



239 Causeway Street, Suite 300
Boston, Massachusetts 02114

Ramya Swaminathan
Chief Operating Officer

T 978.226.1531

F 617.367.3372

rswaminathan@free-flow-power.com

www.free-flow-power.com

May 22, 2012

Kimberly Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N. E.
Mailcode PJ – 12.1
Washington, DC 20426

RE: FFP Project 111, LLC Application for Preliminary Permit

Dear Secretary Bose,

On behalf of FFP Project 111, LLC, enclosed please find a completed application for a preliminary permit pursuant to Section 4.30 of the Commission's regulations for the Lorella Pumped Storage Hydroelectric Project.

If you have any questions regarding this filing, please do not hesitate to contact me at 978-226-1531.

Sincerely,

A handwritten signature in black ink, appearing to read "Ramya Swaminathan". The signature is fluid and cursive, with the first letter of each word being capitalized and prominent.

Ramya Swaminathan

**BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

APPLICATION FOR PRELIMINARY PERMIT

Lorella Pumped Storage Hydroelectric Project

**FFP Project 111, LLC
239 Causeway Street, Suite 300
Boston, MA 01244**

May 22, 2012

VERIFICATION STATEMENT

This application for a preliminary permit for the Lorella Pumped Storage Hydroelectric Project is executed in the State of Massachusetts, Suffolk County.

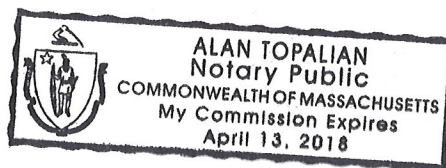
Ramya Swaminathan, Chief Operating Officer of Free Flow Power Corporation, the Managing Member of FFP Project 111, LLC, being duly sworn, deposes and says that the contents of this Preliminary Permit Application are true to the best of her knowledge or belief. The undersigned Applicant has signed the application on this 22nd of May, 2012.

By: Ramya Swaminathan
Ramya Swaminathan, Chief Operating Officer
Free Flow Power Corporation

Subscribed and sworn before me, a Notary Public of the State of Massachusetts this ____ of May, 2012.

My commission expires on 4/13/18

By: Alan Topalian



**BEFORE THE UNITED STATES FEDERAL ENERGY REGULATORY COMMISSION
APPLICATION FOR PRELIMINARY PERMIT**

I. Statement of Application

FFP Project 111, LLC applies to the Federal Energy Regulatory Commission for a preliminary permit for the proposed Lorella Pumped Storage Hydroelectric Project, as described in the attached exhibits. This application is made in order that the applicant may secure and maintain priority of licensing for the project under Part 1 of the Federal Power Act while obtaining the data and performing the acts required to determine the feasibility of the project and to support an application for license.

2. The location of the proposed project is:

State: Oregon
County: Klamath
Nearby Town: Lorella, Oregon and Malin, Oregon

3. The exact name, business address, and telephone number of the applicant is:

FFP Project 111, LLC
239 Causeway Street, Suite 300
Boston, MA 01244
978.283.2822

The exact name, address, and telephone number of persons authorized to act as agent for the applicant in this application are:

Daniel R. Irvin
Free Flow Power Corporation
239 Causeway Street, Suite 300
Boston, MA 01244
978.252.7631
dirvin@free-flow-power.com

Daniel Lissner
Free Flow Power Corporation
239 Causeway Street, Suite 300
Boston, MA 01244
978.252.7111
dlissner@free-flow-power.com

Ramya Swaminathan
Free Flow Power Corporation
239 Causeway Street, Suite 300
Boston, MA 01244
978.226.1531
rswaminathan@free-flow-power.com

Jason Hines
Free Flow Power Corporation
2200 Rimland Drive, Suite 104
Bellingham, WA 98226
978.252.7112
jhines@free-flow-power.com

4. Preference under Section 7(a) of the Federal Power Act

FFP Project 111, LLC is a domestic limited liability company, and is not claiming preference under the section 7(a) of the Federal Power Act.

5. Term of Permit

The proposed term of the requested permit is 36 months.

6. Existing Dams or Other Project Facilities

The proposed project uses no existing dams or other existing principal project features.

SECTION 4.32(a)

- 1. Identify every person, citizen, association of citizens, domestic corporation, municipality, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the project;**

FFP Project 111, LLC is the only entity that has or intends to obtain and will maintain any proprietary rights necessary to construct, operate, or maintain the proposed property.

The project facilities will be located on federal lands administered by the Bureau of Land Management (BLM). The addresses for the BLM offices are:

Bureau of Land Management
Oregon State Office
333 SW 1st Ave.
Portland, OR 97204

Klamath Falls Resource Area of the Lakeview District
2795 Anderson Avenue, Building 25
Klamath Falls, OR 97603

- 2. Identify:**

- (i) Every county in which any part of the project, and any Federal facilities that would be used by the project, would be located:**

The proposed project is located in the following county:

Klamath County, Oregon
334 Main Street
Klamath Falls, OR 97601

- (ii) Every city, town, or similar local political subdivision:**

- (A) In which any part of the project, and any Federal facilities that would be used by the project, would be located:**

The Project would not be located within any city, town, or similar political subdivision.

- (B) That has a population of 5,000 or more people and is located within 15 miles of the project dam:**

The project would not be located within 15 miles of a city, town, or similar subdivision with 5,000 or more people.

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

Langell Valley Irrigation District
East Langell Road
Bonanza, OR 97673

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

Oregon 2nd Congressional District
Congressman Greg Walden
2182 Rayburn House Office Building
Washington, DC 20515

Senator Jeff Merkley
313 Hart Senate Office Building
Washington, DC 20510

Senator Ron Wyden
221 Dirksen Senate Office Building
Washington, DC 20510

(v) All Indian Tribes that may be affected by the project;

The applicant has identified the following Indian Tribes that may potentially have an interest or be affected by the project using the National Park Service's Native American Consultation Database:

Klamath Tribe
Old Williamson Road
Highway 97
Chiloquin, OR 97620

BEFORE THE UNITED STATES FEDERAL ENERGY REGULATORY COMMISSION
APPLICATION FOR PRELIMINARY PERMIT

EXHIBIT 1 – GENERAL DESCRIPTION

1. General Configuration

The proposed project involves the construction of two new reservoirs, designated the “upper reservoir” and the “lower reservoir”, connected by a penstock and tunnel arrangement to create a closed loop pumped storage configuration. The total installed nameplate capacity of the generating plant would be 1,000 megawatts (MW). The project would operate in an off-stream pumped storage mode, utilizing off-peak electric capacity at night or weekends to pump and store water for use in generating electrical power during peak electrical hours. In addition, the project would provide ancillary benefits to the electrical grid such as frequency and load regulation and support the implementation of non-dispatchable generating resources such as solar and wind power.

The project would consist of a new powerhouse, intake/discharge structures in the upper and lower reservoirs, and a 1,500-foot-long by 38-foot wide D-shaped tailrace tunnel. A 1,350-foot-deep, 24-foot diameter vertical shaft will be installed to connect the upper reservoir to the power tunnel. A 3,200-foot-long, 24-foot diameter power tunnel will connect the shaft with four steel lined penstocks, each 12-feet in diameter and 355-feet-long. The 380-foot by 80-foot reinforced concrete powerhouse will accommodate a pump-turbine generating system with a design head varying from 1,190 to 1,300 feet. The four pump-turbine generator units would have a combined capacity of 1,000 MW along with four 16-foot diameter, 100-foot-long draft tube tunnels. Annual energy production dispatched from the site is expected to be 1,600 gigawatt hours per year (GWh/year).

Upper and Lower Intake/Discharge Structure Partially submerged, new concrete intake/discharge structures will be constructed in the upper and lower reservoirs.

Power Tunnel, Branch Penstocks and Tailrace Tunnel A single, new power tunnel will connect the upper reservoir intake/discharge structure to the powerhouse. At the powerhouse the main pressure penstock will split into four steel lined branch penstocks serving individual turbines. The tailrace tunnel will be a concrete lined tunnel, excavated in rock that conveys the working water to and from the powerhouse to the intake/discharge structure located in the lower reservoir.

Powerhouse The powerhouse will be an underground, reinforced concrete structure. The new powerhouse will contain four 250 MW reversible pump-turbine-generators, control systems, and ancillary equipment. The powerhouse will be located approximately 2,250 ft. northeast of the Upper Reservoir.

Access Tunnel – A new access tunnel will be constructed that will lead from the surface to the powerhouse to provide access to the underground powerhouse for construction, maintenance and ventilation.

Access Roads – The project will utilize existing roads and may require a new access road 4,700 feet in length.

2. Reservoirs

Upper Reservoir and Dams

The upper reservoir would be formed by two earth and rockfill dams, with crest elevations of 5,523 feet mean sea level (MSL). The upper reservoir would have a surface area of approximately 200 acres at the normal maximum water surface elevation of 5,523 feet MSL. The minimum water surface elevation would be 5,400 feet msl. The maximum live storage capacity of the upper reservoir would be approximately 14,300 acre-feet at a water surface elevation of 5,523-feet MSL.

Coordinates for center of Upper Reservoir

Latitude: 42° 7' 5.9"N
Longitude: 121° 21' 34.0"W

Lower Reservoir and Dams

The lower reservoir would be formed by a 50-foot-high earth and rock-fill embankment, with a crest elevation of 4,200 feet mean sea level (MSL). The lower reservoir would have a surface area of approximately 400 acres at the normal maximum water surface elevation of 4,191 feet MSL. The minimum water surface elevation would be 4,147 feet msl. The maximum live storage capacity of the upper reservoir would be approximately 14,300 acre-feet at a water surface elevation of 5,523-feet MSL.

Coordinates for center of Lower Reservoir

Latitude: 42° 8' 41.7"N
Longitude: 121° 20' 34.2"W

Upper and Lower Spillways The upper and lower dams will have new spillways with the approximate width of 200 ft. for emergency release of water. The actual size and design of the spillways will be determined by hydrological study during the permit period.

3. Proposed Transmission Line

A new transmission line will connect the project substation to the existing Pacific Intertie 500 kilovolt (kV) lines at the Captain Jack Substation. The proposed new

transmission line would be 4-miles-long and have a voltage of 500 kV. The interconnection features and characteristics, including the final transmission line design and routing, are dependent upon the results of studies to be carried out during the term of permit.

4. Proposed Generating Equipment

- Four reversible pump-turbines, each with a rated capacity of 250 MW, will be installed at the project.
- The total installed nameplate capacity of the turbine-generator units will be 1,000 MW.
- The project is a pumped storage plant with a net yearly consumption of power. Actual gross production will be based on market and contract based dispatch criteria, but is initially estimated to be 1,600 GWh/yr.
- The rated net hydraulic head for the proposed units ranges from 1,190-feet to 1,300-feet.
- The turbines and generators will be newly manufactured for the project.

5. Lands of the United States

The proposed project lies within lands of the United States under the administration of the BLM. Approximately 500-acres of land will be required for the project. The attached FERC Form 587 describes federal lands to be included within the project boundary.

6. Utilization of Water Resources

The proposed pumped storage project would utilize a closed loop configuration. Water would be conserved between the upper and lower reservoirs except for seepage and evaporation losses. The proposed project would not modify any large creeks, rivers, or navigable waterways.

BEFORE THE UNITED STATES FEDERAL ENERGY REGULATORY COMMISSION
APPLICATION FOR PRELIMINARY PERMIT

EXHIBIT 2 – DESCRIPTION OF STUDIES

Upon the issuance of a preliminary permit, more detailed studies will be conducted to determine the ultimate feasibility of the project and potentially support the preparation of an application for license, as detailed below.

1. General Description of Proposed Studies

The following studies are planned:

1. Description of proposed studies

- a) Information Review: Publicly available general information will be compiled and reviewed. This will include State Resource Agency management plans, local survey data, utility distribution and transmission information, as well as previous hydroelectric feasibility analyses.
- b) Hydrologic Studies: Available surface water and groundwater data and applicant-gathered field data will be used to assess the availability of water resources for initial filling and subsequent refilling for seepage and evaporation losses.
- c) Geological Studies: Studies will be performed to support design and cost estimating for the new dams, intakes, penstock alignment, powerhouse, transmission lines and facilities, and appurtenant facilities. Test borings, as required, will be made with a small portable machine to ensure minimal environmental impact. Each boring site will be restored to its original state. Geologic studies related to dams, reservoir and spillway safety, constructability, seepage, and other associated issues will be performed.
- d) Develop and Review Alternatives: Alternatives will be developed and reviewed in project layout and sizing to maximize the power generated, minimize environmental impact, and otherwise select the optimal project to ensure the best possible use of the resource.
- e) Preliminary Engineering and Design: The information generated in the preceding studies will be incorporated into an optimized design suitable for a definitive estimate of project cost and feasibility.
- f) Energy Generation and Cost Estimates: The flow and head data created in Task (b) coupled with the selected project design alternatives from Tasks (c) and (d) will allow energy generation to be modeled for the project. Daily forecast energy generation

will be determined and ancillary benefits will be estimated. Initial budgetary development and construction costs will be developed. A tentative permitting and construction schedule will be defined.

- g) Feasibility Analysis: The previous work will be compiled into a final feasibility analysis along with data gathered on then-current and forecast wholesale power prices, financing costs, and O&M costs to determine the economic feasibility of the project.

If the result of the feasibility analysis is positive, the following activities are envisioned to take place during the remaining preliminary permit term to support licensing and development of the project. Included in the following activities would be environmental and natural resource analysis including geological, water, fisheries, terrestrial, threatened and endangered species, recreational, land, historical, tribal, and socioeconomic resources.

- h) Informal Stakeholder Consultation and Discussions
- i) Develop Notice of Intent (NOI)
- j) Develop Pre-Application Document (PAD)
- k) Begin Scoping Activities

*It is anticipated that tasks (a) through (g) will be completed within 12 months of the permit issuance. Tasks (h) through (k), if undertaken, will be performed during the remaining permit term.

2. New Road Construction

Access for all field surveys may require new roads. If new roads are required for field surveys they will be constructed according to all applicable laws and regulations and through coordination with the BLM.

3. New Dam Construction

The project will involve construction of two new dams to create a closed loop pumped storage configuration, as described in Exhibit 1. Investigation of existing information in order to assess dam construction feasibility will occur. The field surveys or studies that are planned for the proposed project are as follows:

a) Test Borings:

As required, test borings will be made at the proposed locations for the new dam, intake, penstock alignment, and powerhouse. The test boring sites will be

impacted, but only in the smallest possible area that will accommodate two men and a small boring machine which can be carried into place by hand. The sites will immediately be returned to their natural state.

b) Materials Analysis:

The availability of construction materials for construction of the dams will be assessed.

4. Waiver

The applicant does not request the Commission to waive the field study requirement.

5. Statement of Cost and Financing

a) Estimated Costs:

The total cost for completing tasks (a) through (g) as outlined above is estimated to be \$1,000,000. If task (h) through (k) are undertaken the total cost is estimated to not exceed \$5,000,000.

b) Expected Sources of Financing:

The studies will be financed by the applicant.

**BEFORE THE UNITED STATES FEDERAL ENERGY REGULATORY COMMISSION
APPLICATION FOR PRELIMINARY PERMIT**

EXHIBIT 3 – MAPS

1. General Location of Proposed Project

Attached are maps showing the location, the project layout, and the project boundary for the proposed project. The location of the project is shown on two maps, Map 1 – Vicinity and Map 2 – Location.

2. Project Layout

The probable locations of the primary project features are shown on Map 3 - Layout.

3. Proposed Boundary

The proposed project boundary is shown on Map 4 – Boundary.

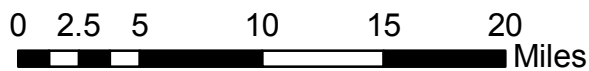
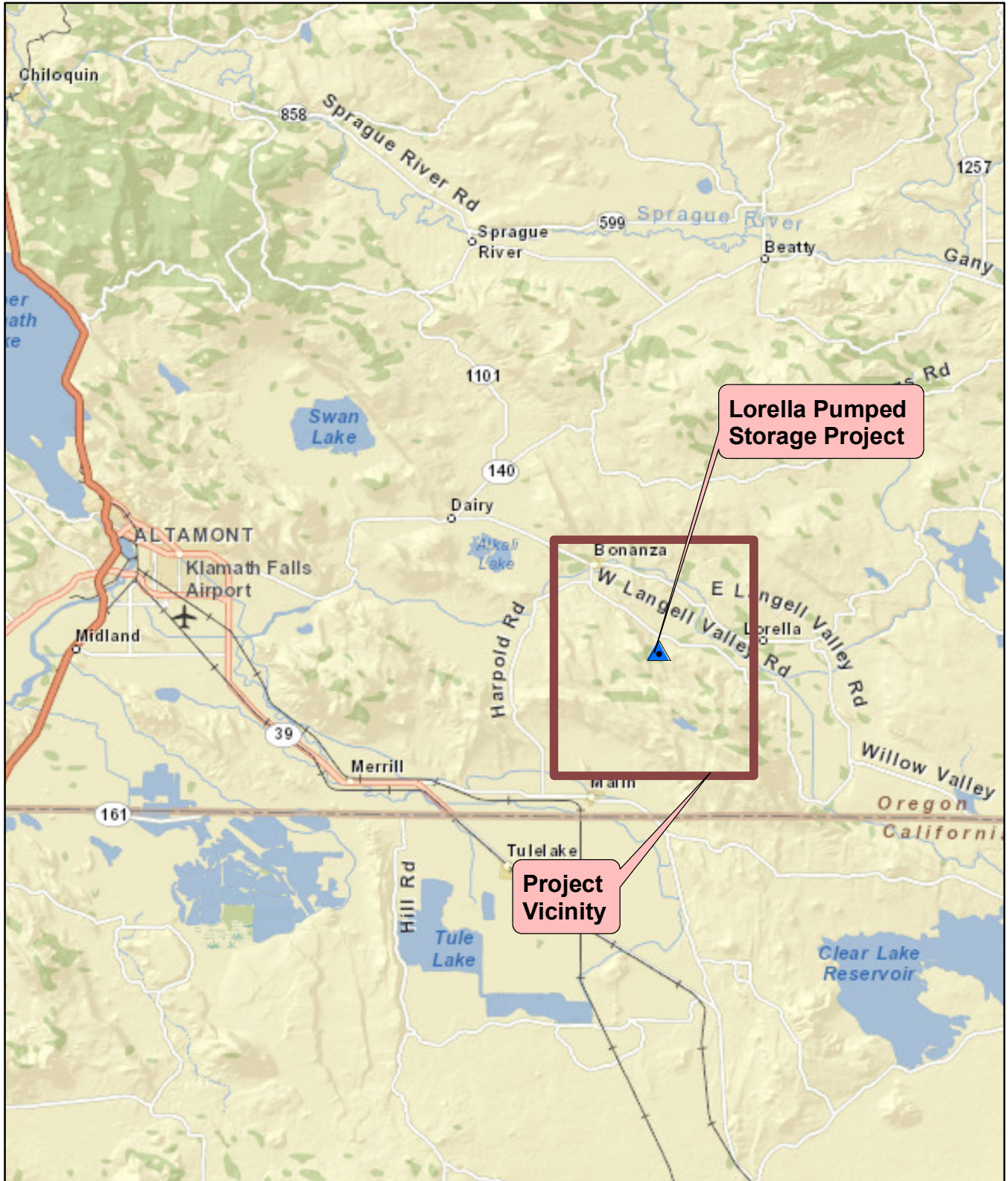
4. National Wild and Scenic Rivers Systems

No areas in the project vicinity are included (or are known to have been designated for study for inclusion) in the National Wild and Scenic Rivers System.

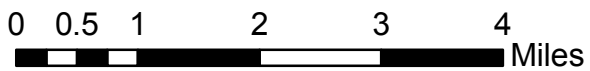
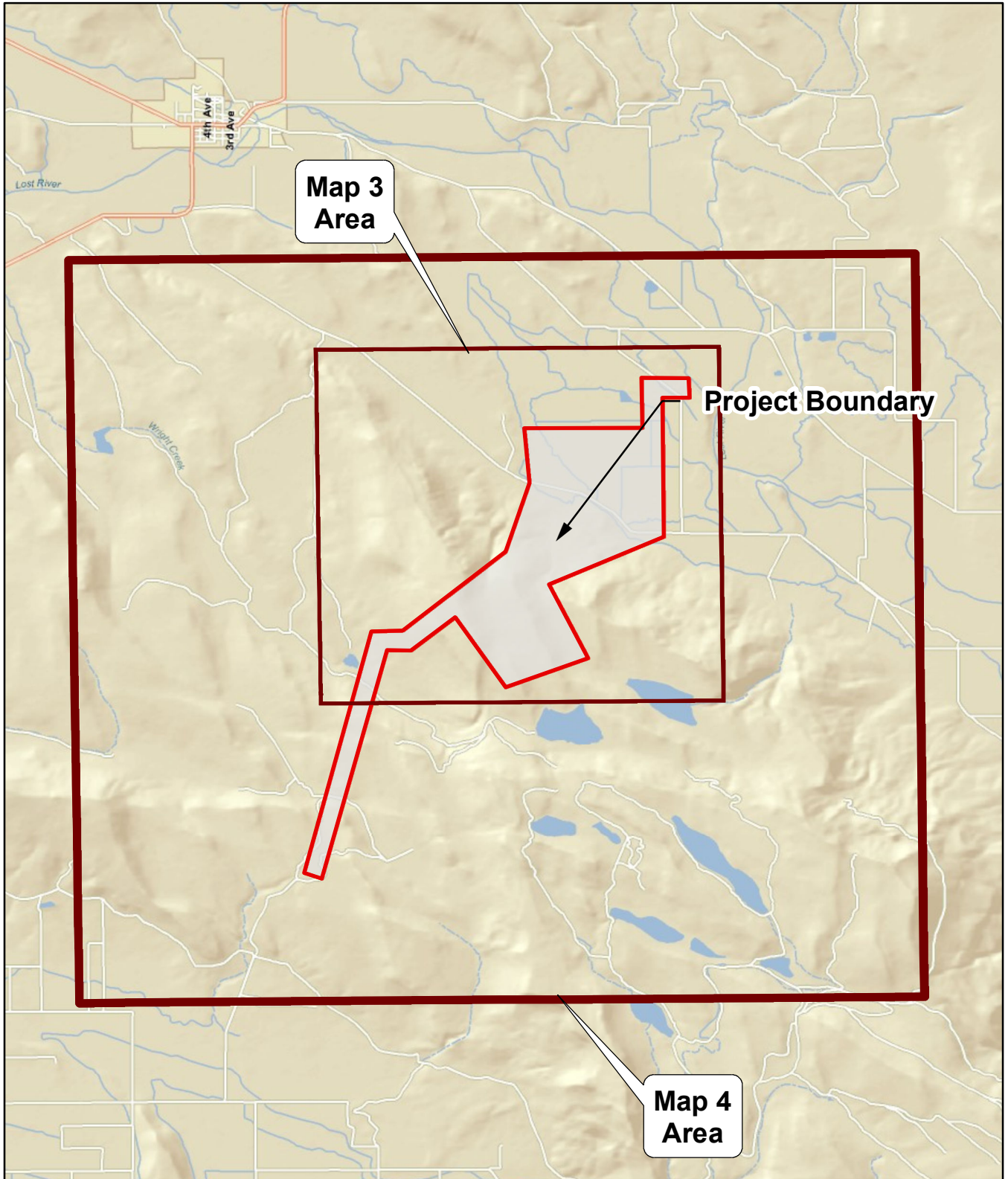
5. Designated Wilderness Areas

No areas within the project boundary have been designated as wilderness area. No areas within the project boundary are known to be recommended for designation as wilderness area or designated as wilderness study area.

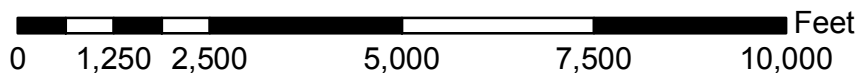
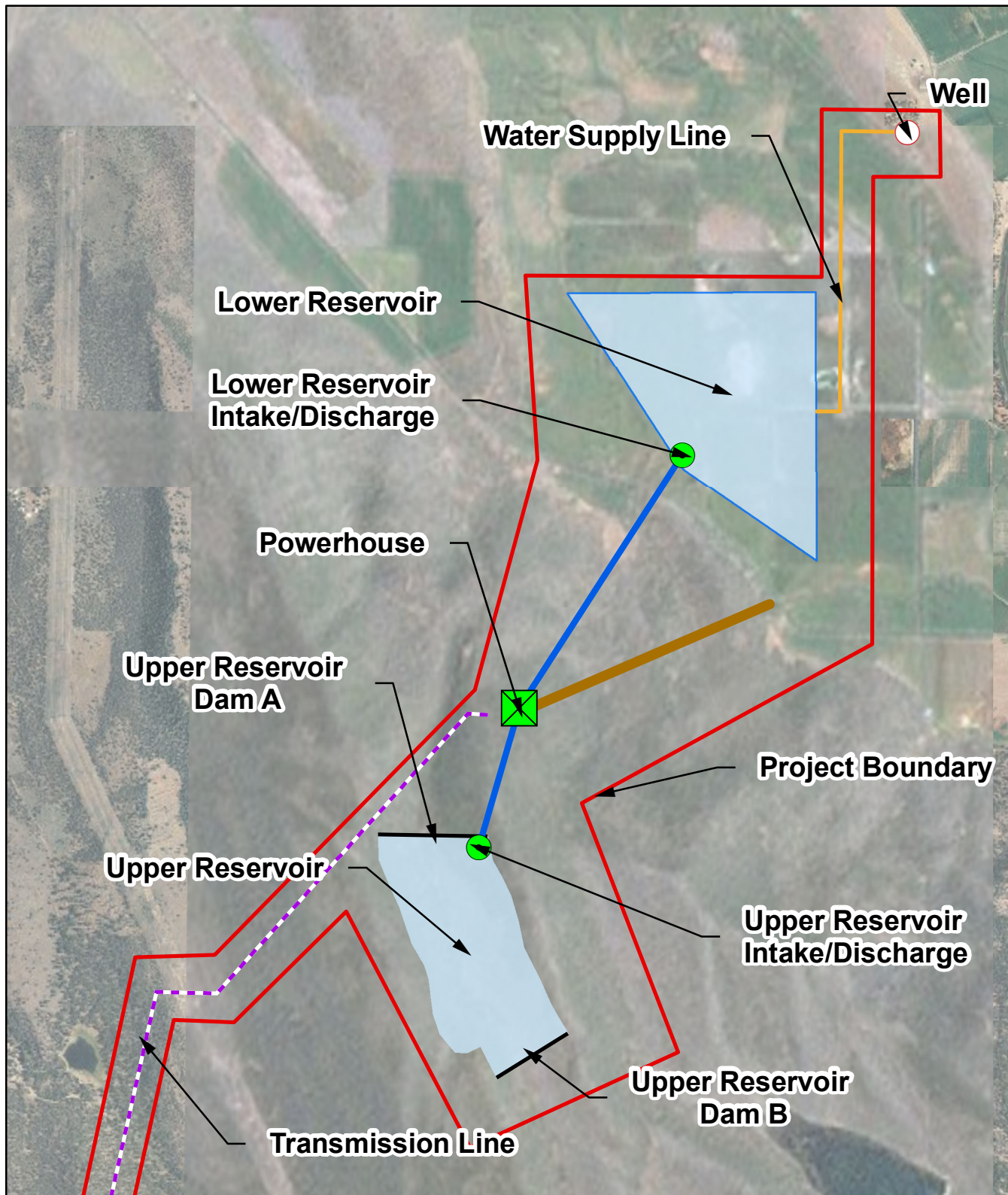
Lorella Pumped Storage Project MAP 1 - VICINITY



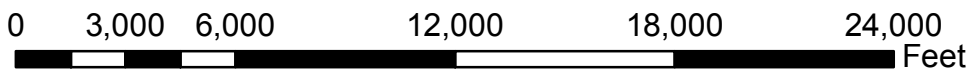
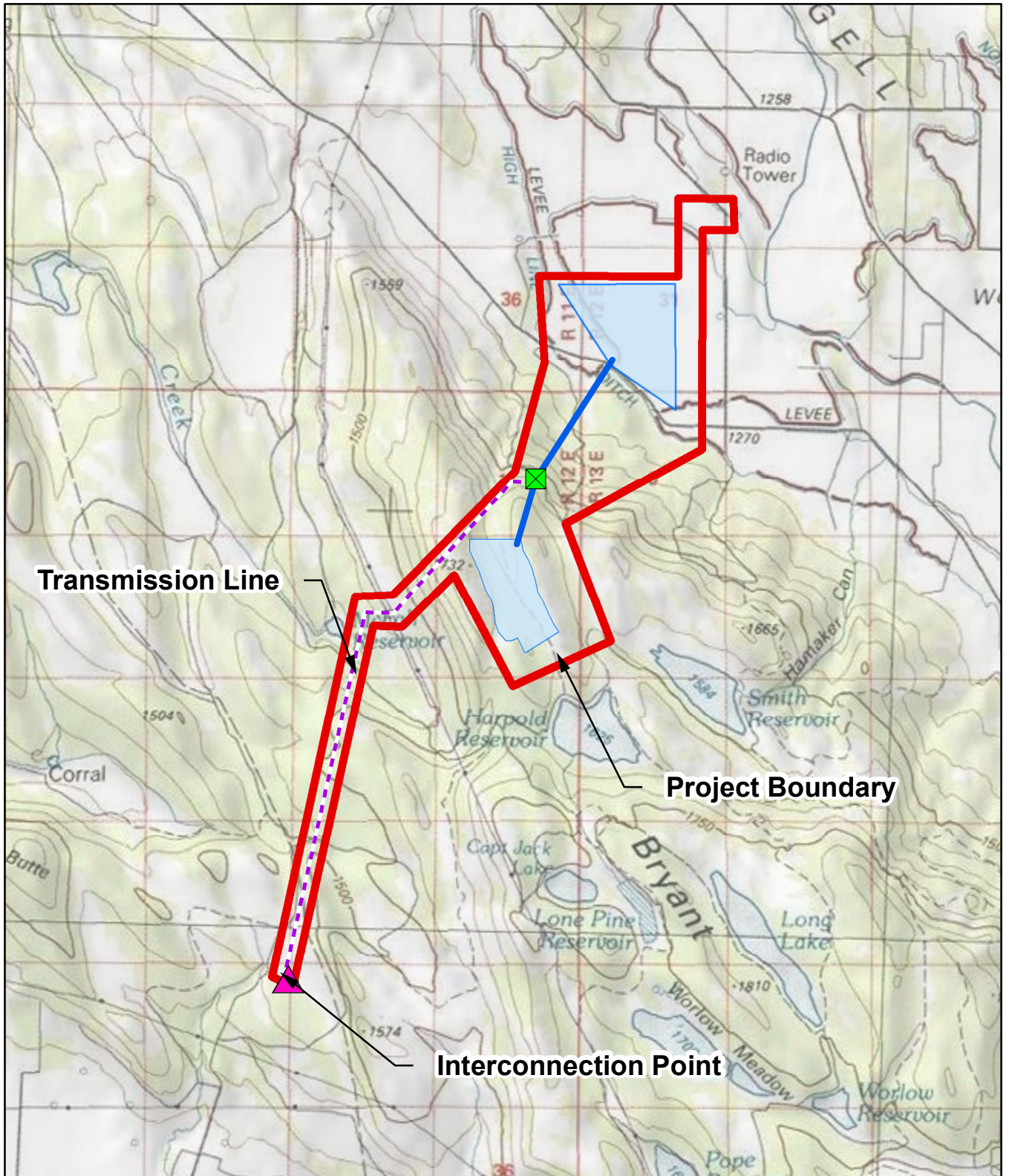
Lorella Pumped Storage Project MAP 2 - LOCATION



Lorella Pumped Storage Project MAP 3 - LAYOUT



Lorella Pumped Storage Project MAP 4 - BOUNDARY



Form FERC-587
OMB No. 1902-0145
(Expires 07/30/2012)

LAND DESCRIPTION

Public Land States

(Rectangular Survey System Lands)

1. STATE: Oregon 2. FERC PROJECT No: _____

3. TOWNSHIP: T40S RANGE: R12E MERIDIAN: Willamette

4. Check one:

License
 Preliminary Permit

Check one:

Pending
 Issued

If preliminary permit is issued, give expiration date: **(Not applicable)**

5. Exhibit Sheet Number(s) or Letter(s)

Section 6	5	4	3	2	1 See Map 4 - Boundary
7	8	9	10	11 See Map 4 - Boundary	12 See Map 4 - Boundary
18	17	16	15	12 See Map 4 - Boundary	13
19	20	21	22	23 See Map 4 - Boundary	24
30	29	28	27	26	25
31	32	33	34	35	36

6. Contact's name: Ramya Swaminathan

Telephone No.: 978-283-2822

Date Submitted: May 22, 2012

This information is necessary for the Federal Energy Regulatory Commission to discharge its responsibilities under section 24 of the Federal Power Act.

Form FERC-587
OMB No. 1902-0145
(Expires 07/30/2012)

LAND DESCRIPTION

Public Land States

(Rectangular Survey System Lands)

1. STATE: Oregon 2. FERC PROJECT No: _____

3. TOWNSHIP: T40S RANGE: R13E MERIDIAN: Willamette

4. Check one:

License
 Preliminary Permit

Check one:

Pending
 Issued

If preliminary permit is issued, give expiration date: **(Not applicable)**

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LAND DESCRIPTION

Public Land States

(Rectangular Survey System Lands)

1. STATE: Oregon 2. FERC PROJECT No: _____

3. TOWNSHIP: T39S RANGE: R12E MERIDIAN: Willamette

4. Check one:

License
 Preliminary Permit

Check one:

Pending
 Issued

If preliminary permit is issued, give expiration date: **(Not applicable)**

5. Exhibit Sheet Number(s) or Letter(s)

Section 6	5	4	3	2	1
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6. Contact's name: Ramya Swaminathan

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Document Content(s)

LorellaProject Prelim Permit App.PDF.....1-21