flow.

The hydroelectric project will be operated run-of-river, non-peaking where inflow will equal outflow. The following operating regime will be followed.

- The Primary (Turbine #1) and Secondary (Turbine #2) will operate as run of river turbines. The units will be operated under the same start up/shut down head pond set points throughout the year and operation will not cease unless reservoir temperatures exceed 26 deg C.
- Hands off flow of 42 cfs will be maintained and distributed evenly over the weir and through the proposed low flow notch (if implemented at a later date) and be prioritized prior to starting of Turbine #1. If natural water volumes are insufficient to

operating the Primary unit, it will remain off line and all of the natural flow available will be passed through the depleted reach, between the weir and the turbine discharge.

- ASG #1 has a start-up flow of 22.5 cfs and a full rated flow of 160 cfs
- ASG #2 has a start-up flow of 22.5 cfs and a full rated flow of 160 cfs
- The minimum amount of water abstracted at any time = 22.5 cfs (ASG #1 operating at start-up flow)
- The maximum amount of water abstracted at any time = 320 cfs (ASG #1 and ASG #2 at full power)
- ASG #1 will attempt to start only once the Hands Off Flow of 42 cfs is met and an additional start-up flow of 22.5 cfs is available.
- ASG #2 will only attempt to start once the HOF is met (42 cfs) and Turbine #1 is at near full capacity at 137.5 cfs and an additional start up flow of (22.5 cfs) is available.
- Under all circumstances head pond water level control systems (Electromechanical Sluice Gates) will be programmed to not generate when water levels are at or below the elevation required to maintain hands off flow of 42 cfs over the weir.
- Hands off Flow (over the weir) will be prioritized and the minimum head pond elevation of 48.66' will be maintained at all times.
- During a power outage or emergency stop the Hydraulic Sluice gate will be closed rapidly to shut water off to the screw generators. The Electric gates will also close but at a much slower rate of decent.

A hands-off flow head pond elevation of 48.66' NAVD 1988 was determined based on restoring the timber capping to a maximum elevation of 48.5' NAVD 1988. The timber capping currently ranges from 48.36' to 48.52' The hands off flow head pond elevation was determined using a Bernoulli Broad Crested weir formula with a Cd = 0.62, a restored timber capping having a maximum elevation of 48.5' and a weir width of 166'. It is anticipated that slight inconsistencies in the elevation of the wooden spillway capping will remain after completion of recapping, but will not exceed the maximum 48.5' elevation.

The Proposed Hydraulic Sluice Gates will include the following features;

Actuator Type	Hydraulic
Gate Blade Dimensions	Height: 7'6" Width: 11.13
Material	Steel
Finish	Hot dipped galvanized
Guide Material	Uhmw-pe
Hydraulic Cylinder	Heavy Duty
Features	Fast Closing During Power Failure (5 – 10 second target time) AC Based System 2 Operation Modes a) full auto b) manual Gate will auto close in power failure Gate will open when power is restored Simple Fail Safe Design with w/ N.O. Let down valve

	3000 pcs components 1/2hp 3 phase pump Manually Adjustable let down valve to control decent rate 5 gallon reservoir Floating Bearing Gear Pump Water Removing Line Filter Relief Valve Flow Control Valve

Table A-9 Hydraulic Sluice Gate Details

The Proposed Electromechanical Sluice Gates will include the following features;

Actuator Type	DC electro mechanical
Gate Blade Dimensions	Height: 7'6" Width: 11.13
Material	Steel
Finish	Hot dipped galvanized
Guide Material	Uhmw-pe
Stem Material	Stainless steel
Features	RTU/PLC - (key pad/HMI, LCD screen, user programmable for adjustment of water heights) DC battery based system. 2 pressure transducers/with stilling wells. 3 operation modes a) Fully Automatic b) manual electric (up/down switch) and c) manual. Primary function is to maintain reservoir or upstream water levels. Secondary function is to maintain a maximum inflow into water turbine during flooding events and high water levels. RTU is preprogrammed based on your site and inflow channel, field adjustment is easily done by end user. Gate will automatically close in the event of a power failure. Gate will automatically open when power is restored. Aids in soft connection to utility.

Table A-10 Electromechanical Sluice Gate Details

The USFWS does not object to Water Street Land installing downward closing gates with the stipulation that the gates will be revisited once anadromous fish have access to the headpond (Appendix B Consultation.environmental "USFWS.012916.pdf"). If effectiveness studies required under their Preliminary Condition 13 indicate that the downward closing nature of the gates reduces the effectiveness of the ASG as a downstream passage route then Water Street Land shall be required to address the issue.

The Proposed Trash Rack / Course Intake Screen located upstream of the in series sluice gates will include the following features;

Dimensions	To suit screw generator channel
Horizontal or Vertical Orientation	Vertical
Clear Spacing between Bars	6”
Material	A36 Steel
Finish	Hot dipped galvanized ASTM A123

Table A-11 Trash Rack Details

5) A graph showing an annual or monthly flow duration curve for the project.

A Graph showing annual Flow Duration Curve for the project;

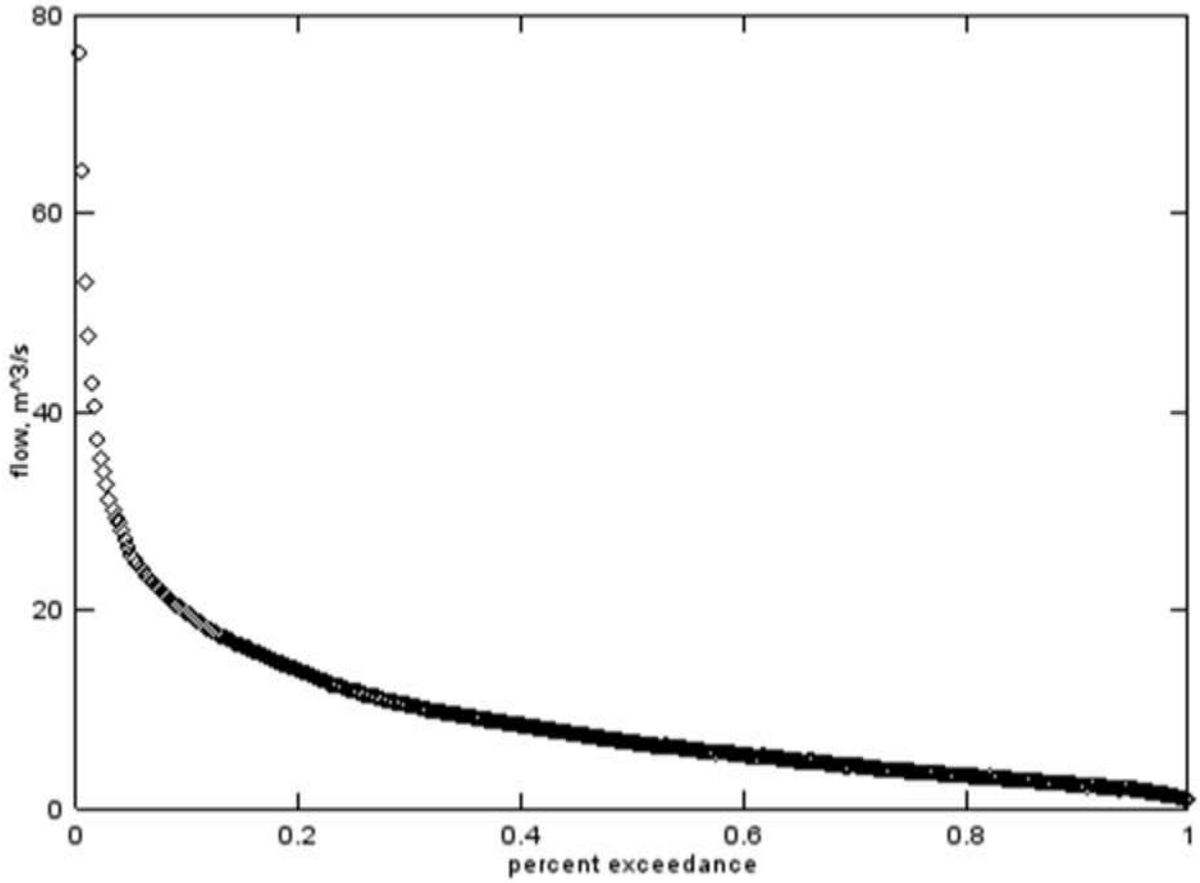


Figure A-4 – Annual Site FDC

A Graph Showing FDC with overlaid system performance information;

In addition to above the Graph below displays a) Site Flow (cms), Hands-off Flow (cms), Flow to Screws (cms), Flow over Weir (cms) and Possible Power Output (Kw) from system on an

annual basis. The graph can be read as a percentage of time from 0% of time on bottom left to 100% of time on Bottom right. The corresponding Power (kW) or Flow (cms) can be read on the right and left side of the chart for each of the 5 statistics depicted.

A few examples of information from chart below;

1) Screws will operate at full flow approx. 32% of the time. (Blue Dashed Line is horizontal starting from left of chart to approx. 32% Occurrence)
2) Generation will cease 6-7% of the time (Solid Orange line goes flat at bottom right at around 93% Occurrence)

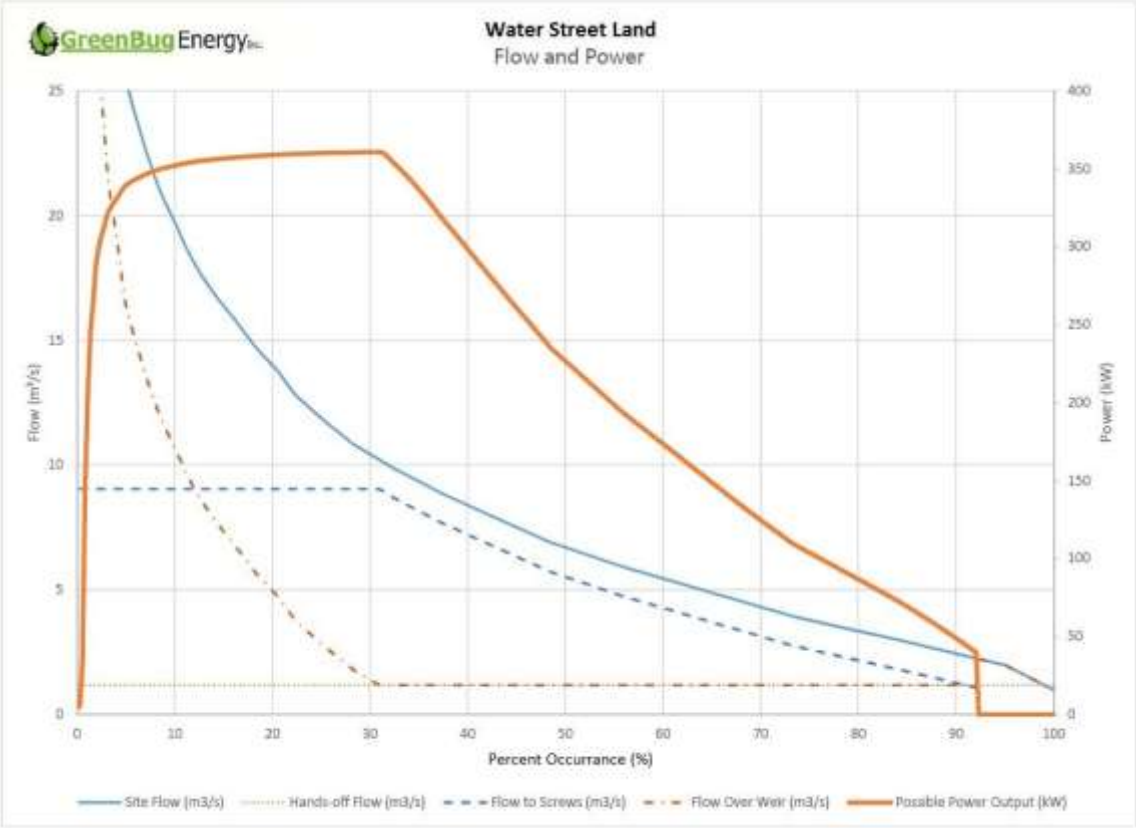


Figure A-5 System Performance Graph

(6) Estimations of:

(i) The average annual generation in kilowatt-hours: 1,786,420 (obtained from above mentioned analysis).

(ii) The average and design head of the hydroelectric project:
Average Gross Head 19.38 feet (reservoir elevation to ASG Discharge Location) and the Design Head is 18.5 feet

(iii) The minimum and maximum hydraulic capacity of the hydroelectric project (flow through the hydroelectric project) in cubic feet per second: _22.5 to 320 cfs_.

(iv) The number of surface acres of the man-made or natural impoundment used, if any, at its normal maximum surface elevation and its net and gross storage capacities [existing conditions and proposed conditions if reinstalling flashboards]:

The existing Natick Pond is approximately 46 acres in size and impounds a reservoir with a maximum storage capacity of 700 acre-feet (see Appendix C). No new impoundment will be created. The Normal Maximum surface elevation is 48.66' as required to maintain hands off flow over the dam. There is no means to store water at a higher elevation as the project is run of river and any inflow into the site = outflow.

Elevations of key elements of the Dam are reported below:

Top of Training Walls	50.51 – 46.18	Ft
Tailrace	24.67 - 26.2	Ft
Spillway Crest	48.5	Ft
Normal		

Table A-12 Elevations (NAVD 1988)

(7) The planned date for beginning construction of the hydroelectric project:

February 10, 2016 - Draft Application Submitted to resource agencies and FERC
March 11, 2016 - Comments from NOAA (March 9) and FERC
June 2016 - Final Application submitted to FERC
August 2016 - Response to any deficiencies in Final Application
October 2016 - comments/terms/conditions due
January 2017- FERC order granting exemption.
March 2017 – Pre Construction Preparation
July 2017 – Start Construction, Installation and Testing of Equipment
September 2017 – Go On-Line

(8) A description of the nature and extent of any repair, reconstruction, or other modification of a dam that would occur in association with construction or development of the proposed 10-MW project, including a statement of the normal maximum surface area and normal maximum surface elevation of any existing impoundment before and after that construction [flashboards can be reinstalled to their historic height]:

A Structural Assessment was completed on August 2013 by Fuss & O'Neill (see "20121867B10_DamInspectionReport.pdf" in Appendix C) for the Natick Pond Dam. This updates the 2010 Inspection Report of Pare Corp ("Natick Pond RI Dam Safety Report 2010.pdf" in Appendix C). The report lists the Recommended Repairs that will be completed as part of project construction. Section 4 of this document "Opinion of Probable Construction Costs" (page 12 of 30) provides a good overview of the repair work that will be completed as part of construction of the new facility.

The Natick Pond Dam was found to be in generally fair conditions. The observed deficiencies in the structure were uncontrolled vegetation growing along the top of the left training wall, missing joint mortar and areas of tree and vegetation growth in both the left and right training wall, debris lodged on the spillway crest, missing sections of the timber sill on the spillway crest, a non-operable low level outlet structure, and few isolated locations of missing stone in the left embankment and training wall. Existing Site Conditions as well as Site Layout and Grading Plan can be seen in Exhibit F.

As a result of the report a summary of work to be completed as part of Project Construction:

A) The Embankment
   1- Clear Vegetation
   2- Repoint Joints with Mortar
   3- Replace Missing Stones
B) The Spillway
   1- Remove Vegetation
   2- Replace Missing Sections of Timber Cap Log
   3- Patch Leaks in Downstream Spillway Face
   4- Repoint Joints in Downstream Spillway Face
C) The Training Walls
   1- Remove Vegetation
   2- Re-Chink Voids
   3- Repoint Joints
D) Lower Level Outlet
   1- Remove Debris and Replace Gate/Frame

The spillway Elevation will be restored to its current elevation of 48.5' with the replacement of the Timber Cap Log sections. The result of this repair will maintain the same elevation of the dam before and after project construction the same. The normal maximum surface area of the reservoir will be unchanged from historic size at 46 acres.

EXHIBIT E

Exhibit E is an Environmental Report. It must be prepared pursuant to 18 C.F.R. § 4.38 and must include the following information, commensurate with the scope and environmental impact of the hydroelectric project's construction and operation:

This description must include the entire project, including any dam and reservoir area and primary transmission line area. Please address each resource area. If you determine that the project will have no effect on any area, say so and why you came to that conclusion.

(1) Pursuant to 18 C.F.R. 4.107(e)(1), a description of the environmental setting in the vicinity of the hydroelectric project, including:

- *geology and soils:*

The soil in the project site generally consist of a gravelly substrate overlain by silty sand and peat/leaf litter. A more detailed description of sediment and soils within the Project Site is available in the Site Investigation Report by Fuss & O'Neill (August 2013) found in Appendix C (...DamInspectionReport.pdf). The balance of the site is disturbed, with remnants of an in-ground stone-lined water intake channel filled with modern rubble and the foundation of a gatehouse.

- *vegetative cover:*

The terrestrial habitat of the Project Site is considered to be highly degraded due to disturbances from nearby roadways and residential development, the presence of invasive plants, and site disturbances that have impacted the characteristics of the current habitat via vegetative clearing and soil disturbance. Trash and debris is also present in portions of the site. This site was the former location for the gatehouse and intake channel associated with the Natick Mills complex, and has therefore been subject to various levels of disturbances over time, with remnants of an in-ground stone-lined water intake channel filled with modern rubble and the foundation of a gatehouse still remaining.

The attached Supplemental Wetland and Habitat Assessment (Appendix B Consultation.environmental) provides a summary of existing vegetative cover. That portion of the impoundment located between Providence Street Bridge and the Dam is fringed with a narrow band of forested and/or shrub habitat along the wetland/upland interface. Common vegetation within the identified wetland habitats includes species such as water willow (Decodon verticillatus), soft rush (Juncus effusus), speckled alder (Alnus incana), American elm (Ulmus americana), black willow (Salix nigra), jewelweed (Impatiens capensis), white ash (Fraxinus americana), red maple (Acer rubrum), silky dogwood (Cornus amomum), and poison ivy (Toxicodendron radicans). Several invasive plants were also observed within the wetlands, including buckthorn (Rhamnus sp.), multiflora rose (Rosa multiflora), and oriental bittersweet (Celastrus orbiculatus).

Upland habitats, portions of which are regulated as 50-foot perimeter wetland and/or 200-foot riverbank wetland, are present within the Project Site and surrounding area Common vegetation observed within upland habitats, including the location of the proposed facility, includes species such as poison ivy (Toxicodendron radicans), Virginia creeper (Parthenocissus quinquefolia), big-toothed aspen (Populus grandidentata), black cherry (Prunus serotina), red oak (Quercus rubra), boxelder (Acer negundo), white ash (Fraxinus americanus), red maple (Acer rubrum), and American elm (Ulmus americanus). The majority of the trees within the upland portion of the Project Site were classified, measured, and survey-located, and are depicted on the Existing Conditions Plan.

- *fish and wildlife resources*:

These resources are characterized in detail in the "Instream Habitat Assessment and Freshwater Mussel Survey in the Pawtuxet River in the Bypass Reach of the Natick Pond Dam" report prepared by Biodrawversity LLC in August 2014 and revised October 2014, that is found in Appendix B Consultations.environmental to this application.

Four passerines were directly observed utilizing the Project Site during NRS assessments. Species included black-capped chickadee (Parus atricapillus), tufted titmouse (Baeolophus bicolor), northern cardinal (Cardinalis cardinalis), and house sparrow (Passer domesticus). Although the identified wetlands within the Project Site lack suitable breeding habitat for obligate vernal pool species such as the wood frog (Rana sylvatica) and spotted salamander (Ambystoma maculatum), the subject wetlands do provide potential habitat for various other herptile species. For example, the perennial nature of the impoundment and River provides suitable breeding, foraging, and cover habitat for species such as the red-spotted newt (Notophthalmus viridescens), bullfrog (Rana catesbeiana), green frog (Rana clamitans), pickerel frog (Rana palustris), painted turtle (Chrysemys picta), and common snapping turtle (Chelydra serpentina). In addition, gravelly soils in the upland and exposed stones and logs within the open water areas provide suitable nesting and basking habitat for the above-noted turtles. Also, features such as overhanging branches, fallen woody debris, rock outcrops, and crevices in the embankments and block walls provide suitable habitat for various snakes such as the common garter snake (Thamnophis sirtalis), northern water snake (Nerodia sipedon), ringneck snake (Diadophis punctatus), and brown snake (Storeria dekayi). The existing upland areas are also capable of supporting terrestrial species such as the red-backed salamander (Plethodon cinereus), as well as common species like the eastern American toad (Bufo americanus), if present in the area.

However, it is likely that the most common species utilizing the Project Site and much of the surrounding area would be considered "urban species" that can tolerate the high level of human-related disturbances within the area due to busy roadways and dense development, as well as tolerate the fragmented and degraded nature of many of the available habitats. Mammals that could potentially use the Project Site include, but are not limited to: mink (Mustela vison), Virginia opossum (Didelphis virginiana), eastern gray squirrel (Sciurus carolinensis), masked shrew (Sorex cinereus), northern short-tailed shrew (Blarina brevicauda), star-nosed mole (Condylura cristata), little brown myotis (Myotis lucifugus), northern myotis (Myotis septentrionalis), big brown bat (Eptesicus fuscus), white-footed mouse (Peromyscus leucopus), eastern coyote (Canis latrans), red fox (Vulpes vulpes), striped skunk (Mephitis mephitis), river otter (Lontra canadensis), American beaver (Castor canadensis), and raccoon (Procyon lotor).

Important Habitat Features

Important habitat features observed within the Project Site and along the river within or near the Project Site and within nearby areas located in the Project Boundary include the following:

- Abundant mast and berry/seed producing vegetation for avians and small mammals (Quercus spp., Rhamnus spp., Celastrus orbiculatus, Prunus serotina, Morus spp., Fraxinus americana, etc.) within Project Site and nearby areas
- Dense overstory and understory within Project Site and in select nearby areas
- Rocks, crevices, and roots under the water's surface for turtles, snakes, and frogs within Project Site and Project Boundary

 Rocks, crevices, fallen logs, overhanging branches at or within 1 meter of the water's surface for turtles, snakes, frogs, wading birds, wood duck, mink, raccoon (Procyon lotor) within Project Site and Project Boundary
 Crevices suitable for mink within Project Site and nearby areas
 Standing vegetation overhanging the water or offering good visibility of open water for species such osprey, belted kingfisher, flycatchers, cedar waxwings within Project Site and along Project Boundary
 Standing water suitable for turtles, foraging waterfowl, breeding amphibians within Project Boundary
 Undercut/overhanging banks (near B-series)
 Emergent wetlands upstream of Project Site within Project Boundary.

- *water quality and quantity*:

Water quality at the site will be preserved during construction by compliance with the requirements of the Water Quality Certification issued July 2, 2014 for this project (included in Appendix B Consultations.environmenta. "Issued RIDEM....pdf) that include a limitation that "all construction activities involving soil disturbances within watercourses for installation or removal of temporary cofferdams must be limited to the low flow period (i.e., the period from July 1 to October 31 of any calendar year).

The Water Quality Certification mandates a minimum discharge flow over the dam of 42 cfs, or inflow, if less, for the protection of in-stream habitat, water quality, and aesthetics. The Certification further mandates that project operations cease when temperatures in the headpond are at 26 deg C or above.

The Certification also identifies that dissolved oxygen and temperature must be monitored during the first low flow period following commencement of operation and if actual conditions are worse than forecasted (by a model as compared to pre-operational conditions), then mitigation measures must be developed and implemented to address such impacts. (Dissolved Oxygen Modeling submitted as RIDEM Wetland Application Addendum filed as Attachment 3 to FERC Accession No. 20140228-5300 beginning on page 75 included in Appendix B Consultations.environmentalsupplemental).

A final concern relates to invasive species, identified in a July 25, 2013 e-mail from Katie DeGoosh of Rhode Island DEM (submitted as part of FERC Accession No. 20130930-5272, commencing on page 86 included in Appendix B.environmental), including Asian clams in Natick Pond, as well as downstream in the Pawtuxet River to the mouth (distribution map at http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/aismaps/corflu.pdf). Similarly, there is variable milfoil at this location (and may also have curlyleaf pondweed, or fanwor, which are less often seen, but have been spotted there). These plants that spread via fragmentation have distribution maps at the same link with the following .pdf filenames: myreht.pdf, potcri.pdf and cabcar.pdf.

- *land and water uses:*

The southeastern section of the Town of West Warwick where the project is located is designated by zoning ordinances as within the Natick Village Design Control District where

the construction of a small scale hydropower facility at an existing dam is neither specifically permitted nor prohibited. The West Warwick Town Planning Board has reviewed and approved the project (Appendix B Consultations.local-Native Americans-historic."2014-03-07 WWarwick Planning Board Approval.pdf") . The Site itself is vacant and contains the remnants of waterworks that once served the Natick Mills textile complex approximately 400 feet downstream.

The Pawtuxet River watershed, located in central-western Rhode Island, is the largest watershed in the state. It flows 12.3 miles and drains a watershed of 231.6 square miles into Narragansett Bay. The river flows generally from west to east. Its headwaters are in the hills of western Rhode Island. Its mouth is in historic Pawtuxet Village between the cities of Warwick and Cranston, the state's second and third largest cities. The watershed encompasses all or portions of the following communities: Coventry, Cranston, East Greenwich, Exeter, Foster, Glocester, Johnston, Providence, Scituate, Warwick, West Greenwich, and West Warwick.

The Pawtuxet River watershed comprises the Scituate Reservoir and its tributaries, the North Branch of the Pawtuxet, the Pocasset River, the Big River and its tributaries, the Flat River Reservoir and its tributaries. the South Branch of the Pawtuxet, and the main stem of the Pawtuxet. In total, the watershed contains 64 ponds, 93 brooks, 7 tributary rivers, and 18 dams.

With the second largest volume of water in Rhode Island and a substantial drop in elevation from its headwaters to Narragansett Bay, the Pawtuxet River watershed became a center of textile manufacturing plants. Numerous impoundments were created along the river and its tributaries, and along the banks were a series of mills and mill villages, many of which now have historical significance. In the late 19th century, this development was so intensive that an urban area emerged in the eastern Coventry-West Warwick area. Factories and villages both discharged their effluent and waste in the river, degrading water quality in the lower portions of the watershed.

As the city of Providence's population increased through the industrial era, public health became a major concern. It was decided that the northern and western portions of the Pawtuxet River watershed should be used as the source for the City's drinking water. The Scituate Reservoir on the North Branch of the Pawtuxet River , completed in the 1920's provides over 60% of the water supply to the State of Rhode Island (USGS, Estimated Water Use and Availability in the Pawtuxet and Quinebaug River Basins, Rhode Island, 2004). This water is supplied to almost all the other basins in Rhode Island including the Blackstone River, Ten Mile River, Moshassuck River, Woonasquatucket River, Narragansett Bay and the Westport River. About 22% of the major public supply withdrawn from the Pawtuxet basin is returned to the basin and about 51% is exported to other basins. Some of the water exported out of the basin for drinking water returns to the Pawtuxet River as wastewater.

Natick Dam is located in east Warwick is a town in Kent County, Rhode Island, United States. West Warwick was incorporated in 1913, making it the youngest town in the state.

Prior to 1913, the town, situated on the western bank of the Pawtuxet River, was the population and industrial center of the larger town of Warwick.

Many mills developed along the river in the past and some still exist today. Most notably, there is the Original Bradford Soap Works, where soap is manufactured, including Dove, Lever, Zest and Ponds. Bradford Soap is one of the few mills that is still running today.. The Original Bradford Soap Works is in the mill that was built in 1834. They make Dove, Lever, Zest, Ponds, and many more.

The Arctic mill is the only mill that still uses the power from the Pawtuxet River. The water runs through a hydroelectric generator to produce energy.

West Warwick used to be a major transportation center. Highways and railroad tracks ran through West Warwick connecting Boston to New York City. The trains also connected every village. Every mill had a train track leading to it. They imported cotton from the south and exported the textiles or finished products to the rest of the world. The trains also carried people to other parts of the east coast. Today, the trains only carry freight.

- *recreational use:*

Largely as a result of poor water quality, the Pawtuxet River is not heavily used for recreation, and although some recreational facilities exist and are proposed, none are located at or near the Project Site. The Rhode Island Department of Environmental Management's Rhode Island Anadromous Fish Restoration Plan gives the Pawtuxet River a low overall ranking due to the river's poor water quality and the large number of dams. The Pawtuxet River is impacted by cadmium, mercury, pathogens, low dissolved oxygen and nutrients. It shows biodiversity impacts (Rhode Island 2006 List of Impaired Waters). The Rhode Island Department of Environmental Management has issued discharge permits to the three major municipal wastewater treatment plants that discharge to the River (West Warwick, Rhode Island, Warwick, Rhode Island and Cranston, Rhode Island).

The Pawtuxet River is classified RIDEM as a Class 5 water body under the state's consolidated assessment and listing methodology (CALM) which is found in RIDEM's 2008 Integrated Water Quality Monitoring and Assessment Report. This classification indicates that the lower Pawtuxet is "Impaired or threatened for one or more designated uses by a pollutant(s)". In the case of the lower Pawtuxet, the Class 5 designation is based on the following impairment criteria:

• Impairment to Fish and Wildlife Habitat – Based on benthic-macroinvertebrate community observations, bioassessments, Cadmium levels, presence of non-native aquatic plants, and Phosphorous (total) levels
• Fish Consumption – presence of elevated levels of mercury in fish tissue
• Primary Contact Recreation (swimming) – Presence of elevated fecal coliform
• Secondary Contact Recreation – Presence of elevated fecal coliform

"*The main stem of the Pawtuxet River from its confluence with the North and South Branches to its mouth in Pawtuxet Cove, is designated for boating and other non-contact recreational activities and has habitat value. It is canoeable to the Natick Dam and also*

from Pontiac village to Pawtuxet village. Permitted discharges from three wastewater treatment facilities impact the water quality of this segment. From Elmwood Avenue to Pawtuxet village the river corridor provides an opportunity for a greenway. Mitigation of runoff from highways is a major issue." (Rivers Policy and Classification Plan, State Guide Plan Element 162: Rhode Island, U.S. Environmental Protection Agency, May 2004).

The Pawtuxet's anadromous fish runs were extirpated beginning in the 1700's by the construction of mill dams on the river's mainstem and tributaries. Natick Pond has no fishing reports or entries on local fishing information websites (http://www.hookandbullet.com/fishing-natick-pond-west-warwick-ri/, http://www.fishingworks.com/rhode-island/kent-ri/lake/pawtuxet-river/).

Natick pond has no designated public access points or boat launches and is not easily accessible for shoreline recreational activities. Rhode Island Fish & Wildlife does stock trout several miles upstream from this location:
"Below are the sites that RIFW stocks trout into the Pawtuxet River that you requested. Typically they are 12 to 15 inches and weigh 1 to 1 ¼ pounds. They can be a combination of Brook, Rainbow and Brown Trout.
North: 3. Approximately 5 miles upriver from this site.
Hope Landing on Route 116- above and below the dam
Sandy Bottom Road near the bait shop
South: 4. Approximately 3 miles upriver from this site.
Shell Station Route 117
Providence Street
Condo and Mill on Route 117- Royal Mills
Pontiac Ave- PRA boating and fishing access" (April 16, 2016 email from Philip Edwards, Fisheries Biologist, RIDEM/Fish & Wildlife).

The Pawtuxet River Authority, doing business as the Pawtuxet River Authority & Watershed Council (PRA&WC), is a quasi public agency/public benefit corporation created by the Rhode Island General Assembly in 1972. The Pawtuxet River Authority and Watershed Council is a 501c(3) non-profit agency created by the RI state legislation in 1972 to improve, preserve and protect the Pawtuxet River. The Authority provides recreational facilities along the river and is expressly authorized to provide for land and water conservation, construct and maintain hiking and biking trails, flood control and water pollution control facilities, preservation of wetlands, dam construction, diversion of streams, dikes walls and pumping stations. They have no projects at Natick dam or pond area.

- *socio-economic conditions:*

As of 2010 census, there were 29,788 people, 12,498 households, and 7,698 families residing in West Warwick. The population density was 3,728.7 people per square mile. There were 13,186 housing units at an average density of 1,662.1 per square mile. The racial makeup of the town was 93.78% White, 1.11% African American, 0.35% Native American, 1.42% Asian, 0.02% Pacific Islander, 1.44% from other races, and 1.88% from two or more races. Hispanic or Latino of any race were 3.10% of the population.

In the town the population was spread out with 22.4% under the age of 18, 9.5% from 18 to 24, 32.0% from 25 to 44, 22.0% from 45 to 64, and 14.1% who were 65 years of age or older. The median age was 36 years. For every 10 females there were 9.97 males. For every 10 females age 18 and over, there were 9.93 males.

The median income for a household in the town was $39,505, and the median income for a family was $47,674. Males had a median income of $35,128 versus $26,720 for females. The per capita income for the town was $20,250. About 9.2% of families and 11.2% of the population were below the poverty line, including 17.9% of those under age 18 and 11.0% of those age 65 or over. Estimated median household income in 2013 was $54,450 (it was $39,505 in 2000).2010 U.S. Census data identify the populations of West Warwick and Warwick at 7.4 to 7.5% below the poverty line. As of 2013, the municipalities had a slightly lower unemployment rate than the State of Rhode Island as a whole, at 8.7 and 8.9%, respectively. The communities offer good access to intermodal transportation and encourage businesses and jobs, while historic flooding along the Pawtuxet River due to periodic storms and prolonged torrential rains has been known to cause damage to homes, businesses and roadways, with the record crest in 2010 resulting in the evacuation of Natick Village and up to $3,000,000 in damages to property.

- *historical and archeological resources:*

The Rhode Island Historical Preservation & Heritage Commission (RIHPHC), by letter dated 16 July 2013 (Appendix B Consultations.local-Native Americans-historic. " RI Historic...pdf"), identified that Natick Village, within which boundaries the project is located, is potentially eligible for listing in the National Register of Historic Places. The RIHPHC further states that the alteration and reuse of the dam by the project will have no adverse effect on the Natick Village Historic District provided that the improvements do not modify the granite block platform at the head of the canal. Additionally, RIHPHC has requested to be notified so that staff can take photos when the site is cleared before construction commences. In Rhode Island Historical Preservation & Heritage Commission (RIHPHC) letter dated 9 June 2015 they stated that they completed the photographic documentation of the site and have "no objection to carrying out of the project" (Appendix B Consultations.local-Native Americans-historic."RI Historic...pdf").

- *cultural resources*

Natick is located in West Warwick, which is in the Pawtuxet Valley of Rhode Island. It is the northeastern most village in West Warwick. Natick is an Indian name meaning a place of many hills. Pawtuxet is an Indian name that means river of little falls. The Pawtuxet River is formed by two branches or smaller rivers known as the North and South Branches. The South Branch is also known as Flat River. These branches come together at Riverpoint village to form the Pawtuxet River, which is one of the state's largest rivers. The Pawtuxet River runs through Natick into Warwick and empties into Narragansett Bay.

The area around the river was occupied by members of the Patuxet tribe, who were part of the larger Narragansett tribe. In 1638, Roger Williams purchased the land north of the Pawtuxet, thus founding Providence. In 1642, Samuel Gorton purchased the land south of the river, thus founding Warwick.

As early as 1660, the Pawtuxet River was used to power gristmills and sawmills. Dams were constructed along the river to support these uses and as a result, the dams prohibited fish migration upstream. The preclusion of migratory fish passage in the Pawtuxet led to the enactment of "An Act Regulating the Fishery in the Pawtuxet River" in 1767, which placed restrictions on dam construction and required fish passage structures on dams. The Act led to the first fish ladder in United States being constructed on the Pawtuxet River.

Textile mills first appeared on the river in 1794 and by 1829 the river supported 13 such mills, and was used for mechanically-powered industrial processing and waste disposal. During the 1860s, the RI General Assembly granted the City of Providence permission to pump municipal drinking water from the Pawtuxet River. In 1868, the City of Providence invested to build the Pettaconsett Pumping Station along the Pawtuxet River in Cranston. The station opened in 1871, pumped water up to the Sockanosett Reservoir and down Reservoir Avenue to Providence. Water quality became an issue before the end of the century and by 1892 a study by the Pawtuxet River Commission concluded that the river was polluted by sewage discharged from mill tenements, private homes, farms, and industrial waste from numerous facilities along the river. The commission recommended that the city relocate its supply to the upper Pawtuxet River prior to the flow reaching the contamination sources.

The Natick Pond Dam was built on the Pawtuxet River in 1886 to store water to power the Natick Mills, where hundreds of workers wove cotton yarn in a complex that dated to 1807 and was expanded over the course of the 19th century. There were once 1032 looms in the Natick Mills. They made textiles in the mill, and it turned out about 11,000,000 (eleven million) yards of textiles. The mill was once known as the Red Mill because of its color. All the mills had imports of cotton, and most had exports of textiles. With the decline of textile manufacturing in the 1920s, the mills closed and, after sitting idle for years, Natick Mills burned to the ground on July 4, 1941. There are few visible remnants of the mills.
Water that collected in the 24-acre pond above the dam was channeled into an eight-foot-deep headrace on the West Warwick side of the river that ran 800 feet to the mills before exiting down a tailrace to rejoin the river. The 50-foot-wide granite-lined headrace has been filled in over the years.

Letter from RI Historical Preservation and Heritage Commission dated June 9, 2015 (Appendix B) states: "*While a portion of the headrace will be affected, it is our conclusion that the proposed alteration and reuse will have no adverse effect on the Natick Village Historic District, provided that the improvements to the historic canal do not modify the granite block platform at the head of the canal and the RIHPHC is provided the opportunity to photo-document the raceway after the site has been cleared but before the alterations. .... On 5 June 2015, RIHPHC Project Review Coordinator Jeffrey Emidy photographed the vegetation-cleared site to record the remnant historic water power infrastructure. This photography completes the field-work portion of the photo-documentation condition that we previously placed on the project. Therefore, we consider your obligation to the RIHPHC to be fulfilled and we have no objection to the carrying out of the project*."

Construction and operation will not modify the granite block platform at the head of the canal therefore this project will not alter existing structures or known archeological sites.

- *visual resources:*

There are no designated scenic areas or overlooks in the vicinity of the Project and the area is densely developed. The falls over the Dam cannot be seen from the bridge. The gatehouse foundation (granite platform) will still be visible and remain unchanged from its current appearance from the bridge.

The generator room power house that will be visible behind the gatehouse foundation will have a split block exterior, with dormer style roof to fit in with appearance of the gatehouse foundation and neighboring residential houses.

- *endangered or threatened species, critical habitats (if none, state):*

USFWS by letter dated July 15, 2013 (included in 20130930-5272, beginning on page 65, attached in Appendix B.environmental) stated that there are no listed species (e.g. threatened, endangered and proposed species, designated critical habitat, and candidate species) for the vicinity of the project (e.g.) that may occur within the boundary of the proposed project and/or may be affected by the proposed project.

The Northeast Region of the National Marine Fisheries Service (NMFS) identified by letter dated September 3, 2013 (FERC Accession No. 20130930-5272, beginning on page 97 included in Appendix B Consultations.environmental) that the presence of the Pontiace Falls dam between the mouth of the Pawtuxet River and the Natick Pond Dam prevents the one identified endangered/threatened species, Atlantic sturgeon from accessing the project site. NMFS concludes that the species would not be anticipated to be exposed to any effects of the proposed action.

There is the presence of Triangle Floater mussels (Alasmidonta undulata) immediately downstream of the proposed bypass reach (2014 survey). This species has been identified as a Species of Greatest Conservation Need (SGCN) in the 2015 Rhode Island Wildlife Action Plan . Applicant agrees to conduct baseline survey before commencing generation and every 3rd year until the 10th year of generation and provide survey result to appropriate regulatory agencies. An invasive species survey will be conducted also during this baseline survey (Appendix B Consultation.environmental "USFWS11-122015.pdf).

The Triangle Floater population will be assessed with a combination of qualitative and quantitative methods. The survey area will include a 50-meter reach (bank to bank) downstream from the bypass reach where Triangle Floater were documented during the 2014 study.

The quantitative survey will include placement of 5 0.5x50-meter transect lines that are marked at 5-meter increments. Biologists will snorkel the length of each transect line and record the number of Triangle Floater and co-occurring mussel species that fall within the transect boundaries. Biologists will also place 0.25m2 quadrats at 5-meter intervals along each transect (10 quadrats per transect, total of 50 quadrats) and count all mussels (all

species) at the surface of the sediment, and excavate each to a depth <10cm and count buried mussels. During this search, biologists will record the location (using GPS), shell length, shell condition, and habitat (substrate, water depth, flow velocity, and percent cover) of every Triangle Floater encountered. Shells will also be counted and collected. All Triangle Floater will be photographed.

Interim reports will be submitted after each of the five surveys, with each report summarizing both the current year and prior data. A comprehensive summary report will be submitted following the final survey.

On January 14, 2016, the U.S. Fish and Wildlife Service (Service) issued a final 4(d) rule for the northern long-eared bat (NLEB), Myotis septentrionalis. Attached is a key to the rule for federal actions that may affect the NLEB (Appendix B Consultation.environmental "USFWS.012916.pdf). There are no known overwintering places (caves or mines) on the project site. Summer roosting habitat is primarily in trees. The clearing of approximately 20,780 square feet of brush and trees that have grown since the property was abandoned was completed with RIDEMs approval in 2015. Applicant agrees to voluntarily add several bat roosting houses to the outside of the power house.
Email from bat expert re this issue (03-19-2016 L9:28 (GMT-5) from Canadian Bat Houses states:
Your location at an existing dam in rode island could very well be a great habitat for bats. For the area of concern I would recommend installing a minimum of 2 Motels or 2 Hotels. These commercial models work exceptionally well in settings such as yours .The bat houses are larger there for they warm up and hold heat longer . Bats are attracted to warm areas to roost and the added capacity will help build and sustain a larger colony in the years ahead . These houses should be installed where they will receive as much sun as possible and mounted 12 to 20 feet high . If you have access to a sunny metal or cement wall at the dam that would be ideal. Other locations are poles or out buildings. Trees can be used but may require trimming to keep access to them .
http://canadianbathouses.com/our-products/the-motel-hotel/
The Motel characteristics are:

Capacity: 600 bats
Chambers: 4
Size: 41″ x 8.5″ x 7″
(104.1cm x 47cm x 17.8cm)
Weight: 21.3kg (47 lbs)

These two bat motels will be installed on the south side of the powerhouse.

(2*) Pursuant to 18 C.F.R. § 107(e)(2), a description of the expected environmental impacts resulting from the proposed construction or development of the 10-MW project, including any impacts from any proposed changes in the capacity and mode of operation of the project if it is already generating electricity, and an explanation of the specific measures proposed by the applicant, the agencies consulted, and others to protect and enhance environmental resources and values and to mitigate adverse impacts of the project on them.*

[If there are no expected environmental impacts, say so and explain why. Do not assume that agencies and other consulted entities can discern it from other parts of the initial consultation document. Please address:

- *vegetative cover;*
- *fish and wildlife resources;*
- *water quality and quantity;*
- *land and water uses;*
- *recreational uses;*
- *socio-economic conditions;*
- *historical and archeological resources;*
- *visual resources; and*
- *endangered or threatened species, critical habitats.]*

The Supplemental Wetland and Habitat Assessment, which was filed on February 28, 2014, describes the site demolition and erosion control plan (included in Appendix B Consultations.environmental). Site improvements are primarily limited to an approximate 1.72 acre parcel identified by the Town of West Warwick as Lot 77 of Assessor's Map 41 (the Project Site), 0.6 acres of which are located landward of the Natick Pond and Pawtuxet River. The following list summarizes key improvements proposed as part of this Project that will result in land disturbance:

- clearing of approximately 20,780 square feet of brush and trees that have grown since the property was abandoned (completed with RI-DEMs approval in 2015);
- installation of an approximate 2,460 square feet of permeable (gravel) driveway that will provide ingress/egress to the facility from Water Street while still accommodating up to two off-street parking spaces;
- construction of a new 97-foot long, 32.16-foot wide intake channel equipped with four sluice gates and trash racks with a 6-inch clear bar spacing;
- construction of a turbine channel that will accommodate the Archimedes screw generator units, an associated powerhouse facility, and an electrical transformer pad and transmission line;
- installation of riprap and grouted riprap slope protection to protect newly created 2 (horizontal) to 1 (vertical) slope areas along the left and right embankments of the turbine outlet channel; and
- installation of approximately 2,865 square feet of open-cell articulated concrete block matting to stabilize the peninsula of land between the newly constructed intake channel and the River during flood events while promoting vegetative growth and providing stormwater infiltration.

Mitigation of construction impacts, as described in the attached Supplemental Wetland and Habitat Assessment (Appendix B Consultation.environmental), include:

Dust Control. It shall be the Contractor's responsibility to control dust and take all necessary measures to ensure roads are maintained in a dust free condition at all times throughout the life of the contract. As such, dust control proposed for this Project shall include, but is not limited to, water and/or crushed stone.

Construction Entrance. Construction entrances have been proposed both within the Project Site (as reflected on the Site Demolition and Erosion Control Plan)

and within the off-site staging area to prevent the tracking or flowing of sediment onto the surrounding properties and roadways.

Coir Rolls (as a perimeter sediment barrier). Coir rolls shall be installed at the beginning of construction along the Project Site's down-gradient limit of land disturbance as reflected on the Site Demolition and Erosion Control Plan. A row of coir rolls will also be installed immediately upgradient of the proposed permeable driveway and the un-grouted riprap slope protection area once constructed. Both rows of coir rolls must remain in-place until up-gradient disturbed soils have been satisfactorily stabilized with permanent vegetation.

Turbidity Curtain. As depicted on the Water Control and Construction Sequencing Plan and Construction Detail Plan, temporary cofferdams are also proposed prior to construction in the impoundment (around the proposed intake canal), and downstream of the proposed tailrace channel. These structures will prevent water from entering into the areas which they are protecting so that construction activities can be performed in relatively dry conditions, while also preventing sediment generated by construction processes from entering adjacent waterbodies. The upstream cofferdam will consist of a Portadam system (or approved equivalent) with an impermeable fabric sealing sheet installed upstream to minimize leakage/seepage. The downstream cofferdam system will consist of a row of bulk bags with plastic sheeting installed to minimize leakage/seepage. Additionally, silt curtains (or turbidity barrier) will be established just downstream of the spillway in between cofferdam locations in the vicinity of proposed eel pass/ramp construction activities. The cofferdam systems and silt curtains will be maintained throughout construction by routine inspection and maintenance.

Structural erosion and sediment control measures include:

Riprap Slope Protection (grouted and non-grouted). In locations where three (horizontal) to one (vertical) slopes could not be achieved, riprap slope protection measures were proposed. The excavated slope to the left (looking downstream) of the turbine channel discharge area will consist of a 36-inch thick layer of 'R-7' sized stone riprap slope protection (with a D50 of 18 inches) installed atop a nineinch thick layer of 'FS-3' filter stone and a non-woven geotextile fabric. The excavated slope to right of the turbine channel between the channel and River will consist of a 36-inch thick layer of 'R-7'sized stone riprap slope protection installed atop a nine-inch thick layer of 'FS-3' filter stone and a non-woven geotextile fabric. This area of slope protection will be grouted for added protection from flood flow that will overtop the right wall associated with the intake channel during floods of a greater magnitude than the 2-year flood event (such as 10-, 25-, and 100-year flood flows). Underdrains will be installed intermittently throughout the slope protection layer to relieve the build-up of any hydrostatic pressure from behind the slope protection.

Articulated Concrete Block Matting. The articulated concrete block matting shall be installed in the area between the intake/turbine channel and the River where overtopping during flood events of a greater magnitude than the 2-year

flood event will occur. The matting has been designed as open-cell matting that is capable of withstanding erosive flood flows while still promoting infiltration and vegetative establishment.

Dewatering Basins. Two dewatering basin areas shall be utilized during construction to remove sediment in discharges from dewatering operations (see Sheet CS-106 of the Permitting Drawing Set). The upstream dewatering basin area will consist of flow from dewatering operations within the upstream cofferdammed area being pumped through an approximate four-foot by six-foot heavy duty dewatering bag (Dirtbag DB5504X06 or approved equal) installed atop a six-inch layer of filter stone with an impermeable liner placed beneath the filter stone. The area will be encompassed by staked haybales and has been designed with an overflow spillway that will convey pre-treated discharge to the River. The downstream dewatering basin area will consist of flow from dewatering operations within the downstream cofferdammed area being pumped through an approximate four-foot by six-foot heavy duty dewatering bag (Dirtbag DB5504X06 or approved equal) installed atop a six-inch layer of filter stone with a non-woven geotextile fabric placed beneath the filter stone. It is not anticipated that there will be significant amounts of sediment from construction dewatering operations in this location since the substrate consists primarily of stone and bedrock in this area.

A series of BMPs have been proposed per the Rhode Island Stormwater Design and Installation Standards Manual (RI Department of Environmental Management (RIDEM) 2010a) to mitigate any stormwater quality and quantity impacts that could result from the introduction of various impervious services and other site improvements, including but not limited to: land clearing; the introduction of impervious surfaces such as the powerhouse roof area, electrical transformer pad, and solid turbine channel covering totaling approximately 2,901 square feet; the introduction of approximately 490 square feet of grouted riprap to protect a newly introduced steep slope along the right embankment (as viewed looking downstream) of the turbine outlet channel; and the introduction of approximately 2,865 square feet of open-cell articulated concrete block\matting to stabilize the peninsula of land between the newly constructed intake channel and the River during flood events.

Proposed stormwater BMPs include a permeable driveway system that has been designed with an approximate 30-inch deep base and an associated 10-foot wide vegetated filter strip between the driveway and the River to provide addition water quality benefits. In addition, stormwater will be infiltrated through vegetated portions of the site and through the concrete block matting.

Primary vegetative and non-structural erosion and sediment control measures include:

Temporary and Permanent Vegetative Cover (including topsoiling). Temporary vegetative cover shall be applied to any disturbed areas (including the stockpile area) that have not yet reached finished grade as soon as possible, but not more than 14 days after the construction activity in that area has temporarily ceased, unless the activity is to be resumed within 21 days. Temporary vegetative cover will consist of 40% of annual ryegrass and 60% of perennial ryegrass. Permanent vegetative cover (including four inches of

topsoil) shall be applied to all disturbed areas that are to remain landscaped and that have reached finished grade as soon as possible, but not more than 14 days after the construction activity in that area has permanently ceased. On-site permanent vegetative cover will consist of New England Conservation/Wildlife Mix as manufactured by New England Wetland Plants, Inc. (or approved equal) at a rate of 25 lbs per acre. Permanent seeding within the off-site temporary construction staging/storage (in vegetated areas that are disturbed by construction) shall be seeded with a Type-1 Park Seed Mix (RIDOT M.18.10) consisting of 70% creeping red fescue, 15% Kentucky bluegrass, and 15% perennial rye grass.

Temporary Mulching. If permanent seeding cannot be completed immediately or within the recommended seeding dates, Temporary Mulching shall be installed to protect the Site and delay seeding until the next recommended seeding period. Straw or hay mulch, wood fiber mulch, and hydro-mulch are recommended. Wood fiber mulch shall not be used alone in the winter or during hot, dry weather. Straw or hay mulch must be anchored immediately after spreading to prevent being windblown. Mulch anchoring shall also be used on slopes greater than three (3) percent and concentrated flow areas such as diversion and waterway channels.

Measures to minimize habitat impacts as provided in the RIDEM Water Quality Permit 13-042 ("Issued RIDEM Wetlands Permit - Natick Hydro.pdf" in Appendix B Consultations.environmental) include:

- limiting construction within the River channel to the low-flow period (July 1-October 31);
- discharging at least 42 cfs (or inflow if less) over the spillway at all times to maintain water quality and fishery habitat within the bypass reach;
- operating in run-of-river mode using existing water levels to prevent impacts to upstream habitats;
- ceasing project generation when the temperature reaches 26degrees C;
- providing downstream migration/passage for resident and migratory fish via the turbines;
- providing upstream eel passage through an eel ramp, with final siting following eel monitoring after project operation commences; and
- providing upstream anadromous fish passage once required by RIDEM, USFWS and/or NOAA-NMFS.

Condition 14 of the Wetland and Water Quality Certification Permit requires the construction of a boater pull-out and portage access to Water Street. A recreational access / boater pull out will be located at the entrance to the intake channel on the north side. The recreational access area will be readily accessible from Water Street at all times. A log / debris boom will be located directly downstream of the access area and will not interfere with use of the recreational access. The access will allow for use at varying natural water levels and be easily accessible at all times. These facilities are shown on the Exhibit G maps.

Safety measures that will be in place at the site are include a log / debris boom to prevent boaters from entering the intake channel. Signage will be placed at the intake / outlet of the ASG to warn of swift moving currents. A sign will be placed on the granite platform to warn of weir and indicate location of boater pullout. A sign will also be placed so show recreational access location from Water Street.

(3) Any additional information about environmental factors (considerations) that the applicant considers important.
The Applicant also agrees to conduct requested bypass flow evaluation after the project commences.

Applicant agrees to conduct floater mussel baseline survey before commencing generation and every 3rd year until the 10th year of generation and provide survey result to appropriate regulatory agencies. An invasive species survey will be conducted also during this baseline survey (Appendix B Consultation.environmental "USFWS11-122015.pdf).

EXHIBIT F

Exhibit F is a set of drawings showing the structures and equipment of the 10-MW hydroelectric project and must conform to the specifications of 18 C.F.R. § 4.41(g). The Commission needs this information in order to determine whether the structure and design of the hydroelectric project is feasible and meets our requirements for 10-MW exemptions. Exhibit F drawings contain critical energy infrastructure information (CEII) and should be labeled as such on the drawing, 18 C.F.R. § 388.113(c). CEII is specific engineering, vulnerability, or detailed design information that relates to the production, generation, transmission, or distribution of energy. The Commission protects this information by restricting public access to CEII materials. For more information please see, http://www.ferc.gov/legal/ceii-foia.asp.

The hydroelectric project drawings must conform to 18 C.F.R. § 4.39, which states that all maps must be drawn to scale, must be legible, and must contain a title block with the drawing title, graphical and numerical scale, and other pertinent information concerning the drawing. These drawings must include the dimensions of important structures such as the dam and powerhouse, identify elevations such as the top of dam and normal maximum reservoir level, and include details of the generating units.

Hydroelectric project drawings of all major structures must include:

- *Plans;*
- *Elevation; and*
- *Section drawings.*

In some cases, the Commission may waive the specific requirements identified above. If you are contemplating requesting a waiver, you should contact Commission staff to determine what you would need to file.

Exhibit F drawing are attached in Appendix F.ExhibitFdrawings (uploaded in this electronic filing as a separate CEII-classified file). These include: site location, existing conditions, demo and erosion control, layout and grading, water control and construction sequence, channel plans, channel sections, power house plans, site restoration, sluice gate details, future fish ladder and eel passage.

These drawings are of good enough quality, and contain enough detail for Commission staff to review and make decisions regarding project impacts to the surrounding environment. This project is of such a small size that we would ask for a waiver of exhibit requirements for maps and drawings regarding a) the location of the project and the extent of land area impacted by the project works, and b) the proposed design of all power producing structure and equipment (FERC Document "Managing Hydropower Projects Exhibits: Guidance Document", pg. 3).

EXHIBIT G

Exhibit G is a map of the hydroelectric project and boundary and must conform to the specifications of 18 C.F.R. § 4.41(h), which states that the project boundary data must be in a geo-referenced electronic format, include a vicinity map of the project area, and a detailed drawing that shows all principal features as a whole in relation to the affected waterway and other permanent geographical features. The Exhibit G drawing is a general location map that shows the physical project features, project boundary, and land ownership. The Commission needs this information to determine: which facilities are under the Commission's jurisdiction; whether you own the land on which all hydroelectric facilities are located; and the location of the hydroelectric project for future inspections.

Maps must:

- *Show the location of all facilities and relationship to the nearest stream and town;*
- *Show the project boundary, which is a line enclosing all project works (including the powerhouse, any dam, reservoir up to the elevation of the spillway crest or flashboard elevation, transmission line extending to the interconnection with the regional grid, and appurtenant facilities);*
- *Have three known reference points (i.e. GPS or latitude/longitude coordinates);*
- *Be stamped by a registered land surveyor;*
- *Conform with 18 C.F.R. § 4.39 to have the appropriate size and scale;*
- *Be in geo-referenced format (each project feature and the coordinates for the reference points must be shown in relation on a map); and*
- *List all of the owners of property (including Federal land) on which the project is located.*

The Exhibit G sheets provide the requisite information. These are included in Appendix G due to their size. The information is available in individual .pdf files suitable for viewing and printing at 24"x36" scale, uploadable from http://natickdam.com/ferc. The autoCAD files used to generate these figures are also available to reviewing agencies and stakeholders upon request.

All of the property on which the project is located is owned by Water Street Land, LLC, as reflected in the Introductory Statement and Appendix A.

Exhibit G-1 shows the upper reach of the project boundary.

Exhibit G-2 shows the lower reach of the project boundary.

Exhibit G-3 shows the project boundary, existing site along with proposed new transmission line and interconnection locations.

Exhibit G-4 shows existing and proposed project facilities.

APPENDICES

The following Appendices are available for review or download at:
http://natickdam.com/ferc/

APPENDIX A (Real Property Interests) [10MB]
(documentary evidence of the applicant's interest in the lands, as required by 18 C.F.R. § 4.31(b)(2))
1) "titlecorrection.pdf" shows the corrected quick claim deed of Water Street Land and the original deed to Quidnick Reservoir Company.
2) "deeds.pdf" show the transfer from Quidnick to New Found Power and from Natick Hydro Electric to L2W.
3) "Notice of Filing", "Notice of Disposal", and "Final Decree" show the transfer from L2W to Water Street Land.
4) "Collectors Deed 1995.pdf" is 1995 Tax Deed – referenced in the Superior Court's Notice of Filing, Notice of Disposal, and Final Decree as "a certain tax deed from the Tax Collector of the Town of West Warwick, State of Rhode Island, duly recorded on April 19, 1995 in the West Warwick Land Evidence Records at Book 592, Pages 270-272 . . ."
(5) "QC Deed...pdf" July 16, 1986 Quitclaim Deed – showing transfer of property and flowage rights from New Found Power Co., Inc., Gregory Cook, and Christopher Malliet to Natick Hydro Electric Associates. This 1986 deed is referenced on page 3 of the December 27, 1990 Warranty Deed [transferring the property from Natick Hydro to L2W, Inc], which states that this earlier quitclaim deed was dated July 16, 1986 and recorded August 13, 1986 in the West Warwick Land Evidence Records, Volume 179 at pages 26 et seq.
6) "Quickclaim Deed ...pdf"" Quickclaim Deed duly noted on October 29, 2013 in the West Warwick Land Evidence Records at Book 22757, pages 118-119.
7) "13-049 overall topo...pdf" shows lower project boundary.
8) "DEM-Wetlands ...pdf" shows the generator location, and power poles to the transmission system (top center of diagram) all lie on Water Street Land property (A.P. 41 Lot 77).

APPENDIX B (Consultation) [90MB]
- Public Notice / Overview
1) "Natick Pond ICD Legal Notice ...pdf" - Legal notice of public meeting
2) "20131021-5033.pdf" - Announcement details of public meeting
3) "public meeting presentation" - presentation at public meeting.
4) "Consultation summary.doc" - summary of consultations
"20130930-5272.pdf" Notice of Initial Consultation Document, electronic file availability, public meeting available in Appendix B Consultation.environmental
- Local / Historic
1) "Mashantucket pequot sign off.pdf"
2) "2013-09-027 Pequot Tribe sign off.pdf"
3) "Local Government Consultation List.excel"
4) "2014-03-07 WWarwick Planning Board Approval.pdf"
5) "Abutters" adjacent property owners identification and consultation
6) "RI Historic...pdf" - Rhode Island Historic Preservation: 07-16-2013 and 06-09-2015 Letter

7) "20131001-5286.pdf" Summary of initial Indian and historic consultations
- Environmental
1) "20130930-5272.pdf"
2) "20140106-5116.pdf"
3) "2014108.0011.pdf"
4) "20140228-5272.pdf"
5) "20140228-5300.pdf"
6) "Dem-Wetlands Approval 06092015.pdf"
7) "instream habitat assessment.pdf"
8) "Issued RIDEM Wetlands Permit - Natick Hydro"
9) "supplemental wetland and habitat assessment.pdf"
10) "USFWS 11-122015.pdf"
11) "USFWS.012916.pdf"

APPENDIX C (Dam Inspections) [10MB]
1) "Natick Pond RI Dam ...pdf."
2) "... Daminspectionreport.pdf"
3) "Drilling Results ...pdf. "
4) "IDF Memo...pdf"

APPENDIX D (National Grid) [6MB]
1) "nationalgridcheck"
2) "19833306-Exh E WaterStreetLand LLC...pdf"
3) "...feasibility study...pdf" shows location of new transmission line and other additions.
4. "....Water StreetLandLLC Impact Study.pdf"

APPENDIX E. Section 30(c) Terms and Conditions

APPENDIX F (Exhibit F Drawings) [65MB]
CEII-classified files - requires prior approval and password to access.
P14680-001_CD_501_Construction Details_pdf
P14680-001_CN_001_General Notes_pdf
P14680-001_CS-101_Site Location_pdf
P14680-001_CS-103_Demo and Erosion Control_pdf
P14680-001_CS-105_Site Restoration Plan_pdf
P14680-001_CS-106_Water Control and Const. Sequence_pdf
P14680-001_CS-108_Future Fish Ladder_pdf
P14680-001_CS-502_Construction Details_pdf
P14680-001_Exhibit F-1_Channel Plan_pdf
P14680-001_Exhibit F-2_Channel Plan_pdf
P14680-001_Exhibit F-3_Channel Plan_pdf
P14680-001_Exhibit F-4_Channel Sections_pdf
P14680-001_Exhibit F-5_Channel Sections_pdf
P14680-001_Exhibit F-6_Power House Plans_pdf
P14680-001_Exhibit F-7_Power House Sections_pdf
P14680-001_Exhibit F-8_Sluice Gate Detail_pdf

P14680-001_Exhibit F-9_Existing Conditions_pdf
P14680-001_ F-104_Layout and Grading _pdf

APPENDIX G (Exhibit G Drawings)

Exhibit G-1 shows the upper reach of the project boundary.
Exhibit G-2 shows the lower reach of the project boundary.
Exhibit G-3 shows the existing project boundary and site along with proposed new transmission line and interconnection.
Exhibit G-4 shows existing and proposed project facilities.

§ 12.13 Notarized Verification form

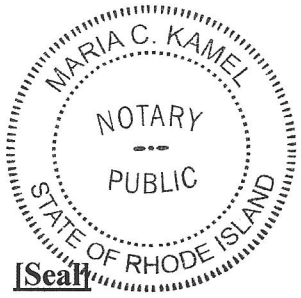
State of [Rhode Island],
County of [Washington], ss:

The undersigned, being first duly sworn, states that he has read this document and knows the contents of it, and that all of the statements contained in that document are true and correct, to the best of his knowledge and belief.

Robert R. Cioe

[Name of person signing]

Sworn to and subscribed before me this [8] of [July], [2016].



[Seal]

Maria C. Kamel

MARIA C. KAMEL
NOTARY PUBLIC
STATE OF RHODE ISLAND
MY COMMISSION EXPIRES 01/02/2018

[Signature of notary public or other state or local official authorized by law to notarize documents.]

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WATER STREET LAND, LLC
P.O. BOX 358
NORTH KINGSTOWN RI 02852

Start: 07/13/2016 Stop: 07/14/2016
Times Ord: 2 Times Run: ***
SLEG 1.00 X 4.46 Words: 83
Total SLEG 4.50
Class: 100 LEGAL
Rate: LEG1 Cost: 137.88

Contact:
Phone: (480)797-3077
Fax#:
Email: legals@ricentral.com
Agency:

Ad Descrpt: NATICK POND DAM
Given by: ROB CIOE
Created: lpali 07/11/16 10:26
Last Changed: lpali 07/11/16 11:17

PUB	ZONE	ED	TP	START	INS	STOP	SMTWTFS
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AUTHORIZATION

Under this agreement rates are subject to change with 30 days notice. In the event of a cancellation before schedule completion, I understand that the rate charged will be based upon the rate for the number of insertions used.

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NOTICE OF FILING

On July 13, 2016 Water Street Land, LLC, P.O. Box 358, North Kingstown, RI 02852 filed an exemption application with the Federal Energy Regulatory Commission for a 10-MW License Exemption for the proposed Natick Pond Dam Hydroelectric Project, Project (FERC No. 14680-000), to be located at Natick Pond Dam, West Warwick, Kent County, Rhode Island on the Pawtuxet River. The application is available for public inspection at http://natick-dam.com/ferc/. Any comments must be filed with the Commission by **September 13, 2016.**