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August 13, 2009

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

**Re: Jackson Hydroelectric Project (FERC No. P-2157-188) –
Response to Deficiency and Additional Information Request**

Dear Secretary Bose:

Enclosed for electronic filing with the Federal Energy Regulatory Commission (Commission) is the Public Utility District No. 1 of Snohomish County's (District's) response to the Notice of Deficiency of License Application and Additional Information Request dated June 29, 2009. The Exhibit G maps are also included in the electronic filing per the Commission's regulations.

If you have any questions on the response or the Jackson Hydroelectric Project relicensing efforts, please contact Dawn Presler at (425) 783-1709 or DJPresler@snopud.com.

Respectfully submitted,

Michael A. Swiger
Counsel for Public Utility District No. 1
of Snohomish County, Washington

Enclosures

Schedule A – Deficiency

Exhibit G

1. The Exhibit G maps were not filed in electronic formats per the Commission’s regulations (18 C.F.R. Part 4, Subpart E, Section 4.41(h)). After modifying the drawings as discussed in Schedule B, Items 7, 8 and 9, please file the drawings in the appropriate electronic formats.

District Response:

The Exhibit G maps are now included in the required electronic format. Exhibit G maps are also provided in Attachment A for reference.

Schedule B Additional Information Request

Exhibit A.

1. You state in section A.2.5 that the discharge capacity of the Francis units was designed to meet the current City of Everett water supply requirements and minimum flows below the diversion dam. Section A.2.9.1 cites the combined maximum capacity of the Francis units to be 390 cubic feet per second (cfs). The license application notes that the City of Everett’s water supply requirements are expected to increase over the license term. The license application does not identify if the increased water supply demands, in conjunction with the increased minimum flow requirements downstream of the diversion dam, would potentially necessitate modifications to any project features, such as the Francis units, Lake Chaplain pipeline, Portal 2 structure, or diversion dam tunnel and pipeline.

In about year 2035, the City of Everett water demand is predicted to be approximately 144 million gallons per day (mgd) or about 223 cfs, and the proposed highest minimum stream flow proposed to be released downstream of the diversion dam is 200 cfs. This would equate to a combined flow through the Lake Chaplain pipeline of 423 cfs (223 cfs plus 200 cfs). Please provide a discussion regarding whether or not infrastructure changes would be necessary to meet those future demands, and if infrastructure changes are necessary, describe what changes would be necessary, when the changes would need to be implemented, what the changes would cost, and who would fund those changes.

District Response:

The District has several obligations for flow delivery within the Project system. In particular, the City of Everett’s (“City”) water supply demands must be satisfied per agreement with them and the instream flows must be satisfied as a requirement of the FERC license. Currently, the City’s water supply demand average is 84 mgd (168 cfs) and the existing system can meet both the City’s demands and the instream flows required on the Sultan River. However, at some point in the distant future the City’s water supply demands are predicted, per the City’s Water Comp Plan, to increase to a point that exceeds the available capacity of the Lake Chaplain return pipeline. Based on the current decline in water demand (below predicted levels) and historical

models, the District believes this situation will initially manifest itself as a short duration event during a summer peaking of water demand. The District has developed strategies to address this situation and identified a progressive set of operational adjustments using the existing infrastructure. The District's use of the City's projected water supply demands did not account for substantial conservation measures that the City can employ during times of drought crisis. Therefore, the District believes we will not need to resort to any major infrastructure construction or amendments during the new license term. During the next relicensing process, the District will consult with the City, the FERC and the Aquatic Resources Committee to assess any capital improvements needed to increase the Chaplain return line capacity for meeting the City's water supply demands and instream flow requirements at the Diversion Dam.

Exhibit A and Exhibit B

2. There are discrepancies in various sections of the license application regarding the minimum discharge capacities of the generating units. Specifically, Section A.2.9.1 states that the minimum discharge capacity of each Pelton unit is 80 cfs and each Francis unit is 44 cfs. The Supplement to Appendix A (Operating Plan), table 2, states that the minimum turbine hydraulic capacity of each Pelton unit is 70 cfs and each Francis turbine is 50 cfs. Section B.2.5 says the minimum powerhouse hydraulic capacity is 70 cfs. Please resolve these discrepancies and provide the correct values.

District Response:

At low generation levels, unit efficiency degrades substantially and maintenance rates increase. Therefore, the District prefers not to operate the Francis units at less than 2 MW for an extended period of time, which is approximately 44 cfs depending on the unit net head. For the same reason, the District prefers not to operate the Pelton units below 5 MW for any extended period of time, which is approximately 70 cfs depending on the net head.

Exhibit A and Exhibit B

3. There are discrepancies in various sections of the license application regarding the maximum discharge capacities of the generating units. Specifically, Section A.2.9.1 states that the combined maximum discharge capacity of the Pelton units is 1,438 cfs (or 719 cfs each) and the combined maximum discharge capacity of the Francis units is 390 cfs (or 195 cfs each). Section B.2.5 says the maximum hydraulic capacity of the powerhouse is 1,300 cfs. Please verify the maximum discharge capacities of each Pelton and Francis unit and provide the correct values.

District Response:

The answer is complicated by the interrelationship of the two Francis units and the two Pelton units operating in conjunction with a long power tunnel-pipeline and the long Lake Chaplain return pipeline. Based on hydraulic test data when Spada Lake was at elevation 1,430 feet, the maximum hydraulic capacity of the two Pelton units is 1,438 cfs. However, these were the only units on line at the time of the test, which rarely happens. The maximum flow measured through the Francis units was 390 cfs (again only the Francis units were on line which never happens since the Pelton units are required to operate to meet the minimum instream flow requirements

below the Powerhouse). At the same reservoir elevation, the maximum hydraulic capacity of the Powerhouse was measured at 1,713 cfs when all four units were on line (Pelton flow = 1,402.6 cfs; Francis unit flow = 310.7 cfs). However, the District rarely operates in this mode (e.g., all four units on line at maximum gate opening), due to the high head losses at full flow which results in inefficient use of the water for generation. Therefore, section B.2.5 should be modified to say that 1,713 cfs is the maximum hydraulic capacity of the Powerhouse, although not all of that water flows directly in to the Sultan River below the Powerhouse.

Exhibit D and Exhibit H

4. *Exhibit D, table D.4-1 provides the cost of financing the existing project.*

For the purposes of our economic analysis, we need to apply an interest rate for financing new construction and other capital expenditures. Please provide an expected interest rate for the financing of these capital expenditures.

District Response:

New construction bonds are assumed to be financed at 6% annually.

Exhibit D and Exhibit H

5. *The license application provides discussions in several sections (including section D.9, H.1.1 and the Supplement to Appendix A) pertaining to energy gains or losses due to proposed modifications to project operations. However, these discussions do not provide enough information for us to fully evaluate proposed changes in project generation. Please provide a table that identifies the energy gains or losses in megawatthours for each protection, mitigation, and enhancement measure, as applicable.*

District Response:

H.1.1 identifies the forgone generation for the following PM&E measures as shown in the table below:

PM&E	<i>Generation Gains/Losses(MWh/year)</i>
Whitewater flow releases	-286
Process flows (outmigration, upstream migration, channel forming flows)	-393
Minimum instream flows	+5,334*

*Generation gains would vary through the new license period as a result of changes in City of Everett water demand. Please read discussion below.

We estimate that the generation gain due to minimum instream flow releases would be 5,334 MWh at the beginning of the new license. As the City water demand increases over the term of the next license, the difference between the current conditions and those proposed become approximately equal. The gain in the early years is because the greater instream flows below the

Powerhouse will lead to more generation from the Project as long as Spada Lake does not fall below the 1,380 feet msl power-off elevation. As the City's water demands increase, Spada Lake will fluctuate to lower and lower elevations during drought conditions. Once below elevation 1,380 feet msl, water is released through Culmback Dam without producing any generation, so that generation during the later years of the new license will be more equivalent to generation under the current license conditions. These values for lost generation are solely due to changes in instream flows and exclusive of the effect of the process and whitewater flows on generation. The rule curve modifications are incorporated into the calculated effect on generation. Please see the Supplementary Paper to the Project Operating Plan (Appendix A in Volume III – Appendices of the Final License Application) for further descriptions of the City of Everett impact to generation over time.

Exhibit A and Exhibit F

6. *Exhibit A does not provide the capacity of the diversion tunnel or the various individual valves in the valve chamber of the access shaft (e.g., 48-inch Howell Bunger valve, turbine/10-inch cone valve, 42-inch slide gate valves). Since the diversion tunnel is the source of the current and proposed 20 cfs minimum flow release, we request additional details pertaining to these project features. Please provide the maximum hydraulic capacity of the tunnel (upstream of the valves assuming the valves did not restrict flows) and the maximum hydraulic capacity of each valve. Also, details of the intake structure for the diversion tunnel are not included in Exhibit A or on any of the Exhibit F drawings presented with the license application. Please provide the elevation in feet (mean sea level) of the invert and the top of the diversion tunnel intake opening such that we can evaluate the depth of withdrawal from the impoundment.*

District Response:

The 20-foot diameter diversion tunnel in the right abutment of Culmback dam is shown in Exhibit F, Sheet 2 and Sheet 4. The invert for the diversion tunnel is at approximately elevation 1,230 feet msl, and the top of the diversion tunnel is approximately 1,250 feet msl (See Sheet 4). This feature was constructed to allow passage of water past the dam site when Stage I of Culmback was constructed in 1965. On completion of dam construction, the diversion tunnel was sealed with a gate and a concrete plug was poured with two 48-inch pipes imbedded. At the end of the pipes are a guard valve and an operating valve. For one pipe, the operating valve is a 42-inch slide gate with a capacity of up to 1,165 cfs. This valve is either full open or full closed. For the other pipe, the operating valve is a 48-inch Howell-Bunger valve with an operating range of 120 to 1,190 cfs. Both of these valves discharge safely into the spillway tunnel and allow the drawdown of Spada Lake, if necessary.

Just upstream of the 48-inch Howell Bunger valve is a pipe connection for a 16-inch diameter pipe that transitions to a 10-inch cone valve that also discharges into the spillway tunnel. The 10-inch cone valve has a range of operation of 5 to 45 cfs. This valve opening is controlled by a programmable logic controller.

Another pipe is connected to the 16-inch line that feeds the 10-inch cone valve. This pipe feeds water to a 60 KW turbine generator which provides local power at the dam. The flow capacity of the turbine is approximately 5 cfs. Between the 10-inch cone valve and the discharge from the hydrogenerator, enough flow is released to satisfy the 20 cfs minimum flow required below Culmback Dam.

Exhibit G

7. Please identify the 3,466.7 acres of section 24 lands on the Exhibit G maps and include this information in your electronic drawing files as well as the hardcopy figures (see Schedule A, Exhibit G deficiency).

District Response:

The 3,466.7 acres are identified on the Exhibit G maps.

Exhibit G

8. Exhibit G, figure G-4, shows a project boundary addition located to the southeast of the powerhouse that is not labeled. Please label the parcel based on its purpose or function. The text in Exhibit E does not provide an adequate explanation as to the purpose of the inclusion of this parcel, and does not state what project features or structures are included within the area shown. Please provide this information and ensure that the parcel to be added is limited only to lands necessary for project purposes. This request should be incorporated into your filing of electronic drawing files as well as the hardcopy figures (see Schedule A, Exhibit G deficiency).

District Response:

The triangular parcel southeast of the Powerhouse is owned by the District and contains no Project features or structures. It is currently managed as part of the Wildlife Habitat Management Plan. The District will continue to manage this parcel for wildlife under the new Terrestrial Resource Management Plan (TRMP).

Exhibit G

9. Important project (and non-project) features, such as the powerhouse, switchyard, Portal 2 structure, and diversion dam, should be included on the Exhibit G maps. Per section 4.41(h)(1) of the Commission's regulations, the Exhibit G maps must show the relative locations and physical interrelationships of the principal project works as described in Exhibit A of the license application. The Exhibit G maps do not show any actual structures, only labels. Please include the footprints of the structures/features on the maps. This request should be incorporated into your filing of electronic drawing files as well as the hardcopy figures (see Schedule A, Exhibit G deficiency).

District Response:

The Exhibit G drawings have been updated to include labels of Project features and arrows pointing to their locations on the map. Please see Attachment A and the electronic data for the revised Exhibit G drawings.

Exhibit E

10. *In table E.7.2-1 on page E-385 (section E.7.2) of your license application, you show a capital cost of \$100,000 and an annual operation and maintenance (O&M) cost of \$1,000 for the 6122 Road Abandonment/ORV Trail. Please describe the site specific measures that the District proposes to implement to accomplish the conversion and to maintain the trail.*

District Response:

The site specific measures included in the District's proposal to convert the 6122 Road into an off-road vehicle (ORV) trail are:

- 1) abandoning the road following Washington State Forest Practice Standards which includes removing five (5) culverts along the alignment and reestablishing the natural streambed width;
- 2) replacing the existing roadbed where feasible with a 4-foot wide trail suitable for ORV access. Trail alignment may need to vary from the existing road alignment in some locations to accommodate crossing of streambeds;
- 3) grading and placement of aggregate;
- 4) constructing an approximately 20-foot long ORV bridge to cross the one larger drainage located approximate 500 feet east of the National Forest System Lands (NFSL)/District property line;
- 5) installing a gate at the entrance to the trail (off of the Culmback Dam Road) and providing keys to Washington Department of Natural Resources, U.S. Forest Service, City of Everett and mining claimants to allow ORV access (foot access would be available to the public); and
- 6) supportive engineering, permitting, and consultation activities for the above.

Annual maintenance measures, as needed, include:

- 1) inspecting crossings;
- 2) monitoring use;
- 3) regrading;
- 4) brushing; and
- 5) collecting trash.

Exhibit E

11. *On page E-347 (section E.6.7.3.1.1) of your license application, you propose to provide access to the Sultan River via a new trail down the face of Culmback dam, indicating that the trail would follow the existing release flow line and would include a grated metal catwalk with handrails. Table E.7.2-1 shows a capital cost of \$80,000 and an annual O&M cost of \$1,000 for this measure. So that we may evaluate the benefits and costs of your proposal, please provide a conceptual drawing of this new trail, including the approximate length.*

District Response:

A map of the trail's location and conceptual drawings of the trail are provided as Attachment B.

Exhibit E

12. *The Forest Service and American Whitewater recommend, based on your proposed access trail down the face of Culmback dam, a boating assessment of segment 1 of the Sultan River*

bypassed reach. You propose to evaluate the boatability of segment 1 during the 3-year whitewater boating assessment.

The proposed trail down the face of Culmback dam is intended to predominantly serve as an access point for whitewater boating if flow releases are required. On page E- 338 of your license application, you state that the whitewater difficulty of segment 1 is rated as Class IV and Class V; however, American Whitewater contends that some portions of this segment may contain rapids that cannot be run and may lack portages. It is clear, that at best, this reach would likely be used by only the most skilled boaters, under the most favorable conditions.

So that we may evaluate the benefits and cost of your proposed access site, please provide the following information: (a) a discussion of the feasibility of boating and portaging in this section, and (b) a projected estimate of whitewater boating use levels in this section if the new trail is provided.

In addition, the available information suggests that the greatest amount of whitewater boating use is most likely to occur in and below segment 2. The U.S. Forest Service recommended that you construct and maintain an alternate trail access for whitewater boaters. So that we may evaluate the benefits and cost of alternatives to your proposed access site, please provide the following information: (a) a description of an alternative whitewater boating trail and access site that could be located between segment 1 and segment 2; (b) a map that clearly shows the site in relation to the project boundary; (c) the land ownership and site size (acres); (d) the potential improvements to the site necessary to provide access, and the associated costs; (e) documentation of consultation, including comments from the U.S. Forest Service, Washington Department of Fish and Wildlife, any affected miners, and American Whitewater on your response.

District Response:

Paragraph 3

3(a) Feasibility of boating and portaging

Per anecdotal information received from whitewater boaters, Segment 1 has been used in the past. The feasibility and necessity of portaging Segment 1 would be based on the boater's skill level which is assumed to be in the advanced category. Since an existing trail is already provided on National Forest System Land (NFSL) lands, this new trail would provide an opportunity for the more advanced boater. Additionally, this new trail would provide administrative access for Project staff to the bottom of the dam for inspections, maintenance and water quality data collection.

3(b) Estimated use

The amount that Segment 1 will get used is unknown. The technical report (RSP 14) indicated that use of the river is expected to be between 40 to 200 boaters per release event; a smaller number of boaters would use the new trail while the others would use the existing trail on the NFSL.

Paragraph 4

4(a) Alternative trail

There is an existing user-defined trail to the Sultan River on NFSL that provides access to the river between segment 1 and segment 2. This trail has been used by a mining claimant and by whitewater boaters for many years.

4(b) Map showing site in relation to Project boundary

See Attachment B.

4(c) Land ownership and site size

This trail is on NFSL. It is approximately 1.2 miles in total - 0.6 miles along the 6122 Road beginning at the boundary of District land and NFSL, and approximately 0.6 miles from the 6122 Road to the Sultan River. Assuming a 4-foot width along the 6122 road beginning at the boundary of District owned land and NFSL, and a 2-foot width from the 6122 road to the Sultan River it encompasses approximately 0.9 acres.

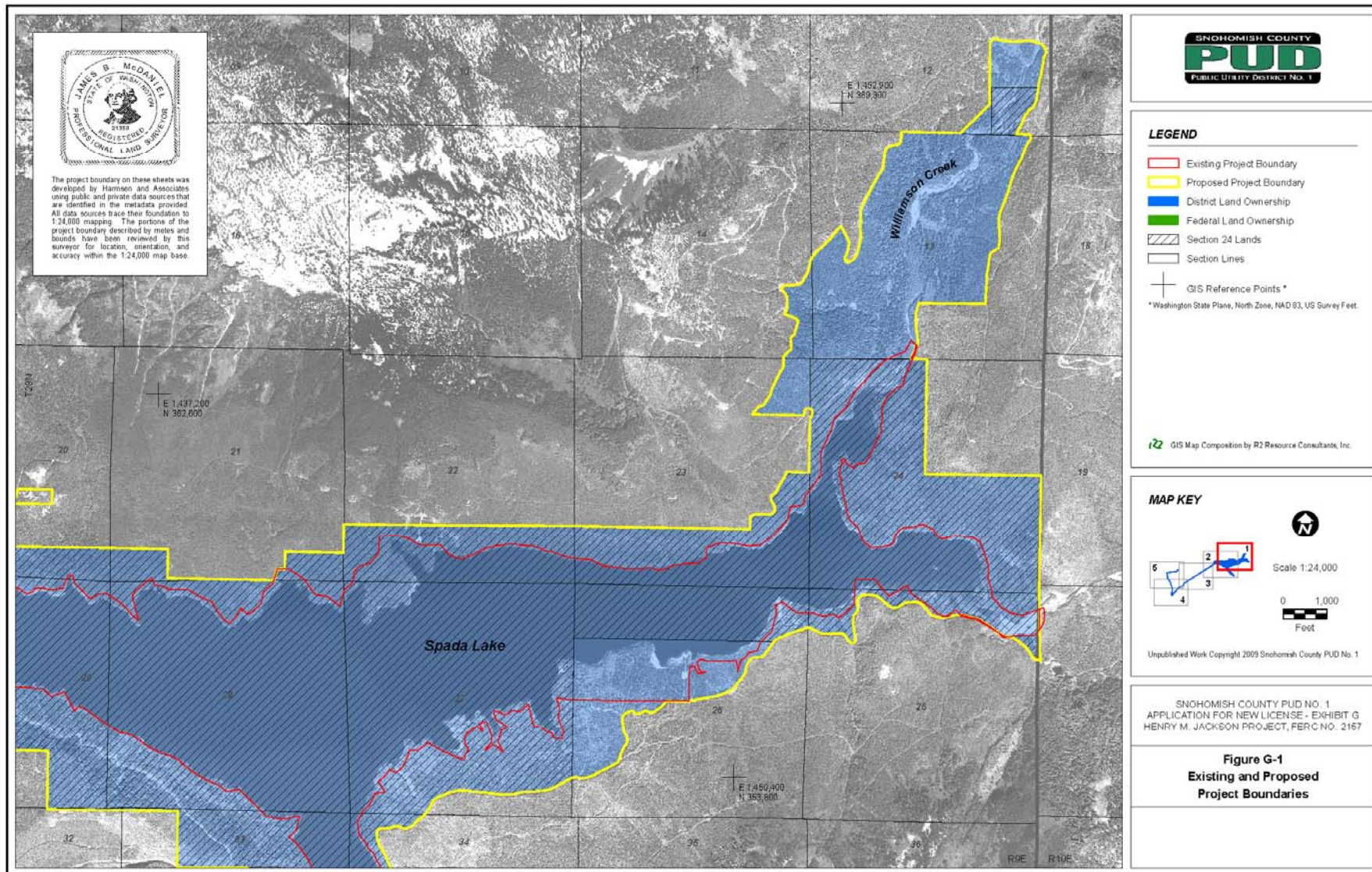
4(d) Site improvements

Improvements to the trail would include additional switchbacks and steps because of steep grades (including cliffs) and numerous seeps particularly on the last ¾ miles; and potential relocation of the last segment of the trail downstream to avoid the miner's claim site and ladder. Costs for the trail on NFSL were determined by the District to be approximately \$225,000 for construction and \$5,000 annually for maintenance; however, this trail was not included as a proposed measure in the FLA. This trail is located in occupied marbled murrelet habitat.

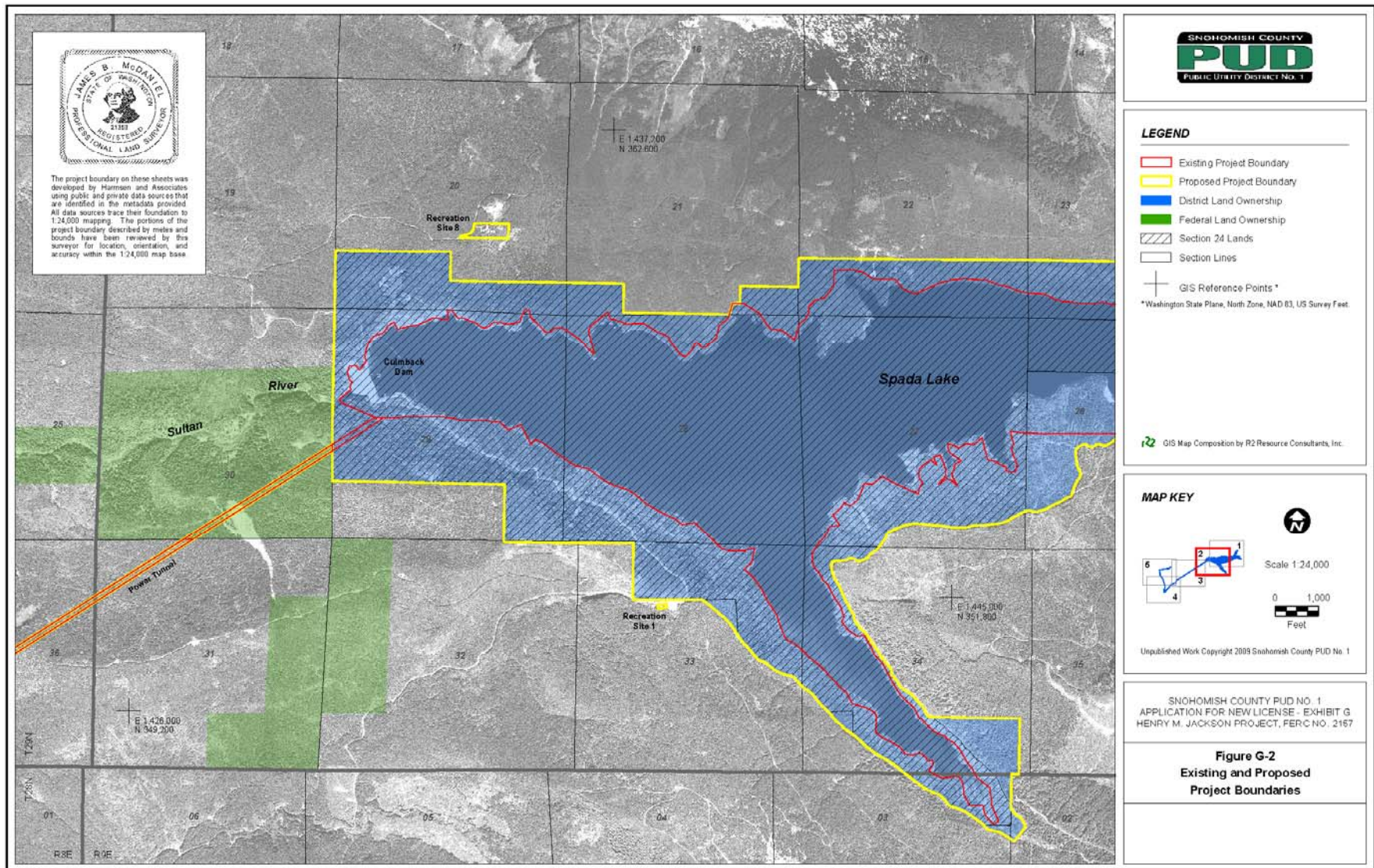
4(e) Documentation of consultation

Documentation of consultation is included in Appendix A of the Recreation Resource Management Plan which is located in Appendix H of the FLA.

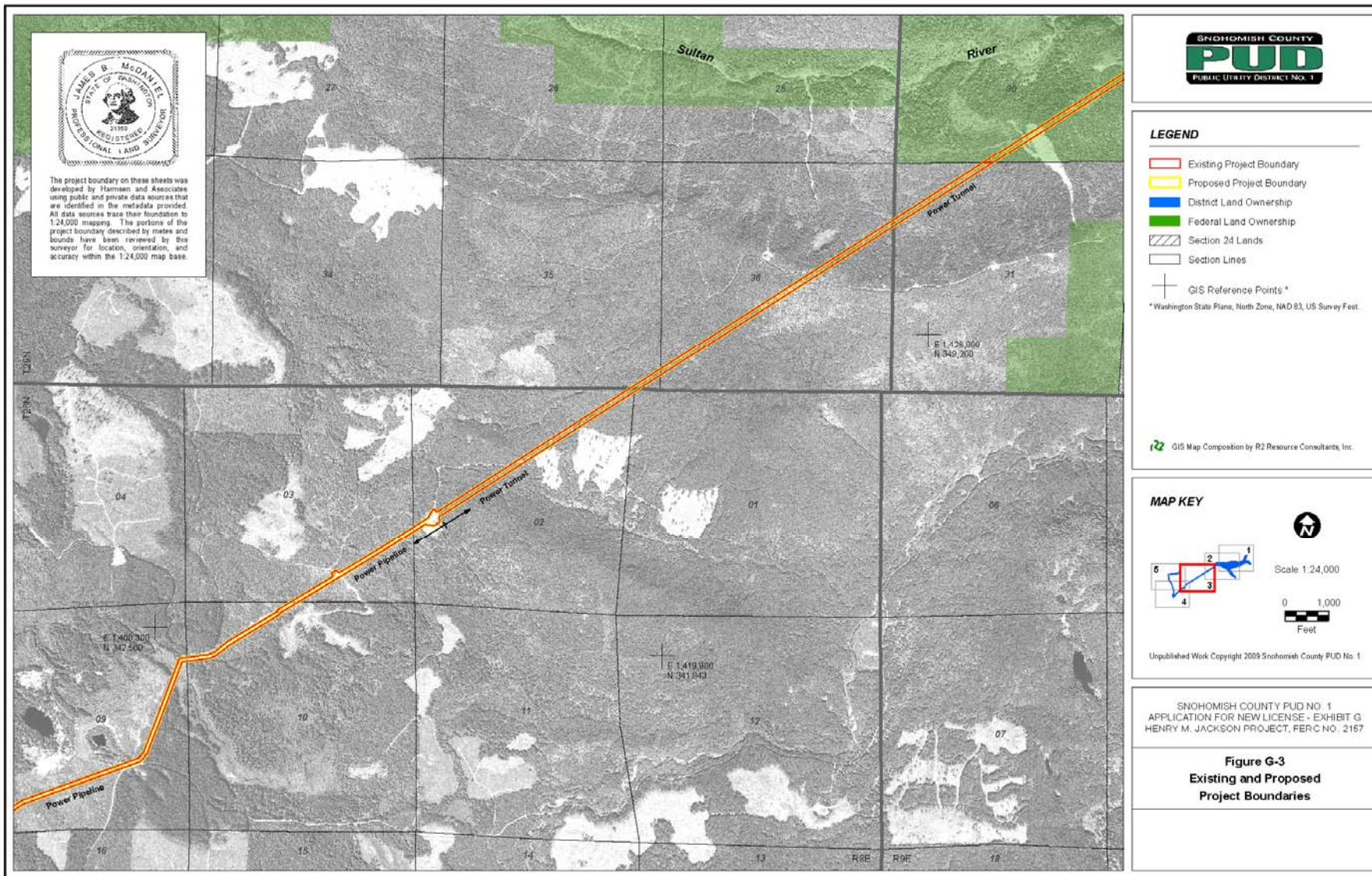
Attachment A



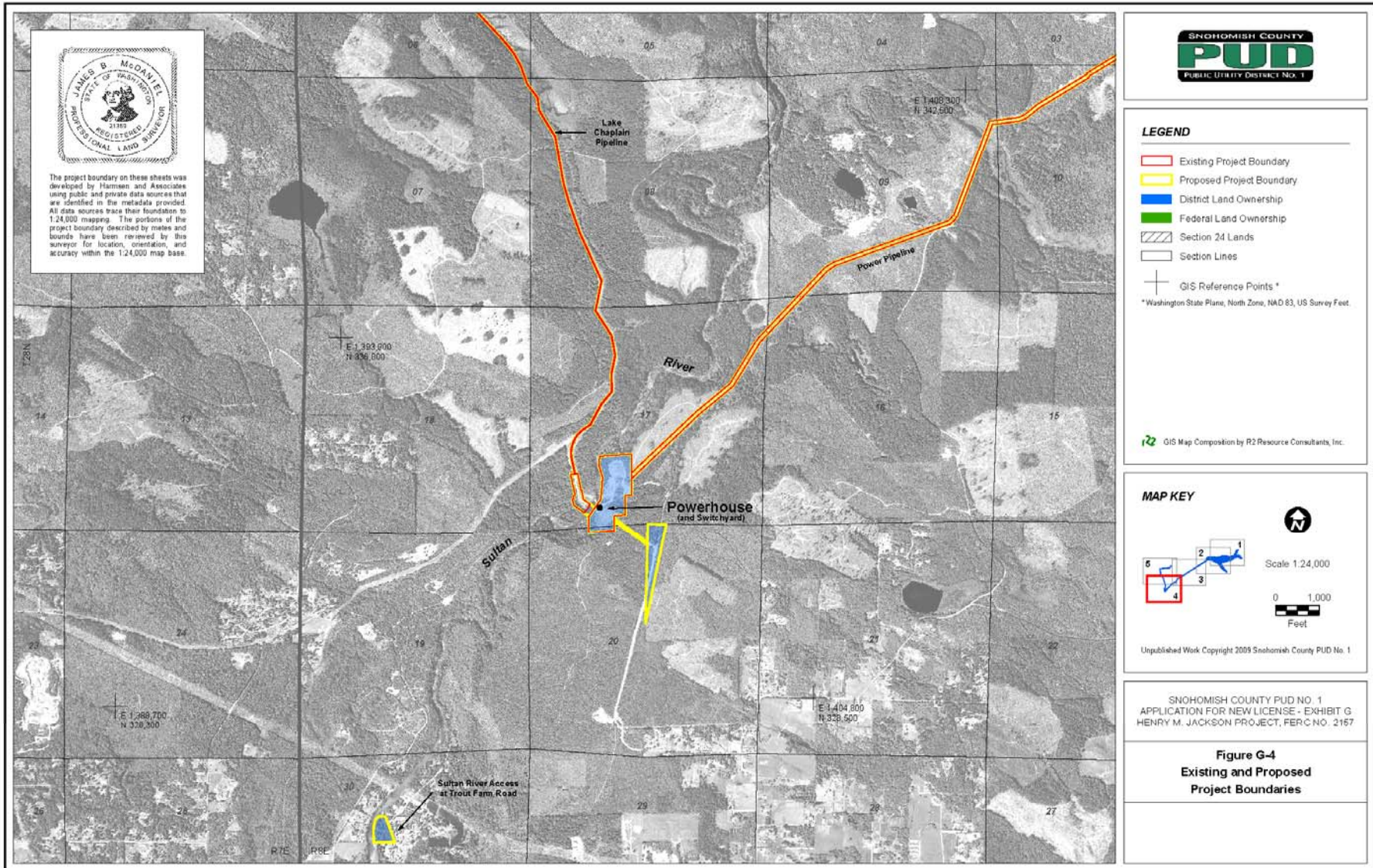
Attachment A



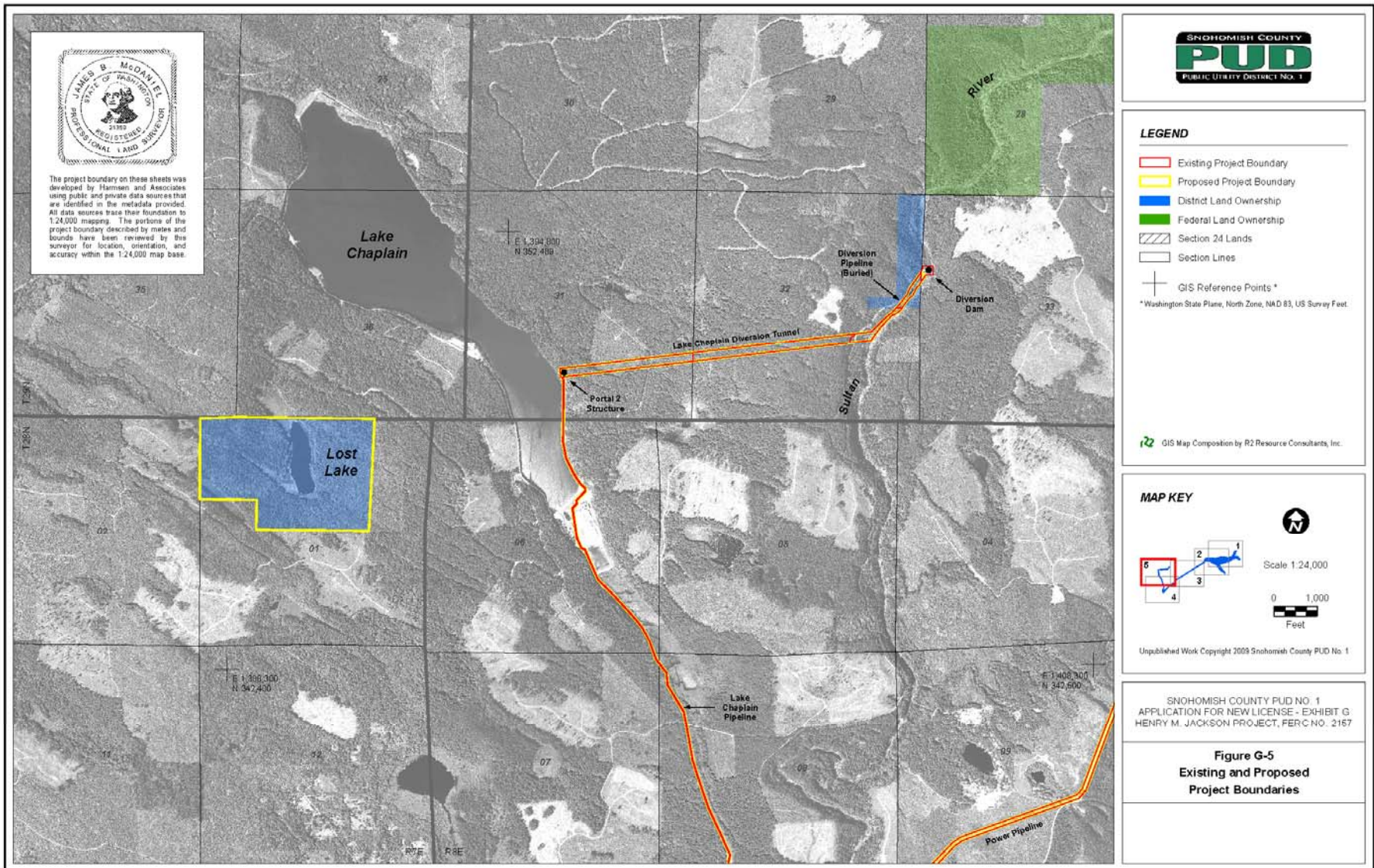
Attachment A



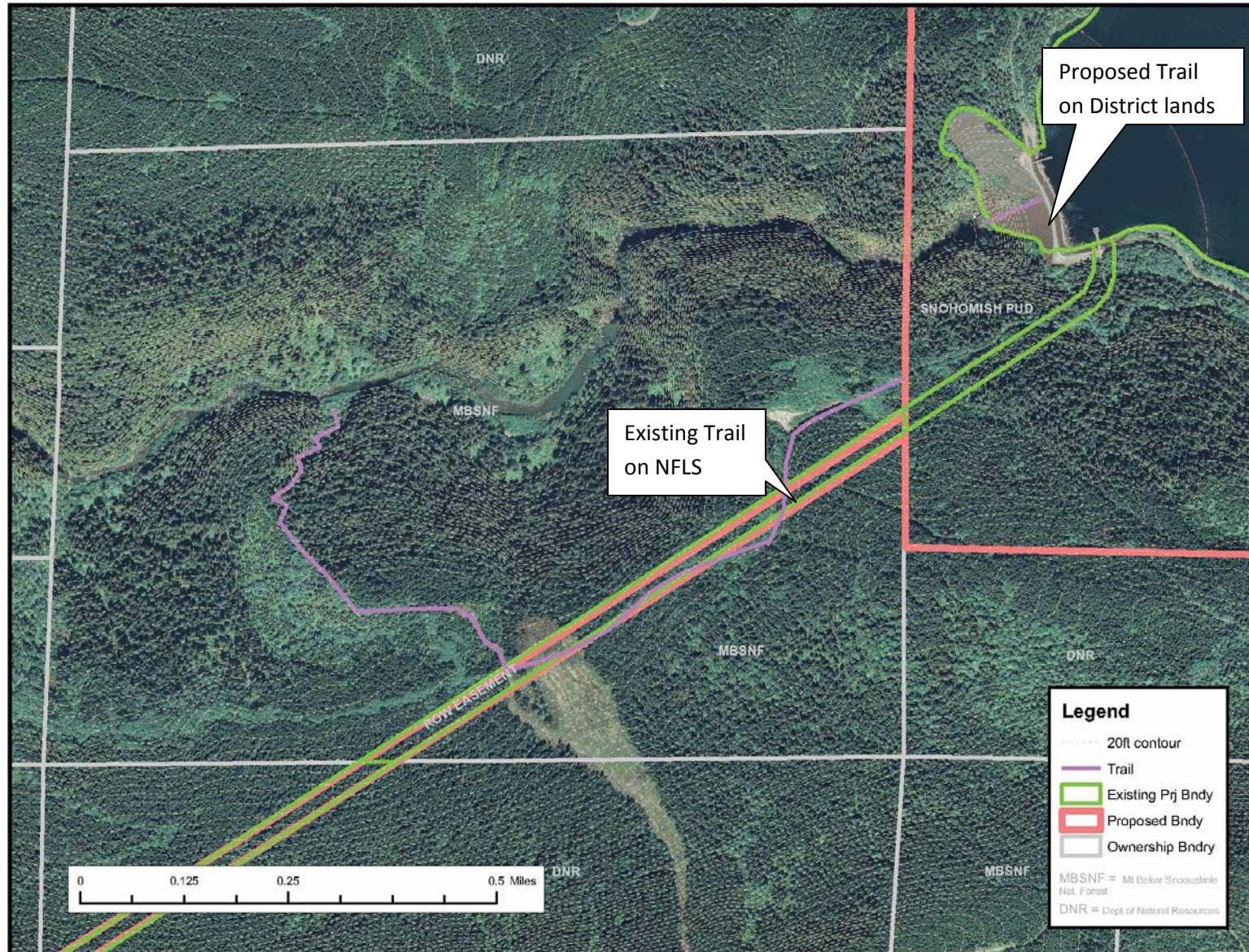
Attachment A



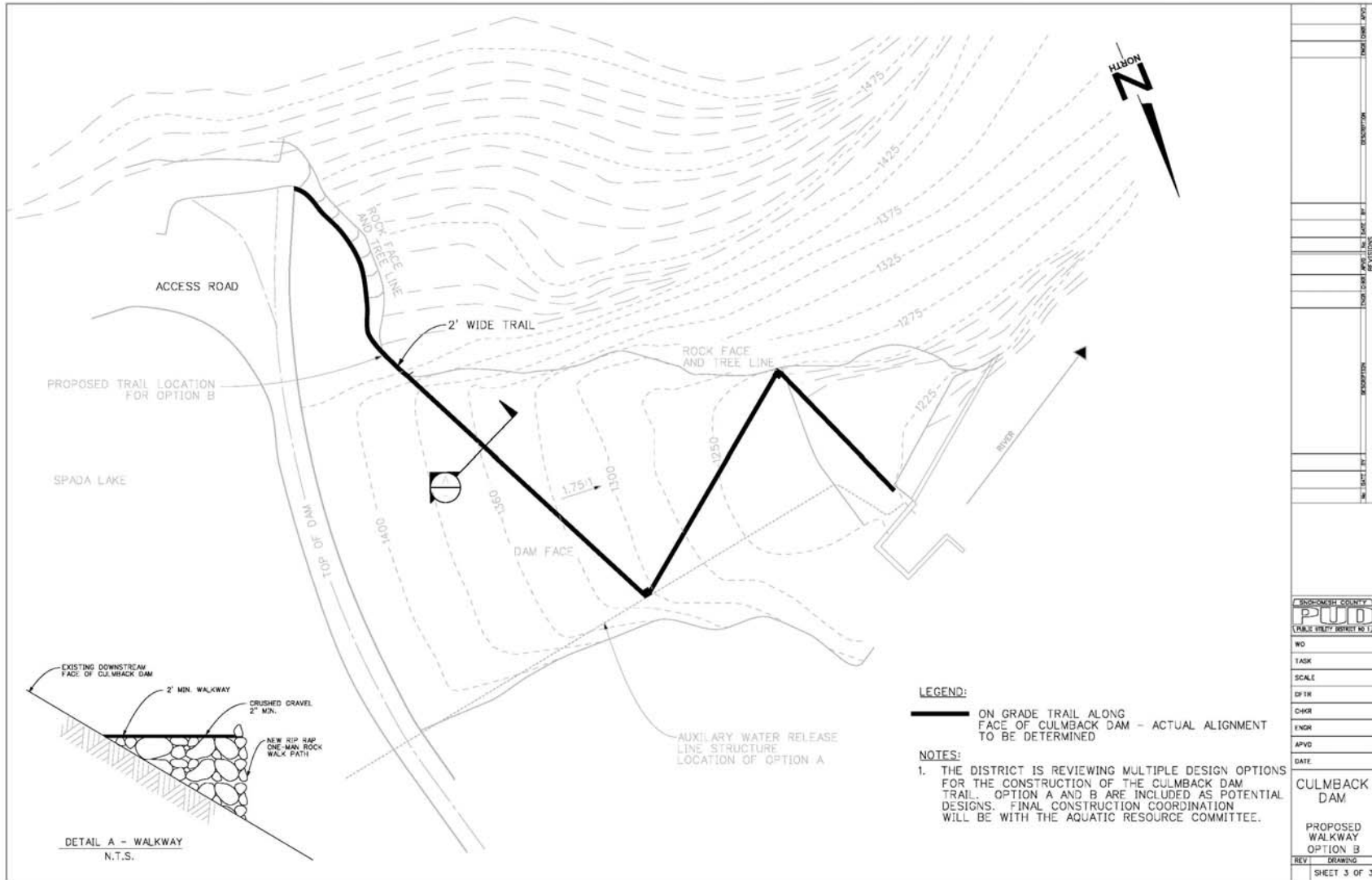
Attachment A



Attachment B



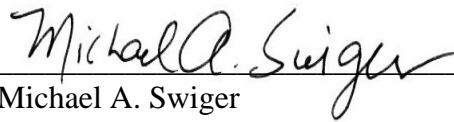
Attachment B



CERTIFICATE OF SERVICE

I hereby certify that I have this day caused the foregoing document to be served upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C., this 13th day of August 2009.

A handwritten signature in black ink that reads "Michael A. Swiger". The signature is written in a cursive style and is positioned above a horizontal line.

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