

Boundary Hydroelectric Project (FERC No. 2144)

***Study No. 22
Land and Roads Study
Final Report***

**Prepared for
Seattle City Light**

**Prepared by
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and
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TABLE OF CONTENTS

1 Introduction.....1

2 Study Objectives.....1

3 Study Area1

 3.1. Land 1

 3.2. Roads..... 1

4 Methods.....2

 4.1. Land 2

 4.1.1. Land Ownership Analysis..... 2

 4.1.2. FERC Boundary Analysis..... 2

 4.1.3. Mining Claim Analysis 3

 4.1.4. Private Shoreline Development Analysis 3

 4.2. Roads.....7

 4.2.1. Project Roadway Needs Analysis 8

 4.2.2. Project Roadway Condition Analysis 8

 4.2.3. Project Road Use Easement and Permit Analysis..... 9

5 Results9

 5.1. Land9

 5.1.1. Land Ownership Analysis..... 9

 5.1.2. FERC Boundary Analysis..... 35

 5.1.3. Mining Claim Analysis 38

 5.1.4. Private Shoreline Development Analysis 46

 5.2. Roads.....78

 5.2.1. Project Roadway Needs Analysis 78

 5.2.2. Project Roadway Condition Analysis 82

 5.2.3. Project Road Use Easement and Permit Analysis..... 87

6 Conclusions.....88

 6.1. Land88

 6.1.1. Land Ownership Analysis..... 88

 6.1.2. FERC Project Boundary 89

 6.1.3. Mining Claim Analysis 89

 6.1.4. Private Shoreline Development 89

 6.2. Roads.....90

7 Variances from FERC-Approved Study Plan and Proposed Modifications.....91

8 References.....91

Appendices

- Appendix 1. FERC Boundary Analysis Locational Data
- Appendix 2. Private Shoreline Development Analysis Data
- Appendix 3. Road Condition Reference Information

List of Tables

Table 5.1-1. Land ownership analysis data.....	21
Table 5.1-2. Project facilities and use areas.....	36
Table 5.1-3. Active unpatented mining claim information.....	43
Table 5.1-4. Summary of private shoreline parcel geographic distribution.	47
Table 5.1-5. Distribution of private shoreline parcels by acreage class.	50
Table 5.1-6. Distribution of private shoreline parcels by land use category.	50
Table 5.1-7. Summary of land capacity calculation results.	67
Table 5.1-8. Total assessed property valuation, Pend Oreille County, 1990-2005.	77
Table 5.2-1. Roads needed for Project-related purposes.	79
Table 5.2-2. Road conditions for Project-related roads.	83
Table 5.2-3. Status of easements, permits, and authorizations for Project-related roads.	87

List of Figures

Figure 5.1-1. Land ownership.....	11
Figure 5.1-2. Project facilities and use areas.	37
Figure 5.1-3. Active unpatented mining claims.....	40
Figure 5.1-4. Private shoreline parcels adjacent to Project boundary.....	48
Figure 5.1-5. Zoning designations for parcels included in the study.....	58
Figure 5.1-6. Shoreline environment designations.	70
Figure 5.1-7. Liquefaction hazard.....	73
Figure 5.1-8. Seismic hazard site classes.....	74
Figure 5.2-1. Project-related roads.....	81

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Study No. 22 – Land and Roads Study

Final Report

Boundary Hydroelectric Project (FERC No. 2144)

1 INTRODUCTION

Study No. 22, the Land and Roads Study (LRS), was conducted in support of the relicensing of the Boundary Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) No. 2144, as identified in the Revised Study Plan (RSP; SCL 2007) submitted by Seattle City Light (SCL) on February 14, 2007, and approved by the FERC in its Study Plan Determination letter dated March 15, 2007. This is the final report describing the methods, results, and conclusions of the LRS. Unless additional Project-related roads are identified through the Dispersed Use and Access study (a component of Study 21, the Recreation Resource Study), no additional work on the LRS is planned for 2008.

2 STUDY OBJECTIVES

The overall goal of the LRS was to gather additional information on Project-related lands and roads so that appropriate decision making may occur during relicensing to address potential Project effects. The objectives of the study were to develop and document current information on Project-related land ownership, rights, and encumbrances, and Project-related roadway ownership, rights-of-way, road use, and access needs within and adjacent to the FERC Project boundary. This information will be used as a basis for discussions on a variety of Project-related analyses and activities.

3 STUDY AREA

3.1. Land

The study area for the Land Analysis included all lands and waters within the FERC Project boundary, parcels immediately adjoining the FERC Project boundary, and all other lands needed to operate and maintain the Project.

3.2. Roads

The study area for the Roads Analysis included the area between the Pend Oreille River shoreline and the nearest State or County road or highway parallel to the river. On the east side of the Pend Oreille River, the study area extended to State Route (SR) 31 and Pend Oreille County (POC) Road 3669 from Box Canyon Dam to below Boundary Dam; on the west side of the river the study area extended to SR 31 and POC Road 2975 along the length of the Project, and to SCL's Machine Hall and maintenance area and the SCL Tailrace Recreation Area below Boundary Dam.

Note: Not all roads within the study area are addressed in detail in this study. The study area is the area *within which* roads were reviewed for potential Project-related impacts.

4 METHODS

4.1. Land

Four tasks were conducted for the lands portion of this study:

- Task 1: Land ownership analysis
- Task 2: FERC boundary analysis
- Task 3: Mining claim analysis
- Task 4: Private shoreline development analysis

The methodologies for each task are discussed in the following sections.

4.1.1. Land Ownership Analysis

Seattle Public Utilities (SPU) surveying and mapping staff were engaged to collect and digitize ownership data for lands within the study area. Information was obtained from SCL Real Estate Services, the Pend Oreille County Auditor's and Assessor's offices, and the U.S. Bureau of Land Management (BLM). In September 2005, SPU hired Pend Oreille Title Company in Newport, Washington, to collect relevant deeds and related Assessor's records for properties within the study area. From BLM, SPU obtained copies of master plat maps, mineral surveys, and patents for mineral and homestead lands within the study area. Based on the available surveys, deeds, and legal descriptions collected from the above sources, SPU digitized the parcel data for mapping (using an ESRI Geographic Information System [GIS] program) and created an associated Microsoft® Excel database with the following information for each parcel (where available): tax parcel number, fee owner, abbreviated legal description, and approximate acreage. Several iterations of the ownership map were presented to the U.S. Forest Service (USFS) and its feedback was incorporated.

4.1.2. FERC Boundary Analysis

An analysis of the FERC Project boundary was conducted as a means to compile all existing survey data relating to the limits of the current boundary. These data will serve as a baseline from which SCL will develop relevant exhibits for the delineation of a proposed Project boundary for the period of a new license. SPU surveying and mapping staff conducted this analysis utilizing the following source material:

- Washington State Public Land Survey Office records of survey, land corner records, and Section breakdowns;
- FERC Exhibit K maps (created in the 1960s for SCL by Ruskin Fisher and Co.);
- Pend Oreille County Auditor property records;
- Pend Oreille County Planning Records of Survey;

- Pend Oreille County Assessor tax parcel information; and
- BLM mineral survey and homestead patent records.

All available coordinate information for the Public Land Survey System (PLSS) was entered into a spreadsheet and the coordinates were uploaded into AutoCAD software. Points were connected, labeled, and checked to create the PLSS grid, which included all Section corners and Meander corners. The PLSS grid was used to constrain all of the property information. From the FERC Exhibit K maps, all coordinate and vector information for the Project boundary and Balanced Meanders were entered into spreadsheets and uploaded into AutoCAD. Finally, all the records of survey, property records, and tax parcel information were used to create the parcel geometry and associated ownership information for each parcel.

Most of the information in the source documents was created in the North American Datum of 1927 (NAD27) and had to be re-projected into the current datum, NAD83/91. The re-projection was performed using AutoCAD routines and checked using software provided by the U.S. Army Corps of Engineers (CORPSCON).

In addition to the foregoing FERC boundary analysis, SCL compiled a list of all Project facilities and use areas that are necessary for the continued operation and maintenance of the Project. An assessment was also conducted to determine if these sites are contained within the current FERC Project boundary.

4.1.3. Mining Claim Analysis

SPU requested from the BLM office in Portland, Oregon, a listing of all active unpatented mining claims within the study area in Townships 38, 39, and 40 N of Range 43 EWM to identify the claims that, in plan view, overlap the Project boundary. Based on the information provided by BLM, SPU digitized the active mining claims that are within the study area and created an associated Excel database with the following information (where available) for each claim that, in plan view, overlaps the Project boundary: abbreviated legal description, claim name, and claim holder. SPU also searched BLM's online records database for mineral surveys associated with active unpatented claims within the study area.

As noted in Section 4.1.1, BLM also provided documentation relating to patented mines, including associated mineral surveys. Because the issuance of a patent conveys the patented lands out of federal ownership and into private ownership, BLM does not characterize patented mining lands as either active or closed. The location and ownership of patented lands within the study area are therefore addressed in the land ownership analysis.

4.1.4. Private Shoreline Development Analysis

The purpose of this analysis was to investigate the development potential for parcels of private land directly adjacent to the FERC Project boundary. In the Licensing Application, SCL will utilize this information as it evaluates potential impacts to Project resources and considers how to address those impacts over the term of a new license (e.g., to determine if there is a need for a permitting system or shoreline management plan for the reservoir). The approach was to

determine the potential development capacity of these lands based on the parcel structure and applicable land use regulations, and to assess likely land capacities that might be realized by private landowners or developers in light of local development trends. This study task included inventory and analysis steps as the two basic components of the study.

4.1.4.1. *Inventory*

This task included the following three components: 1) developing base maps and data for the lands included in the study, 2) documenting applicable land use regulations, and 3) characterizing existing development conditions for the study area.

4.1.4.1.1. *Parcel Map and Database*

Utilizing the landownership data described in Section 4.1.1, Tetra Tech EC (TtEC) generated a base map by highlighting and selecting parcels identified as (a) privately owned and (b) adjacent to (directly touching) the Project boundary. From this subset of parcels, a parcel database was created specifically for use in this analysis.

The SPU parcel database includes locations and attributes for all individual lots that are immediately adjacent to the Project boundary. The subset of the parcel database used for the shoreline development analysis includes few parcels within the Town of Metaline Falls incorporation limits because there is a band of land in public ownership adjacent to the Project boundary within much of the town.

4.1.4.1.2. *Land Use Regulation*

Most of the land addressed in this study is located within unincorporated Pend Oreille County, while the remainder is within the incorporation limits of the towns of Metaline or Metaline Falls. Source documents for this part of the study are noted below for Pend Oreille County and the towns of Metaline and Metaline Falls.

Pend Oreille County

- Comprehensive plan;
- Development regulations;
- Zoning map;
- Shoreline management environment designation map; and
- Environmentally sensitive areas—National Wetland Inventory; frequently flooded areas (100-year floodplain) maps; geologic hazards (liquefaction susceptibility and seismic risk by soil site class); and, U.S. Geological Survey digital elevation models (slope classes).

Towns of Metaline and Metaline Falls

- Comprehensive plan and development code (separate documents for each jurisdiction).

TtEC GIS staff created map layers from these data sources and overlaid them with the private shoreline parcel map to identify land use regulations applicable to the respective parcels.

4.1.4.1.3. *Existing Development Conditions*

As a basis for understanding existing development conditions, the following documents were reviewed:

- Portions of the comprehensive plans for Pend Oreille County and the towns of Metaline and Metaline Falls that provide information on the numbers of people and households within the respective jurisdictions, based on data from the 2000 Census and the general population distribution within the county;
- Current population estimates from the Washington Office of Financial Management (WOFM) to assess the degree of population change since 2000; and
- Information from the Pend Oreille County Planning Division on building permit and lot creation activity to characterize recent development history within the local area.

4.1.4.2. *Analysis*

The first component of the analysis task was to determine the land development capacity of the parcels to accommodate future development, based primarily on the applicable land use regulations. The second component was to assess the potential land development capacity that could likely be realized based on consideration of local trends, current growth management policies, and anticipated land development market conditions.

4.1.4.2.1. *Land Capacity*

In this context, land development capacity means the potential capability of private land to be converted to an urbanized land use from a non-urbanized land use, and/or to a higher density land use compared to the existing use. Land development capacity is typically measured by the numbers of residential units or commercial space (in square feet) that could be developed on a given parcel of land. It is determined primarily by the applicable land use regulations and zoning, which prescribe the types of development that can occur in a given area, the permitted density for the new development, and development constraints that must be taken into account.

The key step in determining land development capacity for the parcels addressed in this study was to calculate the maximum number of potential lots that could be created on a specific parcel. This calculation was based on the size of the parcel and the current County or Town development regulations and zoning, applicable to subdivision of existing parcels of land. (Zoning and other regulations can be changed to permit a greater or lesser level of development in a specific area. Because there is no way to predict whether and how the local jurisdictions might change their land use regulations, this analysis was necessarily conducted as a static analysis based on existing land use regulations.)

The capacity of land to absorb future development is a function of both the number of lots that could potentially be created and the existing level of development on the subject parcels. Some of the parcels in the study area have already been developed for residential or other purposes, as indicated by reference to improvements in the Pend Oreille County Assessor records. Net land

capacity for future development was determined by subtracting the existing build-out (parcels with improvements) from the aggregate estimate of maximum future lots to reflect the potential number of undeveloped lots that could be available in the study area.

Land development capacity is influenced by a variety of regulatory factors other than zoning. The local jurisdictions in Pend Oreille County administer shoreline management programs and critical area (also termed environmentally sensitive area) regulations that can constrain the extent or intensity of development that might otherwise be permitted on a parcel based on zoning alone. TtEC investigated these types of regulation-based development constraints by examining the development regulations for Pend Oreille County and the two towns as they pertain to critical areas and shoreline management designations. TtEC created a series of separate GIS layers representing the distribution of shoreline management designations and several types of environmentally sensitive area features identified in the local codes.

In general, the effect of these types of development constraints is to restrict the amount and location of development on a parcel, rather than to preclude development on that parcel. For example, shoreline management regulations apply to the area within 200 feet of the ordinary high-water mark of the regulated water body, but do not govern uses on the landward portion of a property beyond the shoreline jurisdiction. Similarly, the existence of a regulated wetland on a parcel typically results in a wetland and buffer area that is left undisturbed, while development is confined to the non-wetland portion of the property. Consequently, determining with quantitative precision how shoreline and critical area regulatory factors would constrain potential development capacity would require a site-specific evaluation for each parcel. TtEC did not attempt to conduct a parcel-by-parcel analysis of these types of development constraints. Instead, TtEC mapped the distribution of development constraints within the study area, based on readily available spatial information, and entered information about the constraint features into the land capacity database. TtEC then performed a qualitative assessment of how the presence of these constraints might affect the land capacity calculation derived through analysis of parcel characteristics and zoning.

4.1.4.2.2. Development Potential

Once the land development capacity of the study area parcels had been identified, the focus for the analysis became the approximate level and general distribution of future shoreline development that might realistically be expected. The analysis sought to evaluate how much of the land capacity might actually be developed over a period of time, and where that development might likely occur. While this exercise is based primarily on land parcel characteristics and land use regulations, analysis of land development potential is subjective and is based on interpretation of variable real estate market conditions.

TtEC considered several types of information in conducting the land development potential analysis. This information included population projections and population growth allocations adopted by the respective local jurisdictions; recent trends in local building permit and lot creation activity; information about current land values and recent changes in values that might indicate potential future conditions; and observations and opinions from knowledgeable local sources about current and likely future real estate market conditions.

A key feature of local comprehensive planning in Washington under the Growth Management Act is the identification of projected population growth for a given geographic area (such as the County) and the allocation of growth “targets” to the respective jurisdictions within that area. The allocation of population growth targets among the unincorporated areas of Pend Oreille County and the incorporated communities in the County will influence actual future development relative to estimated land capacity. TtEC reviewed population projections and growth targets identified in the applicable comprehensive plans to address this aspect of the analysis.

Measures such as the number of new lots recorded with local governments (through various types of legal land subdivision procedures), the number of building permits issued by local governments, and requests for new utility hookups are typically used as indicators of the rate of development activity in a given area. While data for such measures are limited to historical activity, as opposed to objective forecasts of future development activity, recent historical trends are generally considered to be reasonably indicative of near-future conditions. Consequently, TtEC reviewed available data, primarily from Pend Oreille County, on lot creation, building permits, and utility hookups.

Real property values and patterns of change in those values are other common indicators used to forecast future development activity. Substantial and/or rapid increases in real estate values in a given area typically indicate a high level of demand and considerable transaction activity, whereas stagnant values and few transactions suggest a relative lack of demand or interest in the market. Although sales prices are the best measure of real estate values, accurate sales price data can be difficult to obtain or interpret, especially if the area of interest is small and/or the number of transactions represents a small sample size. Assessed values used by local governments for property tax purposes are commonly lower than actual market values, because the property reevaluation cycles lag behind market changes. Neither assessed value nor actual sales price data could be obtained on a comprehensive basis for the specific parcels addressed in the analysis. As a result, TtEC reviewed a variety of available land value data discussed below for use in the development potential analysis for this study.

To develop additional perspective, TtEC contacted sources familiar with real estate market conditions in the local area. These sources included Pend Oreille County Planning Department staff and private-sector real estate professionals active in Pend Oreille County. TtEC identified two realtors who were generally considered to be the best sources for information on real estate conditions in northern Pend Oreille County. TtEC followed up with each realtor to conduct a detailed interview about general market conditions in the county; differences between the southern and northern areas of the county; conditions specific to shoreline/waterfront property; recent transaction and development activity history; recent and expected future trends; and knowledge of specific proposed, planned, or potential shoreline developments.

4.2. Roads

Three tasks were conducted for the roads portion of this study; the methodologies for each task are described below.

4.2.1. Project Roadway Needs Analysis

Boundary Project staff reviewed their use of Project area roads for known Project operations and maintenance functions. For each road that is used for Project purposes, they reported road number or name; location; purpose of road use; frequency of use; and type(s) of vehicles used. Upon completion of this task, roads determined to be needed for Project purposes were mapped (if not previously mapped) and then reviewed to determine land ownership and to assess whether the roads are contained within the current FERC Project boundary.

4.2.2. Project Roadway Condition Analysis

For the Roadway Condition Analysis, TtEC contacted entities with responsibility for operating and maintaining roads in the vicinity of the study area to obtain baseline and background information concerning their respective segments of the road system, or for more general information related to transportation in the area. These entities included the following:

- SCL – Boundary Project
- USFS – Colville National Forest
- BLM – Spokane District
- Washington State Department of Transportation
- Pend Oreille County Department of Public Works

The types of information provided by the contacts included maps of road locations, observations about current physical conditions of the roadways, available documentation of road development and maintenance history, and material defining road management classifications and objectives for the respective entities. Pend Oreille County and the USFS, the key agencies (other than SCL) with responsibility for maintaining roads within the study area, have developed systems of management objectives and have assigned specific objectives to each road segment under their jurisdiction. The management objectives define the intended purpose and general use level of each road segment and the physical roadway conditions that the management agency seeks to maintain in order to meet the assigned purpose. Documentation related to USFS road management objectives is provided in Appendix 3.

Using this information for reference, a TtEC registered professional engineer conducted a field reconnaissance of the subject roads in late April 2007. The field visit primarily involved travel by vehicle on the roads of interest, with travel on foot in limited instances. The key purpose of the field reconnaissance was to note the actual roadway conditions observed on the ground and compare them to the assigned management objectives for the respective road segments, as defined in the management-related records supplied by the respective agencies. USFS descriptions of the desired maintenance levels for specific roads were used as the primary benchmarks for assessing existing roadway conditions. The observations recorded for each road segment are summarized in Section 5.2.2.

The field reconnaissance also included observation of locations where soil erosion and/or mass wasting from the road prism was occurring, and where corresponding sedimentation impacts to water resources might be possible. Those general observations were recorded by road milepost.

A subsequent, more detailed investigation of erosion and mass wasting conditions was conducted through Study 1, the Erosion Study. TtEC staff responsible for the roadway condition analysis coordinated with Watershed GeoDynamics staff responsible for the erosion analysis concerning the types of features to be recorded in the field and the forms to be used to record the information. TtEC provided separate forms for documenting road conditions and operational information, culvert locations and conditions, and mass movement sites. Watershed GeoDynamics staff conducted the field investigation for erosion in early September 2007. Detailed technical information related to observed erosion and mass wasting conditions observed along Project-related roads is provided in Section 5.3 of the Study 1 Interim Report (SCL 2008).

4.2.3. Project Road Use Easement and Permit Analysis

Once the Project Roadway Needs Analysis was completed and roads needed for Project purposes were identified, SPU reviewed the real estate records collected as part of the Land Ownership Analysis and other available records (e.g., USFS Special Use Permits) to identify relevant easements, permits or other use authorizations for the needed Project roads. These use authorizations were summarized in a table and evaluated to determine whether the current authorizations are adequate to support identified Project needs.

5 RESULTS

5.1. Land

5.1.1. Land Ownership Analysis

Figure 5.1-1 and Table 5.1-1 provide the results of the land ownership analysis and are based on review of available records as described in Section 4.1.1. Ownership of lands outside the study area is mapped for the reader's convenience based upon readily available public information; SCL did not conduct the detailed ownership analysis described in Section 4.1.1 for lands outside of the study area.

The ownership interest reflected in the map and table is fee ownership of the land surface. Easements or other non-fee interests are not presented. Similarly, mineral rights or other interests relating to lands beneath the surface that have been severed from the fee interest in the surface are not presented.

The delineation shown in Figure 5.1-1 between lands owned by the state and lands owned by the federal government is based on the existing FERC Exhibit K maps. These maps depict the pre-Project line of ordinary high water. North of Metaline Falls, this line is based on the margins of the river for a flow of 78,700 cubic feet per second (cfs) from aerial photographs. South of Metaline Falls, this line is based on the line of ordinary high water as observed in 1967.

The Polygon Identification (PID) numbers are provided to assist the reader in correlating the polygons outlined on Figure 5.1-1 with corresponding ownership data in Table 5.1-1. When available, tax parcel numbers (Assessor No.) are provided in Table 5.1-1. In some cases, Assessor's tax parcels had to be divided into two or more PIDs for mapping purposes. Within each section, Table 5.1-1 is sorted by Assessor's parcel numbers so that all PIDs associated with

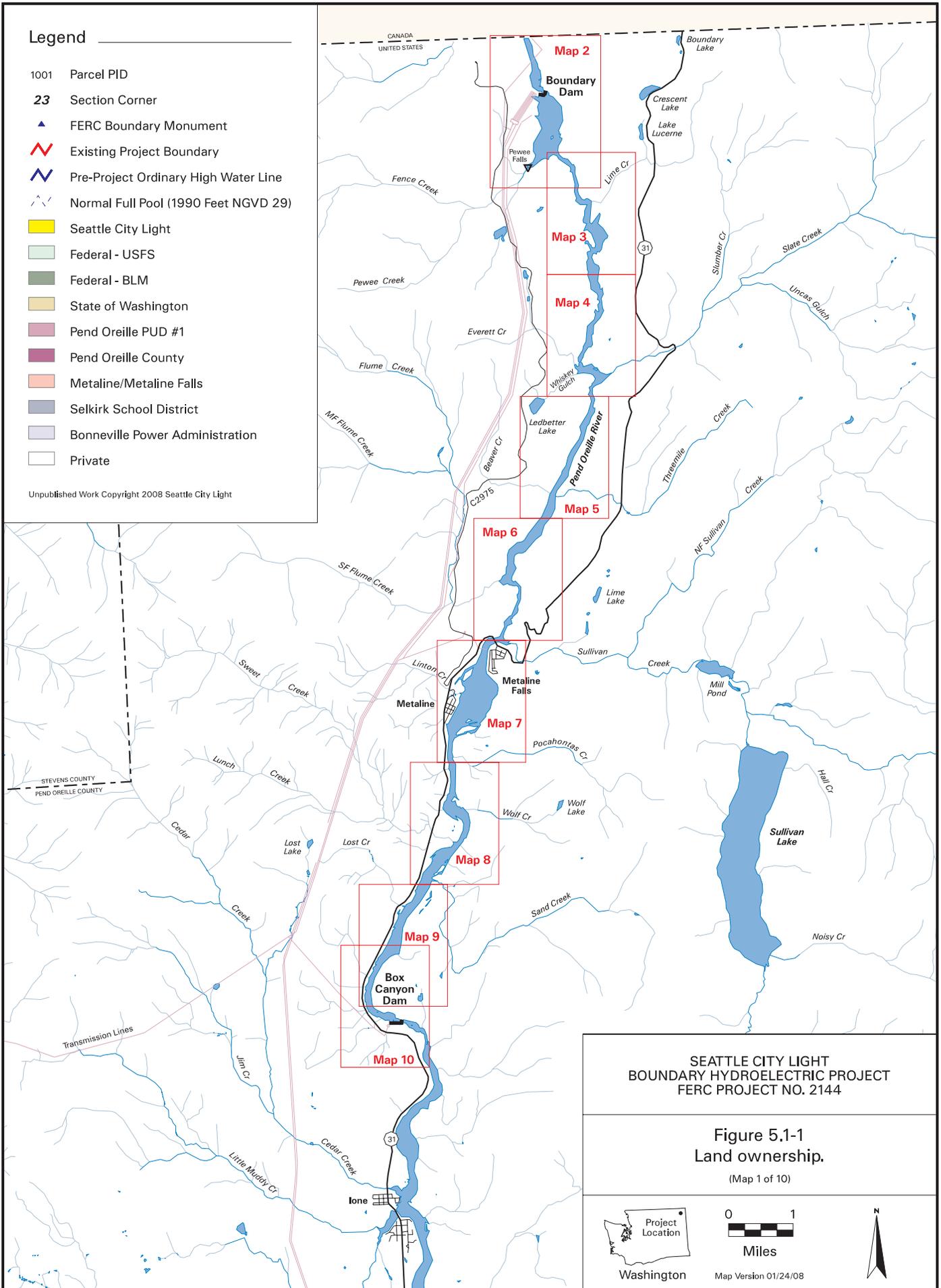
a particular Assessor's parcel are gathered together in the table. The remaining parcels in each section (i.e., those lacking Assessor tax parcel numbers) are listed numerically, by PID.

Table 5.1-1 provides abbreviated legal descriptions for all PIDs that refer to PLSS identifiers (i.e., Township, Range, Section and Government Lot or Aliquot description, also known as quarter-quarter calls) or to recorded plats. The abbreviated legal descriptions for many PIDs also refer to the Project boundary (i.e., portion of Government Lot X outside of the Project boundary) because many conveyances were delineated by reference to the Project boundary. Where available, the abbreviated legal descriptions provide reference to the Auditor's File Numbers (AFN) of recorded documents that provide more complete legal descriptions for PIDs. Table 5.1-1 also provides approximate acreage for all PIDs, calculated using GIS.

Legend

- 1001 Parcel PID
- 23 Section Corner
- ▲ FERC Boundary Monument
- ⚡ Existing Project Boundary
- ⚡ Pre-Project Ordinary High Water Line
- ⚡ Normal Full Pool (1990 Feet NGVD 29)
- Seattle City Light
- Federal - USFS
- Federal - BLM
- State of Washington
- Pend Oreille PUD #1
- Pend Oreille County
- Metaline/Metaline Falls
- Selkirk School District
- Bonneville Power Administration
- Private

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BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144

Figure 5.1-1
Land ownership.
(Map 1 of 10)



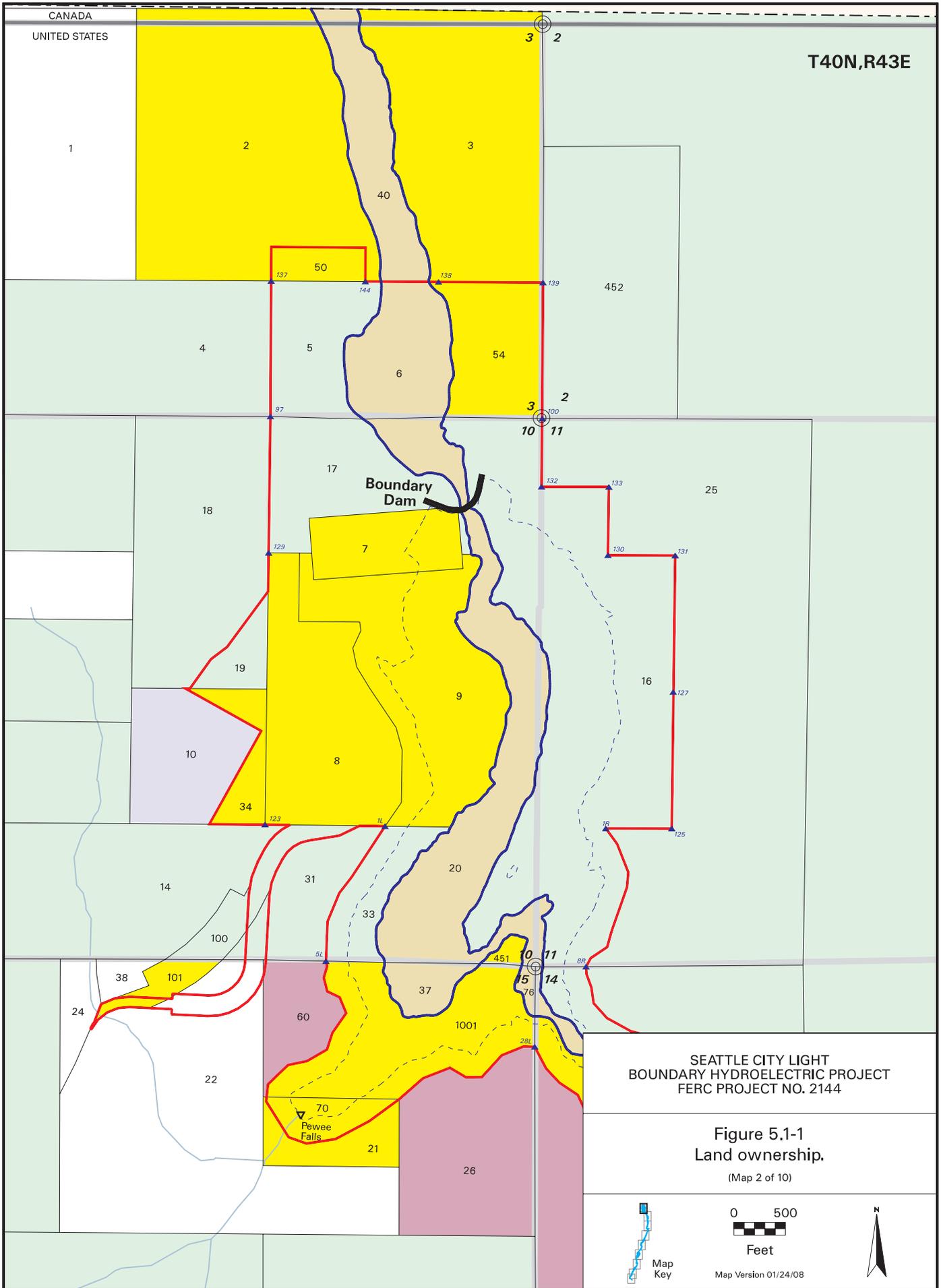
Washington



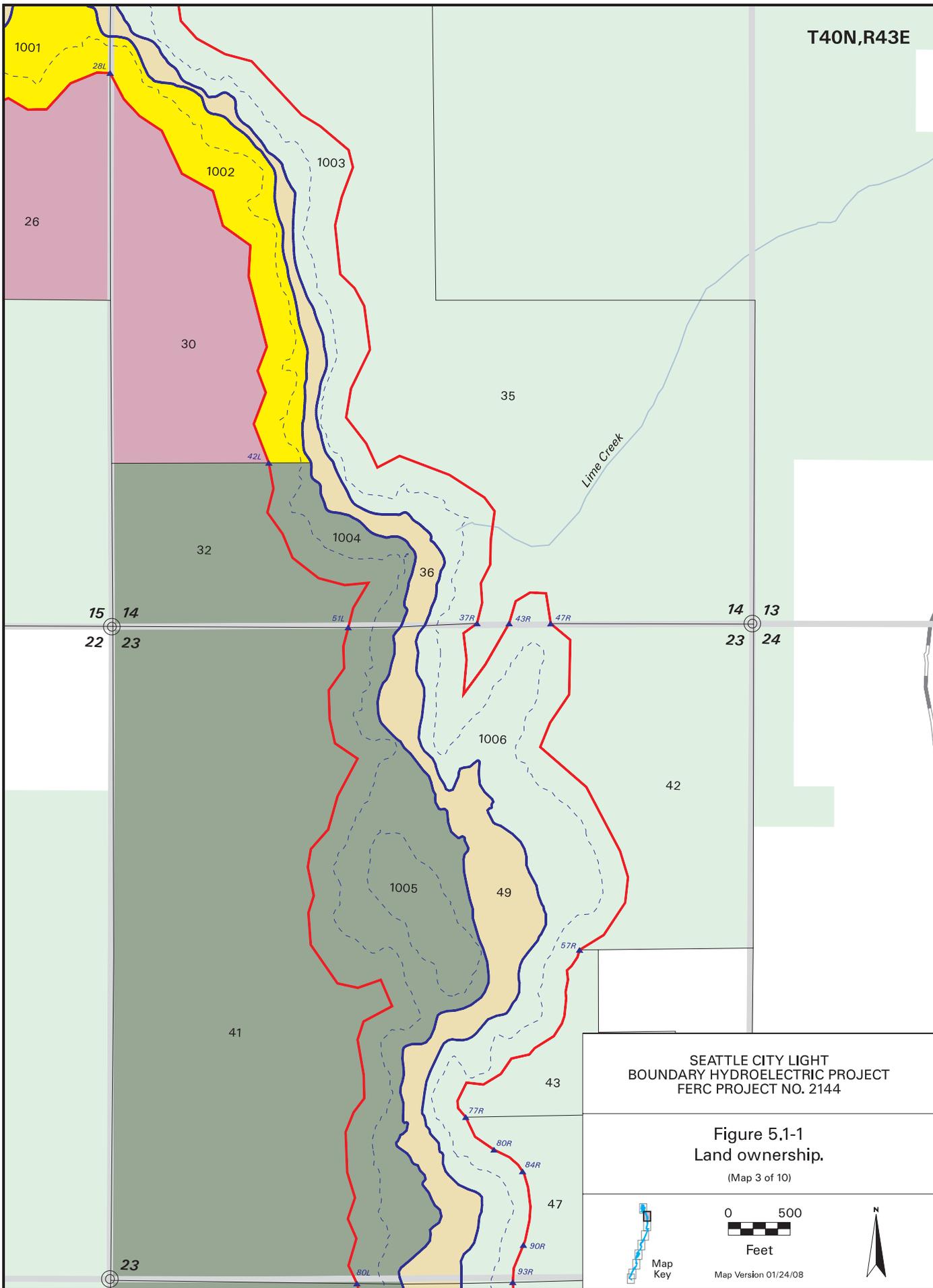
Miles



Map Version 01/24/08



T40N,R43E



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BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144

Figure 5.1-1
Land ownership.

(Map 3 of 10)



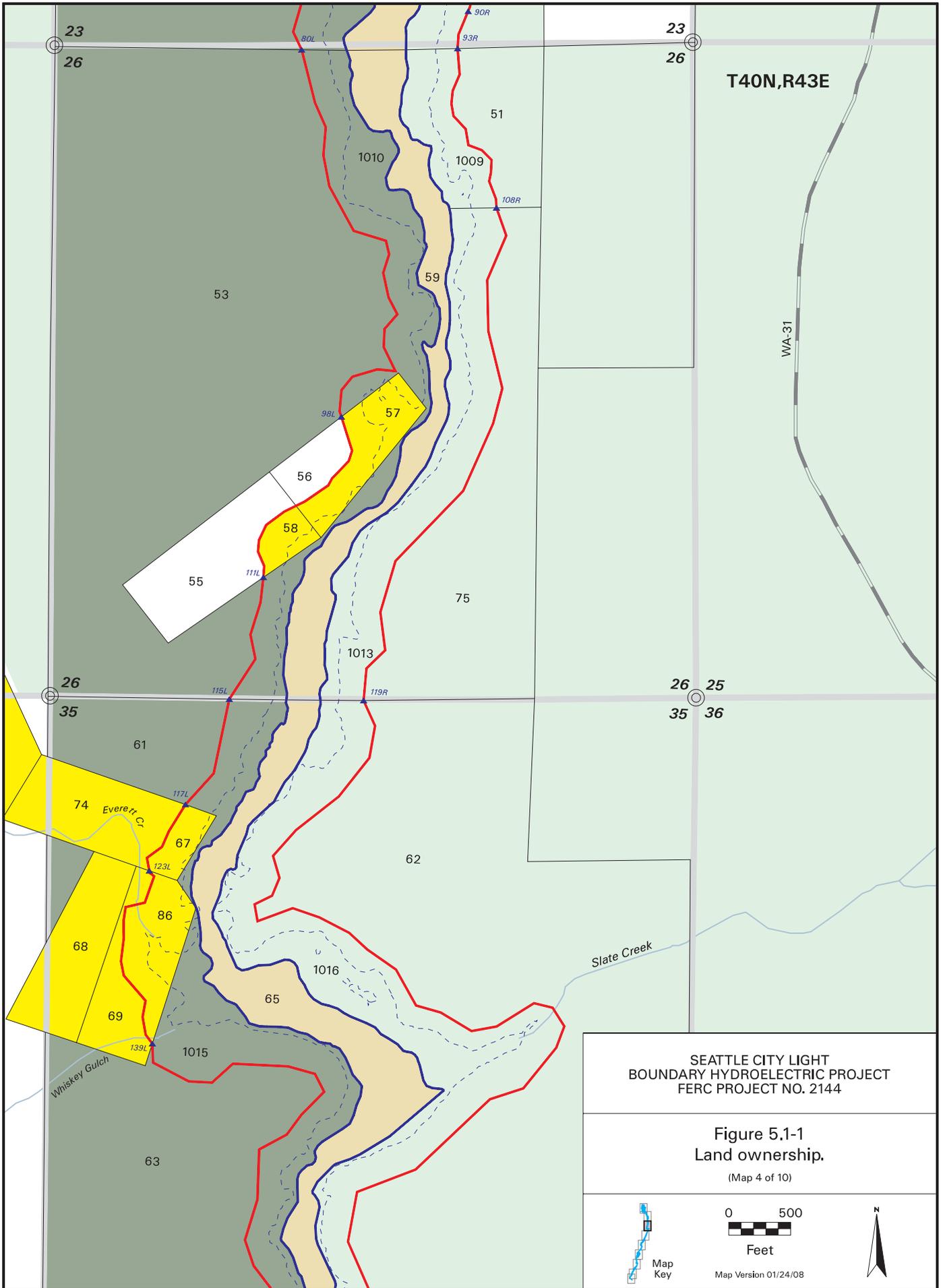
Map Key



Feet

Map Version 01/24/08





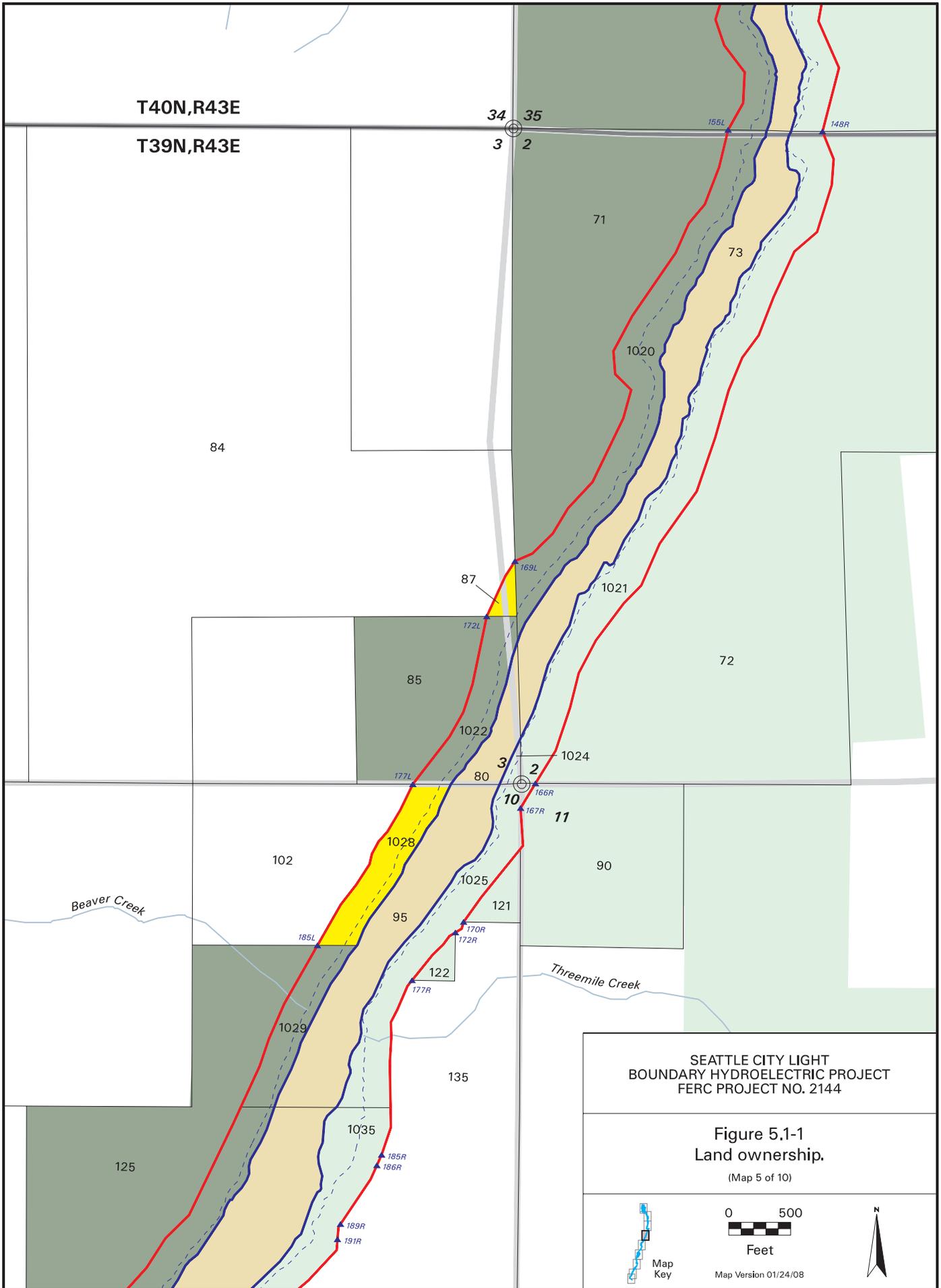
SEATTLE CITY LIGHT
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 FERC PROJECT NO. 2144

Figure 5.1-1
 Land ownership.
 (Map 4 of 10)

Map Key

0 500
 Feet

Map Version 01/24/08



T40N,R43E

T39N,R43E

34 35

3 2

155L

148R

71

73

1020

84

87

169L

1021

172L

72

85

1022

1024

177L

3

2

10

11

166R

167R

90

102

1028

1025

Beaver Creek

185L

95

121

Threemile Creek

135

170R

172R

177R

122

125

1035

185R

186R

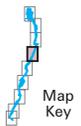
189R

191R

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FERC PROJECT NO. 2144

Figure 5.1-1
Land ownership.

(Map 5 of 10)



Map Key

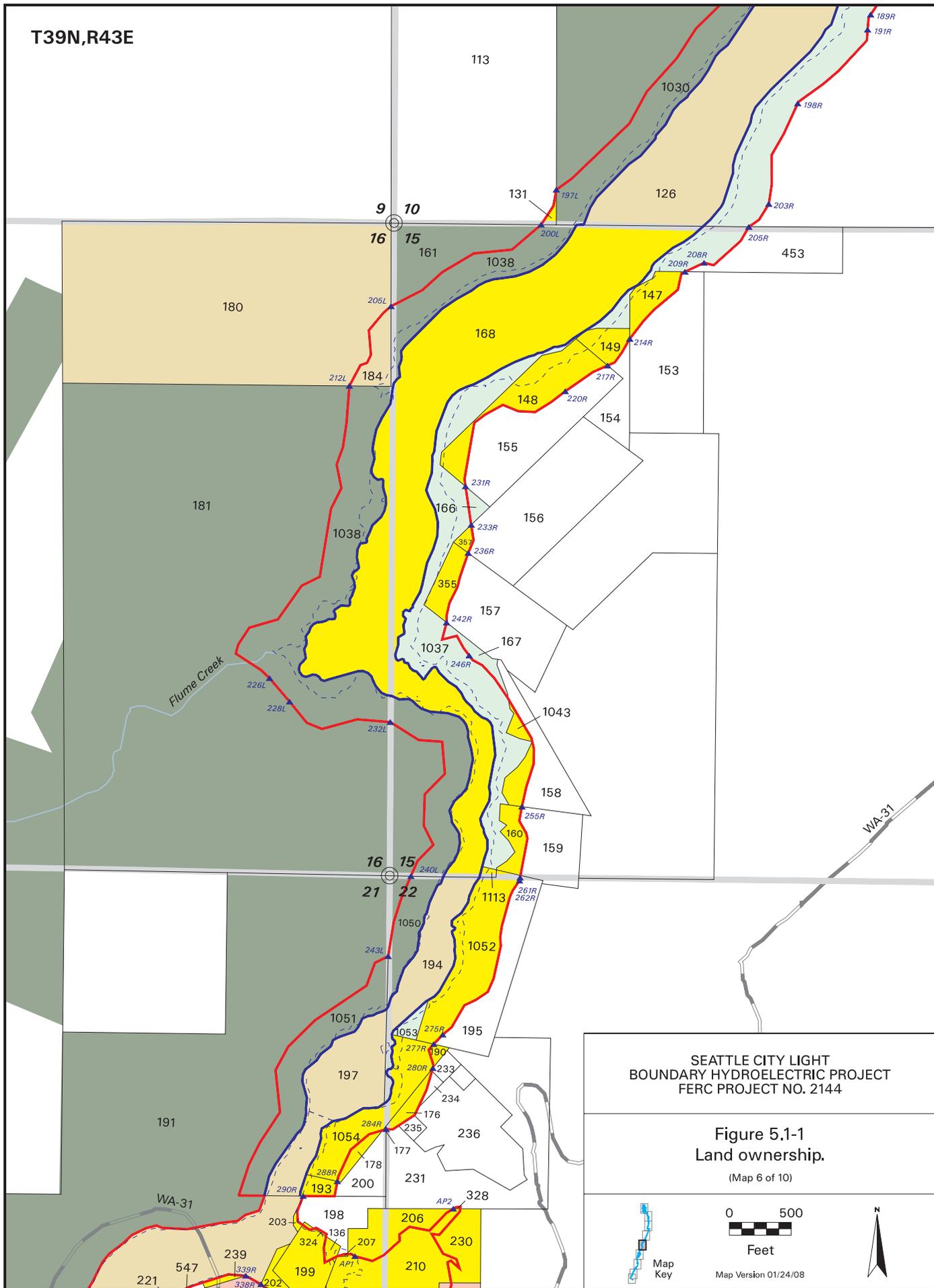


Feet

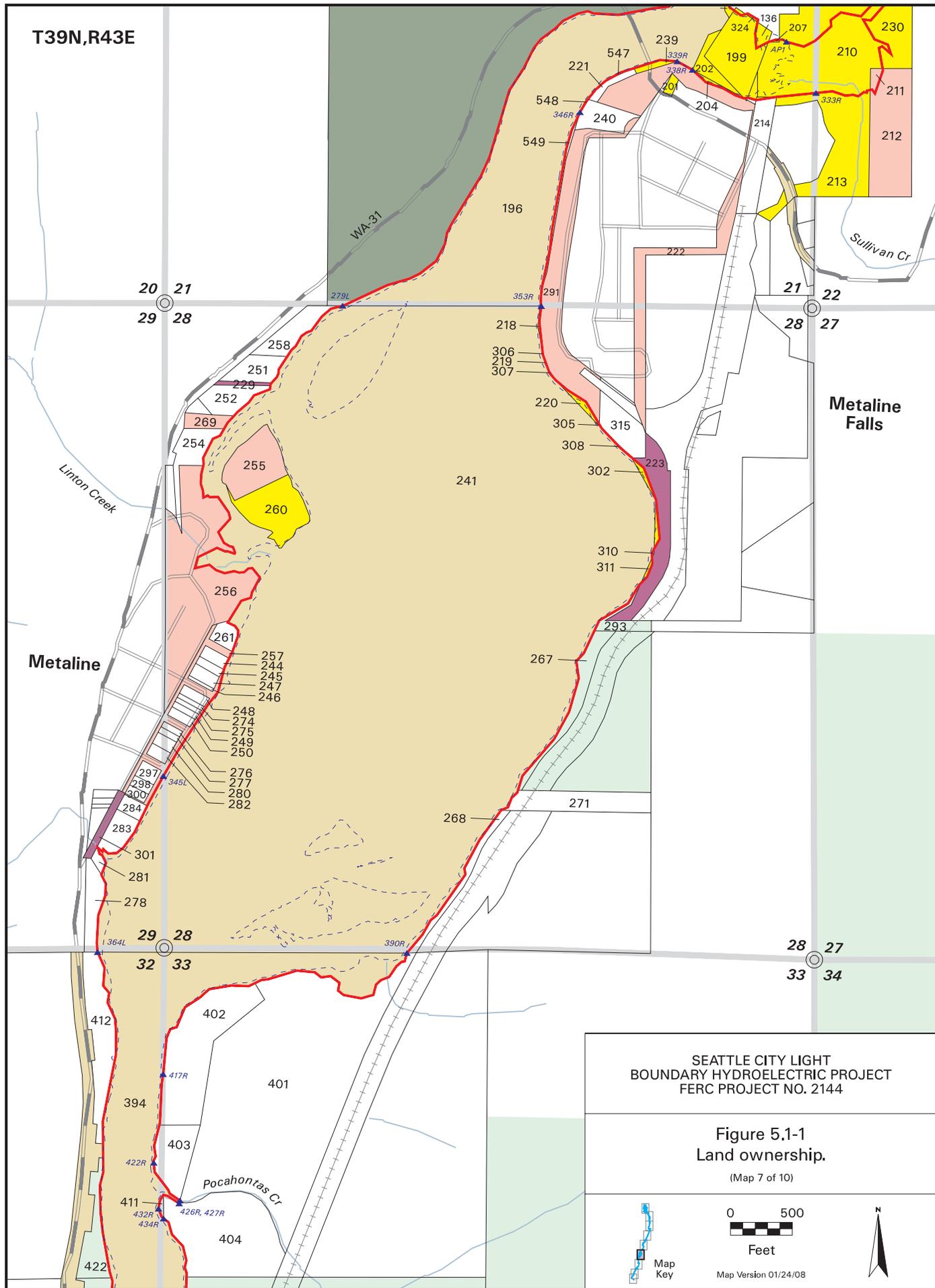
Map Version 01/24/08



T39N,R43E



T39N,R43E



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Figure 5.1-1
Land ownership.

(Map 7 of 10)



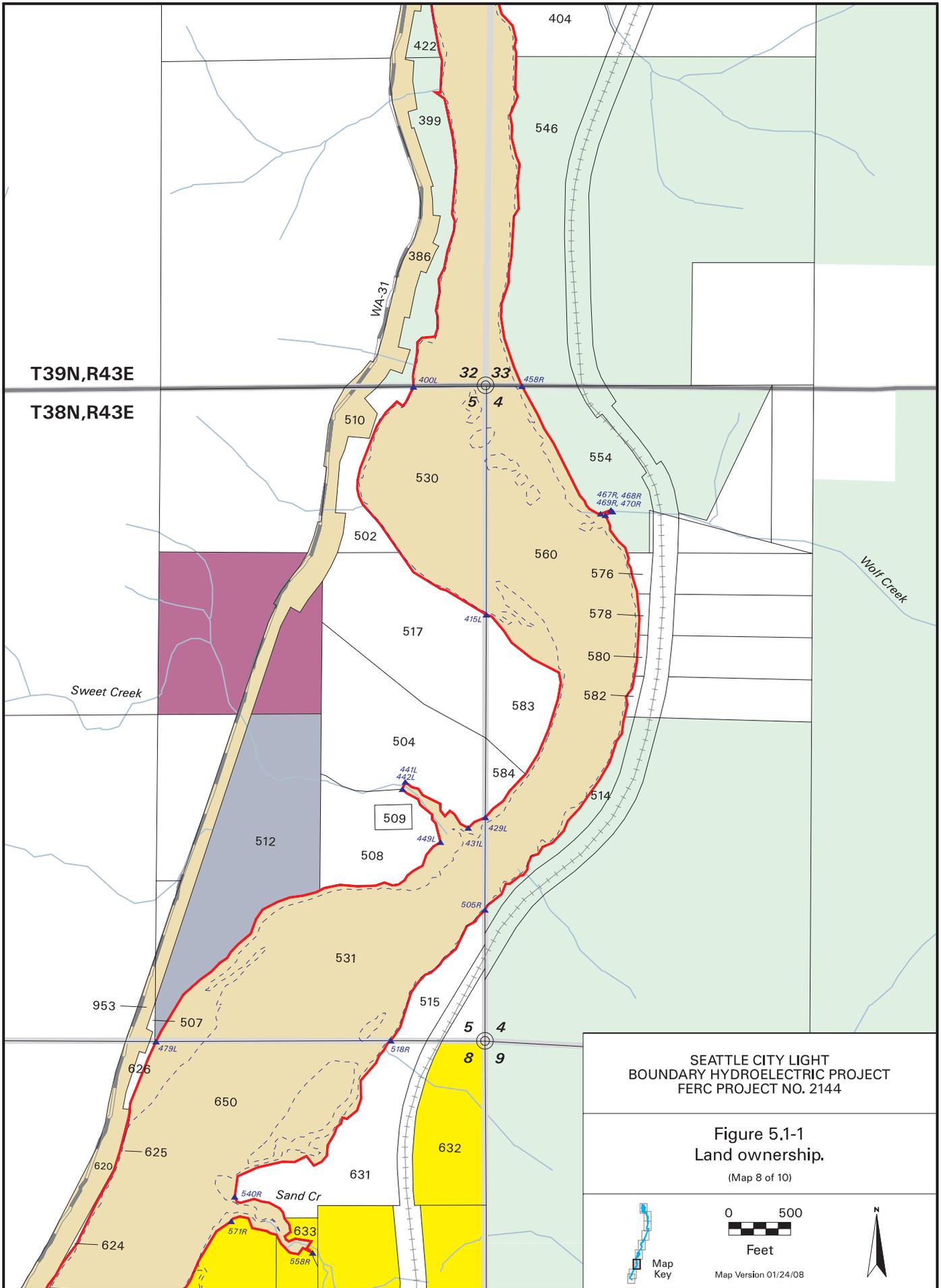
Map Key



Feet

Map Version 01/24/08





T39N,R43E

T38N,R43E

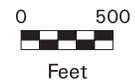
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 FERC PROJECT NO. 2144

Figure 5.1-1
 Land ownership.

(Map 8 of 10)



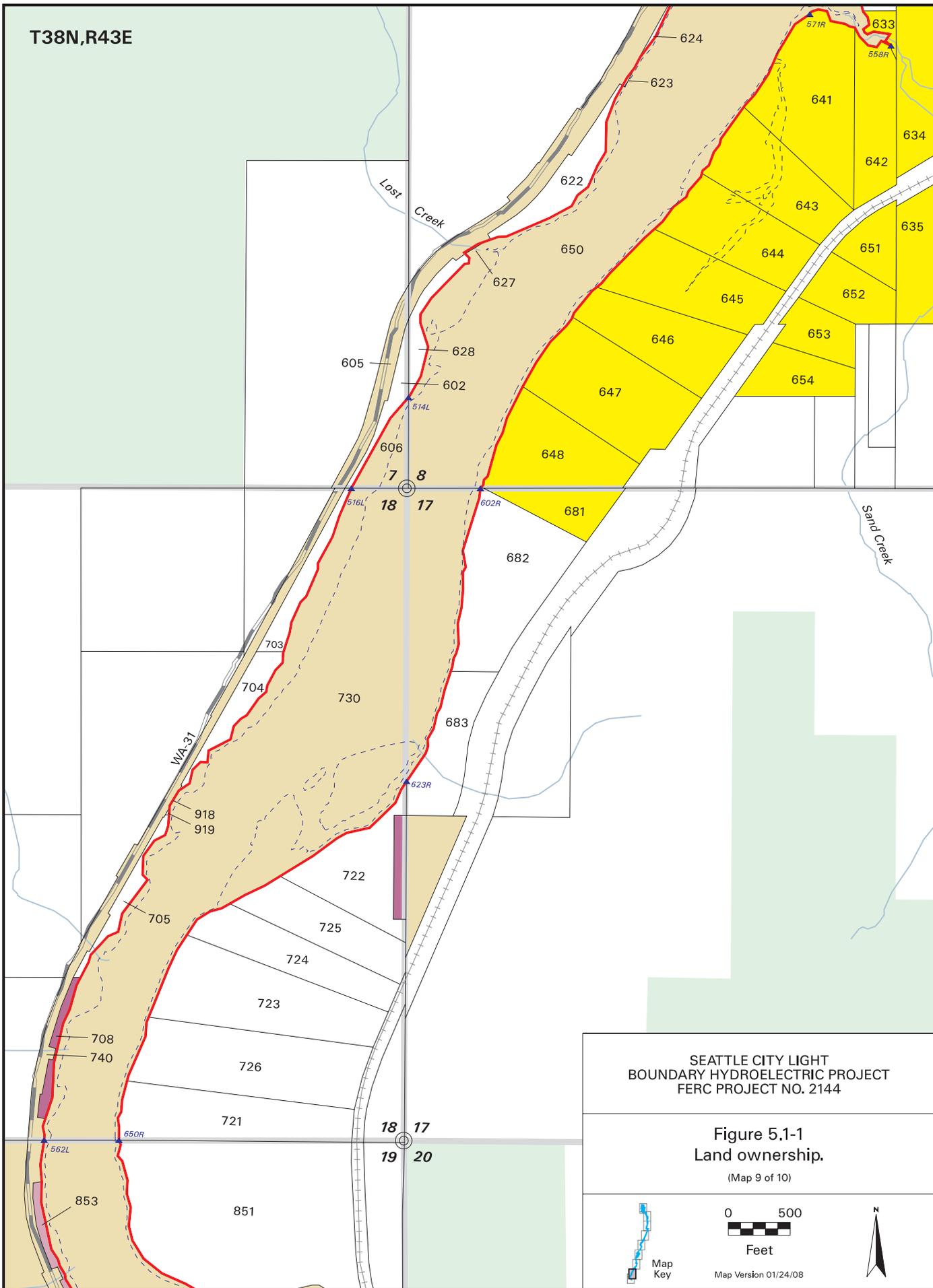
Map Key



Map Version 01/24/08



T38N,R43E



SEATTLE CITY LIGHT
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Figure 5.1-1
Land ownership.

(Map 9 of 10)



Map Key



Feet



Map Version 01/24/08

T38N,R43E

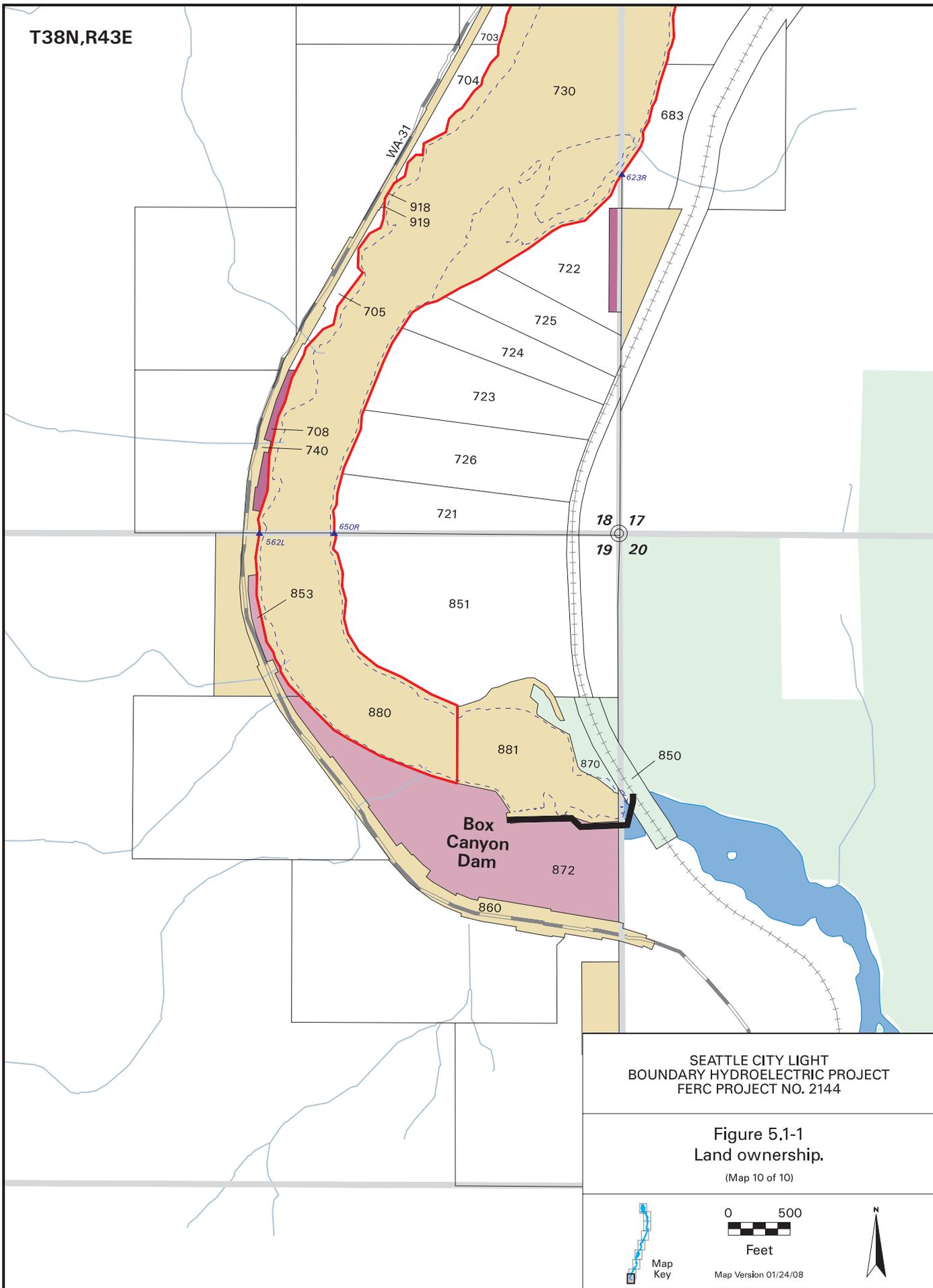


Table 5.1-1. Land ownership analysis data.

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
404302	452			USFS	W2 SW4	79.96
404303	3	434003	500001	SCL	GL5 plus Shorelands & GL8 plus Shorelands (AFN 94395 / AFN 110185 (SL))	86.79
404303	54	434003	500001	SCL	GL 6 plus Shorelands (AFN 94395 / AFN 110185 (SL))	27.69
404303	2	434003	500002	SCL	PTN GL4 outside Project Boundary plus Shorelands, GL9 plus SL & NE4 SW4 (AFN 94394 / AFN 110185 (SL) / Ex K)	119.28
404303	50	434003	500002	SCL	PTN GL 4 inside Project Boundary (AFN 94394 / Ex K)	6.93
404303	4			USFS	S2 SW4	79.23
404303	5			USFS	GL7 (Shorelands to SCL) (AFN 110185 (SL))	25.92
404303	6			WADNR	PTN SEC 3 Bedlands inside Project Boundary (AFN 111010 / Ex K)	26.56
404303	40			WADNR	PTN SEC 3 Bedlands outside Project Boundary (AFN 111010 / Ex K)	26.56
404310	7	434010	460001	SCL	Hanley Lode patented land (MS 811 / PAT 45480)	20.01
404310	9	434010	500001	SCL	GL 8 plus Shorelands, PTN GL 4 plus Shorelands inside Buffer Zone, PTN GL 9 inside Buffer Zone or inside Restricted Area & PTN NW4 SE4 inside Buffer Zone (AFN 114651 / AFN 115722 (SL) / Ex K)	66.15
404310	8	434010	500002	SCL	PTN GL 4, 9 & NW4 SE4 outside Buffer Zone and outside Restricted Area (AFN 114651 / Ex K)	55.92
404310	34	434010	503000	SCL	PTN NE4 SW4 inside Project Boundary (AFN 120719)	10.22
404310	10			BPA	PTN NE4 SW4 outside Project Boundary (AFN 120719)	29.45
404310	14			USFS	PTN S2 SW4 & GL 5 west of new Access Road alignment (7/28/83 Special Use Permit)	70.12
404310	16			USFS	GL 1 & 6 of SEC 10, GL 1 & 2 of SEC 11, SW4 NW4 NW4 of SEC 11, & PTN GL 3 of SEC 11 inside Project Boundary (all Shorelands to SCL) (AFN 115722 (SL) / Ex K)	149.04
404310	17			USFS	GL 2 (Shorelands to SCL) (AFN 115722 (SL))	33.98
404310	18			USFS	PTN E2 NW4 outside Project Boundary (Ex K)	71.65
404310	19			USFS	PTN E2 NW4 inside Project Boundary (Ex K)	8.06
404310	20			WADNR	SEC 10 Bedlands (AFN 111010)	67.34
404310	31			USFS	PTN GL 5 & SE4 SW4 east of new Access Road alignment (7/28/83 Special Use Permit)	21.89
404310	33			USFS	PTN GL 5 inside Project Boundary (Shorelands to SCL) (AFN 115722 (SL) / Ex K)	15.61

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
404310	100			USFS	New Access Road alignment (7/28/83 Special Use Permit)	11.52
404310	451			SCL	GL 7 (Shorelands to SCL) (AFN 115722 (SL))	1.81
404311	25			USFS	PTN W2 outside Project Boundary (Ex K)	205.07
404314	30	434014	500001	PUD#1	PTN GL 2 & 5 outside Project Boundary (AFN 115722)	65.66
404314	32			BLM	PTN SW4 SW4 & GL 6 outside Project Boundary (Ex K)	46.93
404314	35			USFS	PTN GL 1, 3, 4, 7 & NE4 NW4 outside Project Boundary, N2 SE4 & SE4 SE4, all in SEC 14 & PTN GL 1 of SEC 23 outside Project Boundary (Ex K)	233.45
404314	36			WADNR	SEC 14 Bedlands (AFN 111010)	19.31
404314	1002			SCL	PTN GL 2 & 5 inside Project Boundary plus Shorelands (AFN 115722)	33.38
404314	1003			USFS	PTN GL 1, 3, 4, 7 & NE4 NW4 inside Project Boundary (Shorelands to SCL) (AFN 115722 (SL) / Ex K)	56.67
404314	1004			BLM	PTN GL 6 & SW4 SW4 inside Project Boundary (Shorelands to SCL) (AFN 115722 (SL) / Ex K)	17.82
404315	26	434015	100001	PUD#1	PTN GL 1 outside Project Boundary & SE4 NE4 (AFN 115722)	48.88
404315	60	434015	100001	PUD#1	PTN GL 2 outside Project Boundary (AFN 115722)	15.81
404315	21	434015	130001	SCL	PTN N2 SW4 NE4 outside Project Boundary (AFN 106032 / AFN 182983)	11.61
404315	70	434015	130001	SCL	PTN N2 SW4 NE4 inside Project Boundary (AFN 106032 / AFN 182983)	8.49
404315	22	434015	200001	Private	S2 SW4 NE4, SE4 NW4, E2 SW4 NW4, PTN E2 NW4 NW4 east of County Road and south of new Access Road alignment & PTN NE4 NW4 south of new Access Road alignment (AFN 182983 / AFN 185373 / AFN 185374)	122.82
404315	24	434015	220001	Private	PTN E2 NW4 NW4 west of County Rd (AFN 182983)	7.84
404315	37			WADNR	SEC 15 Bedlands (AFN 111010)	7.49
404315	38			PRIVAT E	PTN N2 NW4 north of new Access Road alignment (AFN 182983 / AFN 185373)	4.01
404315	76			WADNR	SEC 15 Bedlands (AFN 111010)	1.51
404315	101			SCL	New Access Road alignment (AFN 185373)	5.97
404315	1001			SCL	PTN GL 1 & 2 inside Project Boundary plus Shorelands (AFN 115722)	46.46
404323	43	434023	050001	USFS	PTN GL 5 outside Project Boundary (Ex K)	16.60
404323	47	434023	090001	USFS	PTN GL 8 (Monument Bar Placer) & 9 outside Project Boundary (Ex K)	21.48

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
404323	41			BLM	PTN GL 2, 3, 6 & 7 outside Project Boundary & W2 W2 (Ex K)	225.90
404323	42			USFS	PTN GL 1 & 4 outside Project Boundary & NE4 NE4 (Ex K)	81.63
404323	49			WADNR	SEC 23 Bedlands & Shorelands (AFN 111010)	40.87
404323	1005			BLM	PTN GL 2, 3, 6 & 7 inside Project Boundary (Ex K)	85.90
404323	1006			USFS	PTN GL 1, 4, 5, 8 (Monument Bar Placer) and 9 inside Project Boundary (Ex K)	82.89
404326	51	434026	010001	USFS	PTN GL 1 outside Project Boundary (Ex K)	17.32
404326	55	434026	460001	Private	PTN Flusey Lode (MS 913 / PAT 105643) outside Project Boundary (AFN 122792 / Ex K)	18.38
404326	58	434026	460002	SCL	PTN Flusey Lode (MS 913 / PAT 105643) inside Project Boundary (AFN 122792 / Ex K)	3.55
404326	56	434026	460004	Private	PTN Hoopalula Lode (MS 913 / PAT 105643) outside Project Boundary (AFN 122792 / Ex K)	5.38
404326	57	434026	460005	SCL	PTN Hoopalula Lode (MS 913 / PAT 105643) inside Project Boundary (AFN 122792 / Ex K)	10.32
404326	53			BLM	PTN GL 2, 3, 9 & 11 outside Project Boundary, GL 10 & W2 NW4 (Ex K)	240.01
404326	59			WADNR	SEC 26 Bedlands & Shorelands (AFN 111010)	30.58
404326	75			USFS	PTN GL 4, 5 & 8 outside Project Boundary (Ex K)	64.05
404326	1009			USFS	PTN GL 1 inside Project Boundary (Ex K)	12.80
404326	1010			BLM	PTN GL 2, 3, 9, & 11 inside Project Boundary (Ex K)	37.83
404326	1013			USFS	PTN GL 4, 5 & 8 inside Project Boundary (Ex K)	36.79
404335	67	434035	460001	SCL	PTN D. Aldrich Lode (MS 808 / PAT 45478) inside Project Boundary	3.71
404335	74	434035	460001	SCL	PTN D. Aldrich Lode (MS 808 / PAT 45478) outside Project Boundary (Ex K)	16.99
404335	68	434035	460002	SCL	PTN May Thomas Lode (MS 808 / PAT 45478) outside Project Boundary (Ex K)	16.68
404335	69	434035	460003	SCL	PTN Rob't E. Lee Lode (MS 808 / PAT 45478) outside Project Boundary (Ex K)	9.08
404335	86	434035	460003	SCL	PTN Rob't E. Lee Lode (MS 808 / PAT 45478) inside Project Boundary (Ex K)	10.39
404335	61			BLM	PTN GL 2 outside Project Boundary (Ex K)	21.92
404335	62			USFS	PTN GL 1, 4, 5, 8, SE4 NE4 & NE4 SE4 outside Project Boundary & SE4 SE4 (Ex K)	259.55
404335	63			BLM	PTN GL 6, 7 & NW4 SW4 outside Project Boundary & SW4 SW4 (Ex K)	99.09
404335	65			WADNR	SEC 35 Bedlands & Shorelands (AFN 111010)	41.64
404335	1015			BLM	PTN GL 2, 3, 6, 7 & NW4 SW4 inside Project Boundary (Ex K)	45.59

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
404335	1016			USFS	PTN GL 1, 4, 5, 8, SE4 NE4 & NE4 SE4 inside Project Boundary (Ex K)	68.79
394302	71			BLM	PTN GL 3, 4 & 7 outside Project Boundary (Ex K)	81.00
394302	72			USFS	PTN GL 2, 5, 6 & 8 outside Project Boundary & other unpatented lands in SEC 2 (Ex K / PAT 937075)	277.51
394302	73			WADNR	SEC 2 Bedlands & Shorelands (AFN 111010)	32.34
394302	1020			BLM	PTN GL 3, 4 & 7 inside Project Boundary (Ex K)	29.24
394302	1021			USFS	PTN GL 2, 5, 6 & 8 inside Project Boundary (Ex K)	37.29
394303	87	433903	110001	SCL	PTN NE4 SE4 inside Project Boundary (AFN 122793 / Ex K)	1.34
394303	84	433903	500001	PRIVAT E	GL 2, 3, SE4 NW4, SW4 NE4, E2 SW4, NW4 SE4 & PTN NE4 SE4 outside Project Boundary (AFN 268143)	318.85
394303	85			BLM	PTN GL 5 outside Project Boundary (Ex K)	26.46
394303	1022			BLM	PTN GL 5 inside Project Boundary (Ex K)	8.94
394303	1024			USFS	PTN GL 6 inside Project Boundary (Ex K)	0.73
394310	1028	433910	020001	SCL	PTN GL 2 inside Project Boundary (AFN 114015)	9.35
394310	113	433910	300001	Private	PTN W2 SW4 outside Project Boundary (AFN 261012)	81.26
394310	102	433910	500001	Private	PTN GL 2 outside Project Boundary (AFN 114015)	42.22
394310	135	433910	500002	Private	Patented lands outside Project Boundary in SEC 10 (MS 1323 / PAT 46800026)	132.90
394310	95			WADNR	N2 SEC 10 Bedlands & Shorelands (AFN 11010)	26.44
394310	121			USFS	PTN GL 1 outside Project Boundary (Ex K)	3.23
394310	122			USFS	PTN GL 4 outside Project Boundary (Ex K)	1.67
394310	125			BLM	PTN GL 3, 6 & 7 outside Project Boundary (Ex K)	75.42
394310	126			WADNR	S2 SEC 10 Bedlands & Shorelands (AFN 11010)	43.04
394310	131			SCL	PTN SW4 SW4 inside Project Boundary (AFN 122791)	0.30
394310	1025			USFS	PTN GL 1 & 4 of SEC 10 inside Project Boundary & PTN NW4 NW4 of SEC 11 inside Project Boundary (Ex K)	18.14
394310	1029			BLM	PTN GL 3 inside Project Boundary (Ex K)	8.45
394310	1030			BLM	PTN GL 6 & 7 inside Project Boundary (Ex K)	19.13
394310	1035			USFS	PTN GL 5 & 8 inside Project Boundary (Ex K)	23.00
394311	90			USFS	PTN NW4 NW4 outside Project Boundary (Ex K)	39.78

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
394315	155	433915	460001	Private	PTN Charlotte Lode (MS 1282 / PAT 1159274) outside Project Boundary (AFN 122807 / Ex K)	12.45
394315	453	433915	460002	Private	PTN of Eagle, Senator & Metaline Lodes (MS 1323 / PAT 46800026) in SEC 15	8.00
394315	148	433915	460004	SCL	PTN Charlotte Lode (MS 1282 / PAT 1159274) inside Project Boundary (AFN 122807 / Ex K)	7.37
394315	158	433915	460017	Private	PTN Riverside Bluff Lode (MS 1240 / PAT 1116517) outside Project Boundary (AFN 118278 / Ex K)	5.69
394315	159	433915	460025	Private	PTN Sunday Lode (MS 1240 / PAT 1116517) outside Project Boundary (AFN 118278 / Ex K)	6.28
394315	357	433915	460026	SCL	PTN Young America Lode (MS 1025 / PAT 514726) inside Project Boundary (AFN 122789 / Ex K)	0.42
394315	149	433915	460027	SCL	PTN Victor Lode (MS 1282 / PAT 1159274) inside Project Boundary (AFN 122807 / Ex K)	1.92
394315	160	433915	460028	SCL	PTN Sunday Lode (MS 1240 / PAT 1116517) inside Project Boundary (AFN 118278 / Ex K)	1.92
394315	355	433915	460029	SCL	PTN John R Stone Lode (MS 1025 / PAT 514726) inside Project Boundary (AFN 122789 / Ex K)	2.31
394315	147	433915	460030	SCL	PTN Big Chief Lode (MS 1282 / PAT 1159274) inside Project Boundary (AFN 122807 / Ex K)	2.50
394315	153	433915	460031	Private	PTN Big Chief Lode (MS 1282 / PAT 1159274) outside Project Boundary (AFN 122807 / Ex K)	15.05
394315	154	433915	460031	Private	PTN Victor Lode (MS 1282 / PAT 1159274) outside Project Boundary (AFN 122807 / Ex K)	3.31
394315	156	433915	460031	Private	PTN Young America Lode (MS 1025 / PAT 514726) outside Project Boundary (AFN 122789 / Ex K)	19.43
394315	157	433915	460031	Private	PTN John R Stone Lode (MS 1025 / PAT 514726) outside Project Boundary (AFN 122789 / Ex K)	12.52
394315	1113			SCL	PTN Mars patented land (MS 1209 / PAT 1055468) inside Project Boundary (AFN 122786 / Ex K)	0.22
394315	161			BLM	PTN GL 2 outside Project Boundary (Ex K)	9.22
394315	166			USFS	PTN GL 3 outside Project Boundary (Ex K)	0.62
394315	167			USFS	PTN GL 4 outside Project Boundary (Ex K)	1.30
394315	168			SCL	SEC 15 & Bedlands & Shorelands (AFN 122785)	73.07
394315	1037			USFS	PTN GL 1, 3, 4 & 6 inside Project Boundary (Ex K)	27.59

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
394315	1038			BLM	PTN GL 2 & 5 of SEC 15 inside Project Boundary & PTN GL 1 & 2 of SEC 16 inside Project Boundary (Ex K)	45.82
394315	1043			SCL	PTN Riverside Bluff patented land (MS 1240 / PAT 1116517) inside Project Boundary (AFN 118278 / Ex K)	2.10
394316	180			WADNR	PTN GL 5 outside Project Boundary & NW4 NE4 (AFN 116389)	77.78
394316	181			BLM	PTN GL 1 & 2 outside Project Boundary, SW4 NE4, W2 SE4, SE4 SE4, all in SEC 16 & PTN GL 5 of SEC 15 outside Project Boundary (Ex K)	207.80
394316	184			WADNR	PTN GL 5 inside Project Boundary (AFN 116389)	2.71
394321	200	433921	100001	private	PTN GL 10 outside Project Boundary (AFN 122788 / Ex K)	2.97
394321	206	433921	440001	SCL	PTN Defiance Placer (MS 955 / PAT 159489) outside Project Boundary (AFN 120184 / Ex K)	4.29
394321	213	433921	440001	SCL	PTN Defiance Placer (MS 955 / PAT 159489) patented lands outside Project Boundary (AFN 120184 / Ex K)	8.15
394321	230	433921	440001	SCL	PTN Defiance Placer (MS 955 / PAT 159489) outside Project Boundary (AFN 120184 / Ex K)	3.73
394321	198	433921	460001	Private	PTN Spokane No. 2 Lode (MS 1209 / PAT 1055468) outside Project Boundary (AFN 122787 / Ex K)	4.20
394321	332	433921	460001	Private	PTN Spokane No. 2 Lode (MS 1209 / PAT 1055468) outside Project Boundary (AFN 122787 / Ex K)	0.05
394321	221	433921	460002	Private	Tract B of Metaline Falls 70 Plat (ROS 984 / AFN 260324)	0.55
394321	136	433921	460004	SCL	PTN Friday Millsite (MS 48-B / PAT 21369) outside project Boundary (AFN 118278 / Ex K)	0.40
394321	199	433921	460004	SCL	PTN Friday Millsite (MS 48-B / PAT 21369) inside project Boundary (AFN 118278 / Ex K)	4.56
394321	329	433921	460004	SCL	PTN Friday Millsite (MS 48-B / PAT 21369) outside project Boundary (AFN 118278 / Ex K)	0.01
394321	177	433921	460007	SCL	PTN GL 10 inside Project Boundary (AFN 122788 / Ex K)	0.01
394321	193	433921	460007	SCL	PTN GL 10 inside Project Boundary (AFN 122788 / Ex K)	0.94
394321	202	433921	460007	SCL	PTN Spokane No. 2 Lode (MS 1209 / PAT 1055468) inside Project Boundary (AFN 122787 / Ex K)	1.12

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
394321	228	433921	460007	SCL	PTN Spokane No. 2 Lode (MS 1209 / PAT1055468) inside Project Boundary (AFN 122787 / Ex K)	0.21
394321	324	433921	460007	SCL	PTN Spokane No. 2 Lode (MS 1209 / PAT 1055468) inside Project Boundary (AFN 122787 / Ex K)	0.04
394321	1054	433921	460007	SCL	PTN Metaline Falls patented land (MS 1209 / PAT 1055468) inside Project Boundary (in SEC 21 and 22) (AFN 122786 / Ex K)	7.70
394321	240	433921	510139	Private	Blk A Plus Tract A of Metaline Falls 70 Plat (ROS 984 / AFN 260324)	1.91
394321	201	433921	510174	SCL	Lot 1 & West 25' of Lot 3, Blk 14 of Metaline Falls Town Plat	0.27
394321	191			BLM	PTN GL 1 & 2 outside Project Boundary & GL 6 & 7, all in SEC 21 & PTN GL2 of SEC 22 outside Project Boundary (Ex K)	169.89
394321	196			WADNR	S2 SEC 21 Bedlands & Shorelands (AFN 111010)	51.86
394321	197			WADNR	N2 SEC 21 Bedlands & Shorelands (AFN 111010)	13.24
394321	203			SCL	PTN Spokane No. 2 Lode (MS 1209 / PAT 1055468) inside Project Boundary (AFN 122787 / Ex K)	0.17
394321	204			SCL	PTN of Spokane Placer (MS 957 / PAT 162324) inside Project Boundary (AFN 120185 / Ex K)	0.18
394321	205			SCL	PTN of RR ROW inside Project Boundary (AFN 121349)	0.05
394321	207			SCL	PTN Spokane No. 2 Lode (MS 1209 / PAT 1055468) inside Project Boundary (AFN 122787 / Ex K)	0.02
394321	214			Private	Pend Oreille Valley RR ROW inside of Metaline Falls	3.48
394321	222			City of Metaline Falls	Park and Road ROW in NW Part of Metaline Falls Town Plat	10.01
394321	229			Pend Oreille County	Road ROW from SR-31 ROW to Pend Oreille River, in GL 2	0.30
394321	239			SCL	PTN Spokane Placer (MS 957 / PAT 162324) as described in AFN 120185	0.33
394321	291			City of Metaline Falls	PTN Spokane Placer (MS 957 / PAT 162324) outside of Metaline Falls Town Plat	10.13
394321	547			USFS	PTN GL 8 outside Spokane Placer (MS 957 / PAT 162324)	0.03

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
394321	548			USFS	PTN GL 8 outside Spokane Placer (MS 957 / PAT 162324)	0.02
394321	549			USFS	PTN GL 8 outside Spokane Placer (MS 957 / PAT 162324)	0.47
394321	1051			BLM	PTN GL 1 & 2 inside Project Boundary (Ex K)	11.10
394322	195	433921	460001	Private	PTN Mars Lode (MS 1209 / PAT 1055468) outside Project Boundary (AFN 122786 / Ex K)	7.99
394322	178	433921	460007	SCL	PTN Metaline Falls Lode (MS 1209 / PAT 1055468) outside Project Boundary (AFN 122786 / Ex K)	0.85
394322	190	433921	460007	SCL	PTN Metaline Falls Lode (MS 1209 / PAT 1055468) outside Project Boundary (AFN 122786 / Ex K)	0.36
394322	231	433922	500002	Private	PTN GL 10 outside Project Boundary (AFN 122788 / Ex K) and PTN of 50 foot strip across the N line of the NW4 SW4 outside Project Boundary (AFN 251229)	21.78
394322	328	433922	500002	SCL	PTN 50 foot strip across the N line of the NW4 SW4 inside Project Boundary (AFN 251229)	0.02
394322	233	433922	529005	Private	Lot 5, Blk 1, Pend Oreille Village (AFN 185193)	0.70
394322	234	433922	529006	Private	Lot 6, Blk 1, Pend Oreille Village (AFN 185193)	0.39
394322	235	433922	529027	Private	Lot 2, Blk 4, Pend Oreille Village (AFN 185193)	0.55
394322	176			SCL	PTN GL 10 inside Project Boundary (AFN 122788 / Ex K)	1.08
394322	194			WADNR	SEC 22 Bedlands & Shorelands (AFN 111010)	8.89
394322	210			SCL	PTN Defiance Placer (MS 955 / PAT 159489) inside Project Boundary (AFN 120184 / Ex K)	11.29
394322	211			City of Metaline Falls	PTN Defiance Placer (MS 955 / PAT 159489) inside Project Boundary (AFN 113836 / AFN 125091 / Ex K)	0.32
394322	212			City of Metaline Falls	PTN Defiance Placer (MS 955 / PAT 159489) outside Project Boundary (AFN 113836 / AFN 125091 / Ex K)	7.84
394322	236			Private	Pend Oreille Village (multiple owners) (AFN 185193)	11.44
394322	1050			BLM	PTN GL 2 inside Project Boundary (Ex K)	4.44
394322	1052			SCL	PTN Mars patented land (MS 1209 / PAT 1055468) inside Project Boundary (AFN 122786 / Ex K)	10.57
394322	1053			USFS	PTN GL 1 inside Project Boundary (Ex K)	0.87
394328	268	433928	070002	Private	PTN GL 7 west of Pend Oreille Valley RR ROW (AFN 221642)	1.55

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
394328	271	433928	079001	Private	N 165 Feet of GL 7 West of Od Perkins Road as described in AFN 195967	4.29
394328	223	433928	101003	Pend Oreille County	PTN of GL 4 west of Pend Oreille Valley RR ROW	4.64
394328	315	433928	120002	Private	PTN Spokane Placer (MS 957 / PAT 162324) as described in AFN 172947	2.62
394328	276	433928	510006	Private	Lot 11 & 12, Blk 2 & 2A, Metaline Town Plat	0.20
394328	277	433928	510007	Private	Lot 9 & 10, Blk 2 & 2A, Metaline Town Plat	0.20
394328	250	433928	510008	Private	Lots 1,2,3 Blk 3 & 3A, Metaline Town Plat	0.36
394328	249	433928	510009	Private	Lots 4,5 Blk 3 & 3A, Metaline Town Plat	0.25
394328	275	433928	510010	Private	Lots 6 & S2 Lot 7, Blk 3 & 3A, Metaline Town Plat	0.19
394328	274	433928	510011	Private	N2 Lot 7, all of Lot 8, Blk 3 & 3A, Metaline Town Plat	0.19
394328	246	433928	510013	Private	Lot 1, Blk 4 & 4A, Metaline Town Plat	0.13
394328	245	433928	510015	Private	Lot 6 less south 10 feet of West 100 feet & South 5 feet of East 32.27 feet; Lots 7 & 8 Blk 4; Lots 6, 7 & 8, Blk 4A less South 5 feet Lot 6, Metaline Town Plat	0.35
394328	244	433928	510016	Private	Lots 9,10,11,12, Blk 4 & 4A, Metaline Town Plat	0.50
394328	261	433928	510017	Private	Lots 1-6 Blk 5; Lots 1-8, Blk 5A, Metaline Town Plat	0.83
394328	248	433928	518012	Private	Lots 9,10, Blk 3 & 3A, Metaline Town Plat	0.43
394328	247	433928	518014	Private	Lots 2-5 & S 10 feet of W 100 feet of lot 6 & South 5 feet of East 32.27 feet of Lot 6, Blk 4; Lots 2-5, Blk 4A, Metaline Town Plat	0.55
394328	255	433928	550004	City of Metaline	PTN Shorelands in front of GL 2 & 8 (AFN 112410)	4.33
394328	256	433928	550004	City of Metaline	PTN GL 8 less Metaline Town Platted Lots	16.14
394328	254	433928	550006	Private	Parcel in GL 2 as described in AFN 275103	2.35
394328	252	433928	550007	Private	Parcel in GL 2 as described in AFN 261975	2.08
394328	251	433928	550009	Private	Parcel in GL 2 as described in AFN 120256	1.88
394328	258	433928	550012	Private	Parcel in GL 2 as described in AFN 223259	2.41
394328	218			SCL	PTN of Spokane Placer (MS 957 / PAT 162324) inside Project Boundary (AFN 125090)	0.09
394328	219			SCL	PTN of Spokane Placer (MS 957 / PAT 162324) inside Project Boundary (AFN 125090)	0.01
394328	220			SCL	PTN of Spokane Placer (MS 957 / PAT 162324) inside Project Boundary (AFN 125090)	0.31

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
394328	241			WADNR	SEC 28 Bedlands & Shorelands in front of GL 5, 7, 9, 11, Spokane Placer and Homestake Placer; SEC 29 Bedlands (AFN 111010)	338.91
394328	257			City of Metaline	Metaline Town Plat Road ROW	6.96
394328	260			SCL	PTN Shorelands in front of GL 8 (AFN 112410)	4.54
394328	267			USFS	PTN GL5 west of Pend Oreille Valley RR ROW	2.63
394328	269			City of Metaline	PTN of GL 2 South of Parcel described by AFN 261975	0.96
394328	293			USFS	GL 11	1.09
394328	302			SCL	PTN of Homestake Placer (MS 984 / PAT 347487) inside Project Boundary (AFN 124445 / Ex K)	0.44
394328	305			SCL	PTN of Spokane Placer (MS 957 / PAT 162324) inside Project Boundary (AFN 124445)	0.01
394328	306			USFS	PTN of GL 8 outside Spokane Placer (MS 957 / PAT 162324)	0.00
394328	307			USFS	PTN of GL 8 outside Spokane Placer (MS 957 / PAT 162324)	0.01
394328	308			USFS	PTN of GL 8 outside Spokane Placer (MS 957 / PAT 162324)	0.03
394328	310			USFS	PTN of GL 8 outside Homestake Placer (MS 984 / PAT 347487)	0.02
394328	311			SCL	PTN of Homestake Placer (MS 984 / PAT 347487) inside Project Boundary (AFN 124445)	0.10
394329	278	433929	170001	Private	PTN of GL 17 E of SR-31 ROW, described as Parcel 22 in AFN 268148	2.11
394329	300	433929	510001	Private	Lots 1-3 Blk 1 & 1A of Metaline Town Plat and Parcel described in AFN 120265	0.31
394329	298	433929	510002	Private	Lots 4-6 & S2 of 7 Blk 1 & 1A, Metaline Town Plat	0.34
394329	297	433929	510003	Private	Lots 8-12 & N2 of 7 Blk 1 & 1A, Metaline Town Plat	0.53
394329	282	433929	510004	Private	Lots 1-4, Blk 2 & 2A, Metaline Town Plat	0.39
394329	280	433929	510005	Private	Lots 5-8, Blk 2 & 2A, Metaline Town Plat	0.39
394329	284	433929	550006	Private	PTN of GL 17 as described in AFN 176607	0.66
394329	281	433929	550007	Private	PTN GL 17 East of Old Road and South of Creek	0.30
394329	283	433929	550008	Private	PTN of GL 17 as described in AFN 195967	1.57
394329	301			Pend Oreille County	S. Main Ave. Road ROW	0.84

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
394332	412	433932	500001	Private	PTN GL 1 east of SR-31 ROW, a PTN of Parcel 30 as described in AFN 268143	5.35
394332	411	433932	500003	Private	PTN GL 6 south of Pocohontas Creek (AFN 213446)	0.12
394332	422			USFS	PTN GL 5 East of SR-31 ROW	2.78
394332	386			WSDOT	SR-31 ROW	17.50
394332	394			WADNR	SEC 32 Bedlands & Shorelands in front of GL 6; SEC 33 Bedlands & Shorelands (AFN 111010)	75.93
394332	399			USFS	PTN GL 9, 11 & 12 east of SR-31 ROW	12.10
394333	404	433933	030001	Private	PTN GL 3 south of Pocohontas Creek and west of Pend Oreille Valley RR ROW (AFN 213446)	12.26
394333	401	433933	500007	Private	PTN of SE4 NW4 and GLs 1, 2 & 3 West of Pend Oreille Valley RR ROW and East of a line described in AFN 249065	47.65
394333	402	433933	500008	Private	Tract in GL 2 & 3 of SEC 33 and GL 6 of SEC 32 north and west of a line described in AFN 249065	10.52
394333	403	433933	500009	Private	Tract in GL 3 of SEC 33 and GL 6 of SEC 32 south and west of a line described in AFN 249065	3.50
394333	546			USFS	PTN GL 4 & 5 west of Pend Oreille Valley RR ROW	30.02
384304	583	433804	029001	Private	Parcel in GL 2 described in AFN 177806	11.18
384304	576	433804	030001	Private	PTN N2 N2 GL 3 & PTN GL 14 west of Pend Oreille Valley RR ROW, PTNs of Parcels 1 & 2 as described in AFN 281816	1.22
384304	578	433804	030002	Private	PTN S2 N2 GL 3 West of Pend Oreille Valley RR ROW, a PTN of Parcel 3 as described in AFN 281816	0.65
384304	580	433804	030003	Private	PTN N2 S2 GL 3 West of Pend Oreille Valley RR ROW (AFN 163180)	0.59
384304	582	433804	030004	Private	PTN S2 S2 GL 3 West of Pend Oreille Valley RR ROW (AFN 198128)	0.65
384304	584	433804	049001	Private	Parcel in GL 2 described in AFN 159131	2.40
384304	514			USFS	PTN GL 4 & 5 west of Pend Oreille Valley RR ROW	4.90
384304	554			USFS	PTN GL 1 west of Pend Oreille Valley RR ROW	14.97
384304	560			WADNR	SEC 4 Bedlands & Shorelands (AFN 111010)	67.85
384305	512	433805	050002	Selkirk School District	PTN GL 5 east of SR-31 ROW (AFN 254446)	37.10
384305	515	433805	060001	Private	PTN GL 6 west of Pend Oreille Valley RR ROW (AFN 256835)	6.23

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
384305	502	433805	500001	Private	PTN GL 1 east of SR-31 ROW, as described in AFN 257259	6.61
384305	507	433805	500002	Private	PTN GL 4 east of SR-31 ROW, a PTN of Parcel 14 as described in AFN 251876	0.25
384305	504	433805	500003	Private	Parcel in GL 2 & 3 north of Sweet Creek, as described in AFN 268164	27.83
384305	517	433805	500005	Private	PTN of GL 2, as described in AFN 268164	27.68
384305	508	433805	520001	Private	Parcel A of Gragg Short Plat (AFN 254446)	15.26
384305	509	433805	520002	Private	Parcel B of Gragg Short Plat (AFN 254446)	1.38
384305	510			WSDOT	SR-31 ROW	17.17
384305	530			WADNR	N2 SEC 5 Bedlands & Shorelands (AFN 111010)	32.00
384305	531			WADNR	S2 SEC 5 Bedlands & Shorelands (AFN 111010)	57.85
384305	953			WSDOT	SR-31 ROW	1.62
384307	602	433807	519001	Private	PTN GL 5 east of SR-31 ROW, as described in Sinn's Subdivision (AFN 272624)	2.46
384307	605			WSDOT	SR-31 ROW	4.47
384307	606			WADNR	SEC 7 Bedlands & Shorelands (AFN 111010)	4.25
384308	632	433808	010001	SCL	PTN GL 1 East of Pend Oreille Valley RR ROW (AFN 226690)	16.30
384308	631	433808	010002	Private	PTN GL 1 west of Pend Oreille Valley RR ROW and North 100 Feet of GL 4 (AFN 214874)	20.21
384308	633	433808	040001	SCL	PTN GL4 North of Sand Creek LESS North 100 Feet (AFN 192382)	1.22
384308	634	433808	460001	SCL	PTN SE4 NE4 and the NE4 SE4 west of Pend Oreille Valley RR ROW (AFN 226690)	18.28
384308	635	433808	460001	SCL	PTN SE4 NE4 and the NE4 SE4 east of Pend Oreille Valley RR ROW (AFN 226690)	54.58
384308	622	433808	500002	Private	PTN GL 3 & 6 and SW4 NW4 east of SR-31 ROW (AFN 228966)	6.17
384308	624	433808	500002	Private	PTN of GL 2 & 3 east of SR-31 ROW (AFN 228966)	0.37
384308	626	433808	500002	Private	PTN GL 2 east of SR-31 ROW (AFN 228966)	0.91
384308	628	433808	500002	Private	PTN GL 3 & 6 east of SR-31 ROW (AFN 228966)	2.94
384308	641	433808	510001	SCL	Parcel 9 of Franco Survey Plat (ROS 34 / AFN 148082)	19.50
384308	642	433808	510001	SCL	Parcel 10 of Franco Survey Plat (ROS 34 / AFN 148082)	9.75
384308	643	433808	510002	SCL	PTN Parcel 8 of Franco Survey Plat west of Pend Oreille Valley RR ROW (ROS 34 / AFN 148082)	13.70
384308	651	433808	510002	SCL	PTN Parcel 8 of Franco Survey Plat east of Pend Oreille Valley RR ROW (ROS 34 / AFN 148082)	4.84

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
384308	644	433808	510003	SCL	PTN Parcel 7 of Franco Survey Plat west of Pend Oreille Valley RR ROW (ROS 34 / AFN 148082)	13.56
384308	652	433808	510003	SCL	PTN Parcel 7 of Franco Survey Plat east of Pend Oreille Valley RR ROW (ROS 34 / AFN 148082)	6.43
384308	645	433808	510004	SCL	PTN Parcel 6 of Franco Survey Plat west of Pend Oreille Valley RR ROW (ROS 34 / AFN 148082)	14.96
384308	653	433808	510004	SCL	PTN Parcel 6 of Franco Survey Plat east of Pend Oreille Valley RR ROW (ROS 34 / AFN 148082)	5.28
384308	646	433808	510005	SCL	PTN Parcel 5 of Franco Survey Plat west of Pend Oreille Valley RR ROW (ROS 34 / AFN 148082)	13.33
384308	654	433808	510005	SCL	PTN Parcel 5 of Franco Survey Plat east of Pend Oreille Valley RR ROW (ROS 34 / AFN 148082)	6.60
384308	647	433808	510006	SCL	Parcel 4-Franco Survey (ROS 34 / AFN 148082)	19.85
384308	648	433808	510007	SCL	PTN Parcel 3 of Franco Survey in SEC 8 (ROS 34 / AFN 148082)	14.10
384308	625			WSDOT	SR-31 ROW in GL 2, inside Project Boundary	0.11
384308	620			WSDOT	SR-31 ROW	16.83
384308	623			WSDOT	SR-31 ROW in GL 3, inside Project Boundary	0.06
384308	627			WSDOT	SR-31 ROW in GL 3, inside Project Boundary	0.05
384308	650			WADNR	SEC 8 Bedlands & Shorelands (AFN 111010)	141.77
384317	682	433817	510016	Private	Parcel 2 of Franco Survey Plat (ROS 34 / AFN 148082)	20.65
384317	683	433817	510017	Private	Parcel 1 of Franco Survey Plat (ROS 34 / AFN 148082)	9.95
384317	681	433817	510031	SCL	PTN Parcel 3 of Franco Survey Plat in SEC 17 (ROS 34 / AFN 148082)	5.75
384318	703	433818	010002	Private	PTN GL 1 east of SR-31 ROW (AFN 270036)	3.90
384318	704	433818	049001	Private	PTN GL 4 east of SR-31 ROW (AFN 227881)	4.30
384318	919	433818	049001	Private	PTN GL 4 east of SR-31 ROW (AFN 227881)	0.02
384318	705	433818	069001	Private	PTN GL 6 east of SR-31 ROW (AFN 262436)	2.59
384318	708	433818	340002	Pend Oreille County	PTN GL 9 east of SR-31 ROW	1.74
384318	722	433818	510026	Private	Parcel 6 of Franco Survey Plat (ROS 26 / AFN 145162)	11.91
384318	723	433818	510027	Private	Parcel 3 of Franco Survey Plat (ROS 26 / AFN 145162)	21.16
384318	724	433818	510028	Private	Parcel 4 of Franco Survey Plat (ROS 26 / AFN 145162)	11.77

Table 5.1-1, continued...

TTRRSS	PID (polygon name)	Assessor No. (if applicable)		Fee Owner (surface)	Abbreviated Legal Description	Approx. Acreage
384318	725	433818	510029	Private	Parcel 5 of Franco Survey Plat (ROS 26 / AFN 145162)	10.89
384318	726	433818	510030	Private	Parcel 2 of Franco Survey Plat (ROS 26 / AFN 145162)	22.13
384318	721	433818	510031	Private	Parcel 1 of Franco Survey Plat (ROS 26 / AFN 145162)	16.15
384318	730			WADNR	SEC 17 & 18 Bedlands & Shorelands (AFN 111010)	135.16
384318	740			WSDOT	SR-31 ROW	10.11
384318	918			WSDOT	SR-31 ROW in GL 4 inside Project boundary	0.02
384319	853	433819	020003	PUD#1	PTN GL 2 east of SR-31 ROW (AFN 145603)	1.55
384319	851	433819	500001	Private	GL1 and PTN NE4 NE4 west of Pend Oreille Valley RR ROW (AFN 250737)	51.15
384319	850			USFS	Pend Oreille Valley RR ROW	9.16
384319	860			WSDOT	SR-31 ROW	15.46
384319	870			USFS	PTN GL 6 west of Pend Oreille Valley RR ROW	3.65
384319	872			PUD#1	PTN GL 5, 7 & N2 SW4 north and east of SR-31 ROW	39.15
384319	880			WADNR	PTN SEC 19 Bedlands & Shorelands inside Project Boundary (AFN 111010 / Ex K)	34.97
384319	881			WADNR	PTN SEC 19 Bedlands & Shorelands outside Project Boundary (AFN 111010 / Ex K)	21.63

Notes:

AFN – Auditor’s File Number

Blk – Block

BPA–Bonneville Power Administration

Ex K – Exhibit K to FERC License (FPC-2144-72 to 80)

GL – Government Lot

MS – Mineral Survey

N2 etc. – North Half

NE4 etc. – Northeast Quarter

NE4 SW4 etc. – Northeast Quarter of the Southwest Quarter

PAT – Patent

PID – Polygon IDentification number

ROS – Record of Survey

ROW – Right of Way

SEC – SEction

SL – ShoreLands

TTRRSS – Township, Range, Section

5.1.2. FERC Boundary Analysis

Locations of the FERC boundary survey monuments are displayed on the land ownership map, Figure 5.1-1. They are indicated by a number followed by “L” or “R” for Left or Right bank (e.g., 62L). These designations follow the convention on the current FERC Exhibit K drawings.

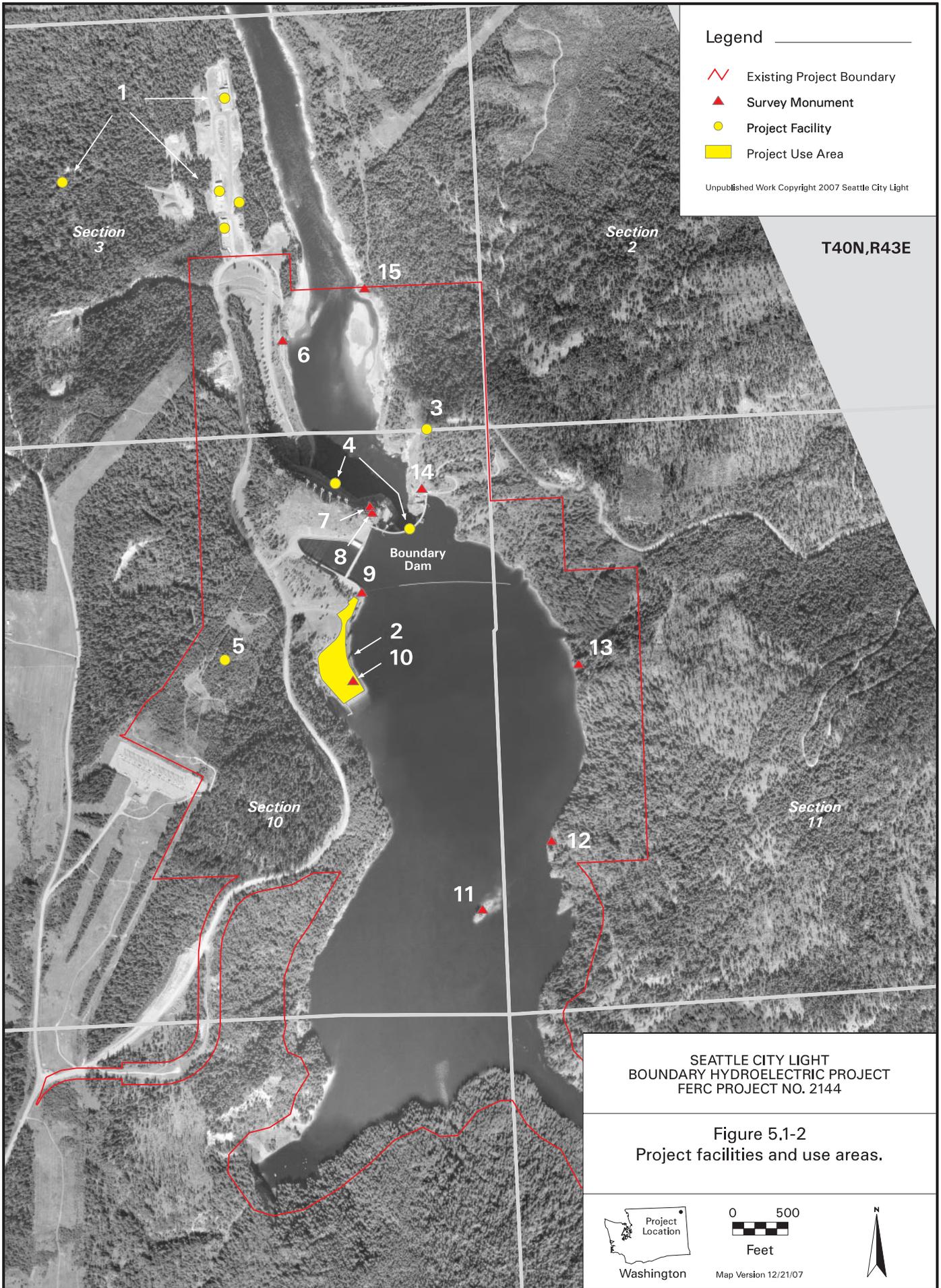
Tables A.1-1 through A.1-3 in Appendix 1 contain detailed information on the FERC boundary including survey point identifiers that follow the convention on the current Exhibit K drawings; State Plane coordinates (i.e., locations) for boundary survey monuments; and bearing and distance descriptions for the lines connecting all survey points. The survey for the FERC boundary was completed between 1962 and 1967, and is recorded on the current FERC Exhibit K drawings (FPC-2144-72 through 80). Table A.1-1 covers the FERC boundary in the vicinity of the dam, forebay, and powerhouse, which is the area identified on Exhibit K as the “Works Area Boundary.” Table A.1-2 covers the FERC boundary along the west (Left) bank of the Pend Oreille River from the Works Area Boundary in the north to the Box Canyon Project boundary (FERC Project No. 2042) in the south. Table A.1-3 covers the FERC boundary along the east (Right) bank of the river.

Table 5.1-2 lists the Project facilities and use areas that are necessary for the continued operation and maintenance of the Project. The survey monuments listed in Table 5.1-2 are critical components of SCL’s Dam Safety Program, used to calibrate the automatic monitoring system that monitors movement of the dam. The site numbers listed in the table correspond to locations displayed on Figure 5.1-2. (Note: The locations shown on Figure 5.1-2 are approximate and any FERC boundary adjustments that may be proposed by SCL will be described in the Licensing Application.)

Table 5.1-2. Project facilities and use areas.

Site #	Project Facility/Use Area	Location/Landowner	Within Current FERC Boundary?
1	Operations and maintenance support area. Includes: Shipping and Receiving building; Paint Shop/warehouse; spring water source and storage (stores water for cooling generator); maintenance shop; storage yards/staging areas (e.g., storage of aggregate); other misc. functions.	T40N, R43E, Section 3 SCL	No
2	Forebay Recreation Area – SCL-maintained campground, boat ramp/float, picnic sites, and restrooms.	T40N, R43E, Section 10 SCL	Yes
3	Vista House – Viewpoint building, parking area, trail and viewing platform used by visitors to view the dam. Housing for SCL communications equipment inside building.	T40N, R43E, Sections 3 and 10 SCL and USFS	Yes
4	Dam and powerhouse complex	T40N, R43E, Section 10 SCL, USFS, and State of Washington	Yes
5	Transmission line ROW (includes station service and associated underground utilities)	T40N, R43E, Section 10 SCL and USFS	Yes
6	Survey monument	T40N, R43E, Section 3 USFS	Yes
7, 8, 11, 14	Survey monuments	T40N, R43E, Section 10 USFS	Yes
9, 10	Survey monuments	T40N, R43E, Section 10 SCL	Yes
12, 13	Survey monument	T40N, R43E, Section 11 USFS	Yes
15	Survey monument	T40N, R43E, Section 3 SCL	Yes

For communications purposes, SCL has maintained a microwave station atop Abercrombie Mountain (T40N, R43E, Section 31); the site is owned by BPA. At present, SCL is in the process of replacing its microwave communications equipment, so the long-term need for this site has not yet been determined. SCL will address any future needs for this site in either the Preliminary License Proposal or License Application.



Legend

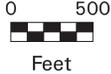
-  Existing Project Boundary
-  Survey Monument
-  Project Facility
-  Project Use Area

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T40N,R43E

SEATTLE CITY LIGHT
 BOUNDARY HYDROELECTRIC PROJECT
 FERC PROJECT NO. 2144

Figure 5.1-2
 Project facilities and use areas.



Map Version 12/21/07

SCL purchased a 155-acre parcel that was designated as a wildlife preserve (T38N, R43E, Sections 8 and 17; see Figure 5.1-1, maps 8 and 9); this purchase served as mitigation for the 1986 FERC License Amendment. At the time of purchase, the pertinent FERC exhibits were not modified to incorporate into the Project boundary the land that was acquired. SCL treats this land as if it is contained within the current Project boundary but will propose to amend the boundary when the License Application is filed with FERC in 2009.

5.1.3. Mining Claim Analysis

Figure 5.1-3 and Table 5.1-3 provide the results of the mining claim analysis and are based on the review of records provided by BLM as described in Section 4.1.3. The map and table cover unpatented mining claims designated by BLM as “active” that are within the study area, (i.e., that are at least partially located within the Project boundary in plan view). The area mapped for each claim is the area described in the claim location notices provided by BLM. The data provided in the table is taken directly from information provided by BLM. SCL makes no representation that these claims are valid under federal mining law.

Table 5.1-2 provides abbreviated legal descriptions for all mapped claims using reference to Public Land Survey identifiers (i.e., Township, Range, Section, and Aliquot description). The abbreviated legal descriptions also refer to the BLM serial number for each claim, which can be used to obtain location notices with more complete legal descriptions. Several claims are located in more than one Section. For these claims, Table 5.1-3 contains a separate row (i.e., claim record) for each Section in which the claim is located, consistent with BLM records. Several claims are also listed twice in BLM’s records, with each listing reflecting a different owner. In these cases, Table 5.1-3 provides the names of both owners in the “Claimant” column.

The RSP called for SCL to provide mineral survey information associated with current claims within the study area if available. As described in Section 4.1.3, SCL searched BLM’s online records database for any mineral surveys associated with active unpatented claims within the study area. The records search indicated that no such surveys exist.

Under the terms of FERC’s Boundary Project license and FERC’s subsequent withdrawal of federal lands, there are no valid unpatented mining claims within the buffer zone around the reservoir or within the area shown on Exhibit K (FPC-2144-72 through 80) as the Restricted Area around the dam, both of which are defined not only horizontally (i.e., as shown in plan view) but also vertically (i.e., from the surface to a specified depth beneath the surface). From the Box Canyon Dam north to Metaline Falls, the buffer zone is the area beneath the reservoir, down to a depth of approximately 500 feet beneath the river bottom; and from Metaline Falls north to Boundary Dam, the buffer zone is the area beneath the reservoir and beneath lands within 200 feet horizontally of the reservoir, also down to a depth of approximately 500 feet beneath the river bottom. The Restricted Area is the area shown on Exhibit K around the forebay, dam and powerhouse, in which no mining is allowed at any depth.

The FERC license required SCL to create a no-mining buffer zone around the reservoir (26 F.P.C. 54 at 57-60 [1961]). Pursuant to the license, and in order to prevent future mining, SCL acquired the portions of claims that existed as of 1968 that were located within the buffer zone or within the Restricted Area (40 F.P.C. 1515 at 1517 [1968]). Because SCL acquired these partial

claims in order to prevent future mining, SCL did not take the actions necessary to maintain these claims under federal mining law, i.e., conduct mining activities or pay annual assessments. SCL's interests in its portions of these claims located within the buffer zone and Restricted Area therefore have been abandoned by operation of law and are no longer valid.

In January 1969, the Federal Power Commission (FERC's predecessor) withdrew from entry or location all federal lands within the Project boundary, as defined both horizontally and vertically in Exhibit K (34 FR 777 [January 17, 1969]). Mining claims can only be located on federal lands that are open to location and entry. Accordingly, any claims located after the FPC's 1969 withdrawal notice are invalid as to any portion within the Project boundary. Of the claims mapped in Figure 5.1-3 that are at least partially within the Project boundary as shown in plan view, all that were not addressed by SCL in the 1960s were located after the FPC's withdrawal of lands within the Project boundary, and so are invalid as to that portion that is within the Project boundary, as defined both horizontally and vertically.

Figure 5.1-3 and Table 5.1-3 include one unpatented claim, Pine No. 5, that is outside of the current FERC Project boundary. SCL included this claim in the analysis because there is a small area of overlap between this claim and the right-of-way for the Project's relocated West-Side Access Road. As discussed in Section 6.1, SCL is recommending this right-of-way area for inclusion within a revised FERC Project boundary.

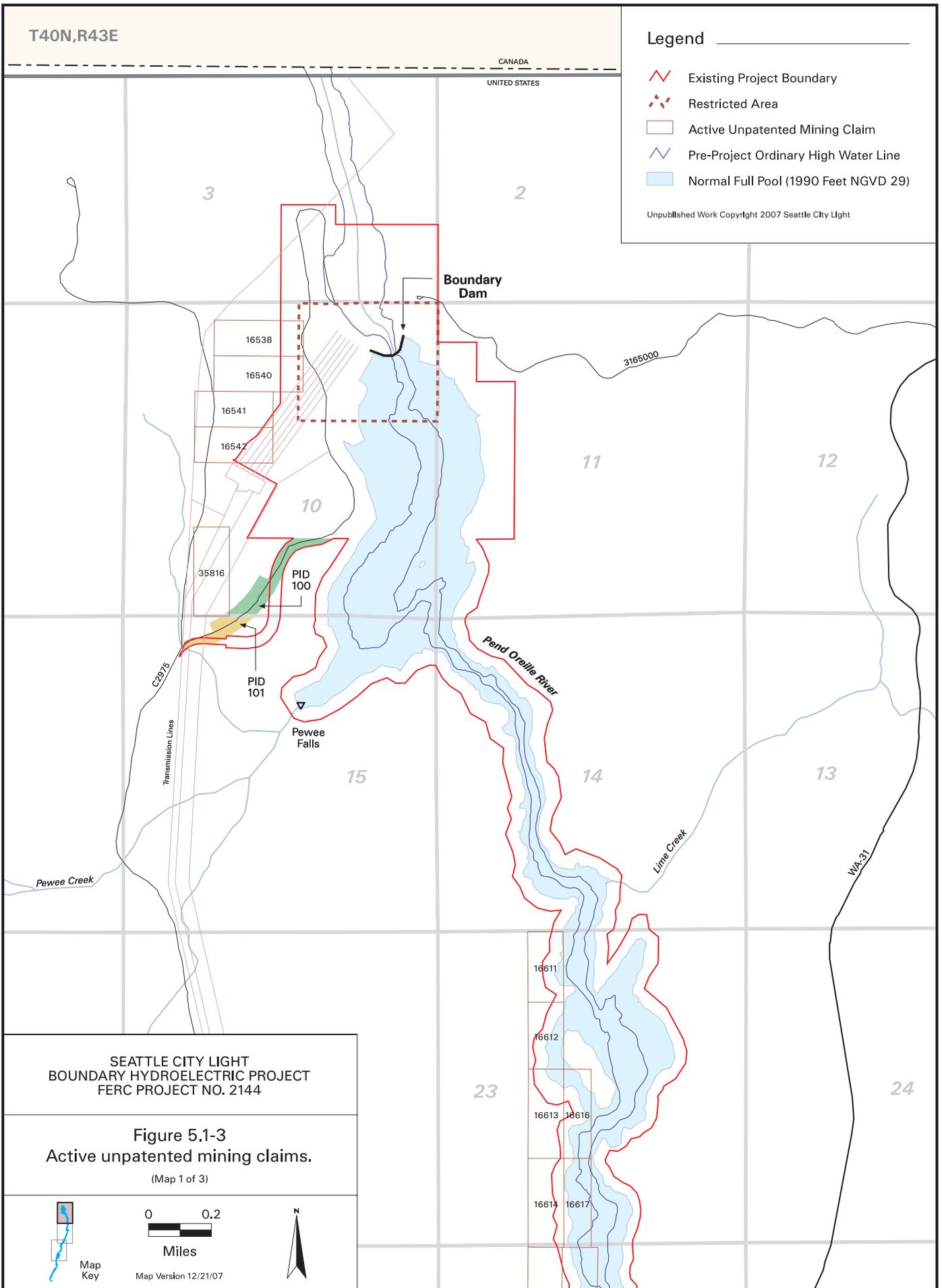
T40N,R43E

CANADA
UNITED STATES

Legend

-  Existing Project Boundary
-  Restricted Area
-  Active Unpatented Mining Claim
-  Pre-Project Ordinary High Water Line
-  Normal Full Pool (1990 Feet NGVD 29)

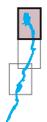
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FERC PROJECT NO. 2144

Figure 5.1-3
Active unpatented mining claims.

(Map 1 of 3)



Map Key



Miles

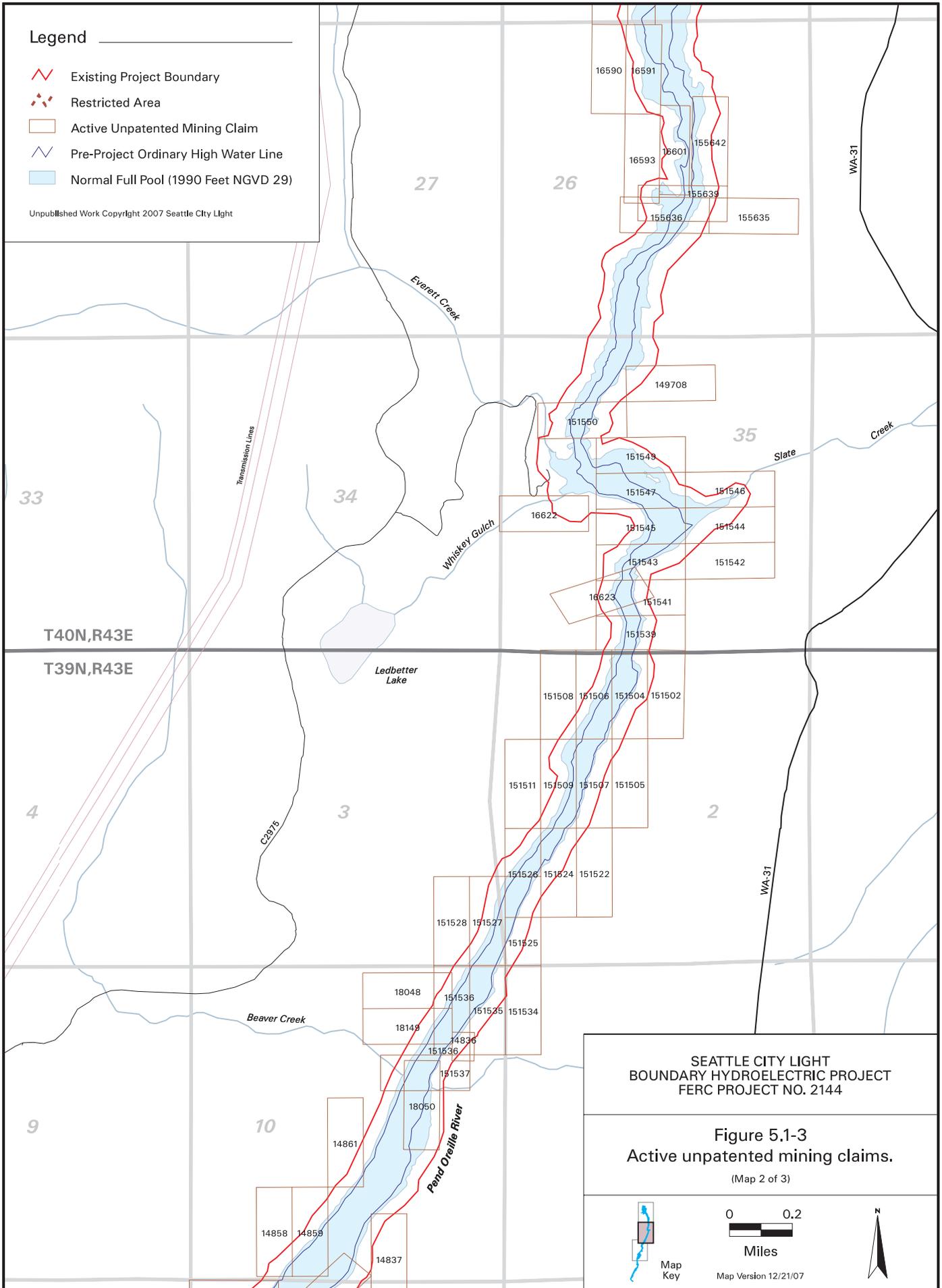


Map Version 12/21/07

Legend

-  Existing Project Boundary
-  Restricted Area
-  Active Unpatented Mining Claim
-  Pre-Project Ordinary High Water Line
-  Normal Full Pool (1990 Feet NGVD 29)

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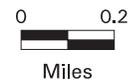


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BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144**

**Figure 5.1-3
Active unpatented mining claims.**
(Map 2 of 3)



Map Key



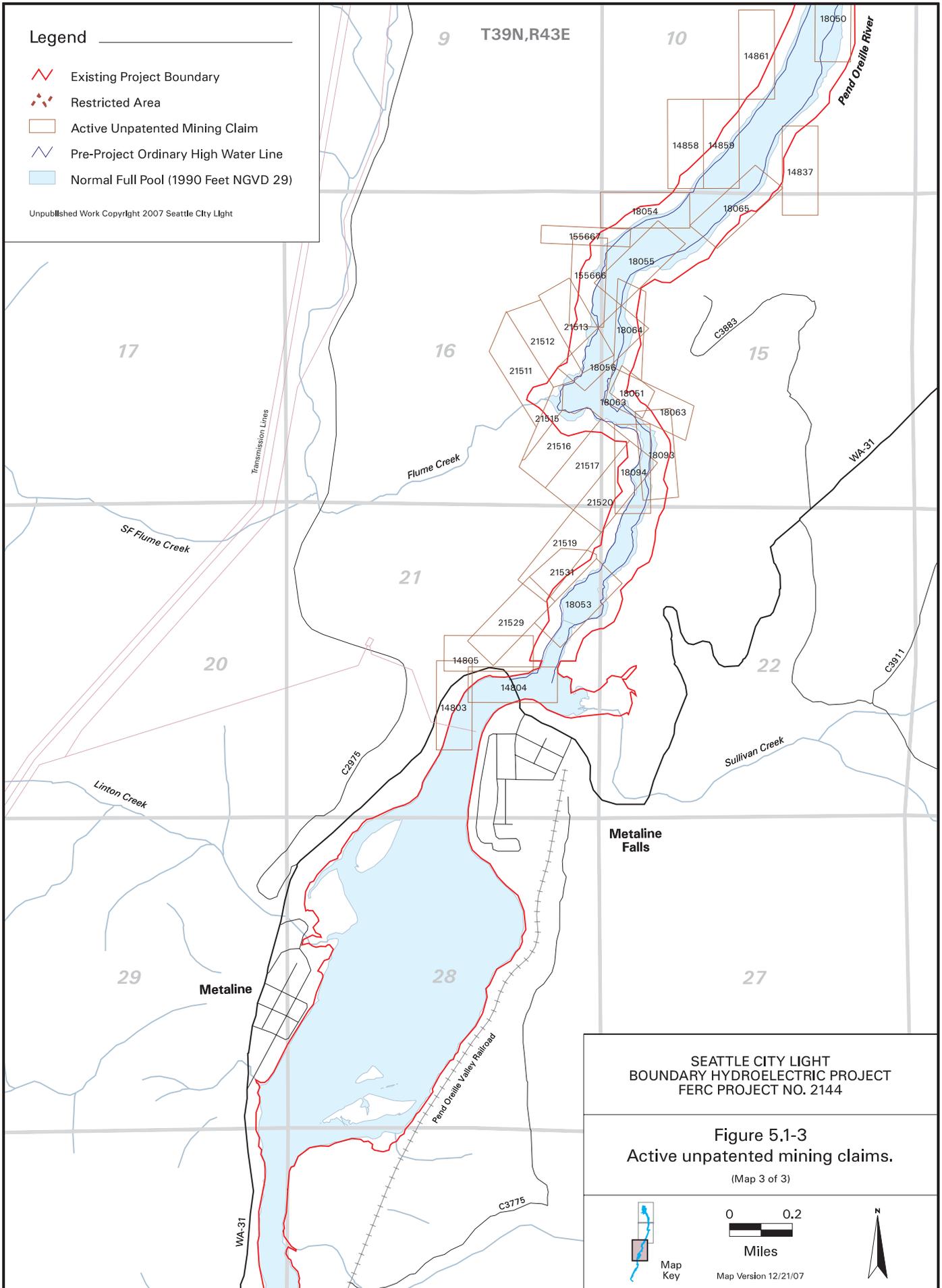
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Legend

- Existing Project Boundary
- Restricted Area
- Active Unpatented Mining Claim
- Pre-Project Ordinary High Water Line
- Normal Full Pool (1990 Feet NGVD 29)

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Figure 5.1-3
Active unpatented mining claims.
(Map 3 of 3)

Map Key

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Map Version 12/21/07

Table 5.1-3. Active unpatented mining claim information.

Abbreviated Legal Description			Claim Name	Claimant
TTRSS	Quad	BLM Serial No.		
404310	NE NW	16540	CHAMPION	Metaline Contact Mines
404310	SW	35816	PINE NO.5	Cominco American Inc.
404310	NE NW	16538	TOM CAT	Metaline Contact Mines
404310	NW	16542	TUXEDO	Metaline Contact Mines
404310	NW	16541	VELVET	Metaline Contact Mines
404323	NW	16611	EX NO.10	Cominco American Inc. & Metaline Contact Mines
404323	NW	16612	EX NO.11	Cominco American Inc. & Metaline Contact Mines
404323	NW SW	16613	EX NO.12	Cominco American Inc. & Metaline Contact Mines
404323	SW	16614	EX NO.13	Cominco American Inc. & Metaline Contact Mines
404323	NW SW	16616	EX NO.15	Cominco American Inc. & Metaline Contact Mines
404323	SW	16617	EX NO.16	Cominco American Inc. & Metaline Contact Mines
404326	NW	16590	AX NO.15	Cominco American Inc. & Metaline Contact Mines
404326	NW	16591	AX NO.16	Cominco American Inc. & Metaline Contact Mines
404326	NW SW	16593	AX NO.18	Cominco American Inc. & Metaline Contact Mines
404326	NE SE	16601	AX NO.26	Cominco American Inc. & Metaline Contact Mines
404326	SE	155635	LINDSAY 57	Cominco American Inc.
404326	SW SE	155636	LINDSAY 58	Cominco American Inc.
404326	SW SE	155639	LINDSAY 61	Cominco American Inc.
404326	NE SE	155642	LINDSAY 64	Cominco American Inc.
404335	SW	16622	BEE NO.5	Cominco American Inc. & Metaline Contact Mines
404335	SW	16623	BEE NO.6	Cominco American Inc. & Metaline Contact Mines
404335	NW	149708	DM MANN NO.49	Cominco American Inc.
404335	SW SE	151539	DM MANN NO.83	Cominco American Inc.
404335	SW SE	151541	DM MANN NO.85	Cominco American Inc.
404335	SE	151542	DM MANN NO.86	Cominco American Inc.
404335	SW SE	151543	DM MANN NO.87	Cominco American Inc.
404335	SE	151544	DM MANN NO.88	Cominco American Inc.
404335	SW SE	151545	DM MANN NO.89	Cominco American Inc.
404335	NE SE	151546	DM MANN NO.90	Cominco American Inc.
404335	ALL	151547	DM MANN NO.91	Cominco American Inc.

Table 5.1-3, continued...

Abbreviated Legal Description			Claim Name	Claimant
TTRRSS	Quad	BLM Serial No.		
404335	NW	151549	DM MANN NO.93	Cominco American Inc.
404335	NW	151550	DM MANN NO.94	Cominco American Inc.
394302	NE NW	151502	DM MANN NO.09	Cominco American Inc.
394302	NW	151504	DM MANN NO.11	Cominco American Inc.
394302	NW SW	151505	DM MANN NO.12	Cominco American Inc.
394302	NW	151506	DM MANN NO.13	Cominco American Inc.
394302	NW SW	151507	DM MANN NO.14	Cominco American Inc.
394302	NW	151508	DM MANN NO.15	Cominco American Inc.
394302	NW SW	151509	DM MANN NO.16	Cominco American Inc.
394302	NW SW	151511	DM MANN NO.18	Cominco American Inc.
394302	SW	151522	DM MANN NO.29	Cominco American Inc.
394302	SW	151524	DM MANN NO.31	Cominco American Inc.
394302	SW	151525	DM MANN NO.32	Cominco American Inc.
394302	SW	151526	DM MANN NO.33	Cominco American Inc.
394303	SE	151527	DM MANN NO.34	Cominco American Inc.
394303	SE	151528	DM MANN NO.35	Cominco American Inc.
394310	ALL	14861	CARL NO.2	Cominco American Inc.
394310	NE SE	18050	CROMWELL NO.02	Cominco American Inc.
394310	NE	151535	DM MANN NO.42	Cominco American Inc.
394310	NE	151536	DM MANN NO.43	Cominco American Inc.
394310	NE	151537	DM MANN NO.44	Cominco American Inc.
394310	SW	14858	JENSEN NO.1	Cominco American Inc.
394310	SW	14859	JENSEN NO.2	Cominco American Inc.
394310	SW SE	18065	MEANDER NO.04	Cominco American Inc.
394310	SE	14837	METALINE LEAD	Cominco American Inc.
394310	NE	14836	ROBIN	Cominco American Inc.
394310	NE	18049	ZINC FRACTION	Cominco American Inc.
394310	NE	18048	ZINC NO.01	Cominco American Inc.
394311	NW	151534	DM MANN NO.41	Cominco American Inc.
394315	SW	18051	BONANZA FRACTION	Cominco American Inc.
394315	SW	21520	CALCAMIDE NO.2	Cominco American Inc.
394315	NW SW	21513	DIVIDEND EXTENSION	Cominco American Inc.
394315	NW SW	18056	JUNE	Cominco American Inc.
394315	NW	18054	LPL NO.2	Cominco American Inc.
394315	NW	18055	MAY	Cominco American Inc.
394315	SW	18063	MEANDER NO.01	Cominco American Inc.
394315	NW SW	18064	MEANDER NO.02	Cominco American Inc.
394315	NE NW	18065	MEANDER NO.04	Cominco American Inc.
394315	SW	18094	MEANDER NO.100	Cominco American Inc.

Table 5.1-3, continued...

Abbreviated Legal Description			Claim Name	Claimant
TTRRSS	Quad	BLM Serial No.		
394315	SW	18093	MEANDER NO.38	Cominco American Inc.
394315	NE	14837	METALINE LEAD	Cominco American Inc.
394315	SW	21517	ORION	Cominco American Inc.
394315	NW	155666	WILL 10	Cominco American Inc.
394315	NW	155667	WILL 11	Cominco American Inc.
394316	SE	21520	CALCAMIDE NO.2	Cominco American Inc.
394316	SE	21516	CHICKAHOMINY	Cominco American Inc.
394316	NE SE	21512	DIVIDEND	Cominco American Inc.
394316	NE SE	21513	DIVIDEND EXTENSION	Cominco American Inc.
394316	NE SE	18056	JUNE	Cominco American Inc.
394316	NE SE	21511	LOOKOUT	Cominco American Inc.
394316	NE	18055	MAY	Cominco American Inc.
394316	SE	21517	ORION	Cominco American Inc.
394316	SE	21515	WEDGE FRACTION	Cominco American Inc.
394316	NE	155666	WILL 10	Cominco American Inc.
394316	NE	155667	WILL 11	Cominco American Inc.
394321	NE	18053	BARBARA	Cominco American Inc.
394321	NE	21519	CALCAMIDE NO.1	Cominco American Inc.
394321	NE	21520	CALCAMIDE NO.2	Cominco American Inc.
394321	NE	21529	ETNA	Cominco American Inc.
394321	SE	14803	GORDON NO.3	Cominco American Inc.
394321	SE	14804	GORDON NO.4	Cominco American Inc.
394321	NE	14805	GORDON NO.5	Cominco American Inc.
394321	NE	21531	WASHINGTON FRACTION	Cominco American Inc.
394322	NW	18053	BARBARA	Cominco American Inc.
394322	NW	21520	CALCAMIDE NO.2	Cominco American Inc.
394322	NW	18094	MEANDER NO.100	Cominco American Inc.

5.1.4. Private Shoreline Development Analysis

The information presented in this section summarizes the results for the inventory and analysis components of this task.

5.1.4.1. *Inventory*

Documentation of the results for the inventory component of the study includes three sets of information: 1) a detailed map series and table recording information for the set of parcels included in the study area; 2) maps and discussion of local land use regulations; and 3) a summary of existing land development conditions.

5.1.4.1.1. *Parcel Map and Database*

GIS analysis of the land ownership database (as shown in Table 5.1-1) indicated there are 87 tax parcels that are privately owned and adjacent to the Project boundary. Figure 5.1-4 is a summary-level map indicating the locations of the PIDs that make up these tax parcels, which represent the land base for the analysis of shoreline development potential. In some cases, a single tax parcel contains multiple PIDs because of the way discrete polygons were managed in the mapping process (typically when a tax parcel is divided by a road or railroad right-of-way, such as with PIDs 576, 578, 580, and 582 on Map 7 of Figure 5.1-5). In these cases, the appropriate PIDs were combined to derive the acreage total for the tax parcel. The 87 tax parcels in the database include 95 PIDs.

As can be seen from Figure 5.1-4, privately owned parcels adjacent to the Project boundary are concentrated along the southern portion of the Project from Metaline Falls upstream. Including the urbanized but unincorporated area on the northern outskirts of Metaline Falls, 74 of the 87 privately owned parcels are located south of the falls, while 13 parcels (including some with multiple PIDs) occur in scattered locations north of Metaline Falls. Most of the private parcels north of Metaline Falls are associated with former or current mining uses. Within the southern part of the study area, private ownership along the Project boundary is virtually continuous along the east bank of the Pend Oreille River, with the primary exceptions being gaps from approximately Pocahontas Creek to Wolf Creek and in the vicinity of Sand Creek. Lands adjacent to the Project on the west side of the river are also predominantly in private ownership, although there are several segments of federal, state, and local government ownership.

Appendix 2 contains the parcel database that corresponds to the properties outlined in Figure 5.1-4. Table A.2-1 documents information on key baseline characteristics for each parcel included in the scope of the analysis, including parcel identification data, the type of use identified in the Pend Oreille County land records, and parcel acreage. The appendix also includes capacity information related to land regulations. Table 5.1-4 provides a highly aggregated summary of the geographic distribution of these parcels.

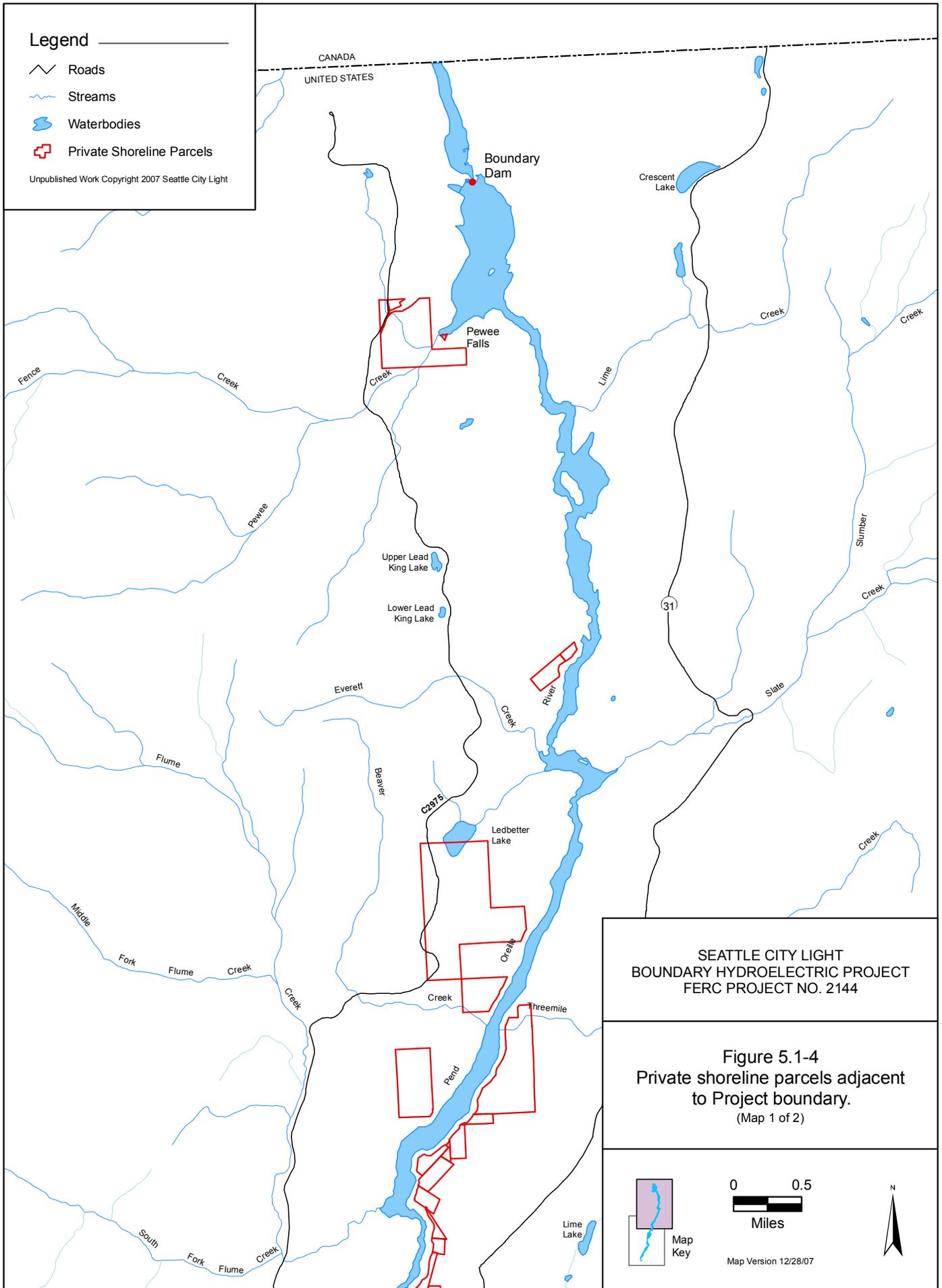
Table 5.1-4. Summary of private shoreline parcel geographic distribution.

Study Area Location	Number of Parcels
West bank, north of Metaline Falls	6
East bank, north of Metaline Falls	7
West bank, south of Metaline Falls	41
East bank, south of Metaline Falls	33
Total	87

Legend

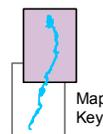
-  Roads
-  Streams
-  Waterbodies
-  Private Shoreline Parcels

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Figure 5.1-4
Private shoreline parcels adjacent
to Project boundary.
(Map 1 of 2)



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Miles

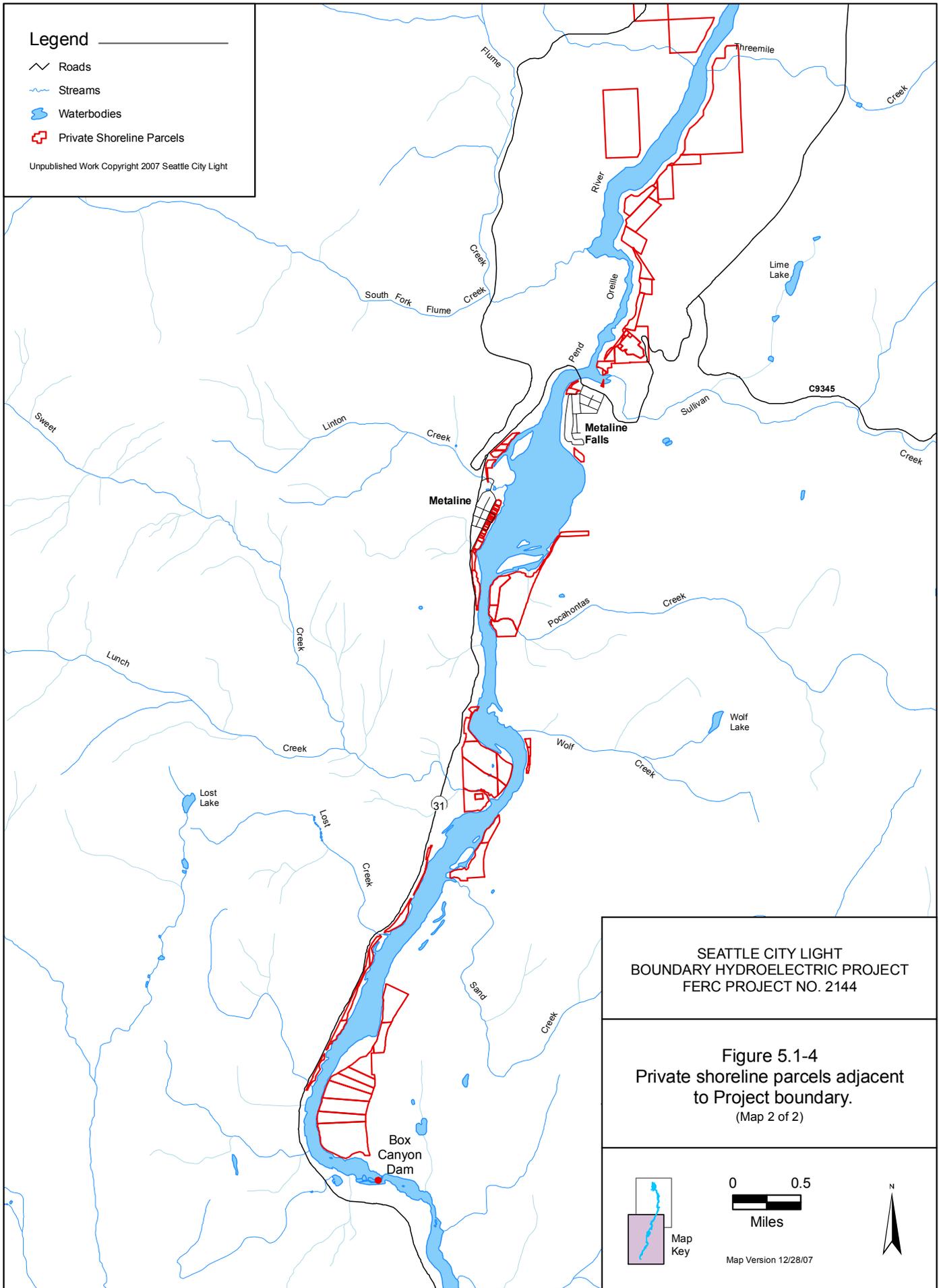


Map Version 12/28/07

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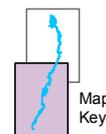
-  Roads
-  Streams
-  Waterbodies
-  Private Shoreline Parcels

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Figure 5.1-4
Private shoreline parcels adjacent
to Project boundary.
(Map 2 of 2)



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Map Version 12/28/07

Table 5.1-5 indicates the distribution of parcels by acreage class. The subject parcels range in size from approximately 0.02 acre to 319 acres, although a large majority are small parcels. Only 3 of the parcels include 100 acres or more, and only 16 are 20 acres to 100 acres in size. Twenty-seven parcels include less than 1 acre, and another 18 are from 1 to 5 acres in size.

Table 5.1-5. Distribution of private shoreline parcels by acreage class.

Acres	Number of Parcels
100+	3
40-100	8
20-40	8
10-20	11
5-10	12
1-5	18
<1	27
Total	87

The land use designations contained in the Pend Oreille County land records are not necessarily current. However, they provide a reasonable approximation of current land use on the private shoreline parcels. Table 5.1-6 summarizes the distribution of the parcels by the recorded land use category. Single-family residential use accounts for 33 of the parcels. A similar number (25) of the parcels were identified as undeveloped. The land records show MH (mobile home) as the use for 5 parcels. The 17 parcels identified as “Designated” appear to be properties enrolled as timber lands for property tax purposes.

Table 5.1-6. Distribution of private shoreline parcels by land use category.

Use Category	Number of Parcels
8800 Designated	17
9100 Undeveloped	25
8590 Mining Claim	5
1100 Residential – Single	33
1150/1500 MH (mobile home)	5
7191 Historic	1
8300 Ag (OS)	1
Total	87

5.1.4.1.2. *Land Use Regulation*

Existing conditions relative to local land use regulation are presented below.

Pend Oreille County

Comprehensive Plan

Pend Oreille County adopted its current Comprehensive Plan on October 17, 2005. The Comprehensive Plan summarizes existing conditions and identifies goals and policy statements for the following elements: land use, economic development, transportation, housing, parks and recreation, utilities, essential public facilities, and capital facilities (Pend Oreille County 2005). The land use element describes the desired future land use patterns within the county through goals and policies relating to general land use, rural lands, natural resource lands, and critical areas. The Comprehensive Plan is intended to be used as an overall guide for existing property owners and future residents who intend to buy and develop land in the county.

In conjunction with the Comprehensive Plan, Pend Oreille County developed and adopted a Future Land Use Map that displays land use designations for all areas under county land use jurisdiction (the unincorporated areas of the county). The land use element of the plan indicates that all parcels in the unincorporated county have received one of the following future land use designations, most of which reflect the allowed parcel density: Public Lands; Tribal Lands; Natural Resource-40; Natural Resource-20; Rural-40; Rural-20; Rural-10; Rural-5; Rural-2.5.

The adopted Comprehensive Plan is currently being revised in response to a legal appeal. With respect to the land use designations, the primary pending change is expected to be the elimination of the Rural-2.5 designation; all lands originally assigned the Rural-2.5 designation would be redesignated as Rural-5 (M. Lithgow, Pend Oreille County Public Works Department, personal communication, September-October 2007). For purposes of the capacity analysis in this study, parcels designated in the Comprehensive Plan as Rural-2.5 are treated as if they are designated as Rural-5.

Development Regulations

Local jurisdictions implement land use guidance established in their comprehensive plans through the adoption and enforcement of development regulations and zoning. Through Pend Oreille County Ordinance #2007-2, development regulations for Pend Oreille County are now consolidated in Title XX of the county code (Pend Oreille County 2007). Key components of the development regulations include Chapter XX.26 Zoning Controls, Chapter XX.34 Shoreline Regulations, and Chapter XX.36 Environmentally Sensitive Areas. Provisions of these chapters that are directly pertinent to the private shoreline development analysis are summarized below.

The Pend Oreille County Code addresses zoning requirements for legal lots, establishes zoning districts to be used in accordance with the Comprehensive Plan, identifies permitted and conditional uses within the respective zoning districts, establishes performance standards applicable to all developments and land use activities, defines a rural overlay zone that may be suitable for more intensive development, and provides direction for the location of essential

public facilities (Pend Oreille County 2007). Section XX.26.030 establishes eight zoning districts, which are the land use designations identified in the Comprehensive Plan, minus the Rural-2.5 classification. Lands with a Natural Resource zoning designation can be further specified as Timber or Agricultural Lands.

Five of the eight county zoning designations (Rural-5, -10, and -20, and Natural Resource Lands-20 and -40) apply to one or more parcels within the study area for the private shoreline development analysis. These five designations are defined as follows:

- Rural-5. The residential density of this zoning district is one dwelling unit per 5 acres. This zoning district is located along U.S. highways, state routes, designated arterials, and major and minor county collector roads.
- Rural-10. The residential density of this zoning district is one dwelling unit per 10 acres. This zoning district includes parcels with frontage on maintained county roads with adequate access.
- Rural-20. The residential density of this zoning district is one dwelling unit per 20 acres. Adequate access is required for parcels within this zone.
- Natural Resource Lands-20. The residential density of this zoning district is one dwelling unit per 20 acres. Parcels within this zone must have approved road access and be designated as timber or agricultural lands, or currently in use as a mine.
- Natural Resource Lands-40. The residential density of this zoning district is one dwelling unit per 40 acres. Parcels within this zone have no road access and must be designated as timber or agricultural lands, or currently in use as a mine.

The natural resource zoning districts are used for timber and agricultural lands and mining properties. Natural resource zoning designations are applied only to timber and agricultural lands that are designated exclusively for those purposes in order to receive preferential property tax assessment. Because tax penalties must be paid when designated timber or agricultural lands are converted for developed use, owners of such properties have a disincentive to consider development activity on their lands. Conversely, because lands with rural zoning designations do not include designated timber or agricultural lands, lands zoned rural are more likely to be converted to developed land uses than are lands in the natural resource designations.

Chapter XX.34, Shoreline Regulations, discusses County requirements related to the Washington Shoreline Management Act (SMA) of 1971. Pend Oreille County adopted the current shoreline master program in 1974. All shoreline areas in the county that are subject to regulation under the SMA are assigned one of four shoreline environment designations. All shoreline lands in unincorporated Pend Oreille County on both the east and west sides of Boundary Reservoir are designated as conservancy environment (Pend Oreille County 2007).

As stated in the regulations, the “objective in designating a conservancy environment is to protect, conserve and manage existing natural resources and valuable historic and cultural areas in order to insure a continuous flow of recreational benefits to the public and to achieve sustained resource utilization” (Pend Oreille County 2007). This designation is for areas intended to maintain their existing character; preferred uses are those that are non-consumptive of the physical and biological resources of the area, and nonpermanent uses that do not substantially

degrade the existing character of an area. The regulations note that this environment also would be suitable for areas of steep slopes presenting erosion and slide hazards, areas prone to flooding, and areas that cannot provide adequate water supply or sewage disposal.

Chapter XX.36 prescribes Pend Oreille County regulation of Environmentally Sensitive Areas. These include wetlands, frequently flooded areas, geologically hazardous areas, critical wildlife and fish habitat, and critical aquifer recharge areas (Pend Oreille County 2007). The regulations identify several types of geologically hazardous areas, specifically erosion, landslide, seismic, and mine hazard areas. In addition to defining the hazards and how they are identified, the regulations prescribe performance standards or development controls that are applicable to proposed activities on properties that include sensitive areas. In general, the restrictions applied through these regulations reduce the amount and intensity of development that can occur on an affected property, and thereby make these areas less attractive to potential developers.

Meteline and Metaline Falls

The towns of Metaline and Metaline Falls have both adopted comprehensive plans and development regulations to implement those plans. Because the plans and regulations for the two towns are very similar, they are discussed together.

Comprehensive Plans

Comprehensive plans for the towns of Metaline and Metaline Falls were approved in 1996 (Town of Metaline 1996; Town of Metaline Falls 1996). These comprehensive plans include similar elements, along with goals and strategies, as those listed in the Pend Oreille County Comprehensive Plan. Both towns' comprehensive plans identify Pend Oreille River-specific goals that include (1) providing increased public access to the Pend Oreille River with the support of local, state, and federal agencies; and (2) managing the level and flow of the Pend Oreille River to enhance recreational opportunities, wildlife, the fishery, and water quality, while recognizing power generation requirements. Both plans also call for the effective involvement of local residents in the ongoing management of the Pend Oreille River. Both towns are currently in the process of updating their comprehensive plans, which is required periodically by the GMA; updated plans may be available in 2008 (M. Lithgow, Pend Oreille County Public Works Department, personal communication, Sept-Oct 2007).

Development Codes

The two towns both adopted development codes in 1997 (Town of Metaline 1997; Town of Metaline Falls 1997) to establish zoning and related regulations. Chapter V, Zoning District Regulations (for both towns), provides descriptions of each zoning designation applicable to the Project study area. Zoning designations adjacent to the reservoir for the Town of Metaline include Open Space and Residential. The Open Space zoning applies to an area in the middle of the town, where Metaline Waterfront Park is located. Areas along the reservoir to the north and south of the park are zoned Residential. The Town of Metaline Falls' zoning designations establish an Open Space buffer around the edge of the town adjacent to the river. The Open Space zoning district in both towns applies to designated open space such as existing parks, areas with severe slopes, and floodplains.

The Residential zoning districts for the towns of Metaline and Metaline Falls include areas used exclusively for residential purposes, which may include home businesses (other commercial activities are prohibited). Permitted uses include single-family dwellings, minor utility installations, family daycare homes, adult daycare homes, churches, schools, and congregate living facilities and daycare homes (Town of Metaline 1997; Town of Metaline Falls 1997). Chapter 6, Performance Standards, in the development code for each town requires that developers comply with additional performance standards where applicable. These requirements can include shoreline buffers, which the regulations note may be needed along the river and its tributary streams.

The shoreline areas within the towns of Metaline and Metaline Falls are designated as urban environments under the SMA. The objective of this designation is to ensure optimum use of shorelines within urbanizing areas by providing for intensive public use and by managing development so that it enhances and maintains shorelines for a multiplicity of urban uses. This is considered an area of high-intensity land use.

5.1.4.1.3. Existing Development Conditions

Land Use

Pend Oreille County covers approximately 896,000 acres of land, of which about 65 percent is publicly owned, with the remaining 35 percent (309,000 acres) held in private ownership (Pend Oreille County 2005). Of the total area, 833,000 acres (93 percent) is in large-block ownerships (public and private) that are unlikely to change from their current undeveloped or relatively undeveloped state. These lands include federal and state timberlands; public parks; privately owned timber and agricultural resources; and sensitive features such as wetlands, streams, and other critical areas. Nearly 72 percent of the privately owned land in the unincorporated county is designated as timber land, and another 9 percent is designated under the agricultural open space program. Existing improved parcels, which are predominantly in single-family residential use, occupy approximately 4,600 acres or 1.5 percent of the privately owned land in the county. Approximately 4,000 existing lots comprising nearly 11,000 acres have been platted but are currently vacant, and are considered developable; these unimproved parcels account for approximately 3.5 percent of the private land. The remaining 14 percent of private land consists of rural lands that are located outside the urban growth areas and are not already platted.

Incorporated cities and towns and their designated urban growth areas comprise less than 1 percent of the land area in the county. Pend Oreille County's five incorporated cities and towns - Newport, Cusick, Ione, Metaline, and Metaline Falls - include 1,838 acres within their incorporation limits. Per the Washington Growth Management Act, Urban Growth Areas (UGAs) have been designated around each incorporated community in the state to delineate the area within which future urban growth is allowed. Unlike other incorporated communities in the county, the towns of Metaline and Metaline Falls designated UGAs that did not include any additional land beyond their present boundaries. The five UGAs include a total of 3,321 acres outside of existing incorporation boundaries. Therefore, the total land area within UGAs is 5,159 acres, of which approximately 70 percent is currently vacant (Pend Oreille County 2005).

The towns of Metaline and Metaline Falls are small communities that developed from a resource-based economy within the narrow valley of the Pend Oreille River. Metaline is situated

on a river terrace on the west bank of the river. The current land use in Metaline consists mostly of residential areas, primarily in the northwest and southeast parts of the town. There is a mix of commercial, institutional, and residential uses in the area defined as the Village Center, and public (municipal) land in the northeast and southwest areas of the town. The remaining portions of the town are considered vacant. The pattern of existing parcels in the town is dominated by a dense area, approximately 5 blocks long and 3 blocks wide, of small lots configured roughly in a grid pattern. Future land use designations in the Comprehensive Plan are predominantly residential, with open space areas in the middle of town between the river and SR 31, in the southwest corner of town, and a small piece along the western boundary of town (Town of Metaline 1996). Metaline designated a UGA that does not extend beyond the current town boundaries and comprises approximately 294 acres of land. There have been no new subdivisions in and around Metaline in recent years (Pend Oreille County 2007).

Metaline Falls is situated on a bluff on the east bank of the river a short distance north of Metaline. The predominant land use is residential, with adjacent areas of open space located along the river. The Central Business District (CBD) is a 2-block area of commercial uses located in the north-central part of the town. It is adjoined by areas with a mix of commercial, institutional, and residential uses in the western, south-central, and east-central parts of the community. The CBD and adjacent core areas of the town have a pattern of small lots arranged in dense, generally rectangular grids, although some of the streets intersect at angles. Residential areas along the northern and western edges of the town and the northeastern and southwestern quadrants were platted at later dates and have somewhat larger lots. Based on direction provided in the Comprehensive Plan, future land uses in Metaline Falls are anticipated to be similar to the current pattern (Town of Metaline Falls 1996). Open-space areas will be concentrated near existing parks and areas with severe natural limitations on development, such as steep slopes and floodplain areas. Metaline Falls designated a UGA that did not extend beyond its current boundaries and comprises approximately 143 acres (Pend Oreille County 2007).

Population Distribution and Growth

Pend Oreille County (2005) had a total population of 11,732 people in 2000. The five incorporated communities accounted for approximately 25 percent of the total population (2,997 people), while the remaining 75 percent of the population lived in unincorporated areas. Newport was by far the largest incorporated community, with a population of 1,921 in 2000. The Metaline and Metaline Falls populations in 2000 were 162 and 223, respectively.

The county population increased by more than 32 percent between 1990 and 2000 (from a base of 8,915 people). The population in unincorporated areas grew by almost 43 percent during that period, compared to a combined increase of less than 7 percent for the incorporated communities (Pend Oreille County 2005). Between 1990 and 2000, the population increased in the communities of Cusick, Metaline Falls, and Newport, but decreased in Ione and Metaline. Increases in population ranged from 6 percent in Metaline Falls to more than 13 percent in Newport, while the decreases were more than 5 percent in Ione and 18 percent in Metaline. Although the population in unincorporated areas grew relative to the total population, both the unincorporated and incorporated population has become increasingly concentrated in southern Pend Oreille County (generally, the area south of Cusick).

Population change in Pend Oreille County from 2000 to 2004 was less than in the 1990–2000 period. WOFM estimated the total population of the county in 2004 at 11,900, an increase of 1 percent from the 2000 population (Pend Oreille County 2005). For the same period, the estimates for the unincorporated areas and Newport represented increases of 2 percent in each case, while the balance of the incorporated population decreased by 1 percent. By 2007, however, the county population was estimated at 12,600, an increase of 7.4 percent over the 2000 population level (WOFM 2007). The estimated Metaline population as of April 1, 2001 was 165, a slight increase over the 2000 figure of 162. A special census in Metaline Falls indicated a 2007 population of 286 people, representing growth of 28 percent from 2000 to 2007.

5.1.4.2. Analysis

5.1.4.2.1. Land Capacity

In summary, the development capacity of the private shoreline parcels adjacent to the Project boundary was determined through estimating the maximum number of individual lots that could be created on those parcels, based on zoning and other applicable land use regulation. The results from that process are presented below, followed by a discussion of how future use of that land capacity might be influenced by a variety of regulatory constraints on development.

Existing Parcels and Acreage

Of the 87 private shoreline parcels identified, 60 parcels are located in unincorporated Pend Oreille County and the remaining 27 parcels are within the incorporated towns of Metaline (primarily) and Metaline Falls. The size of these parcels ranges from approximately 0.02 acre to 319 acres. The total area within the 87 parcels is 1,512 acres. The five largest parcels (319, 133, 127, 88, and 81 acres) account for more than 49 percent of the total acreage. These five parcels are owned by mining and forest resources companies. More than half of the parcels are 5 acres or less in size.

The Pend Oreille County land records reviewed by SPU indicate that 62 of the private shoreline parcels have been developed with some type of improvement, while the remaining 25 private parcels are recorded as undeveloped. Of the 62 developed parcels, 42 are located within the unincorporated county and the remaining 20 are within one of the towns. The 25 undeveloped parcels are distributed similarly, with 18 in the county and the remaining 7 parcels within the towns.

Depending on the size of the parcel, parcels that have already been developed may already be at their foreseeable land capacity. For example, a 6,000-square-foot lot with an existing residence in one of the towns would already be developed to the maximum intensity allowed under the local development regulations. Conversely, a larger parcel with an existing residence conceivably could be divided into one or more additional lots on which new structures could be developed.

Potential Future Parcel Division

The development regulations adopted by Pend Oreille County and the towns of Metaline and Metaline Falls define the ways in which existing parcels can be subdivided into additional

parcels to permit development of residences or other structures. The ability to subdivide a property is dependent on the zoning designation for that property. For example, a 40-acre parcel in unincorporated Pend Oreille County that is zoned Rural-10 could be split into a maximum of four 10-acre lots, unless the owner were successfully able to obtain a rezone of the property to permit a higher density.

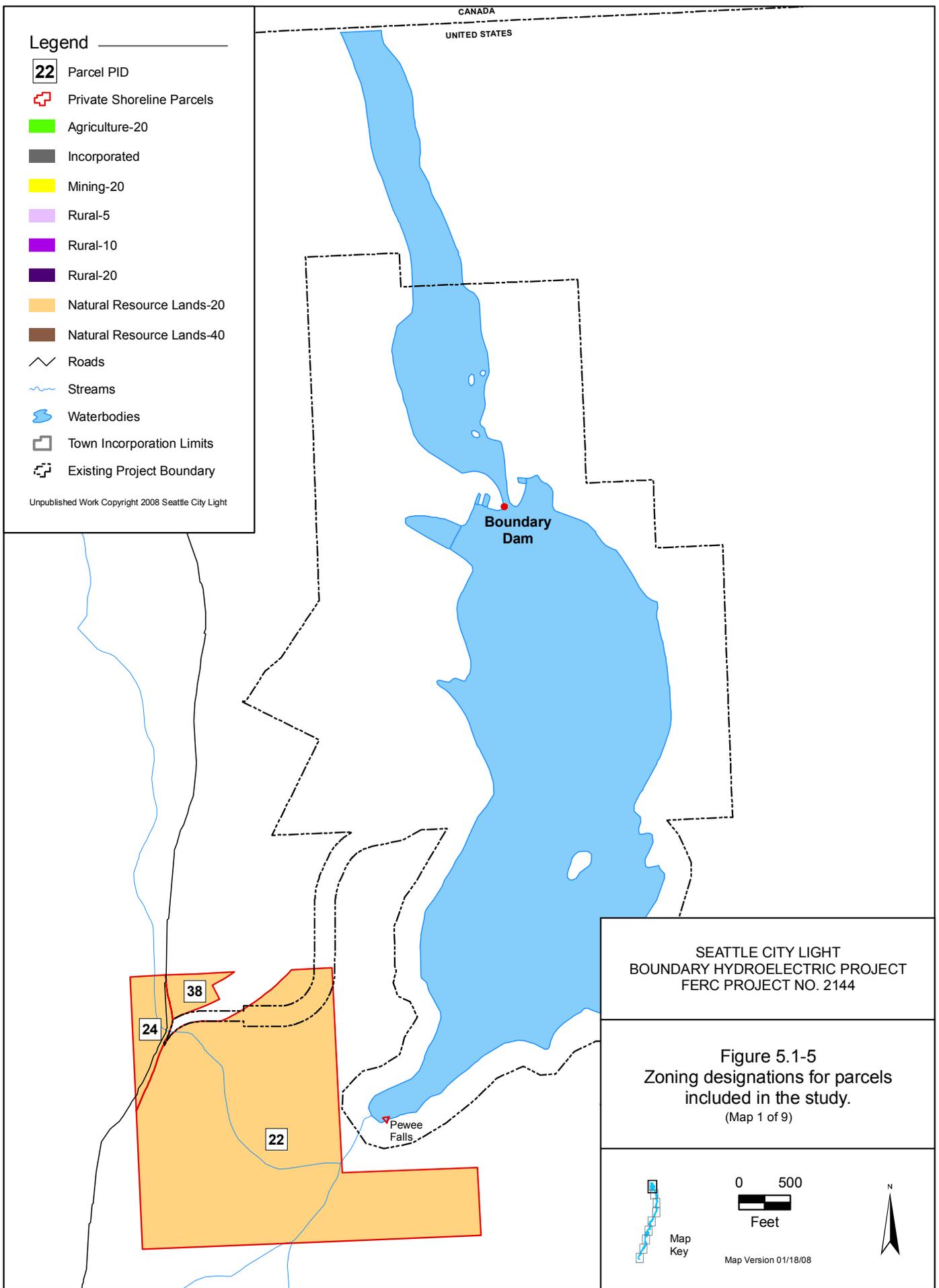
TtEC calculated the number of potential future lots that could be created by dividing the existing parcels within the study area. This was done by examining the acreage for each existing parcel and the development density criterion (minimum lot size) prescribed by the applicable county or town zoning designation. If the existing parcel acreage is less than the minimum lot size defined by the zoning designation, no additional lots could be created on the parcel. If the existing parcel acreage is greater than the prescribed minimum lot size, division of the parcel into additional lots would be permissible. For those cases, TtEC calculated the maximum number of lots that could legally be created under current zoning. Figure 5.1-5 is a map series indicating the zoning designations applicable to the specific parcels included in the analysis.

The results of this calculation are summarized in Table 5.1-7. Based on current zoning, it would be permissible to divide some of the existing parcels into future parcels in a way that would result in a total of 261 parcels or lots within the study area (87 existing parcels plus 174 potential new parcels). That result should not be interpreted to mean that in the future there could or would likely be up to 261 privately-owned parcels adjacent to the Project boundary, where there are now 87 such parcels. If and when property owners subdivided their land, many of them could be expected to do so in a way that created the maximum number of waterfront lots. Particularly with larger parcels, however, it would likely not be feasible or desirable to divide the property so that all lots would be adjacent to the Project boundary. For example, if a 20-acre parcel adjacent to the Project boundary that is zoned Rural-5 were subdivided in the future, it is not necessarily the case that this action would result in four lots adjacent to the Project boundary (a net increase of three adjacent lots). Therefore, even if all of the existing parcels that could be divided were in fact configured to their maximum capacity based on current regulations, it is likely that the number of new lots adjacent to the Project boundary would be less than 174.

Legend

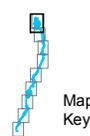
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- ▣ Private Shoreline Parcels
- Agriculture-20
- Incorporated
- Mining-20
- Rural-5
- Rural-10
- Rural-20
- Natural Resource Lands-20
- Natural Resource Lands-40
- Roads
- Streams
- Waterbodies
- Town Incorporation Limits
- Existing Project Boundary

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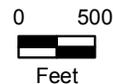


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Figure 5.1-5
Zoning designations for parcels
included in the study.
(Map 1 of 9)



Map Key



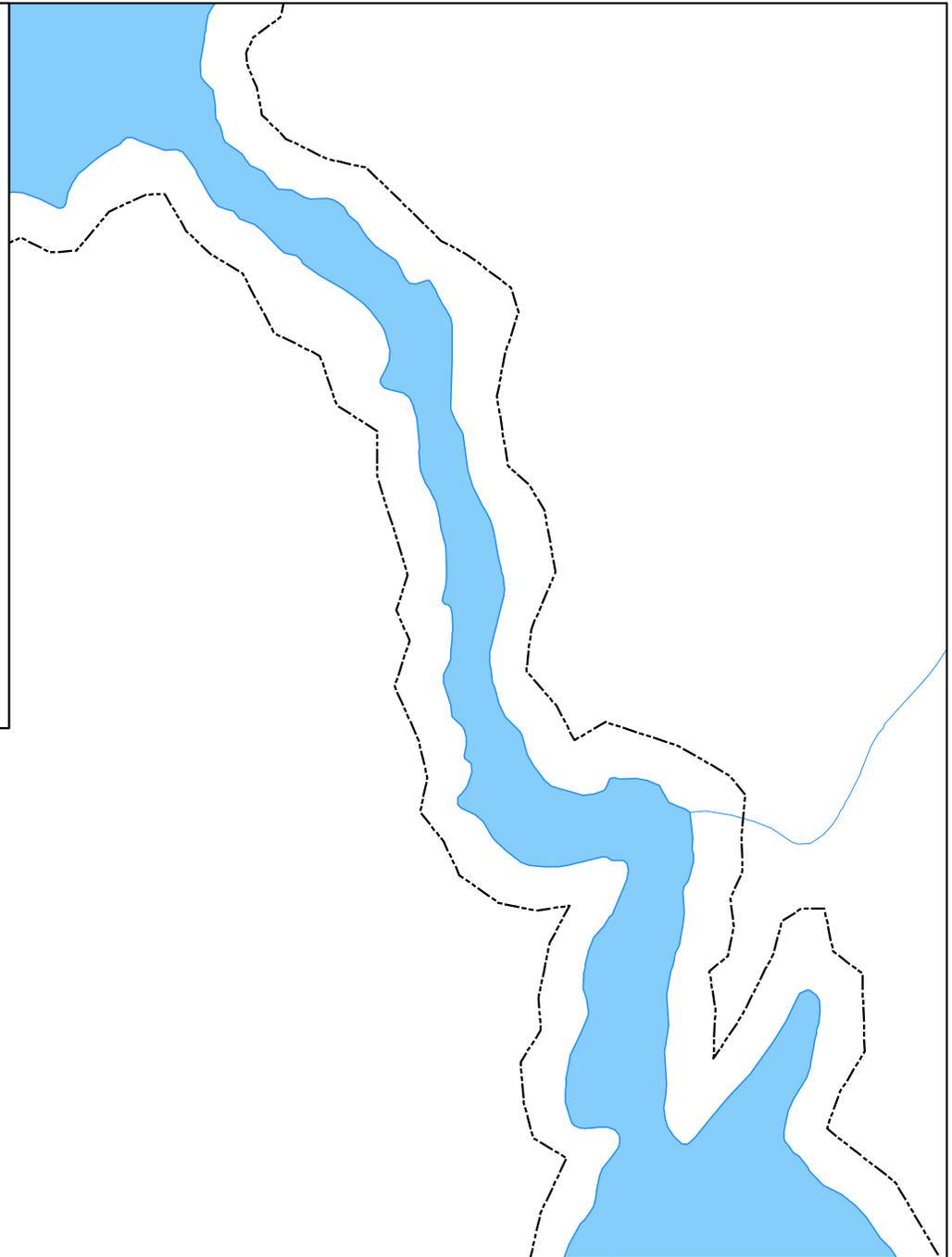
Map Version 01/18/08



Legend

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-  Private Shoreline Parcels
-  Agriculture-20
-  Incorporated
-  Mining-20
-  Rural-5
-  Rural-10
-  Rural-20
-  Natural Resource Lands-20
-  Natural Resource Lands-40
-  Roads
-  Streams
-  Waterbodies
-  Town Incorporation Limits
-  Existing Project Boundary

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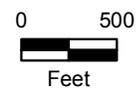


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Figure 5.1-5
Zoning designations for parcels
included in the study.
(Map 2 of 9)



Map
Key



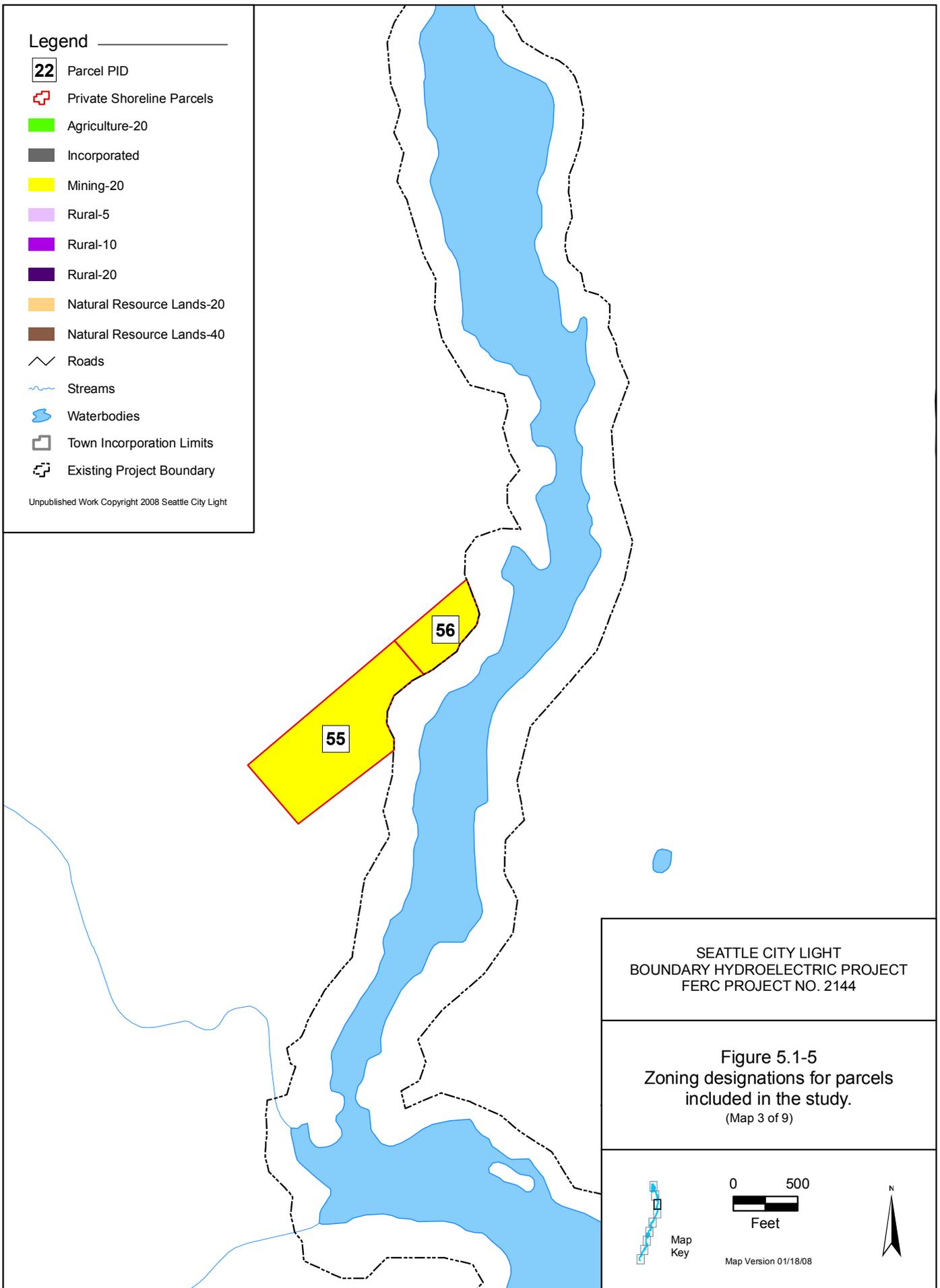
Map Version 01/18/08



Legend

-  Parcel PID
-  Private Shoreline Parcels
-  Agriculture-20
-  Incorporated
-  Mining-20
-  Rural-5
-  Rural-10
-  Rural-20
-  Natural Resource Lands-20
-  Natural Resource Lands-40
-  Roads
-  Streams
-  Waterbodies
-  Town Incorporation Limits
-  Existing Project Boundary

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Figure 5.1-5
Zoning designations for parcels
included in the study.
(Map 3 of 9)



Map
Key

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Feet

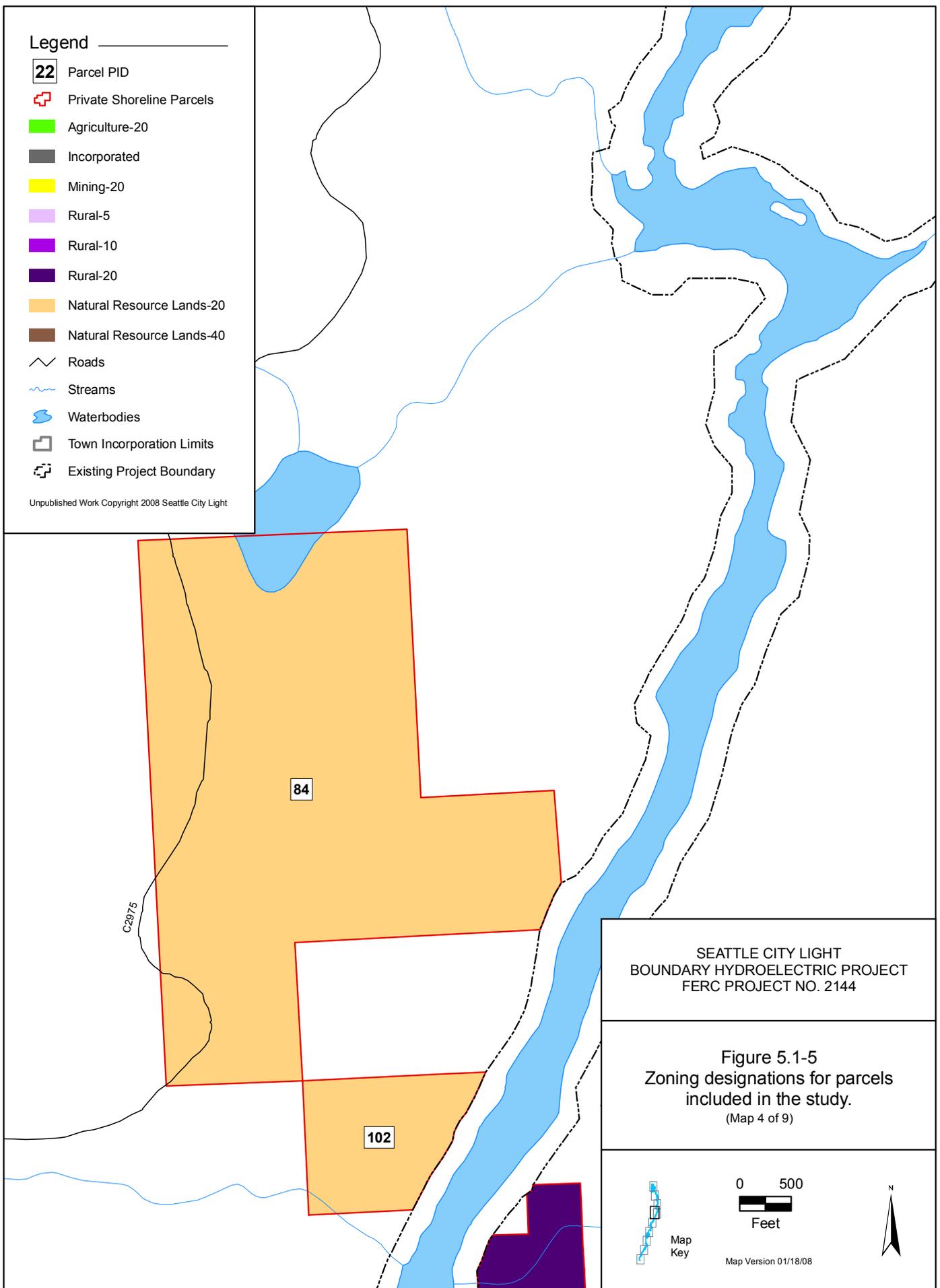
Map Version 01/18/08



Legend

- 22 Parcel PID
- Private Shoreline Parcels
- Agriculture-20
- Incorporated
- Mining-20
- Rural-5
- Rural-10
- Rural-20
- Natural Resource Lands-20
- Natural Resource Lands-40
- Roads
- Streams
- Waterbodies
- Town Incorporation Limits
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Figure 5.1-5
Zoning designations for parcels
included in the study.
(Map 4 of 9)



Map
Key

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Feet

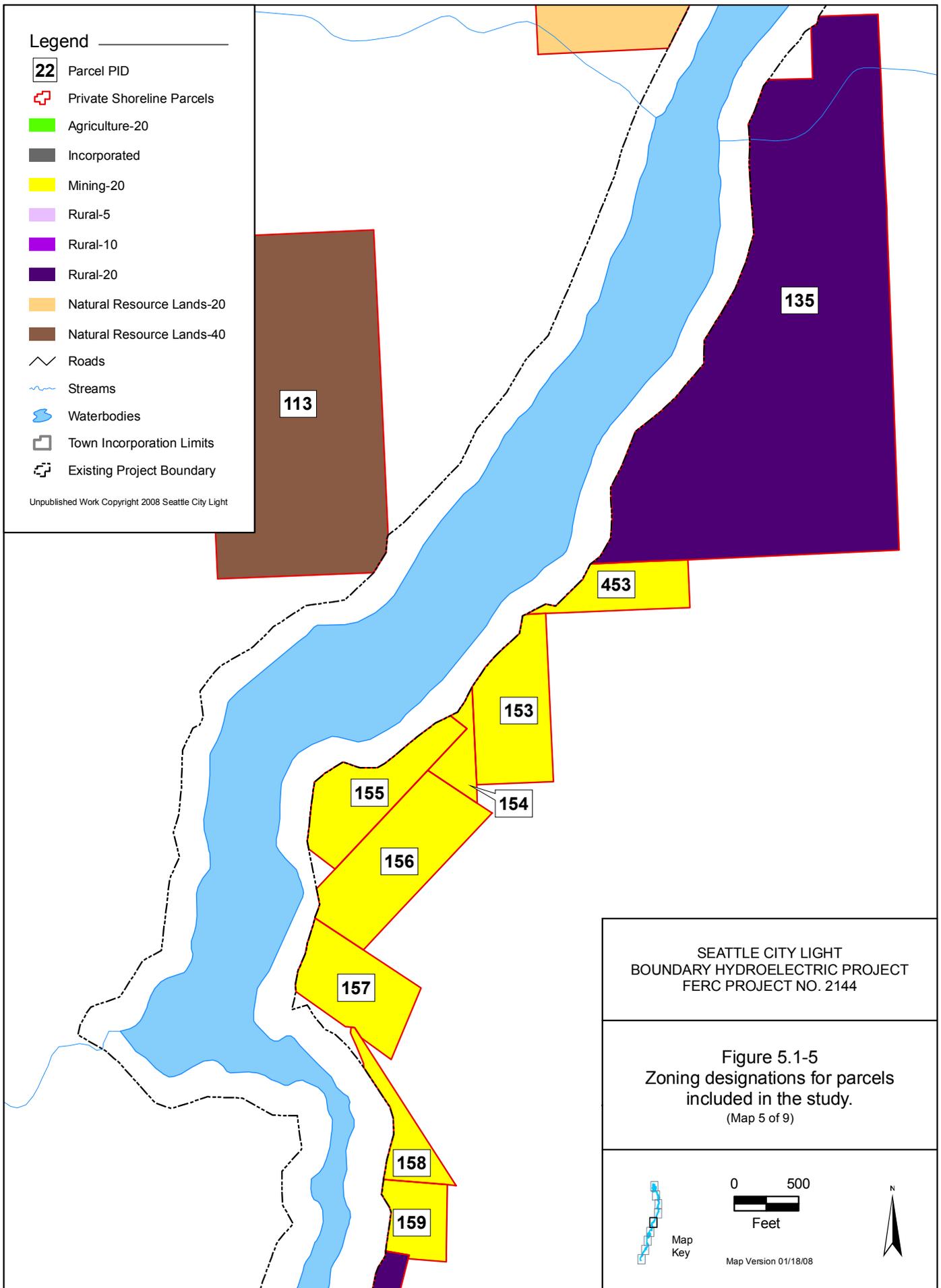
Map Version 01/18/08



Legend

- 22 Parcel PID
- Private Shoreline Parcels
- Agriculture-20
- Incorporated
- Mining-20
- Rural-5
- Rural-10
- Rural-20
- Natural Resource Lands-20
- Natural Resource Lands-40
- Roads
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FERC PROJECT NO. 2144

Figure 5.1-5
Zoning designations for parcels
included in the study.
(Map 5 of 9)



Map
Key

0 500
Feet

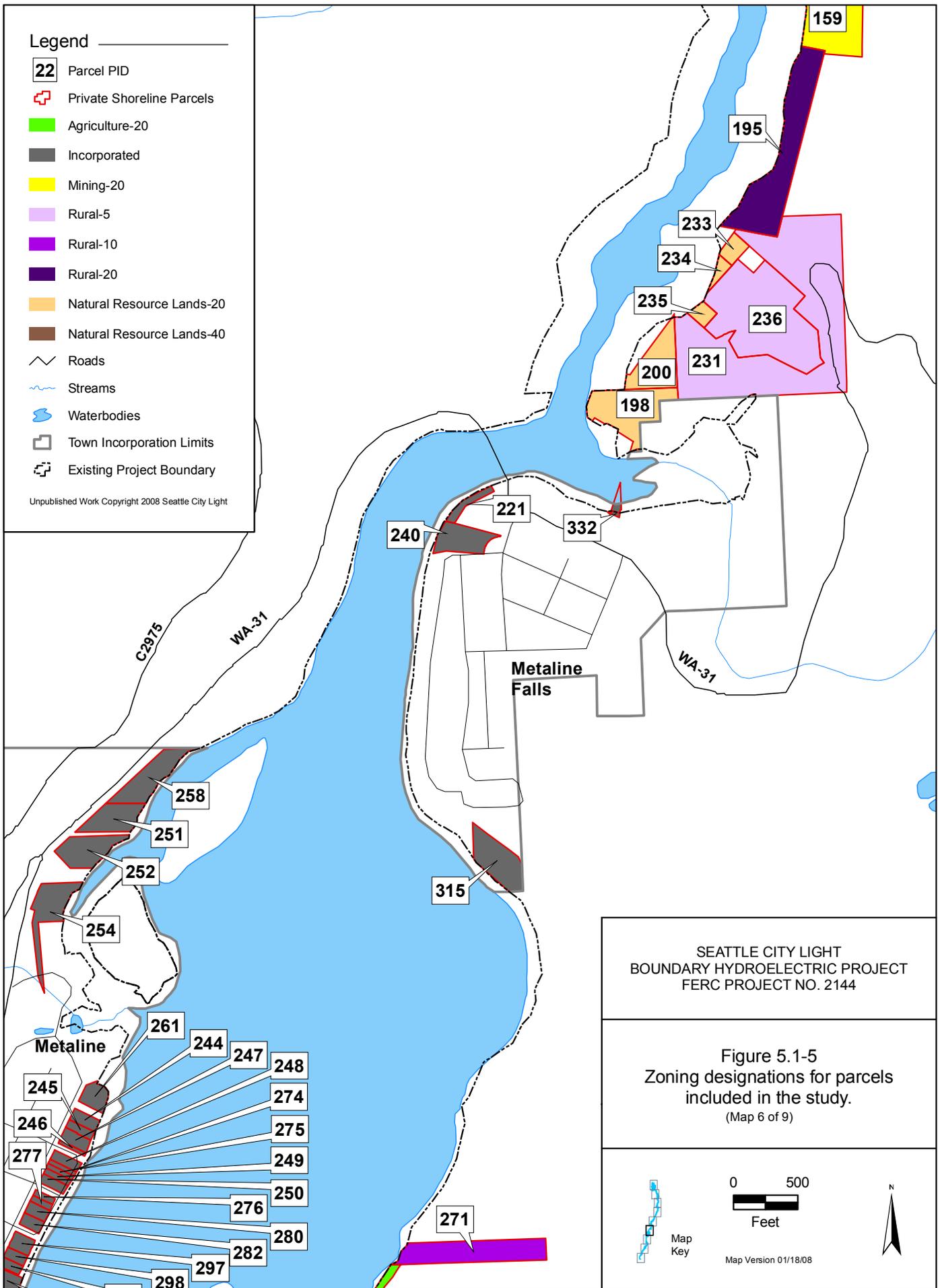
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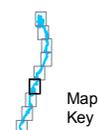
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- Agriculture-20
- Incorporated
- Mining-20
- Rural-5
- Rural-10
- Rural-20
- Natural Resource Lands-20
- Natural Resource Lands-40
- Roads
- Streams
- Waterbodies
- Town Incorporation Limits
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Figure 5.1-5
Zoning designations for parcels
included in the study.
(Map 6 of 9)



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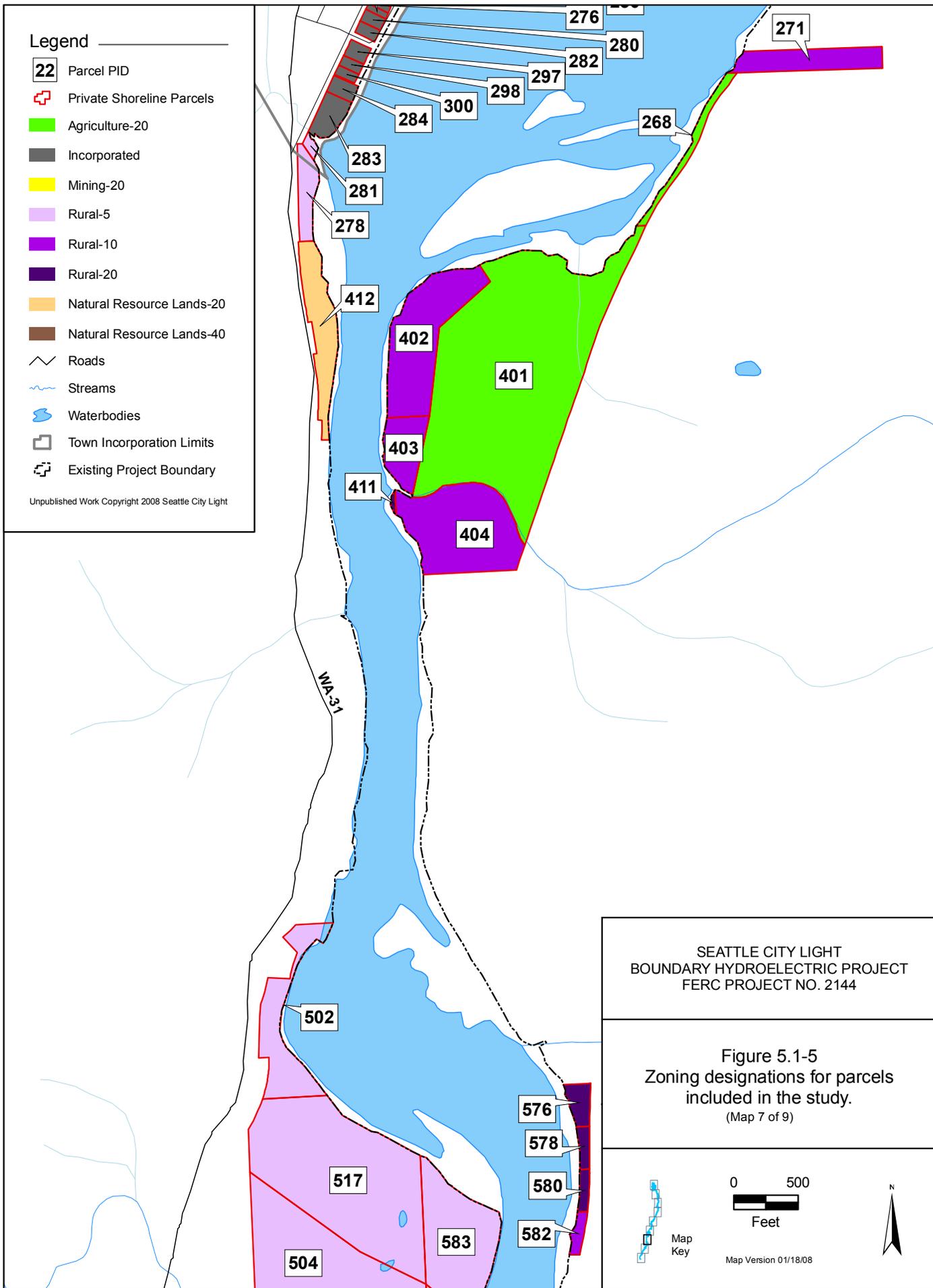


Map Version 01/18/08

Legend

- 22 Parcel PID
- + Private Shoreline Parcels
- Agriculture-20
- Incorporated
- Mining-20
- Rural-5
- Rural-10
- Rural-20
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- Natural Resource Lands-40
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Figure 5.1-5
Zoning designations for parcels
included in the study.
(Map 7 of 9)

Map
Key

0 500

Feet

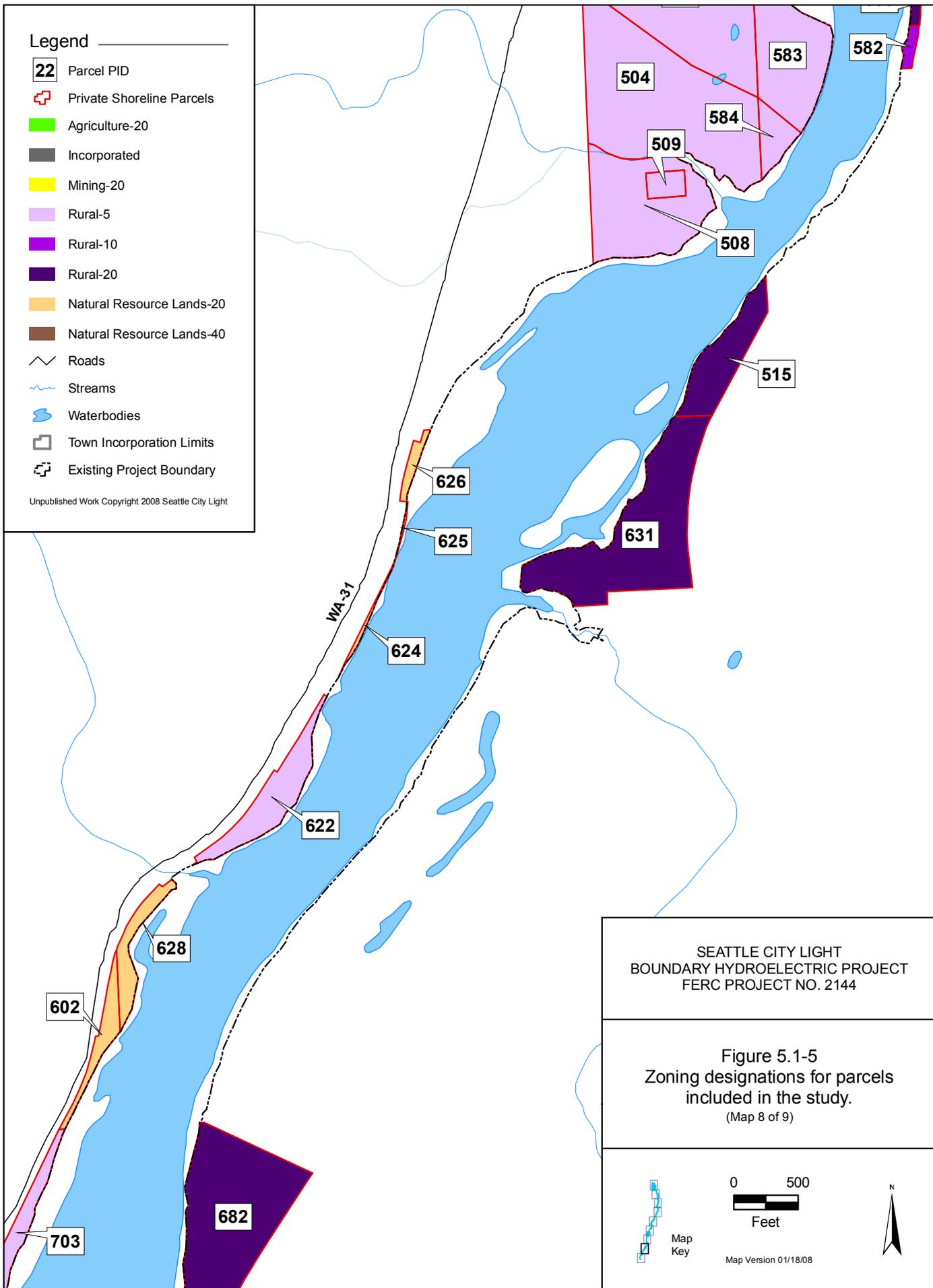
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Map Version 01/18/08

Legend

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- + Private Shoreline Parcels
- Agriculture-20
- Incorporated
- Mining-20
- Rural-5
- Rural-10
- Rural-20
- Natural Resource Lands-20
- Natural Resource Lands-40
- Roads
- Streams
- Waterbodies
- Town Incorporation Limits
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Figure 5.1-5
Zoning designations for parcels
included in the study.
(Map 8 of 9)

Map Key

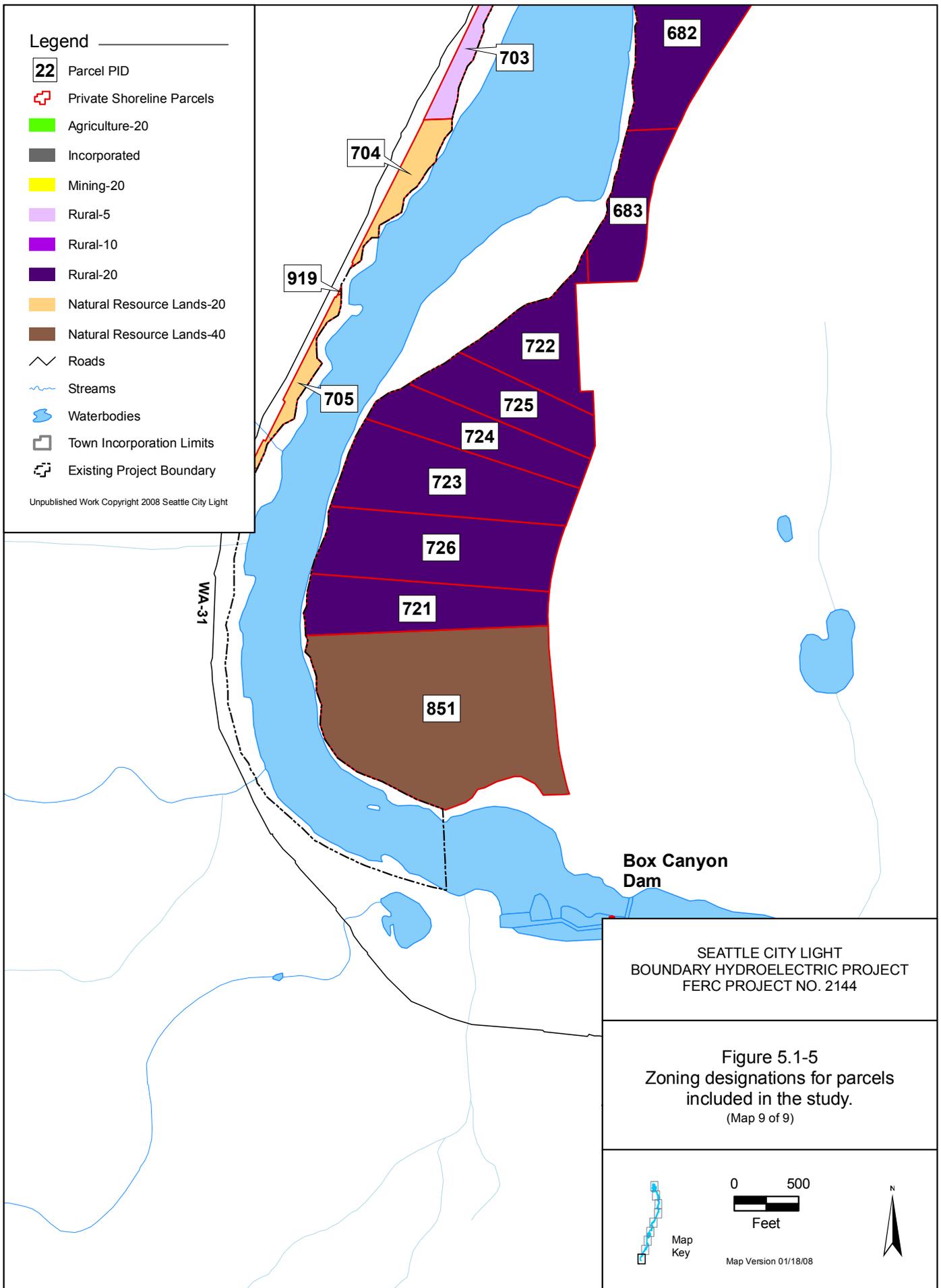
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Legend

- 22 Parcel PID
- Private Shoreline Parcels
- Agriculture-20
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Figure 5.1-5
Zoning designations for parcels
included in the study.
(Map 9 of 9)

Map Key

0 500
Feet

Map Version 01/18/08

Table 5.1-7. Summary of land capacity calculation results.

Zoning Designation	Total Acres	Number of Existing Parcels	Potential Number of Lots² (includes existing parcels)
NR-40 (County)	141.4	2	3
NR-20 (County)	808.8	24	49
Rural-20 (County)	337.7	16	21
Rural-10 (County)	40.2	6	6
Rural-5 (County)	161.7	14	32
Residential (Towns) ¹	22.4	27	150 ³
Total	1,512.2	87	261

Notes:

- 1 Three of the 27 town parcels are within Metaline Falls, which has a protective buffer designated as open space along the river; that occupies most of the incorporated land adjacent to the Project boundary.
- 2 Maximum lots were calculated by using the density criteria for the existing zoning designations for Pend Oreille County and the towns.
- 3 Minimum lot sizes for residential-zoned parcels within the incorporated towns are 6,000 sq. ft. for a one-family dwelling and 9,000 sq. ft. for two-family dwellings. It was assumed that each parcel could be split into multiple 6,000-sq. ft. lots by means of short subdivision (1 to 4 parcels) and regular subdivision (5 or more parcels) of property.

As indicated in the table, the calculation of potential future lots shows that the greatest potential for new lots would be on the incorporated parcels that are zoned residential. The parcel database includes 27 existing parcels with 22 acres in that zoning classification. Because lot sizes as small as 6,000 square feet are permitted under the Metaline and Metaline Falls Development Codes, those parcels could theoretically be divided into 150 total lots (representing 123 new lots). Given the typical sizes of new residences in most rural jurisdictions, including Pend Oreille County, it is questionable that there would be much future development activity involving construction of new residences on newly-created 6,000-square-foot lots. Any new lots created in these areas would likely be larger than 6,000 square feet, consistent with typical lot sizes for new subdivisions in incorporated areas.

Natural resource zoning currently applies to 26 parcels in the study area, which include approximately 950 acres (nearly 63 percent of the total acreage in the study area). The land capacity calculation determined that 26 new lots (52 future lots, less 26 existing parcels) could be created from those parcels under current density criteria. Two of the largest parcels in the study area (with 318 and 127 acres, respectively) account for 21 of the potential 26 future lots that could exist under current zoning. These parcels are owned by timber and mining companies, are zoned as natural resource lands, and have “designated” land use codes. The “designated” land use code applies to parcels that have been enrolled as timber or agricultural lands for property taxation, meaning that property tax penalties would apply if the lands were converted from natural resource to a developed use. Consequently, study area parcels with natural resource zoning could be considered the least likely lands to be developed in the near future, particularly if resource uses remain viable on those lands.¹

¹ The zoning files provided by Pend Oreille County identified the zoning designation for three parcels as “FS.” Through discussions with Pend Oreille County Planning Division staff, it was determined that parcels identified with “designated” land use codes and FS zoning would be recoded as natural resource lands, while those with

In calculating potential future land capacity, TtEC did not attempt to account directly for changes to those parcels within the unincorporated county that might occur under the exempt segregation provision of the code. That provision allows a property owner to divide land without following the subdivision procedures in the code, but does not exempt the subject land from the zoning regulations. Because lots created through exempt segregations must still be 10 acres or larger and must meet the minimum lot size criterion and road access requirements of the zoning regulations, it is unclear whether use of the exempt segregation procedure could result in creation of any additional lots.

Development Constraints

Although zoning regulations determine the theoretical maximum capacity of a given land area to accommodate development, the ability to effectively use that land capacity can be constrained by a variety of other factors. Those constraints can be based on several other factors addressed in the applicable development regulations. They can also be based on physical attributes, such as slope and soil conditions, and economic factors such as proximity to transportation and utility services. In general, the physical and economic limitations on development potential must be assessed on a site-specific basis, which is beyond the scope of this analysis. Conversely, some types of regulatory-based development constraints can be evaluated on an area-wide basis and were included in the analysis.

TtEC investigated several types of development constraints that are prescribed in the development regulations of the local jurisdictions. As discussed in Section 4.1.4, those included shoreline management designations and critical area regulation. The latter category includes several types of environmentally sensitive areas, specifically wetlands, frequently flooded areas, geologically hazardous areas, and critical fish and wildlife habitat.

Figure 5.1-6 illustrates the shoreline management environments along the Pend Oreille River that have been designated by the respective local jurisdictions. In summary, shoreline lands within the two towns have an urban shoreline environment designation, while lands within the unincorporated county have a conservancy designation. The shoreline jurisdiction under the SMA generally applies to the area 200 feet landward of the ordinary high water mark of a water body. Along the reservoir north of Metaline Falls, the Project boundary is similarly located approximately 200 feet in horizontal distance from the ordinary high-water line of the reservoir. Consequently, because most of the parcels addressed in the analysis that are north of the falls are located more than 200 feet from the river, the shoreline management designation applies to only a few of the parcels. Nevertheless, the shoreline program regulations would influence any proposed development activity on adjacent private parcels that involved access to the shoreline. From Metaline Falls south to Box Canyon Dam, the Project boundary approximates the location of the ordinary high-water line. In this area, the shoreline management jurisdiction would typically extend for 200 horizontal feet into the adjacent private parcel.

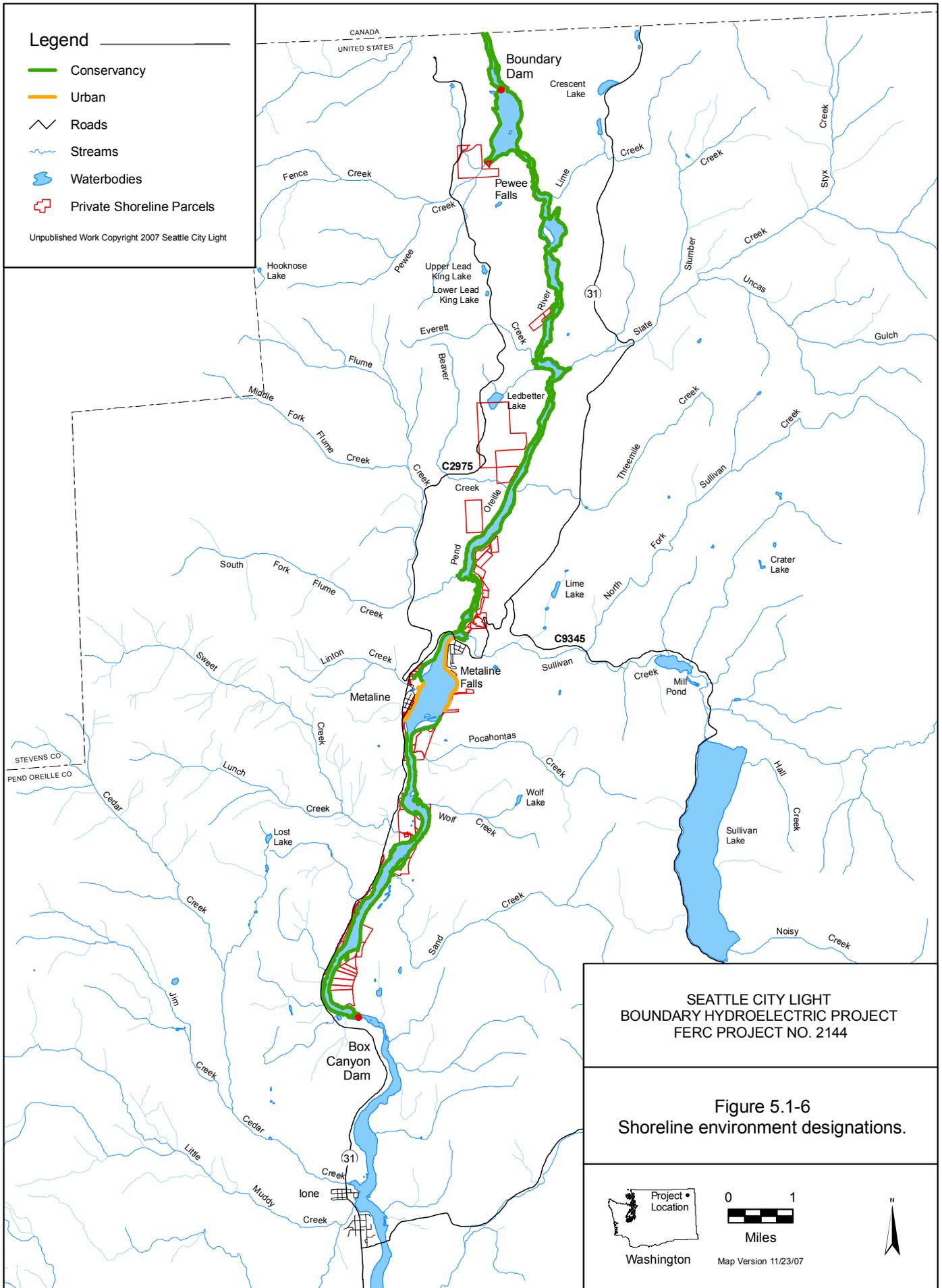
“undeveloped” land use codes were classified as rural zoning designations. The designated and undeveloped land use codes as identified by the county are found in Appendix 2, Table A.2-1. To determine a density class for these parcels, to be conservative each parcel was given the lowest natural resource or rural density level. For example, if a “designated” parcel was 100 acres, that parcel would be assigned a NR-20 (instead of a NR-40) zoning designation, meaning it could be divided into five parcels, as opposed to two parcels.

To investigate the relationship of the private parcels addressed in the study to the shoreline designations, TtEC represented the data mapped in Figure 5.1-6 and intersected this layer with the parcel database. Shoreline designations were then attributed to individual parcels based on the designation for the respective reach of the river. By that process, 65 of the existing private parcels are within or are adjacent to land designated in the conservancy shoreline environment. One parcel (PID 24) is adjacent to the Project boundary but is located well away from the reservoir and not within the shoreline jurisdiction. The remaining 21 parcels were identified as within the river reach for the urban environment. The shoreline designation for each parcel is provided in Appendix 2, Table A.2-1.

Legend

-  Conservancy
-  Urban
-  Roads
-  Streams
-  Waterbodies
-  Private Shoreline Parcels

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As discussed previously, the conservancy designation is intended to protect, conserve and manage existing natural resources and valuable historic and cultural areas in order to ensure a continuous flow of recreational benefits to the public and to achieve sustained resource uses. Commercial development is prohibited along conservancy shorelines except for low-intensity recreational developments or activities that do not substantially change the character of that environment (e.g., travel trailer parking areas, non-profit group camps, and hunting and fishing club facilities). Multi-family and single-family units and/or planned unit residences (as defined in the regulations) are permitted on conservancy shorelines. These regulatory provisions would be applied in the review of any applications for shoreline development permits within the conservancy environment along the Project.

TtEC's investigation of development constraints took into consideration several types of physical and biological features that are regulated as environmentally sensitive areas. Although Pend Oreille County and both towns regulate environmentally sensitive areas, the Comprehensive Plans for Metaline (1996) and Metaline Falls (1996) both indicate that environmentally sensitive areas are not present in the towns. Consequently, the following discussion of environmentally sensitive areas focuses on unincorporated Pend Oreille County.

Wetlands are one of several types of environmentally sensitive areas regulated by Pend Oreille County (2007). The County's development regulations indicate that mapping based on the National Wetland Inventory (NWI) is used as a reference, and that site-specific field study is required for any proposed development activity if there appears to be a wetland on the parcel. Parcels with possible wetlands identified in the NWI are identified in Appendix 2, Table A.2-1. A site-specific field study would be required to confirm the NWI mapping or to determine whether wetlands not indicated in the NWI mapping are present. If wetlands are present on these (or other) parcels, it would not necessarily preclude future development activity. Rather, any proposal for future development would require field investigation to confirm wetland extent and determine the appropriate wetland rating, and site-specific development plans would need to account for the wetlands and their prescribed buffers. Where they occur, the presence of wetlands would serve to constrain the extent and intensity of development activity on the affected parcels.

The Pend Oreille County (2007) development regulations reference a 2002 flood hazard study and associated maps issued by the Federal Emergency Management Agency (FEMA) as the appropriate source for identifying frequently flooded areas. GIS analysis indicates that 54 of the 87 parcels intersect with the 100-year floodplain area indicated on the FEMA (2002) maps. The parcel-specific results for this map analysis are identified in Appendix 2, Table A.2-1. A site-specific field study would be required to confirm the conditions indicated by the FEMA mapping.

The Pend Oreille County (2007) development regulations address geologically hazardous areas based on erosion, landslide, seismic and mine hazard conditions. Erosion hazard areas are defined as those with soils rated by the Natural Resource Conservation Service (NRCS) as having "severe" rill and inter-rill erosion capability. Because evaluation of this constraint would require relatively complex mapping and site-specific evaluation, TtEC did not address erosion hazard areas in the analysis.

Landslide hazard areas can be identified based on a variety of conditions related to slope, geologic contacts between permeable sediments and impermeable sediments or bedrock, and the presence of springs or groundwater seepage. TtEC did not address landslide hazard areas on a property-by-property basis because evaluation of this constraint would require relatively complex mapping and site-specific evaluation. However, some steep slopes are present in the study area and so may affect future development of some parcels. Proposals for future development activity on any portions of parcels with steep slopes would be required to include documentation of engineering measures to mitigate potential landslide hazards on the site.

The Pend Oreille County (2007) development regulations define seismic hazards based on susceptibility to soil liquefaction and/or ground shaking, and on soil characteristics and potential acceleration of ground waves. The regulations refer specifically to maps of liquefaction and ground shaking site class published by the Washington Department of Natural Resources (2004). TtEC obtained both as GIS layers, and the resulting maps are presented as Figures 5.1-7 and 5.1-8. As indicated in Figure 5.1-7, the private shoreline parcels covered in the analysis include areas in the liquefaction hazard classes of “very low,” “very low to low,” and “bedrock.” Similarly, these parcels occur in areas variously rated as Site Class B, Site Class C, Site Class C to D, or Site Class D (see Figure 5.1-8). Pend Oreille County defines Site Class D to E as the seismic hazard threshold for privately-owned buildings. Based on review of these maps, seismic hazards appear to represent minimal constraints on future development for parcels in the study area.

The County and the two towns define critical fish and wildlife habitat based on features mapped in the Priority Habitats and Species (PHS) database and related habitat records maintained by the Washington Department of Fish and Wildlife (WDFW). Wildlife habitat features regulated under this provision of the code include riparian habitat, critical waterfowl nesting habitat, and areas associated with endangered, threatened or sensitive species. Streams designated by WDFW as a critical fish resource are similarly regulated as key fish habitat. Because these site-specific data can be highly sensitive and are not to be disclosed, TtEC has not mapped resources within the study area parcels that would be regulated as critical fish and wildlife habitat. Both town comprehensive plans state that there are no PHS features within their boundaries. It is conceivable that some of the unincorporated parcels might support habitat features such as riparian and/or waterfowl nesting habitat, although such features would likely be limited to perimeter areas nearest the river. As with many types of regulated critical areas, the influence of fish and wildlife habitat on future development potential of the study-area parcels would need to be determined on a case-by-case basis.

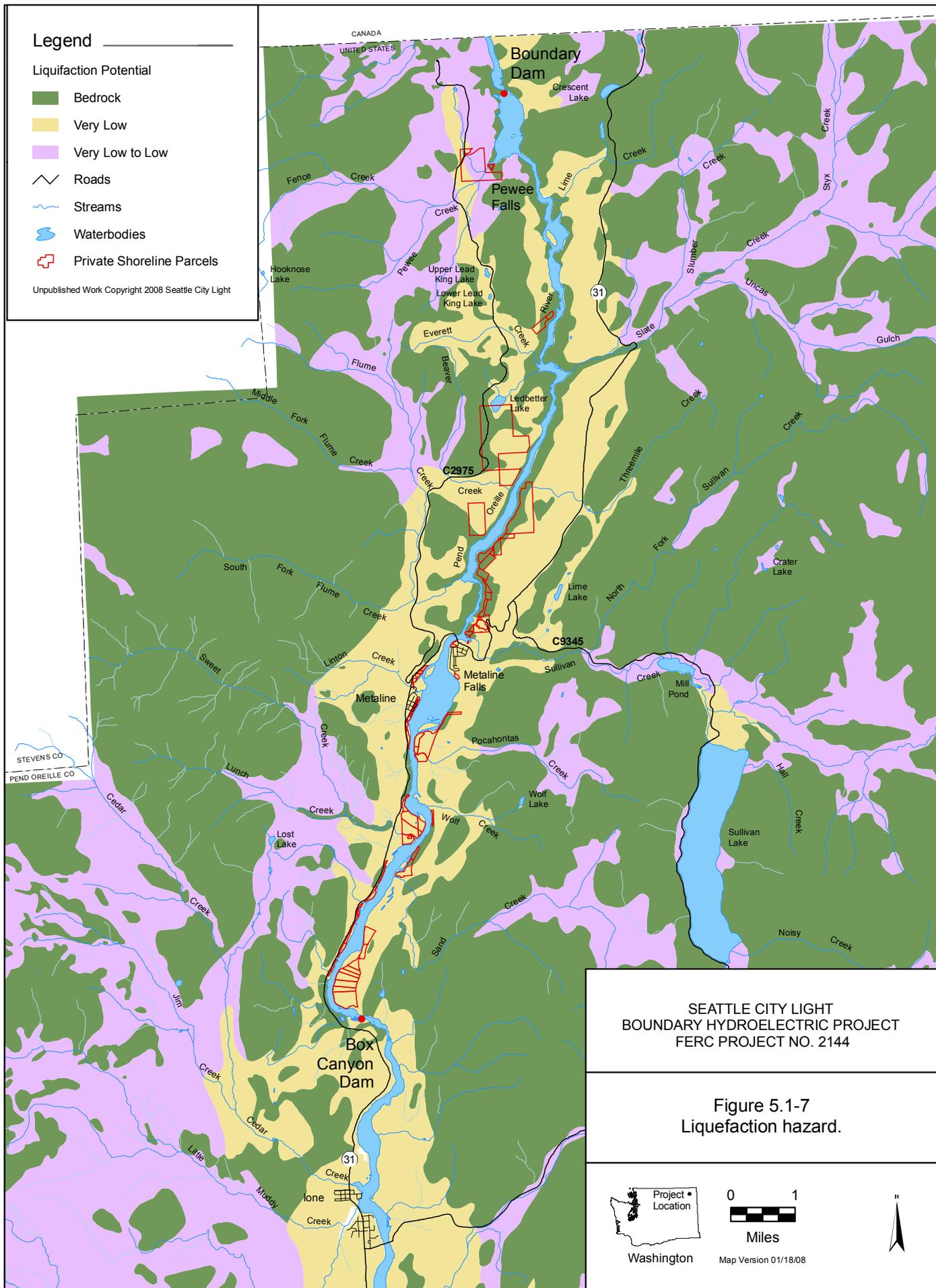
Legend

Liquefaction Potential

- Bedrock
- Very Low
- Very Low to Low

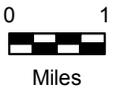
- Roads
- Streams
- Waterbodies
- Private Shoreline Parcels

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Figure 5.1-7
 Liquefaction hazard.



Washington Miles Map Version 01/18/08

Legend

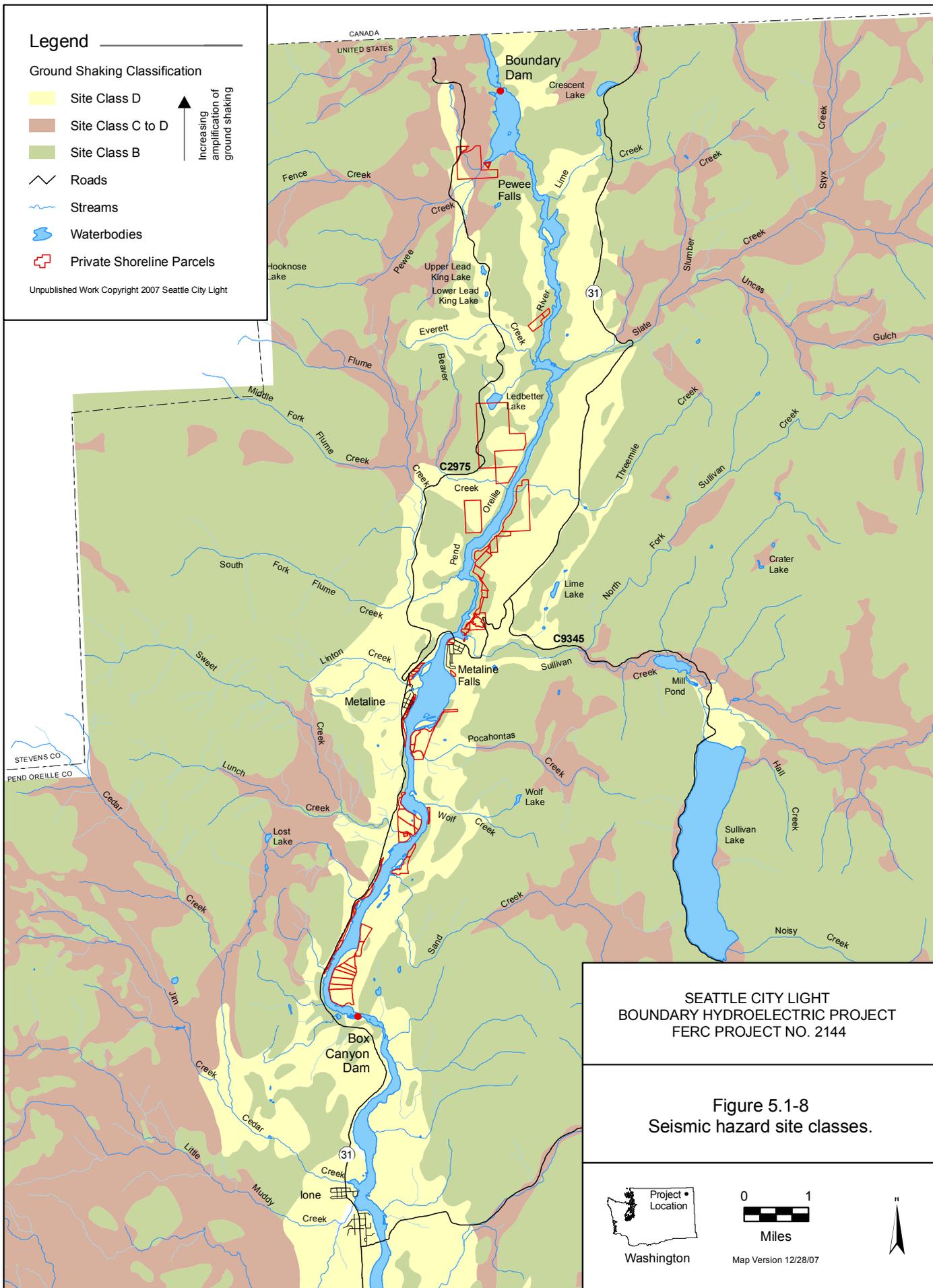
Ground Shaking Classification

- Site Class D
- Site Class C to D
- Site Class B

↑
Increasing
amplification of
ground shaking

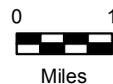
- Roads
- Streams
- Waterbodies
- Private Shoreline Parcels

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Figure 5.1-8
Seismic hazard site classes.



Map Version 12/28/07

While the theoretical maximum number of new developable parcels adjacent to the Project boundary is 174, in addition to the existing parcels, this number could be reduced by the presence of development constraints discussed above. Shoreline management regulations would influence the type and specific location of developed uses on many of the parcels. Identified wetland areas are also likely present on some existing parcels and would affect the amount of developable area on those lands. As noted previously, a site-specific assessment of constraints and lot configuration would be needed to determine whether constraints would preclude development on any specific parcel.

5.1.4.2.2. *Development Potential*

Population Projections and Allocations

Projected population growth is a principal determinant in estimating future needs for developed land uses. In the comprehensive planning process under the Washington GMA, the WOFM issues population projections that local jurisdictions use to determine their respective population growth targets and the land use allocations needed to accommodate those targets. Currently, WOFM has prepared a series of high, intermediate, and low population projections through the year 2025. The WOFM low population projections include a 2025 projected population for Pend Oreille County of 13,996 (with 5,577 projected households), whereas the high population projections include a 2025 projected county population of 19,411 (with 7,734 households). Based on recent population and development trends and available land, the County determined that a realistic growth rate is in the intermediate range, between 1.2 percent and 1.6 percent annually. The intermediate population projections for the County include a 2025 total population of 16,662 (6,639 households). This represents a population increase from 2004 to 2025 of 4,762 people, or roughly 230 people or 92 new households per year (Pend Oreille County 2005).

The combined population of Cusick, Ione, Metaline, and Metaline Falls (the incorporated communities in northern Pend Oreille County) is projected at 2,108 people by 2025 (Pend Oreille County 2005). The combined population of these communities in 2000 was 1,015 people; the projected growth by 2025 represents an increase of nearly 108 percent over the 2000 level. The projected populations for Metaline and Metaline Falls in 2025 are 356 and 383 people, respectively, compared to their 2000 populations of 162 and 223. Those projected growth rates are considerably higher than growth actually experienced in some recent periods, which includes a population decrease in Metaline of 18 percent from 1990 to 2000 and a slight decrease in Metaline Falls from 2000 to 2004. Regardless of the ultimate accuracy of the projections, however, local jurisdictions must determine whether they have an adequate land base to accommodate projected population growth.

Population history for the county includes the general trends in rural eastern Washington toward an increasing percentage of the population living outside of incorporated areas. In 1960, about 53 percent of the county's population lived outside of the five incorporated areas. This proportion remained unchanged in 1970, increased by 12 percent in 1980, and by another 4 percent in 1990. The 2000 census showed about 75 percent of the population living in the unincorporated areas, an increase of 3 percent since 1990 (Pend Oreille County 2005).

Consistent with the growth assumptions in the comprehensive plan, the County has adopted the WOFM intermediate population projections as discussed above. The County population is projected to increase at a rate of slightly more than 200 residents per year for the 18-year period. Although historically the population has increasingly shifted outside of incorporated areas, this projection assumes that the proportion of population outside of incorporated areas will stabilize at about 75 percent of the total population. This stabilization could take place through a combination of disincentives to live outside of incorporated areas, such as county restrictions on subdivision or increased requirements for group water systems, and incentives to live inside towns, such as the availability of existing public services and facilities (Pend Oreille County 2005).

The projected population growth through 2025 represents an average increase of 92 new households each year in the County. The southern portion of the county is expected to receive a dominant proportion of these new households. The 2025 population projections documented in the Comprehensive Plans for Metaline and Metaline Falls represent cumulative increases of an additional 65 households in Metaline and 78 households in Metaline Falls. That would average out to be four new households per year in each town.

Development History

Between 1990 and 2003, Pend Oreille County received a total of 109 applications to plat short and long subdivisions throughout the county, an average of about 8 applications each year. Of those applications, the County approved a total of 409 lots, an average of about 29 lots per year (Pend Oreille County 2005). The geographic distribution of those lots is not easily determined, but recent development trends indicate a large majority would have been located in the southern part of the county away from the Project.

Historic building permit activity is a common indicator of potential development trends. Pend Oreille County (2005) issued an average of 119 residential building permits per year from 1990 through 1999, with annual figures ranging from 73 in 1990 to 147 in 1995. From 2000 to 2003, the county issued a combined total of 506 building permits for the unincorporated portions of the county and the towns of Cusick, Ione, Metaline, and Metaline Falls (these data do not contain city of Newport building permits). The total included 218 residential permits, 239 manufactured home permits, 20 industrial permits, and 29 commercial permits. County records indicate that approximately 460 new residential units (including manufactured homes) were constructed from 2000 through August 2004, which is the equivalent of about 90 units per year. That number is quite similar to the annual projected demand for new housing units through 2025 of approximately 95 dwelling units/year (based on a population increase of 230 persons annually). Again, the projected development activity is expected to be concentrated in southern Pend Oreille County away from the Project.

Data on utility hookups are also used as a common indicator of development trends. As of 2001, the Pend Oreille County Public Utility District (PUD) #1 (the retail electricity supplier throughout the county) reported 6,944 total customers for residential electric service (Pend Oreille County 2005). Just under 15 percent of the total (1,011 accounts) were seasonal customers. The number of seasonal customers in 1996 was 760, representing an increase of 33 percent over 5 years. The PUD installed 1,206 new electrical line extensions from 1993 through

2000, an average of 151 connections per year during that period. The PUD provides service to the entire county, and the data source does not indicate the distribution of the new services by area of the county. As discussed elsewhere, however, most of the recent growth has occurred in the southern part of Pend Oreille County.

Land Value Information

Throughout Washington, the value of real property is assessed to provide the basis for levying property tax. Table 5.1-8 indicates the total assessed valuation for all types of taxable real property (residential, commercial, industrial, etc.) in Pend Oreille County from 1990 to 2005. These total county values ranged from \$392 million in 1990 to \$744 million in 2005. From 1990 to 1993, the total assessed property values for the county increased each year. However, between 1994 and 1996 the value decreased, and did not reach the 1993 value again until 1997. The total assessed valuation again decreased slightly in 1998, but since 2000 the assessed real property values have steadily increased.

Table 5.1-8. Total assessed property valuation, Pend Oreille County, 1990-2005.

Year	Assessed Real Property Value
2005	\$743,888,587
2004	\$700,309,659
2003	\$680,980,000
2002	\$654,500,877
2001	\$657,202,805
2000	\$640,239,369
1999	\$608,820,978
1998	\$598,338,848
1997	\$619,790,327
1996	\$515,856,000
1995	\$488,792,000
1994	\$464,540,000
1993	\$605,908,000
1992	\$592,771,000
1991	\$592,750,000
1990	\$392,359,000

Source: Employment Security Department, Labor Market and Economic Analysis Branch. 2007. Workforce Explorer, Washington Labor Market. April.
 (<http://www.workforceexplorer.com/cgi/databrowsing/localAreaProfileQSResults.asp?selectedarea=Pend+Oreille+County&selectedindex=26&menuChoice=localAreaPro&state=true&geogArea=5304000051&countyName=>)

Unfortunately, the real estate value information available for the parcels addressed in this study is too limited to be of any value in the analysis.

Real Estate Market Conditions

According to the Washington Center for Real Estate Research at Washington State University (2006), the average seasonally-adjusted annual rate of sales of existing homes in Pend Oreille County between 1993 and 2006 was approximately 1,042. The annual figures for existing home sales in the county ranged from 230 in 1993 to 1,850 in 2005.

To gain additional perspective on real estate market conditions in Pend Oreille County generally and specifically for the northern part of the county and for shoreline/waterfront properties, TtEC contacted local sources with experience and knowledge in the market. As discussed in Section 4.1.4, the effort to identify appropriate sources focused on two local realtors active with shoreline/waterfront properties. Each realtor interviewed estimated that approximately 70 developed and undeveloped properties are likely sold in northern Pend Oreille County in a typical year, and that about one-third (20 to 25) of those sold are shoreline/ waterfront properties. Typical buyers are primarily non-local residents who are buying second homes. Key factors in buying shoreline/waterfront properties vary considerably but typically include accessibility to the water, water depth near the shore, if the land has building constraints, the size of the property, and the affordability of the property. The realtors indicated that shoreline/waterfront properties have rapidly increased in price over the past 3 to 4 years, particularly in the southern part of the county. They speculated the increase may have been enough to eliminate most potential local buyers and families with children still at home or in college.

At the same time, the northern shoreline/waterfront properties appear to be unattractive to buyers for whom proximity to community hospitals, shopping facilities, and restaurants is important, as these types of resources are limited in the northern part of the county. This is especially a concern for older buyers looking to retire. Realtor contacts anticipated that the growth rate and interest in properties along the reservoir in the Metaline and Metaline Falls area might be slower than elsewhere. Additionally, those who are buying these properties are not anticipated to be year-round residents of the community, but instead from larger metropolitan areas like Spokane and Seattle. Traditionally, these buyers also look at properties in the unincorporated portions of the county and along shoreline/waterfront areas.

Local real estate contacts were not aware of significant resort or recreational developments planned or proposed for locations in the northern portion of Pend Oreille County.

5.2. Roads

5.2.1. Project Roadway Needs Analysis

The roads listed in Table 5.2-1 represent the complete list of roads currently known to be needed for Project-related purposes. Some of these roads are used exclusively by SCL; others are known to be used by other parties. For some of the roads, however, the extent of use by other parties is not known. For roads in this last category, the “Known use by other parties” entries necessarily include only those uses that are known at this time. The site number for each road refers to the number on Figure 5.2-1.

Table 5.2-1. Roads needed for Project-related purposes.

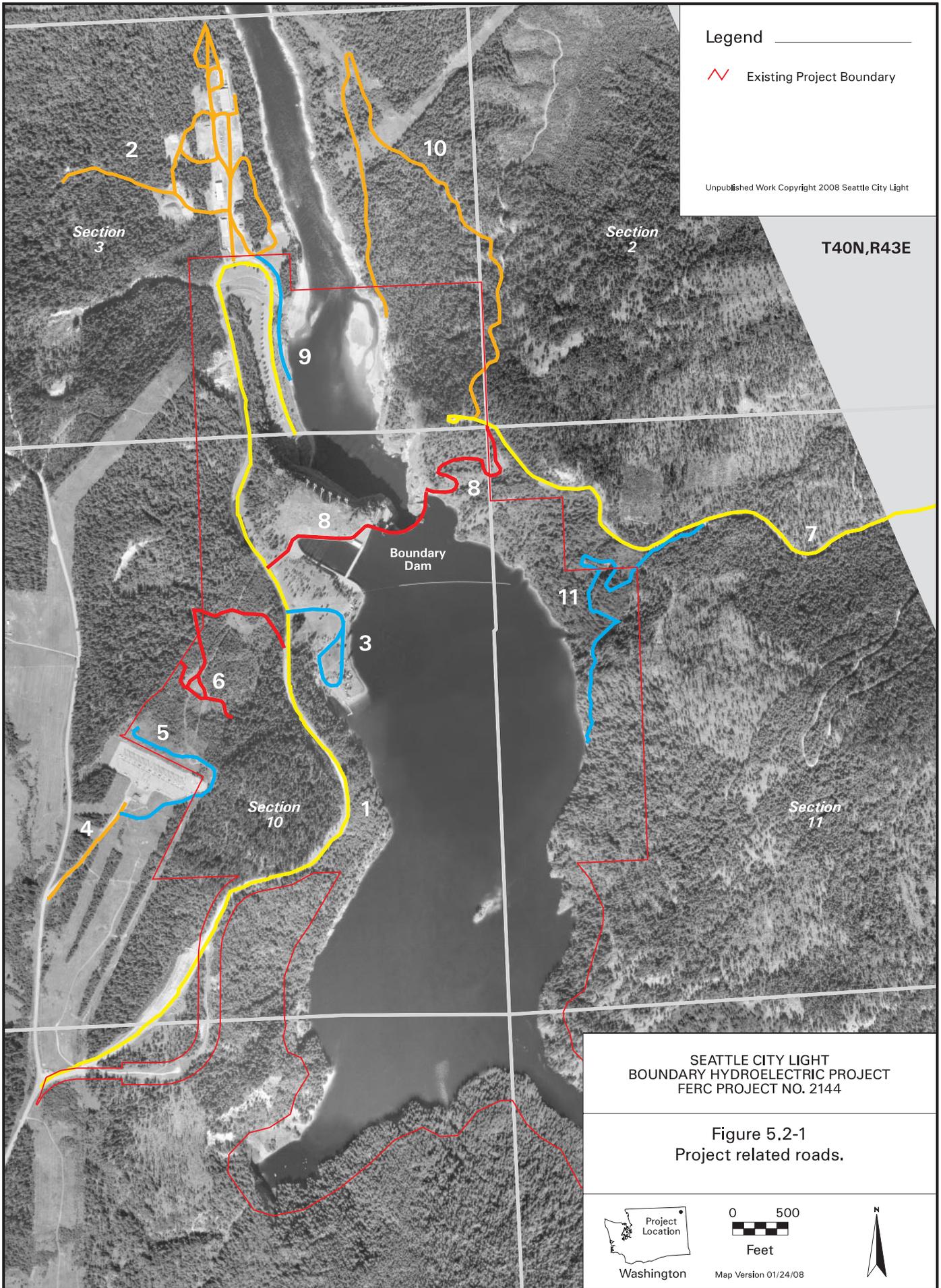
Site#	Road No. or Name	Location/Landowner	Purpose of SCL Road Use	Frequency of Use by SCL; Type of Vehicle Used ³	Within Current FERC Boundary?
				Known use by other parties	
1	West-Side Access Road	T40N, R43E, Sections 3, 10 and 15 SCL, USFS	Primary access route for dam, powerhouse and maintenance facilities, and access to the SCL Tailrace Recreation Area/Visitor Center	Daily; 1, 2, 3, 4, 5, 6 SCL/visitor use only	Partially
2	Maintenance facility road network	T40N, R43E, Section 3. Must pass through SCL security gate to access area SCL	Access to numerous maintenance and operations functions including: shipping and receiving, paint shop/warehouse, spring water storage, etc.	Daily; 1, 2, 3, 4, 5, 6 SCL use only	No
3	Road to SCL Forebay Recreation Area	T40N, R43E, Section 10 SCL	Provides visitor access to recreation area, including a boat launch	Daily; 1, 2, 3, 4, 5, 6 SCL/visitor use only	Yes
4	BPA switchyard road	T40N, R43E, Section 10 BPA, USFS	Maintain SCL equipment within BPA switchyard.	Daily; 1, 2, 3, 5, 6 BPA	No
5	Spur off the BPA switchyard road	T40N, R43E, Section 10 BPA, SCL, USFS	Maintain SCL transmission lines, towers, and equipment; Project security	Daily; 1, 2, 3, 5, 6 Not known	Partially
6	South end of FR 6200-348	T40N, R43E, Section 10 SCL, USFS	Maintain SCL transmission lines, towers, and equipment.	Monthly; 1, 2, 5, 6 SCL use only	Partially
7	POC 3990 / FR 3165-000 Boundary Dam/ Crescent Lake	T40N, R43E, Sections 2, 11 and 12 SCL, USFS, Private	Provides visitor access to SCL Vista House	Seasonally; ¹ 1, 2, 3, 4, 5 SCL/visitor, USFS, U.S. Border Patrol	Partially

Table 5.2-1, continued...

Site#	Road No. or Name	Location/Landowner	Purpose of SCL Road Use	Frequency of Use by SCL; Type of Vehicle Used ³	Within Current FERC Boundary?
				Known use by other parties	
8	FR 3165-350 (connector between West Side Access Road and FR 3165; road goes over top of dam)	T40N, R43E, Sections 10 and 11 SCL, USFS	Access to portals into the dam; Maintain SCL equipment at SCL Vista House; Project security	Daily; 1, 2, 3, 4, 5, 6 SCL use only	Partially
9	Tailrace boat launch road (west side)	T40N, R43E, Section 3. Must pass through SCL security gate to access road SCL, USFS	Access to downstream side of dam	Weekly; 1, 2, 4, 5, 6 SCL use only	Yes
10	FR 3165-200 and unnamed spur off of FS 3165-200	T40N, R43E, Sections 2 and 3 SCL, USFS	Monitor dam deflection from survey monument #5	Every 2 years; 1, 5 SCL, U.S. Border Patrol	Partially
11	FR 3165-340	T40N, R43E, Section 11 USFS	Monitor dam deflection from survey monument #1	Every 2 years; 1, 5 SCL, U.S. Border Patrol	Partially

Note:

- 1 SCL's seasonal use of this road pertains only to that portion from the intersection of Road #8 to the SCL Vista House. Use by SCL of the entire road from Crescent Lake to the SCL Vista House is intermittent.
- 2 USFS Road (FR)
- 3 Key for vehicle use:
 - 1 – Light-duty truck, up to 1 ton
 - 2 – Medium duty truck, 2 to 3 tons
 - 3 – Heavy-duty truck, over 4 tons
 - 4 – Passenger vehicle
 - 5 – ATV
 - 6 – Rubber-tired, non-highway construction equipment (such as backhoe or wheel loader)



Legend _____

 Existing Project Boundary

Unpublished Work Copyright 2008 Seattle City Light

T40N,R43E

SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144

Figure 5.2-1
Project related roads.



Washington

0 500



Feet



Map Version 01/24/08

SCL has not identified the need to construct new roads in the Project vicinity or to acquire rights for use of roads other than those listed in Table 5.2-1. However, the results of the Dispersed Use and Access study (a component of Study 21, the Recreation Resource Study) may indicate that new or additional access roads may need to be considered in the future to meet Project-related recreation needs.

Prior to construction of the Project, SCL established a series of groundwater monitoring wells located along the river from Metaline north to Boundary Dam. To access these monitoring wells, SCL either constructed roads or obtained easements or other authorizations to use previously constructed roads. SCL terminated its groundwater monitoring program in 2006 because monitoring was no longer needed and intends to abandon the wells in 2009. An abandonment plan will be developed in consultation with the USFS and other affected landowners or agencies. The plan will address treatment of roads for which SCL has responsibility.

5.2.2. Project Roadway Condition Analysis

This section documents the results of the inventory of roadway conditions for roads currently known to be needed for Project purposes.

Table 5.2-2 lists roads needed for Project-related purposes and provides basic information about them. The SCL vehicle types listed in Table 5.2-1 are appropriate for use on this road system. In all cases, the roads are structurally capable of accommodating the planned vehicle types as well as occasional heavy construction-related equipment. The following text describes the condition of each road in more detail. Supporting information relating to the objectives of road management is provided in Appendix 3. As noted in Section 4.2.2, detailed information on erosion and mass wasting conditions related to roads was collected as part of Study 1, the Erosion Study, and the results, as they relate to the roads identified in Table 5.2-2, are presented in Section 5.3 of the Study 1 Interim Report (SCL 2008).

Roads on federally-managed land typically are native-surfaced and have out-sloped road prisms. Rolling dips in the roadway are typically used where the roads intersect minor drainages, with culverts installed only to convey larger streams. Brush encroachment of the roadways does not appear to be a serious problem.

Table 5.2-2. Road conditions for Project-related roads.

Site#	Road No. or Name	Length (Miles)	Lanes	Surface	Function	Management Objective	Observed Condition
1	West-Side Access Road	1.1	2	BST	L	NA	3
2	Maintenance facility road network	1.6+	Var.	AC Aggregate Native	L	NA	4
3	Road to SCL Forebay Recreation Area	0.3	2	BST	L	NA	4
4	BPA switchyard road	0.2	2	Aggregate	L	NA	3
5	Spur off the BPA switchyard road	0.3	1	Native	L	NA	2
6	South end of FR 6200-348	0.9	1	Native	L	2	2
7	POC 3990/ FR 3165-000 Boundary Dam/Crescent Lake	2	2	BST	C	3	3
8	FR 3165-350 to security fence gate	0.3	1	Native	L	1	3
	Top of dam	0.1	1	Concrete	L	1	4
	Connector between West Side Access Road and FR 3165)	0.2	1	Aggregate	L	1	4
9	Tailrace boat launch road (west side)	0.25	1+	Aggregate	L	NA	3
10	FR 3165-200	1.0	1	Native	L	2	2
	Unnamed spur off of FR 3165-200	0.8	1	Native	L	NA	1
11	FR 3165-340	0.4	1	Native	L	2	2

Notes:*Surface:*

AC – Asphalt Concrete

BST – Bituminous Surface Treatment (Chip seal)

Aggregate – Graded crushed rock

Native – Natural soil (occasional short segments will have crushed rock added for stability)

Function:

A – Arterial

C – Collector

L – Local

(Forest road systems often resemble a tree; the trunk is the arterial, the main branches the collectors, and the small branches and twigs, the local roads.)

Table 5.2-2, continued...

USFS Management Objective (see detailed descriptions in Appendix 3)

- 1 – Closed to public use
- 2 – Primitive road
- 3 – Improved and graded road
- 4 – Good road, often hard-surfaced
- 5 – Highway standards

5.2.2.1. West-Side Access Road (Site #1)

The West-Side Access Road (Site #1) provides access to the dam, powerhouse, SCL maintenance area, and the Tailrace Recreation Area from POC 2975 (the paved county road from the town of Metaline to Crawford State Park). Informational and directional signage for Boundary Dam begins at Metaline on POC 2975, and is also located at the intersection of the West-Side Access Road and POC 2975.

This road has a bituminous surface and two travel lanes. The road was originally built in 1964 in association with the construction of the Project. In 1982, a landslide blocked the road, creating the need to realign a portion of the road to bypass the landslide. The realigned road segment extends from approximately milepost (MP) 0.1 to MP 0.3. This road segment is buttressed on both sides with triple-high retaining walls constructed from ecology blocks stacked three high. The current road width is 32 feet in the realigned segment and 24 feet beyond. The current roadway condition is consistent with a USFS Level 3 management objective. There were no obvious issues with roadway conditions. Detailed information on the 1982 slide area is provided in the Study 1 Interim Report (SCL 2008).

A security gate and guard house are situated at MP 1.15. The cross-dam access road (Site #8) intersects the West-Side Access Road just beyond the security gate. The entrance to the spur road to the public picnic area and boat ramp (the SCL Forebay Recreation Area) is at MP 1.1, just before the gate. Beyond the security gate, the West-Side Access Road continues downhill and around a switchback to a terminus at the dam tailrace area and parking for SCL staff working in the dam and powerhouse.

5.2.2.2. Maintenance Facility Road Network (Site #2)

A network of service roads and driveways (Site #2) branches to the north from the switchback, serving the shop and maintenance facilities associated with the Project. These surface roads generally have a variety of surfacing, including some areas of paved asphalt, aggregate, and native surface. All of the road segments are in good condition, and most (except for those with native surfaces) are consistent with a USFS Level 4 management objective.

5.2.2.3. Forebay Recreation Area Access Road (Site #3)

The spur road (Site #3) leads from the West-Side Access Road to the Forebay Recreation Area, from a junction just before the security fence and gate on the former road. It is a public road for access to the campground, boat launch, and picnic area; the road also provides access to a

subsurface grounding grid. The road has two lanes and a bituminous surface and is in good condition, consistent with a USFS Level 3 management objective.

5.2.2.4. *BPA Switchyard Road (Site #4)*

The BPA switchyard is located southwest of Boundary Dam, between the West-Side Access Road and POC 2975. A double-lane road serves as the access drive from POC 2975 to a parking lot for the BPA switchyard. This road has an aggregate surface and is in good condition, consistent with a USFS Level 3 management objective.

5.2.2.5. *Spur Off BPA Switchyard Road (Site #5)*

A single-lane road loops around the side and back of the Bonneville Power Administration (BPA) switchyard to provide access to the SCL transmission line towers leading from the dam to the switchyard. This one-lane road with a native surface is in good condition. The appearance of this road is consistent with a USFS Level 2 management objective.

5.2.2.6. *South End of FR 6200-348 (Site #6)*

This native-surfaced road between POC 2975 and the West-Side Access Road accesses the towers of the Project-related transmission lines. The portion of the road near its junction with the West-Side Access Road has an 18 percent grade. The observed condition of the road was consistent with a USFS Level 2 management objective. USFS records indicate the long-term management objective is ultimately to close the road to public access.

5.2.2.7. *FR 3165-000 (POC 3390/Boundary Dam/Crescent Lake Road East Side Access) (Site #7)*

This road is designated by Pend Oreille County as POC 3990 and by the USFS as Forest Road (FR) 3165, and is sometimes referred to as the Boundary Dam/Crescent Lake Road. It serves the USFS Crescent Lake recreation site and provides access to Boundary Dam and the SCL Vista House from the east. Pend Oreille County currently maintains the road. Maintenance does not include plowing in the winter.

POC 3390 is signed and center-striped. There is a gate at MP 1.74 (measured from SR 31) to control public access for border security reasons (mandated by the federal Department of Homeland Security). There is informational and directional signage at the intersection with SR 31. The roadway is 20 feet wide throughout, although it is signed “One Lane Road” beyond the gate. There are 24- and 30-inch drainage culverts installed throughout its length.

The management objective assigned to this road is Level 3, indicating it is to be maintained for travel by prudent drivers in standard passenger cars, and that user comfort and convenience are not considered priorities (see Appendix 3). The roadway was observed to be in good condition in April 2007 and was considered consistent with the Level 3 management objective. A rotational slide affecting the road at MP 1.8 is the only noted instance of adverse roadway conditions. Significant repairs at this site were performed in 2004 and in the late 1980s by Pend

Oreille County. Detailed information on the slide area is provided in the Study 1 Interim Report (SCL 2008).

5.2.2.8. *Connector Between West-Side Access Road and FR 3165 (Site #8)*

FR 3165-350 provides access to the east side of Boundary Dam. This road is maintained by SCL and has three segments. From the security gate at the west end to the dam, it has a single lane and is native-surfaced. The road has a concrete surface across the top of the dam. There is a locked security fence at the eastern end of the dam and a road gate at the junction with FR 3165. This road segment is steep, with 15 percent grades. It is native-surfaced, the surface is in good condition, and is sufficient for use by SCL personnel. The assigned USFS management objective for this road (all segments) is Level 1, indicating closure to public entry. The road is well maintained and stable, and the observed physical condition is generally consistent with Level 3.

5.2.2.9. *Tailrace Boat Launch Road (Site #9)*

The entrance to the road to the tailrace boat launch (Site #9) is at the switchback in the access road to the powerhouse area. The road parallels the main access road to the dam. It has an aggregate surface of variable width, generally 12 to 15 feet. There is a chain gate at the junction to control entry, and the road is signed “Danger” on the left side, adjacent to the river. The observed physical condition is consistent with Level 3.

5.2.2.10. *FR 3165-200 (Site #10)*

FR 3165-200 parallels the Pend Oreille River on the east side from FR 3165 to the international border. This very low-standard, native-surfaced road has grades of up to 15 percent. While vehicle travel on the road is difficult, the road itself is stable. The USFS management objective for FR 3165-200 is Level 1, closure to public access; this objective is consistent with current management, as there is a gate at the upper end near the SCL Vista House. In addition, there are border security concerns regarding use of this road.

There is a non-USFS road spur located near the east bank of the river, between FR3165-200 and the tailrace of the dam. SCL uses the road to access a survey monument for observation of dam deflection. The roadway has a native surface, is narrow, with typically a 10-foot travel surface, has steep grades of up to 15 percent, and is maintained to a very low standard. The road is stable, and the observed roadway condition is consistent with a USFS Level 1 management objective.

5.2.2.11. *FR 3165-340 (Site #11)*

This native-surfaced road parallels FR 3165 for some distance and becomes a track in the grass for the remainder of its length. It appears to terminate at approximately the Project boundary. There is a 24-inch culvert across a stream at MP 0.2. This road is shown on USFS inventories as closed with a locked gate. However, no gate was noted during the field reconnaissance. The road is used by SCL on a very infrequent basis to monitor a survey monument. The observed condition was consistent with a Level 2 management objective.

5.2.3. Project Road Use Easement and Permit Analysis

Table 5.2-3 provides information on the status of easements, permits and other use authorizations for known Project-related roads. As noted in the final column, additional use authorizations may be needed for portions of two Project-related roads, neither of which is used exclusively for Project purposes.

Table 5.2-3. Status of easements, permits, and authorizations for Project-related roads.

Site #	Road No. or Name	Location/Landowner	Type of Authorization	Additional Access Authorization Needed?
1	West-Side Access Road	T40N, R43E, Sections 3, 10 and 15 SCL, USFS	SCL ownership (PIDs 7, 8, 9, 50 and 101) ¹ FERC License (PIDs 5, 17 and portion of PID 100 inside current Project boundary) USFS Special Use Permit (portion of PID 100 outside of current Project boundary)	No
2	Maintenance facility road network	T40N, R43E, Section 3. Must pass through SCL security gate to access area SCL	SCL ownership (PIDs 2 and 50)	No
3	Road to SCL Forebay Recreation Area	T40N, R43E, Section 10 SCL	SCL ownership (PID 9)	No
4	BPA switchyard road	T40N, R43E, Section 10 BPA, USFS	Perpetual right of access from BPA (PID 10) [AFN 120719]	Possibly (for PID 14 if BPA does not have access)
5	Spur off the BPA switchyard road	T40N, R43E, Section 10 BPA, SCL, USFS	Perpetual right of access from BPA (PID 10) [AFN 120719] SCL ownership (PIDs 8 and 34) FERC License (PID 19)	No
6	South end of FR 6200-348	T40N, R43E, Section 10 SCL, USFS	SCL ownership (PIDs 8 and 9) FERC License (PID 19) USFS Special Use Permit (PID 18)	No

Table 5.2-3, continued...

Site #	Road No. or Name	Location/Landowner	Type of Authorization	Additional Access Authorization Needed?
7	POC 3990/ FR 3165-000 Boundary Dam/ Crescent Lake	T40N, R43E, Sections 2, 11 and 12 SCL, USFS, private	SCL ownership (PID 54 and prior owners' interests in road across Sections 2, 11 and 12) [AFN 94395] USFS Special Use Permit (Section 2) Pend Oreille County resolution and USFS letter re: County acceptance of road into the County Road System for maintenance (PID 25 and Sections 2, 11 and 12)	No
8	FR 3165-350/ (connector between West- Side Access Road and FR 3165-000)	T40N, R43E, Sections 10 and 11 SCL, USFS	SCL ownership (PID 7) FERC License (PIDs 16 and 17) USFS Special Use Permit (PID 25)	No
9	Tailrace boat launch road (west side)	T40N, R43E, Section 3. Must pass through SCL security gate to access road SCL, USFS	SCL ownership (PID 50) FERC License (PID 5)	No
10	FR 3165-200 and unnamed spur off of FR 3165-200	T40N, R43E, Sections 2 and 3 SCL, USFS	SCL ownership (PIDs 3 and 54 and prior owners' interests in road across Section 2) USFS Special Use Permit (Section 2)	No
11	FR 3165-340	T40N, R43E, Section 11 USFS	FERC License (PID 16) USFS Special Use Permits (PID 25)	Possibly (for PID 25 – authorized use was initial clearing of fluctuation zone, not ongoing O&M)

Note:

1 See Figure 5.1-1, map 2, for locations of all PIDs referenced in Table 5.2-3.

6 CONCLUSIONS

6.1. Land

6.1.1. Land Ownership Analysis

Lands within the Project boundary are all owned by the United States, the State of Washington, or SCL. Lands immediately adjacent to the Project boundary are owned by the United States, the

State of Washington, SCL, Pend Oreille County, the towns of Metaline and Metaline Falls, private entities, and others.

6.1.2. FERC Project Boundary

At three locations in the Project vicinity, needed adjustments to the FERC Project boundary were identified. For each of these sites, SCL expects to propose that adjustments be made to the Project boundary when it submits its license application.

1. West-Side Access Road – T40N, R43E, Sections 10 and 15—A portion of the original west side access road followed a different alignment than the current road. After a landslide in 1982, the road was relocated slightly to the west of the original grade. Authorization to site the new road was obtained through a USFS Special Use Permit and a property exchange; however, the FERC Project boundary was never modified to incorporate the new road alignment. The proposed adjustment to the FERC Project boundary will shift the narrow portion of the boundary line in Sections 10 and 15 to the west to surround the current location of the road.
2. Operations and maintenance support area – T40N, R43E, Section 3—As indicated in Table 5.1-2, this site is needed to support key operations functions and is not currently contained within the FERC Project boundary.
3. Boundary Wildlife Preserve – T38N, R43E, Sections 8 and 17—As discussed in Section 5.1.2, SCL designated a 155-acre parcel of land as a wildlife preserve in accordance with the 1986 license amendment; however, SCL did not amend the FERC license exhibits to incorporate this new parcel of land into the FERC Project boundary. SCL will propose to include this new parcel within the FERC Project boundary.

6.1.3. Mining Claim Analysis

Under the terms of FERC's Boundary Project license and FERC's subsequent withdrawal of federal lands, there are no valid unpatented mining claims within the buffer zone around the reservoir or within the area shown on Exhibit K (FPC-2144-72 through 80) as the Restricted Area around the dam. Both are defined not only horizontally (as shown in plan view) but also vertically (from the surface to a specified depth beneath the surface).

6.1.4. Private Shoreline Development

Review of land use planning information and real estate market conditions indicates that Pend Oreille County overall is growing at a moderate and steady rate, and that growth has primarily been concentrated in the southern part of the county away from the Project. Growth in the northern portion of the County has fluctuated over the past 15 to 20 years. Based on recent and expected growth for northern Pend Oreille County, it is anticipated that waterfront properties in the Metaline and Metaline Falls areas may experience some level of development activity over time, although indications of high demand and substantial near-term activity are not present.

Purchasers in the local real estate market interested in waterfront properties currently appear to be focusing on the southern portion of Pend Oreille County, for a variety of reasons. This area

offers more amenities, commercial outlets, and public services than does the northern part of the county. From the limited available information, shoreline property in northern Pend Oreille County is considered to still be affordable, whereas shoreline property in the southern portion of the county can be up to double the value on a unit basis.

Apart from consideration of possible market effects, the analysis of land capacity for privately-owned parcels adjacent to the Project boundary suggested there is somewhat limited potential for future development activity on those lands. Existing property that meets that definition includes up to 87 current parcels and 1,512 acres of land. Based on current zoning, it would be theoretically possible to divide some of the existing parcels into future parcels in a way that would result in a total of up to 261 parcels or lots within the study area for this analysis (87 existing parcels plus 174 potential new parcels). However, not all of these new parcels would be directly adjacent to the Project boundary.

Further, the potential for development activity on some parcels would likely be influenced by development constraints such as shoreline management, wetlands, flood hazard, and landslide hazard regulations. Natural resource zoning currently applies to 26 of the parcels in the study area, which include approximately 950 acres (nearly 63 percent of the total acreage). Because these parcels are designated as natural resource lands, the property tax penalties that would apply if the lands were converted from natural resource to a developed use could inhibit future development activity on those parcels.

Based on numbers alone, the greatest potential for new residential lots (up to 123 new lots) would be within the incorporated areas (Metaline and Metaline Falls). These parcels are zoned for residential use and the development codes permit lot sizes as small as 6,000 square feet. Given the typical sizes of new residences in most rural jurisdictions, including Pend Oreille County, it is questionable that there would be much future lot creation activity involving 6,000-square-foot lots. Consequently, the number of new lots that might be created in the future would likely be less than the maximum number indicated by current zoning.

6.2. Roads

Eleven roads were identified as being needed for Project-related purposes. Some of these roads are used exclusively by SCL; others are known to also be used by other parties. The conditions of all 11 roads were observed to be consistent with SCL's need for and use of the roads, and with USFS management objectives, where applicable. Detailed information on erosion and mass wasting conditions related to roads was collected as part of Study 1, the Erosion Study, and the results, as they relate to the roads identified in this study as needed for Project-related purposes, are presented in the Study 1 Interim Report (SCL 2008).

As discussed above, upon completion of the Dispersed Use and Access component of Study 21 (the Recreation Resource Study), roads determined to be needed for Project purposes will undergo further analysis.

7 VARIANCES FROM FERC-APPROVED STUDY PLAN AND PROPOSED MODIFICATIONS

No variances from the FERC approved study plan were made.

8 REFERENCES

- Federal Emergency Management Agency (FEMA). 2002. Flood Insurance Rate Map, Pend Oreille County, Washington. Washington, D.C.
- Pend Oreille County. Undated. Unpublished geographic information system (GIS) files of water body and wetland locations based on National Wetland Inventory. Obtained from Pend Oreille County Public Works Department, Planning Division, October 2007.
- Pend Oreille County. 2005. Pend Oreille County Comprehensive Plan. Newport, Washington. October 17.
- Pend Oreille County. 2007. Pend Oreille County Development Regulations. Newport, Washington. Effective September 1st, 2007, Ordinance #2007-2.
- SCL (Seattle City Light). 2007. Revised Study Plan for the Boundary Hydroelectric Project (FERC No. 2144). Seattle, Washington. February 2007. Available online at: http://www.seattle.gov/light/news/issues/bndryRelic/br_document.asp
- SCL. 2008. Study 1 – Erosion Study Interim Report for the Boundary Hydroelectric Project (FERC No. 2144). Prepared by Watershed GeoDynamics under contract to Tetra Tech. March 2008.
- Town of Metaline. 1996. Town of Metaline Comprehensive Plan: A Statement of Rural Values. Metaline, Washington. September.
- Town of Metaline. 1997. Metaline Development Code, March 1997. Metaline, Washington.
- Town of Metaline Falls. 1996. The Town of Metaline Falls Comprehensive Plan: A Statement of Rural Values. Metaline Falls, Washington. September.
- Town of Metaline Falls. 1997. Metaline Falls Development Code, February 1997. Metaline Falls, Washington.
- U.S. Geological Survey. 2007. 1:24,000-scale digital elevation models, northern Pend Oreille County, Washington area.
- Washington Center for Real Estate Research. 2006. Annual Information: Home Sales, Home Prices, Building Permits, and All Inventory Information, Pend Oreille County, 1993-

2006). Washington State University. Pullman, Washington. Accessed from agency website <http://www.wcrer.wsu.edu/WSHM/buildOwnReport.aspx>.

Washington Department of Natural Resources (WDNR). 2004. Liquefaction Susceptibility and Site Class Maps of Washington State, By County. Open File Report 2004-20. Olympia, Washington. Accessed from agency website <http://www.dnr.wa.gov/geology/pubs/ofr04-20>.

Washington Office of Financial Management (WOFM). 2007. April 1 Population of Cities, Towns, and Counties Used for Allocation of Selected State Revenues, State of Washington, 2000 to 2007. Accessed from agency website <http://www.ofm.wa.gov/pop/april1/default.asp>.

Appendix 1. FERC Boundary Analysis Locational Data

**Table A.1-1
FERC BOUNDARY – WORKS AREA**

**Section 11
T40N,R43E**

**Section 3
T40N,R43E**

**Section 10
T40N,R43E**

<i>PT#</i>	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>
	Bearing & Horizontal Distance			Bearing & Horizontal Distance	
1R	740809.43	2838472.98	P200	740771.32	2478604.74
	N 87°18'00" E	640.67		N 87°17'53" E	640.65
125	740839.61	2839112.94	NE GL3	740801.52	2479244.68
	N 02°10'44" W	1326.38		N 02°10'46" W	1326.42
127	742165.03	2839062.51	NE GL2	742126.98	2479194.24
	N 01°58'16" W	1326.33		N 01°58'16" W	1326.37
131	743490.57	2839016.89	NE GL1	743452.57	2479148.62
	S 87°21'58" W	653.02		S 87°21'51" W	653.00
130	743460.56	2838364.56	SE SW4 NW4 NW4	743422.54	2478496.31
	N 02°01'14" W	663.35		N 02°01'14" W	663.37
133	744123.5	2838341.17	NE SW4 NW4 NW4	744085.50	2478472.92
	S 87°23'00" W	653.59		S 87°22'56" W	653.57
132	744093.66	2837688.26	NW SW4 NW4 NW4	744055.65	2477820.03
	N 02°04'10" W	663.54		N 02°04'09" W	663.56
100	744756.77	2837664.3	NE 104043	744718.78	2477796.07
	N 02°32'34" W	1320.34		N 02°32'34" W	1320.38
139	746075.81	2837605.72	NE GL 6	746037.86	2477737.49
	S 87°32'19" W	1014.01		S 87°32'15" W	1014.04
138	746032.26	2836592.59	NW GL 6	745994.29	2476724.39
	S 87°32'21" W	710.55		S 87°32'14" W	710.52
144	746001.75	2835882.70	NE GL 7	745963.76	2476014.53
	N 02°29'41" W	330.00		N 02°29'41" W	330.01
AP	(Angle Point)				
	N 87°32'20" E	914.21		S 87°32'15" W	914.18
AP					
	S 02°29'38" E	330.00		S 02°29'38" E	330.02
137	745962.49	2834969.33	NW GL 7	745924.48	2475101.19
	S 02°29'39" E	1316.54		S 02°29'39" E	1316.58
97	744647.2	2835026.62	NW GL 2	744609.15	2475158.49
	S 02°2'56" E	1324.63		S 02°02'56" E	1324.67
129	743323.42	2835073.98	NW GL 9	743285.32	2475205.85
	S 02°02'53" E	374.83		S 02°02'54" E	374.84
AP	(From AFN 119923—Transmission Line Easement)				
	S 33°56'30" W	670.22		S 33°56'22" W	670.23
AP					
	S 50°05'10" W	197.80		S 50°05'00" W	197.80
AP					
	S 32°47'18" W	352.12		S 32°47'10" W	352.14

**Table A.1-1
FERC BOUNDARY – WORKS AREA**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	NAD27-Northing	NAD27-Easting	PT NAME	HARN-Northing	HARN-Easting
	Bearing & Horizontal Distance			Bearing & Horizontal Distance	
AP	(From AFN 120719—Deed)				
	S 87°43'43" W	43.19		S 87°43'37" W	43.16
AP	S 63°17'23" E	847.37		S 63°17'21" E	847.32
AP	S 26°41'00" W	1034.80		S 26°40'53" W	1034.83
AP	N 87°35'31" E	548.97		N 87°35'26" E	548.95
123	740685.76	2835168.35	NW GL 5	740647.57	2475300.22
	N 87°59'48" E	1164.88		N 87°59'43" E	1164.84
1L	740726.48	2836332.52	P135	740688.32	2476464.35

Road Alignment

The following alignment represents the centerline location description for the West Side Access Road as shown in the current Exhibit K (FPC-2144-72). The road has since been realigned.

**Section 10
T40N,R43E**

1L	740726.48	2836332.52	P135	740688.32	2476464.35
	S 87°59'42" W	461.33		S 87°59'41" W	461.315

Begin 200 foot ROW as described by the following centerline description

501	740710.35	2835871.47	CL INTX	740672.18	2476003.32
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S 78°08'27" W 525.91

Point of Intersection for a Curve T=220.82 R=440.74 Δ=53°16'30"

S 24°54'57" W 502.65

Point of Intersection for a Curve T=146.77 R=674.07 Δ=24°34'00"

S 00°20'57" W 1246.20

Point of Intersection for a Curve T=438.08 R=440.74 Δ=13°00'00"

N 89°59'48" W 1000.00

**Section 15
T40N,R43E**

Begin 100 foot ROW as described by the following centerline description

N 89°59'48" W 485.46

Point of Intersection for a Curve T=287.13 R=440.74 Δ=13°00'00"

S 23°50'12" W 287.13

500	738635.91	2833527.90	Road Intx	738597.62	2473659.83
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Intersection of Dam Access Road and County Road

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

**Section 10
T40N ,R43E**

**Section 15
T40N ,R43E**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
1L	740726.48	2836332.52	P135	740688.32	2476464.35	
	S 30°25'54" W	587.40		S 30°25'46" W	587.41	
2L		S 34°52'31" W	201.12		S 34°52'22" W	201.12
3L		S 19°39'14" W	297.32		S 19°39'08" W	297.33
4L		S 00°27'44" E	385.79		S 00°27'45" E	385.80
5L	739389.23	2835823.11	P133	739351.01	2475954.96	
	S 15°45'22" E	51.15		S 15°45'19" E	51.15	
6L		S 13°26'18" W	116.18		S 13°26'14" W	116.18
7L		S 16°58'47" E	136.97		S 16°58'44" E	136.97
8L		S 67°04'59" E	133.54		S 67°04'58" E	133.54
9L		S 25°19'47" E	165.96		S 25°19'43" E	165.96
10L		S 32°11'17" W	232.78		S 32°11'09" W	232.79
11L		S 15°15'18" W	171.03		S 15°15'14" W	171.04
12L		S 57°01'08" W	224.12		S 57°00'58" W	224.12
13L		S 75°31'13" W	187.97		S 75°31'05" W	187.97
14L		S 43°20'47" W	269.52		S 43°20'38" W	269.52
15L		S 03°25'37" W	167.30		S 03°25'36" W	167.31
16L		S 34°53'01" E	410.84		S 34°53'16" E	410.84
17L		S 73°14'39" E	183.81		S 73°14'00" E	183.80
18L		N 78°27'12" E	284.76		N 78°27'05" E	284.75
19L		N 59°10'05" E	372.67		N 59°09'55" E	372.67
20L		N 50°59'53" E	359.20		N 50°59'43" E	359.20
21L		N 45°54'43" E	307.49		N 45°54'33" E	307.49
22L		N 65°48'34" E	280.64		N 65°48'25" E	280.64

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

<i>PT#</i>	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
23L	S 62°10'05" E	182.06		S 62°10'03" E	182.06
24L	N 86°15'38" E	153.33		N 86°15'33" E	153.33
25L	N 39°36'00" E	285.52		N 39°35'51" E	285.52
26L	N 64°59'53" E	229.51		N 64°59'44" E	229.51
27L	N 88°59'55" E	107.91		N 88°58'45" E	107.91
28L	738656.89	2837887.89	P100	738618.69	2478019.68
29L	S 30°33'00" E	240.23		S 30°32'56" E	240.23
30L	S 45°52'05" E	186.70		S 45°52'01" E	186.70
31L	S 59°07'40" E	214.37		S 59°07'37" E	214.36
32L	S 27°58'02" E	383.83		S 27°57'58" E	383.83
33L	S 63°36'46" E	288.01		S 63°36'44" E	288.00
34L	S 18°40'55" E	293.46		S 18°40'52" E	293.47
35L	S 57°03'50" E	274.04		S 57°03'47" E	274.03
36L	S 0°27'23" W	251.01		S 00°27'22" W	251.02
37L	S 17°27'08" E	199.66		S 17°27'05" E	199.66
38L	S 17°10'20" E	389.92		S 17°10'17" E	389.93
39L	S 18°15'37" W	207.45		S 18°15'32" W	207.46
40L	S 23°26'17" E	188.56		S 23°26'13" E	188.56
41L	S 18°10'09" W	272.59		S 18°10'04" W	272.60
42L	S 23°58'31" E	338.68		S 23°58'27" E	338.69
	735563.54	2839325.62	P132	735525.27	2479457.37
43L	S 12°55'12" E	211.91		S 12°55'10" E	211.92
44L	S 11°35'32" W	199.06		S 11°35'28" W	199.07
	S 38°19'25" E	212.87		S 38°19'21" E	212.87

**Section 15
T40N ,R43E**

**Section 14
T40N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
45L	S 25°20'46" E	210.24		S 25°20'42" E	210.24
46L	S 54°42'38" E	268.30		S 54°42'35" E	268.30
47L	S 78°07'29" E	218.68		S 78°07'31" E	218.67
48L	N 81°52'12" E	190.92		N 81°52'06" E	190.91
49L	S 28°11'10" W	237.12		S 28°11'03" W	237.13
50L	S 11°27'16" W	163.40		S 11°27'12" W	163.41
51L	734262.86	2840032.55	P102	734224.56	2480164.29
	S 11°52'15" W	158.24		S 11°52'11" W	158.25
52L	S 04°49'01" E	178.63		S 04°49'01" E	178.64
53L	S 32°25'49" W	214.44		S 32°25'41" W	214.45
54L	S 04°23'55" E	234.69		S 04°23'55" E	234.70
55L	S 15°12'19" E	202.07		S 15°12'17" E	202.08
56L	S 58°40'51" E	221.24		S 58°40'49" E	221.24
57L	S 25°17'55" W	343.99		S 25°17'48" W	344.00
58L	S 12°56'56" W	281.15		S 12°56'52" W	281.16
59L	S 38°39'35" W	211.30		S 38°39'26" W	211.30
60L	S 06°58'52" W	148.10		S 06°58'49" W	148.11
61L	S 14°44'37" E	235.76		S 14°44'35" E	235.77
62L	S 14°36'16" W	146.74		S 14°36'12" W	146.75
63L	S 07°04'13" E	259.98		S 07°04'12" E	259.99
64L	S 37°24'45" E	380.22		S 37°24'41" E	380.22
65L	S 80°28'55" E	169.33		S 80°28'57" E	169.32
66L	N 67°52'25" E	196.47		N 67°52'16" E	196.47

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
67L	S 26°00'51" E	232.56		S 26°00'47" E	232.56
68L	S 59°02'10" W	262.39		S 59°02'00" W	262.39
69L	S 15°17'15" W	155.50		S 15°17'10" W	155.51
70L	S 12°44'35" E	290.15		S 12°44'33" E	290.16
71L	S 03°56'05" E	189.45		S 03°56'05" E	189.46
72L	S 34°28'02" W	143.13		S 34°27'54" W	143.13
73L	S 19°04'09" W	171.41		S 19°04'04" W	171.42
74L	S 05°05'01" E	327.29		S 05°05'01" E	327.30
75L	S 19°52'09" E	214.79		S 19°52'06" E	214.79
76L	S 16°07'13" W	180.08		S 16°07'08" W	180.09
77L	S 26°07'32" E	174.87		S 26°07'28" E	174.87
78L	S 13°25'39" W	228.24		S 13°25'35" W	228.25
79L	S 28°06'59" E	160.52		S 28°06'55" E	160.52
80L	728956.42	2840362.65	P104	728917.95	2480494.40
	S 16°57'00" E	443.70		S 16°56'58" E	443.71
81L	S 26°33'54" E	214.66		S 26°33'50" E	214.66
82L	S 02°00'34" W	228.14		S 02°00'33" W	228.15
83L	S 13°36'02" E	255.15		S 13°36'00" E	255.16
84L	S 31°29'20" E	411.61		S 31°29'16" E	411.61
85L	S 75°33'21" E	272.62		S 75°33'22" E	272.61
86L	S 16°00'56" E	112.36		S 16°00'54" E	112.36
87L	S 14°44'37" W	157.18		S 14°44'33" W	157.19
88L	S 14°59'08" E	204.97		S 14°59'06" E	204.98

**Section 26
T40N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
89L	S 30°15'23" E	152.82		S 30°15'19" E	152.82
90L	S 38°15'36" W	156.64		S 38°15'27" W	156.64
91L	S 00°00'00" E	147.00		S 00°00'01" E	147.01
92L	S 28°41'42" E	216.60		S 28°41'38" E	216.60
93L	N 87°16'25" W	147.17		N 87°16'29" W	147.17
94L	S 70°47'14" W	209.68		S 70°47'06" W	209.68
95L	S 36°17'52" W	140.21		S 36°17'44" W	140.21
96L	S 02°24'33" W	171.83		S 02°24'31" W	171.84
97L	S 20°59'16" E	47.05		S 20°59'13" E	47.05
98L	726004.39	2840828.63	P131	725965.82	2480960.38
	S 20°59'16" E	186.92		S 20°59'13" E	186.92
99L	S 22°09'38" E	57.36		S 22°09'35" E	57.36
100L	S 14°34'11" E	43.54		S 14°34'09" E	43.54
101L	S 14°49'42" W	88.68		S 14°49'38" W	88.68
102L	S 41°11'25" W	194.80		S 41°11'16" W	194.80
103L	S 25°23'19" W	63.41		S 25°23'12" W	63.41
104L	S 52°37'47" W	229.01		S 52°37'38" W	229.01
105L	S 60°49'34" W	186.68		S 60°49'25" W	186.68
106L	S 50°47'57" W	181.95		S 50°47'48" W	181.95
107L	S 22°35'14" W	135.38		S 22°35'08" W	135.38
108L	S 02°27'46" W	93.09		S 02°27'45" W	93.09
109L	S 25°57'51" E	127.91		S 25°57'48" E	127.91
110L	S 01°06'37" W	91.33		S 01°06'36" W	91.33

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	NAD27-Northing	NAD27-Easting	PT NAME	HARN-Northing	HARN-Easting	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
111L	724675.69	2840262.23	P129	724637.07	2480394.01	
	S 03°41'16" W	206.11		S 03°41'14" W	206.12	
112L						
	S 14°42'02" W	271.90		S 14°41'58" W	271.91	
113L						
	S 14°22'53" E	201.31		S 14°22'51" E	201.32	
114L						
	S 30°14'03" W	387.91		S 30°13'56" W	387.92	
115L	723676.85	2840034.67	P106	723638.19	2480166.46	
	S 09°03'04" W	614.50		S 09°03'01" W	614.52	
116L						
	S 39°27'38" W	339.31		S 39°27'29" W	339.32	
117L	722808.03	2839722.35	P128	722769.33	2479854.15	
	S 28°43'11" W	169.33		S 28°43'04" W	169.33	
118L						
	S 29°25'27" W	85.57		S 29°25'20" W	85.57	
119L						
	S 21°01'29" W	137.69		S 21°01'23" W	137.69	
120L						
	S 46°40'18" W	46.27		S 46°40'09" W	46.27	
121L						
	S 52°43'23" W	104.82		S 52°43'14" W	104.82	
122L						
	S 13°04'14" E	106.35		S 13°04'08" E	106.36	
123L	722257.64	2839456.53	P127	722218.91	2479588.34	
	S 13°04'14" E	16.76		S 13°04'12" E	16.76	
124L						
	S 55°28'54" E	45.42		S 55°28'52" E	45.42	
125L						
	S 17°15'40" W	84.52		S 17°15'35" W	84.52	
126L						
	S 17°52'59" W	83.82		S 17°52'54" W	83.82	
127L						
	S 13°48'34" W	58.44		S 13°48'30" W	58.44	
128L						
	S 74°11'17" W	159.45		S 74°11'09" W	159.45	
129L						
	S 05°47'21" W	110.70		S 05°47'19" W	110.70	
130L						
	S 03°24'17" E	144.05		S 03°24'17" E	144.05	
131L						
	S 06°24'46" W	102.30		S 06°24'44" W	102.30	
132L						
	S 01°20'39" W	84.36		S 01°20'38" W	84.36	

**Section 35
T40N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
133L	S 13°49'41" E	117.82		S 13°49'39" E	117.82
134L	S 44°43'03" E	180.82		S 44°42'59" E	180.82
135L	S 41°28'45" E	88.47		S 41°28'41" E	88.47
136L	S 07°31'49" W	133.65		S 07°31'46" W	133.65
137L	S 12°46'46" E	146.51		S 12°46'44" E	146.51
138L	S 39°25'38" E	89.64		S 39°24'40" E	89.65
139L	720861.15	2839549.34	P126	720822.38	2479681.15
	S 05°05'49" E	153.76		S 05°05'49" E	153.76
140L	S 65°00'15" E	326.59		S 65°00'14" E	326.58
141L	N 90°00'00" E	188.00		N 89°59'55" E	188.00
142L	N 45°00'00" E	227.69		N 44°59'51" E	227.69
143L	N 90°00'00" E	447.00		N 89°59'55" E	446.99
144L	S 77°11'45" E	225.61		S 77°11'47" E	225.60
145L	S 29°52'34" E	162.61		S 29°52'30" E	162.61
146L	S 41°52'20" W	259.19		S 41°52'11" W	259.19
147L	S 33°41'24" W	201.91		S 33°41'16" W	201.91
148L	S 58°52'52" W	253.48		S 58°52'43" W	253.48
149L	720048.00	2840454.00		720009.18	2480586.08
	S 00°50'48" E	406.04		S 00°50'49" E	406.05
150L	S 14°21'38" W	342.71		S 14°21'34" W	342.72
151L	S 21°33'36" E	220.42		S 21°33'33" E	220.42
152L	S 39°57'58" E	274.00		S 39°57'54" E	274.00
153L	S 00°00'00" W	250.00		S 00°00'01" E	250.01
154L	S 26°31'28" W	248.05		S 26°31'20" W	248.07

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

**Section 2
T39N ,R43E**

**Section 3
T39N ,R43E**

PT#	North American Datum of 1927		PT NAME	High Accuracy Reference Network	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
155L	718423.05 S 10°48'20" W	2840521.22 310.56	P108	718384.22 S 10°48'17" W	2480653.02 310.57
156L	S 18°12'39" W	323.19		S 18°12'34" W	323.20
157L	S 37°19'32" W	201.21		S 37°19'24" W	201.21
158L	S 21°08'53" W	260.55		S 21°08'48" W	260.56
159L	S 31°41'32" W	620.53		S 31°41'25" W	620.55
160L	S 25°17'44" W	322.97		S 25°17'38" W	322.98
161L	S 07°07'30" E	185.43		S 07°07'29" E	185.44
162L	S 48°06'22" E	182.70		S 48°06'19" E	182.70
163L	S 12°48'54" W	238.95		S 12°48'50" W	238.96
164L	S 22°56'08" W	572.24		S 22°56'02" W	572.26
165L	S 40°15'34" W	290.91		S 40°15'26" W	290.92
166L	S 28°10'16" W	239.35		S 28°10'09" W	239.36
167L	S 42°42'34" W	229.99		S 42°42'25" W	229.99
168L	S 63°40'52" W	153.93		S 63°40'37" W	153.92
169L	714851.75 S 30°07'13" W	2838970.03 143.18	P109	714812.76 S 30°07'06" W	2479101.88 143.18
170L	S 23°07'35" W	174.78		S 23°07'29" W	174.79
171L	S 20°56'49" W	185.69		S 20°56'52" W	185.70
172L	714393.75 S 08°18'37" W	2838763.14 146.29	P125	714354.74 S 08°18'34" W	2478894.99 146.30
173L	S 09°14'12" W	417.41		S 09°14'09" W	417.43
174L	S 15°26'47" W	236.54		S 15°26'43" W	236.55
175L	S 26°33'54" W	228.08		S 26°33'48" W	228.09
176L	S 34°54'31" W	484.72		S 34°54'23" W	484.73

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

**Section 10
T39N ,R43E**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
177L	713007.50	2838232.61	P123	712968.43	2478364.48	
	S 23°01'15" W	231.65		S 23°01'09" W	231.66	
178L	S 27°55'59" W	204.59		S 27°55'53" W	204.60	
179L	S 39°04'38" W	109.14		S 39°04'30" W	109.14	
180L	S 25°12'34" W	112.36		S 25°12'28" W	112.36	
181L	S 10°08'01" W	85.36		S 10°07'58" W	85.36	
182L	S 30°13'05" W	196.79		S 30°12'58" W	196.80	
183L	S 35°05'04" W	205.36		S 35°04'57" W	205.37	
184L	S 26°55'15" W	379.39		S 26°55'04" W	379.41	
185L	711666.75	2837525.66	P122	711627.62	2477657.55	
	S 26°46'47" W	545.23		S 26°46'41" W	545.25	
186L	S 20°42'25" W	311.10		S 20°42'20" W	311.11	
187L	S 15°54'40" W	229.80		S 15°54'36" W	229.81	
188L	S 21°55'32" W	514.19		S 21°55'27" W	514.21	
189L	S 22°35'06" W	380.15		S 22°35'01" W	380.16	
190L	S 23°14'59" W	440.80		S 23°14'54" W	440.81	
191L	S 42°42'34" W	265.38		S 42°42'26" W	265.39	
192L	S 29°58'06" W	286.27		S 29°57'59" W	286.28	
193L	S 39°10'42" W	362.49		S 39°10'34" W	362.50	
194L	S 25°46'53" W	294.29		S 25°46'47" W	294.30	
195L	S 43°26'06" W	647.24		S 43°25'58" W	647.25	
196L	S 51°27'13" W	152.84		S 51°27'02" W	152.86	
197L	707880.76	2835350.46	P118	707841.45	2475482.41	
	S 15°31'55" W	25.05		S 15°31'51" W	25.05	
198L	S 05°42'44" W	109.66		S 05°42'42" W	109.66	

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

**Section 15
T39N ,R43E**

**Section 16
T39N ,R43E**

<i>PT#</i>	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
199L		S 30°32'34" W 181.45		S 30°32'22" W 181.46		
200L	707591.23	2835240.63	P111	707551.90	2475372.58	
		S 46°37'05" W 310.45		S 46°36'57" W 310.45		
201L		S 81°28'42" W 310.43		S 81°28'36" W 310.42		
202L		S 56°31'25" W 297.32		S 56°31'16" W 297.32		
203L		S 45°00'00" W 214.96		S 44°59'52" W 214.96		
204L		S 59°52'16" W 287.64		S 59°52'10" W 287.64		
205L	706871.62	2834059.22	P120	706832.24	2474191.20	
		S 46°43'05" W 78.87		S 46°42'57" W 78.87		
206L		S 37°00'33" W 186.66		S 37°00'26" W 186.66		
207L		S 6°45'05" E 131.64		S 06°45'04" E 131.64		
208L		S 09°14'27" E 67.68		S 09°14'26" E 67.68		
209L		S 22°35'42" W 71.96		S 22°35'37" W 71.96		
210L		S 67°36'21" W 57.30		S 67°36'13" W 57.30		
211L		S 25°21'02" W 190.21		S 25°20'48" W 190.22		
212L	706210.80	2833753.73	P119	706171.39	2473885.71	
		S 01°38'46" W 303.93		S 01°38'45" W 303.94		
213L		S 05°35'37" W 194.93		S 05°35'36" W 194.94		
214L		S 16°59'27" W 150.57		S 16°59'23" W 150.58		
215L		S 14°15'00" E 195.00		S 14°14'58" E 195.01		
216L		S 23°57'45" W 187.13		S 23°57'40" W 187.14		
217L		S 06°34'41" W 558.68		S 06°34'39" W 558.70		
218L		S 60°54'40" W 162.50		S 60°54'32" W 162.50		
219L		S 32°27'29" W 335.39		S 32°27'22" W 335.40		
220L		S 71°09'17" W 239.86		S 71°09'09" W 239.86		

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
221L	S 34°42'31" W	57.96		S 34°42'24" W	57.96
222L	S 28°23'39" W	105.05		S 28°23'33" W	105.05
223L	S 12°47'09" W	77.47		S 12°47'06" W	77.47
224L	S 59°46'22" E	244.43		S 59°46'21" E	244.43
225L	S 49°11'24" E	95.03		S 49°11'33" E	95.03
226L	703813.75	2833224.02	P138	703774.25	2473356.02
	S 49°11'24" E	45.77		S 49°11'21" E	45.77
227L	S 41°55'35" E	204.39		S 41°55'31" E	204.39
228L	703631.77	2833395.23	P137	703592.26	2473527.22
	S 41°55'35" E	221.56		S 41°55'32" E	221.56
229L	S 70°35'47" E	132.24		S 70°35'48" E	132.24
230L	N 71°55'54" E	296.63		N 71°55'47" E	296.63
231L	S 88°00'06" E	268.04		S 88°00'11" E	268.03
232L	703505.65	2834217.87	P114	703466.16	2474349.85
	S 60°35'33" E	272.20		S 60°35'32" E	272.20
233L	S 88°29'33" E	190.07		S 88°29'37" E	190.07
234L	S 07°41'46" E	261.35		S 07°41'45" E	261.36
235L	S 41°51'32" W	232.28		S 41°51'24" W	232.28
236L	S 01°07'24" E	255.05		S 01°07'24" E	255.06
237L	S 29°05'13" E	172.79		S 29°05'10" E	172.79
238L	S 41°16'24" W	184.95		S 41°16'16" W	184.95
239L	S 20°44'36" W	131.89		S 20°44'26" W	131.89
240L	702266.66	2834445.29	P115	702227.13	2474577.26
	S 20°26'00" W	201.33		S 20°25'56" W	201.34
241L	S 14°58'10" W	193.57		S 14°58'07" W	193.58
242L	S 06°22'50" W	282.97		S 06°22'52" W	282.98

**Section 15
T39N ,R43E**

**Section 22
T39N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

**Section 21
T39N ,R43E**

PT#	North American Datum of 1927		PT NAME	High Accuracy Reference Network	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
243L	701609.78 S 60°39'17" W	2834293.55 119.94	P116	701570.22 S 60°39'09" W	2474425.53 119.94
244L	S 17°25'24" W	197.04		S 17°25'20" W	197.05
245L	S 53°17'26" W	500.20		S 53°17'18" W	500.21
246L	S 42°44'28" W	305.00		S 42°44'20" W	305.01
247L	S 25°37'19" W	217.38		S 25°37'14" W	217.39
248L	S 08°43'15" E	342.96		S 08°43'14" E	342.97
249L	S 30°27'56" W	295.85		S 30°27'50" W	295.86
250L	S 23°57'42" W	196.98		S 23°57'37" W	196.99
251L	S 15°18'08" W	265.64		S 15°18'05" W	265.65
252L	699613.76 N 87°38'20" E	2833179.89 210.00		699573.99 N 87°38'25" E	2473312.00 209.99
253L	S 17°32'55" W	128.40		S 17°32'51" W	128.40
254L	S 69°50'54" W	116.11		S 69°50'46" W	116.11
255L	S 49°57'02" W	82.89		S 49°56'54" W	82.89
256L	S 80°51'08" W	131.15		S 80°51'02" W	131.15
257L	S 76°40'18" W	282.73		S 76°40'11" W	282.73
258L	N 89°37'28" W	202.09		N 89°37'33" W	202.09
259L	N 70°11'25" W	48.75		N 70°11'26" W	48.75
260L	S 73°01'58" W	83.67		S 73°01'51" W	83.67
261L	S 61°26'22" W	130.92		S 61°26'14" W	130.92
262L	S 43°36'14" W	96.82		S 43°36'06" W	96.82
263L	S 50°24'00" W	139.20		S 50°23'52" W	139.20
264L	S 36°21'26" W	89.40		S 36°21'19" W	89.40

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
265L	S 23°47'34" W	187.27		S 23°47'29" W	187.28
266L	S 30°19'37" W	213.74		S 30°19'31" W	213.75
267L	S 13°40'31" W	559.52		S 13°40'28" W	559.54
268L	S 21°19'25" W	171.17		S 21°19'21" W	171.18
269L	S 28°04'57" W	369.85		S 28°04'52" W	369.86
270L	S 31°35'09" W	82.88		S 31°35'03" W	82.88
271L	S 24°15'48" W	83.17		S 24°15'43" W	83.17
272L	S 08°05'44" W	92.19		S 08°05'42" W	92.19
273L	S 24°18'27" W	155.08		S 24°18'22" W	155.09
274L	S 49°25'20" W	167.61		S 49°25'12" W	167.61
275L	S 61°14'19" W	92.43		S 61°14'11" W	92.43
276L	S 70°55'34" W	186.48		S 70°55'27" W	186.48
277L	S 60°00'53" W	118.95		S 60°00'45" W	118.95
278L	S 63°09'07" W	277.38		S 63°23'59" W	281.19
279L	696856.55	2830658.41	P300	696816.75	2470790.45
	S 73°17'20" W	98.89		S 73°17'13" W	98.89
280L	S 46°30'39" W	96.07		S 46°30'31" W	96.07
281L	S 33°21'30" W	143.67		S 33°21'24" W	143.67
282L	S 67°41'38" W	42.15		S 67°41'30" W	42.15
283L	S 51°20'25" W	51.22		S 51°20'17" W	51.22
284L	S 26°33'54" W	91.68		S 26°33'49" W	91.68
285L	S 45°00'00" W	48.50		S 44°59'52" W	48.50
286L	S 24°46'30" W	42.95		S 24°46'25" W	42.95

**Section 28
T39N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
287L	S 32°02'50" W	145.11		S 32°02'44" W	145.11
288L	S 00°00'00" E	32.00		S 00°00'00" E	32.00
289L	S 21°48'05" W	32.31		S 21°48'01" W	32.31
290L	S 39°07'49" W	76.06		S 39°07'42" W	76.06
291L	S 03°59'27" W	43.10		S 03°59'26" W	43.10
292L	S 77°44'07" W	23.54		S 77°44'00" W	23.54
293L	S 63°52'38" W	115.83		S 63°52'30" W	115.83
294L	S 33°13'54" W	69.34		S 33°13'48" W	69.34
295L	S 47°04'12" W	117.46		S 47°04'04" W	117.46
296L	S 40°02'40" W	122.79		S 40°02'33" W	122.79
297L	S 27°12'14" W	120.31		S 27°12'09" W	120.31
298L	S 63°50'18" W	63.51		S 63°50'10" W	63.51
299L	S 26°08'49" W	122.54		S 26°08'44" W	122.54
300L	S 19°30'09" W	50.92		S 19°30'05" W	50.92
301L	S 06°50'34" E	50.36		S 06°50'33" E	50.36
302L	S 10°07'29" W	85.33		S 10°07'27" W	85.33
303L	S 00°00'00" E	77.00		S 00°00'00" E	77.00
304L	S 19°58'59" E	58.52		S 19°58'56" E	58.52
305L	S 06°35'05" E	55.81		S 06°35'04" E	55.81
306L	N 61°56'27" E	39.21		N 61°56'19" E	39.21
307L	S 50°54'22" E	20.68		S 50°54'20" E	20.68
308L	N 85°25'15" E	67.51		N 85°25'10" E	67.51

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
309L	S 37°19'35" E	152.83		S 37°19'32" E	152.83
310L	S 16°52'52" E	52.46		S 16°52'49" E	52.46
311L	S 34°56'32" W	54.48		S 34°56'26" W	54.48
312L	S 41°25'25" W	90.69		S 41°25'18" W	90.69
313L	S 30°16'43" E	98.42		S 30°16'40" E	98.42
314L	S 62°07'14" E	51.33		S 62°07'13" E	51.33
315L	S 78°24'48" E	29.13		S 78°24'50" E	29.13
316L	S 24°23'07" E	49.57		S 24°23'04" E	49.57
317L	S 26°33'54" W	8.94		S 26°33'49" W	8.94
318L	N 74°34'40" W	60.17		N 74°34'42" W	60.17
319L	S 83°39'35" W	18.11		S 83°39'29" W	18.11
320L	N 69°02'50" W	72.63		N 69°02'51" W	72.63
321L	S 61°14'23" W	172.45		S 61°14'15" W	172.45
322L	S 11°47'36" W	92.96		S 11°47'34" W	92.96
323L	N 73°22'22" E	119.54		N 73°22'15" E	119.54
324L	S 53°56'19" E	70.36		S 53°56'17" E	70.36
325L	S 72°48'16" E	72.58		S 72°48'17" E	72.58
326L	N 74°50'02" E	78.99		N 74°49'55" E	78.99
327L	S 76°36'27" E	43.17		S 76°36'29" E	43.17
328L	N 81°28'09" E	40.45		N 81°28'03" E	40.45
329L	N 45°54'34" E	44.55		N 45°54'26" E	44.55
330L	N 81°30'31" E	32.20		N 81°30'25" E	32.20

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
331L	S 42°08'57" E	98.65		S 42°08'54" E	98.65
332L	S 25°32'03" W	136.99		S 25°31'58" W	136.99
333L	S 09°02'22" W	44.55		S 09°02'20" W	44.55
334L	S 69°46'30" W	80.99		S 69°46'23" W	80.99
335L	S 29°01'40" W	208.15		S 29°01'35" W	208.16
336L	S 67°51'52" E	63.69		S 67°51'52" E	63.69
337L	S 38°51'12" E	46.23		S 38°51'09" E	46.23
338L	S 00°00'00" E	43.00		S 00°00'00" E	43.00
339L	S 16°27'36" W	137.64		S 16°27'33" W	137.65
340L	S 24°00'14" W	140.12		S 24°00'10" W	140.12
341L	S 11°57'35" W	207.50		S 11°57'33" W	207.51
342L	S 35°50'16" W	133.22		S 35°50'10" W	133.22
343L	S 30°11'30" W	445.42		S 30°11'25" W	445.43
344L	S 27°11'10" W	233.79		S 27°16'05" W	234.75
345L	692979.04	2829393.18	P319	692939.07	2469525.24
346L	S 24°46'46" W	167.45		S 24°46'41" W	167.46
347L	S 27°47'26" W	83.65		S 27°47'21" W	83.65
348L	S 20°17'46" W	80.11		S 20°17'42" W	80.11
349L	S 23°49'40" W	178.95		S 23°49'36" W	178.96
350L	S 33°09'32" W	155.79		S 33°09'26" W	155.79
351L	S 49°08'34" W	72.06		S 49°08'26" W	72.06
352L	S 84°15'51" W	66.57		S 84°15'45" W	66.57
	N 51°27'35" W	53.36		N 51°27'33" W	53.36

**Section 29
T39N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
353L	S 13°12'04" W	21.54		S 13°12'02" W	21.54
354L	N 51°10'51" W	50.25		N 51°10'49" W	50.25
355L	S 18°03'45" E	54.75		S 18°03'42" E	54.75
356L	S 75°46'00" E	20.62		S 75°46'02" E	20.62
357L	S 28°52'36" E	72.14		S 28°52'33" E	72.14
358L	S 18°27'39" W	103.31		S 18°27'36" W	103.31
359L	S 29°19'33" E	79.12		S 29°19'30" E	79.12
360L	S 01°24'04" E	95.76		S 01°24'03" E	95.76
361L	S 17°02'48" W	171.15		S 17°02'45" W	171.16
362L	S 00°11'59" W	225.57		S 00°11'59" W	225.58
363L	S 07°29'18" E	74.18		S 07°29'17" E	74.18
364L	691527.99	2828931.04	P302	691487.96	2469063.10
	S 26°53'30" E	138.79		S 26°53'27" E	138.79
365L	S 1°12'49" W	147.44		S 01°12'49" W	147.45
366L	S 42°44'26" E	74.23		S 42°44'23" E	74.23
367L	S 06°30'45" W	77.88		S 06°30'44" W	77.88
368L	S 27°08'50" E	146.97		S 27°08'47" E	146.97
369L	S 07°15'27" E	109.84		S 07°15'26" E	109.84
370L	S 02°08'51" E	179.34		S 02°08'50" E	179.35
371L	S 08°21'23" W	549.14		S 08°21'22" W	549.16
372L	S 03°18'12" E	414.88		S 03°18'11" E	414.89
373L	S 11°19'27" W	109.13		S 11°19'25" W	109.13
374L	S 08°22'23" E	50.80		S 08°22'21" E	50.80

**Section 32
T39N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
375L	S 02°46'57" E	171.49		S 02°46'56" E	171.50
376L	S 09°15'50" E	159.06		S 09°15'48" E	159.06
377L	S 12°44'22" E	324.57		S 12°44'20" E	324.58
378L	S 19°24'40" E	79.02		S 19°24'37" E	79.02
379L	S 00°05'18" W	258.43		S 00°05'18" W	258.44
380L	S 87°34'20" W	39.12		S 87°34'15" W	39.12
381L	S 57°27'56" E	89.35		S 57°27'55" E	89.35
382L	S 14°49'07" E	321.49		S 14°49'05" E	321.50
383L	S 09°13'01" E	245.14		S 09°12'59" E	245.15
384L	S 02°17'41" W	376.19		S 02°17'41" W	376.20
385L	S 23°07'22" E	60.96		S 23°07'19" E	60.96
386L	S 01°30'40" W	77.13		S 01°30'40" W	77.13
387L	S 14°37'29" W	179.41		S 14°37'27" W	179.42
388L	S 08°06'15" W	135.36		S 08°06'14" W	135.37
389L	S 23°46'30" W	100.44		S 23°46'26" W	100.44
390L	S 07°12'48" E	104.72		S 07°12'47" E	104.72
391L	S 08°36'21" W	153.55		S 08°36'20" W	153.56
392L	S 19°54'45" E	46.37		S 19°54'42" E	46.37
393L	S 02°57'03" E	97.13		S 02°57'02" E	97.13
394L	S 15°11'09" W	72.53		S 15°11'06" W	72.53
395L	S 82°15'35" W	103.95		S 82°15'29" W	103.95
396L	S 43°24'32" W	50.93		S 43°24'25" W	50.93

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>		<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
397L	S 00°00'00" E	101.00		S 00°00'00" E	101.00
398L	S 7°36'25" W	176.81		S 07°36'24" W	176.82
399L	S 05°58'16" E	86.52		S 05°58'15" E	86.52
400L	686222.70	2829080.60	P304	686182.49	2469212.66
	S 23°21'54" W	140.77		S 23°21'50" W	140.78
401L	S 39°18'40" W	39.48		S 39°18'34" W	39.48
402L	N 54°45'41" W	58.00		N 54°45'39" W	58.00
403L	S 42°41'58" W	126.56		S 42°41'51" W	126.56
404L	S 30°31'55" W	131.61		S 30°31'50" W	131.61
405L	S 18°40'26" W	365.60		S 18°40'23" W	365.61
406L	S 09°33'26" W	97.83		S 09°33'25" W	97.83
407L	S 00°09'54" W	69.34		S 00°09'54" W	69.34
408L	S 15°21'03" E	67.25		S 15°21'01" E	67.25
409L	S 27°57'27" E	69.87		S 27°57'24" E	69.87
410L	S 44°19'48" E	205.22		S 44°19'45" E	205.22
411L	S 37°36'39" E	481.57		S 37°36'36" E	481.57
412L	S 61°18'17" E	255.73		S 61°18'17" E	255.73
413L	S 77°11'46" E	49.22		S 77°11'48" E	49.22
414L	S 61°31'42" E	378.60		S 61°31'42" E	378.60
415L	684408.82	2829759.18	P306	684368.56	2469891.22
	S 72°53'58" E	46.79		S 72°54'00" E	46.79
416L	S 43°10'51" E	149.79		S 43°10'48" E	149.79
417L	S 36°09'27" E	116.23		S 36°09'24" E	116.23
418L	S 54°26'24" E	209.15		S 54°26'23" E	209.15

**Section 5
T38N ,R43E**

**Section 4
T38N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>
	Bearing & Horizontal Distance			Bearing & Horizontal Distance	
419L					
	S 65°38'41" E	244.93		S 65°38'41" E	244.93
420L					
	S 13°53'47" E	81.64		S 13°53'45" E	81.64
421L					
	S 6°53'59" W	135.47		S 06°53'58" W	135.48
422L					
	S 14°23'45" W	256.74		S 14°23'43" W	256.75
423L					
	S 20°19'07" W	222.47		S 20°19'04" W	222.48
424L					
	S 29°15'22" W	187.62		S 29°15'17" W	187.63
425L					
	S 40°45'54" W	189.26		S 40°45'47" W	189.27
426L					
	S 29°01'43" W	93.58		S 29°01'38" W	93.58
427L					
	S 50°07'09" W	101.78		S 50°07'02" W	101.78
428L					
	S 38°36'55" W	96.26		S 38°37'11" W	96.27
429L	682768.98	2829831.64	P308	682728.67	2469963.68
	S 64°27'32" W	97.34		S 64°27'25" W	97.34
430L					
	S 43°07'58" W	68.42		S 43°07'39" W	68.42
431L	682677.08	2829697.04	P318	682636.76	2469829.08
	N 65°12'49" W	70.68		N 65°12'49" W	70.68
432L					
	N 34°41'52" W	92.11		N 34°41'49" W	92.11
433L					
	N 56°14'44" W	46.65		N 56°14'43" W	46.65
434L					
	S 39°42'54" W	58.58		S 39°42'48" W	58.58
435L					
	N 41°40'45" W	57.07		N 41°40'42" W	57.07
436L					
	N 04°51'23" W	55.23		N 04°51'22" W	55.23
437L					
	N 66°13'04" W	159.36		N 66°13'04" W	159.36
438L					
	N 37°51'38" W	62.10		N 37°51'35" W	62.10
439L					
	N 79°21'26" W	51.43		N 79°21'29" W	51.43
440L					
	N 54°37'02" W	69.52		N 54°37'27" W	69.51

**Section 5
T38N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
441L	683023.99 S 18°52'18" W 63.37	2829170.43	P316	682983.67 S 18°52'08" W 63.36	2469302.48
442L	682964.04 S 51°17'29" E 49.90	2829149.94	P315	682923.72 S 51°17'27" E 49.90	2469281.99
443L	S 64°41'24" E 102.20			S 64°41'24" E 102.20	
444L	S 22°31'16" E 47.94			S 22°31'13" E 47.94	
445L	S 53°37'48" E 124.69			S 53°37'46" E 124.69	
446L	S 04°34'50" E 41.04			S 04°34'49" E 41.04	
447L	S 46°37'34" E 38.28			S 46°37'32" E 38.28	
448L	S 17°31'13" E 160.01			S 17°31'04" E 160.01	
449L	682551.13 S 55°57'53" W 70.64	2829479.30	P317	682510.80 S 55°57'46" W 70.64	2469611.35
450L	S 36°34'20" W 86.61			S 36°34'14" W 86.61	
451L	S 16°09'42" W 91.10			S 16°09'39" W 91.10	
452L	S 57°37'50" W 86.66			S 57°37'43" W 86.66	
453L	S 49°06'44" W 62.31			S 49°06'37" W 62.31	
454L	S 27°27'23" W 43.68			S 27°27'18" W 43.68	
455L	S 52°23'56" W 60.75			S 52°23'49" W 60.75	
456L	S 79°12'26" W 48.02			S 79°12'20" W 48.02	
457L	N 73°07'05" W 68.95			N 73°07'07" W 68.95	
458L	S 68°02'13" W 78.43			S 68°02'06" W 78.43	
459L	S 85°27'39" W 148.08			S 85°27'34" W 148.08	
460L	N 87°56'22" W 138.35			N 87°56'26" W 138.35	
461L	S 75°35'46" W 129.87			S 75°35'39" W 129.87	
462L	S 59°24'37" W 72.28			S 59°24'30" W 72.28	

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>
	Bearing & Horizontal Distance			Bearing & Horizontal Distance	
463L	S 72°50'05" W	115.02		S 72°49'58" W	115.02
464L	S 79°30'34" W	103.07		S 79°30'28" W	103.07
465L	S 67°16'02" W	103.43		S 67°15'55" W	103.43
466L	S 60°15'49" W	137.63		S 60°15'42" W	137.63
467L	S 32°04'00" W	94.48		S 32°03'55" W	94.48
468L	S 17°11'32" W	126.63		S 17°11'29" W	126.63
469L	S 47°22'16" W	127.10		S 47°22'09" W	127.10
470L	S 40°43'05" W	91.27		S 40°42'59" W	91.27
471L	S 28°53'47" W	57.28		S 28°53'42" W	57.28
472L	S 53°41'09" W	73.82		S 53°41'02" W	73.82
473L	S 40°47'55" W	95.30		S 40°47'49" W	95.30
474L	S 51°30'33" W	108.46		S 51°30'26" W	108.46
475L	S 45°42'37" W	185.50		S 45°42'30" W	185.50
476L	S 29°29'27" W	134.90		S 29°29'22" W	134.90
477L	S 27°42'32" W	214.11		S 27°42'28" W	214.12
478L	S 23°15'27" W	90.52		S 23°15'23" W	90.52
479L	680826.96	2827259.84	P309	680786.52	2467391.90
480L	S 22°09'10" W	144.80		S 22°09'07" W	144.81
481L	S 18°40'04" W	290.44		S 18°40'01" W	290.45
482L	S 20°12'00" W	105.01		S 20°11'57" W	105.01
483L	S 2°57'18" W	104.40		S 02°57'18" W	104.40
484L	S 11°37'55" W	300.95		S 11°37'53" W	300.96
484L	S 15°00'04" W	172.57		S 15°00'02" W	172.58

**Section 8
T38N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
485L	S 26°01'26" W	293.28		S 26°01'22" W	293.29
486L	S 19°56'54" W	106.37		S 19°56'51" W	106.37
487L	S 23°44'17" W	254.70		S 23°44'13" W	254.71
488L	S 32°00'27" W	100.13		S 32°00'22" W	100.13
489L	S 35°59'16" W	100.72		S 35°59'10" W	100.72
490L	S 25°08'27" W	100.24		S 25°08'23" W	100.24
491L	S 34°51'20" W	100.50		S 34°51'15" W	100.50
492L	S 26°16'06" W	199.25		S 26°16'02" W	199.26
493L	S 18°03'11" W	198.03		S 18°03'08" W	198.04
494L	S 1°39'21" E	241.62		S 01°39'20" E	241.63
495L	S 28°03'11" W	127.81		S 28°03'07" W	127.81
496L	S 21°02'15" W	191.00		S 21°02'12" W	191.01
497L	S 48°55'36" W	108.54		S 48°55'29" W	108.54
498L	S 25°24'56" W	99.58		S 25°24'52" W	99.58
499L	S 58°51'59" W	206.08		S 58°51'52" W	206.08
500L	S 65°44'14" W	166.11		S 65°44'07" W	166.11
501L	S 62°34'12" W	212.28		S 62°34'05" W	212.28
502L	S 85°04'18" W	64.99		S 85°04'13" W	64.99
503L	S 67°37'35" W	172.96		S 67°37'28" W	172.96
504L	S 55°34'16" W	134.41		S 55°34'09" W	134.41
505L	S 46°58'35" E	60.83		S 46°58'33" E	60.83
506L	S 01°46'31" W	42.64		S 01°46'31" W	42.64

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
507L		S 76°55'48" W 36.25		S 76°55'42" W 36.25		
508L		S 41°24'06" W 383.35		S 41°24'00" W 383.36		
509L		S 31°01'58" W 159.63		S 31°01'53" W 159.64		
510L		S 02°06'52" E 67.92		S 02°06'51" E 67.92		
511L		S 20°37'38" E 205.57		S 20°37'35" E 205.57		
512L		S 11°08'32" W 245.78		S 11°08'31" W 245.79		
513L		S 26°46'24" W 197.45		S 27°26'05" W 197.80		
514L	676142.70	2824846.22	P311	676102.04	2464978.29	
		S 38°19'43" W 222.69		S 38°19'37" W 222.70		
515L		S 26°18'14" W 650.50		S 26°18'10" W 650.52		
516L	675384.86	2824419.86	P312	675344.17	2464551.93	
		S 23°38'30" W 71.89		S 23°38'27" W 71.89		
517L		S 19°13'16" W 171.32		S 19°13'13" W 171.33		
518L		S 15°27'24" W 178.69		S 15°27'22" W 178.70		
519L		S 25°56'12" W 244.64		S 25°56'08" W 244.65		
520L		S 02°20'14" E 49.04		S 02°20'13" E 49.04		
521L		S 20°27'43" W 239.41		S 20°27'40" W 239.42		
522L		S 41°39'20" W 66.39		S 41°39'14" W 66.39		
523L		S 21°29'18" W 178.34		S 21°29'15" W 178.35		
524L		S 06°35'24" W 82.22		S 06°35'24" W 82.22		
525L		S 14°59'47" W 174.99		S 14°59'45" W 175.00		
526L		S 00°05'57" W 79.45		S 00°05'58" W 79.45		
527L		S 41°11'09" W 85.04		S 41°11'03" W 85.04		
528L		S 24°59'55" W 139.96		S 24°59'52" W 139.97		

**Section 7
T38N ,R43E**

**Section 18
T38N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
529L	S 07°29'14" W	52.60		S 07°29'14" W	52.60
530L	S 46°00'18" W	80.62		S 46°00'12" W	80.62
531L	S 32°33'00" W	167.28		S 32°32'55" W	167.29
532L	S 56°13'24" W	54.35		S 56°13'17" W	54.35
533L	S 41°07'39" W	83.35		S 41°07'33" W	83.35
534L	S 11°00'13" W	110.02		S 11°00'12" W	110.02
535L	S 59°58'14" W	199.82		S 59°58'07" W	199.82
536L	S 03°00'46" W	95.13		S 03°00'46" W	95.13
537L	S 90°00'00" W	55.00		S 89°59'55" W	55.00
538L	S 42°46'49" W	91.29		S 42°46'43" W	91.29
539L	S 9°41'43" W	112.81		S 09°41'42" W	112.81
540L	S 53°39'32" W	104.28		S 53°39'25" W	104.28
541L	S 28°32'46" W	142.30		S 28°32'42" W	142.31
542L	S 01°23'19" W	165.05		S 01°23'20" W	165.06
543L	S 14°55'53" W	77.62		S 14°55'51" W	77.62
544L	S 59°29'09" W	100.08		S 59°29'02" W	100.08
545L	S 33°03'35" W	151.76		S 33°03'30" W	151.77
546L	S 00°36'14" E	152.24		S 00°36'13" E	152.25
547L	S 46°49'54" E	58.13		S 46°49'52" E	58.13
548L	S 34°09'17" W	341.98		S 34°09'12" W	341.99
549L	S 09°31'29" W	151.08		S 09°31'28" W	151.09
550L	S 63°09'10" W	90.79		S 63°09'03" W	90.79

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
551L	S 40°05'23" W	206.53		S 40°05'17" W	206.54	
552L	S 12°50'52" W	58.46		S 12°50'51" W	58.46	
553L	S 24°31'57" W	214.35		S 24°31'54" W	214.36	
554L	S 12°55'50" W	201.10		S 12°55'49" W	201.11	
555L	S 22°21'37" W	126.29		S 22°21'34" W	126.29	
556L	S 07°25'54" W	107.57		S 07°25'54" W	107.57	
557L	S 11°29'48" W	220.97		S 11°29'47" W	220.98	
558L	S 00°00'00" E	282.00		S 00°00'01" W	282.01	
559L	S 15°33'41" W	246.02		S 15°33'39" W	246.03	
560L	S 14°42'12" E	67.26		S 14°42'09" E	67.26	
561L	S 00°08'35" W	44.86		S 00°08'36" W	44.86	
562L	669987.08	2822194.96	P313	669946.15	2462327.02	
563L	S 06°09'37" W	199.17		S 06°09'37" W	199.18	
564L	S 07°26'00" E	140.29		S 07°25'58" E	140.29	
565L	S 01°22'30" E	166.08		S 01°22'29" E	166.09	
566L	S 14°56'12" E	390.39		S 14°56'09" E	390.40	
567L	S 35°52'17" E	99.04		S 35°52'14" E	99.04	
568L	S 18°23'18" E	54.01		S 18°23'15" E	54.01	
569L	S 33°39'22" E	81.49		S 33°39'19" E	81.49	
570L	S 08°47'09" E	37.06		S 08°47'07" E	37.06	
571L	S 39°46'06" E	47.34		S 39°46'03" E	47.34	
572L	S 31°02'25" E	74.83		S 31°02'22" E	74.83	
	S 48°24'05" E	145.99		S 48°24'03" E	145.99	

**Section 19
T38N ,R43E**

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>
	Bearing & Horizontal Distance			Bearing & Horizontal Distance	
573L	S 48°00'39" E	181.15		S 48°00'37" E	181.15
574L	S 46°45'18" E	188.79		S 46°45'16" E	188.79
575L	S 62°26'18" E	63.04		S 62°26'18" E	63.04
576L	S 60°19'13" E	73.52		S 60°19'13" E	73.52
577L	S 63°36'55" E	148.45		S 63°36'55" E	148.45
578L	S 65°00'37" E	146.39		S 65°00'38" E	146.39
579L	S 70°51'20" E	295.63		S 70°51'22" E	295.63
580L	S 72°57'06" E	150.91		S 72°57'08" E	150.91
581L	S 75°49'12" E	105.56		S 75°49'14" E	105.56
582L	S 77°41'32" E	110.71		S 77°41'35" E	110.71

**End
FERC
Boundary**

Island

**Section 28
T39N ,R43E**

332L	694624.29	2830096.78		694584.26	2470228.887
ISL.1	N 25°32'03" E	37.00	TIE LINE	N 25°31'58" E	37.00
ISL.2	N 36°58'39" E	106.40	TIE LINE	N 36°58'32" E	106.40
ISL.3	N 47°10'03" E	46.14	TIE LINE	N 47°09'55" E	46.14
ISL.4	N 17°46'26" E	99.87	TIE LINE	N 17°46'23" E	99.87
ISL.5	N 33°40'14" W	79.94		N 33°40'11" W	79.94
ISL.6	N 74°44'42" W	57.01		N 74°44'44" W	57.01
ISL.7	N 45°41'25" E	58.69		N 45°41'17" E	58.69
ISL.8	N 45°00'00" W	21.21		N 44°59'57" W	21.21

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
ISL.9	N 75°33'50" W	104.29		N 75°33'52" W	104.29
ISL.10	N 67°22'48" W	78.00		N 67°22'48" W	78.00
ISL.11	N 47°17'26" W	123.84		N 47°17'23" W	123.84
ISL.12	N 41°08'04" W	104.89		N 41°08'01" W	104.89
ISL.13	N 19°54'59" W	146.78		N 19°54'56" W	146.78
ISL.14	N 65°51'16" W	31.78		N 65°51'16" W	31.78
ISL.15	N 19°10'44" W	24.35		N 19°10'41" W	24.35
ISL.16	N 02°09'40" E	53.04		N 02°09'40" E	53.04
ISL.17	N 14°39'24" E	67.19		N 14°39'21" E	67.19
ISL.18	N 32°38'26" E	181.70		N 32°38'20" E	181.71
ISL.19	N 52°41'46" E	79.20		N 52°41'38" E	79.20
ISL.20	N 44°11'8" E	149.21		N 44°11'01" E	149.21
ISL.21	N 48°34'35" E	45.34		N 48°34'27" E	45.34
ISL.22	N 66°02'15" E	29.55		N 66°02'07" E	29.55
ISL.23	S 28°18'03" E	59.06		S 28°18'00" E	59.06
ISL.24	S 36°24'32" E	99.40		S 36°24'29" E	99.40
ISL.25	S 24°46'30" E	85.91		S 24°46'27" E	85.91
ISL.26	S 13°51'40" E	79.31		S 13°51'38" E	79.31
ISL.27	S 19°39'14" E	74.33		S 19°39'11" E	74.33
ISL.28	S 29°36'16" E	101.21		S 29°36'13" E	101.21
ISL.29	S 15°21'00" E	52.89		S 15°20'58" E	52.89
ISL.30	S 55°29'29" E	58.25		S 55°29'27" E	58.25

**Table A.1-2
FERC BOUNDARY – LEFT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>		<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
ISL.31	S 31°12'02" E	83.01		S 31°11'59" E	83.01
ISL.32	S 24°18'16" E	136.06		S 24°18'13" E	136.06
ISL.33	S 07°56'36" E	43.42		S 07°56'35" E	43.42
ISL.34	S 37°52'30" W	22.80		S 37°52'23" W	22.80
ISL.35	S 60°43'55" W	104.32		S 60°43'47" W	104.32
ISL.36	S 21°38'40" W	67.78		S 21°38'36" W	67.78
ISL.37	S 49°33'14" W	80.16		S 49°33'06" W	80.16
ISL.38	S 32°28'16" W	52.15		S 32°28'10" W	52.15
ISL.4	S 78°45'10" W	18.03		S 78°45'04" W	18.03

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

**Section 11
T40N,R43E**

**Section 14
T40N,R43E**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
1R	740809.43	2838472.98	P200	740771.32	2478604.74	
	S 39°00'59" E	185.89		S 39°00'54" E	185.89	
2R		S 24°18'57" E	296.28		S 24°18'53" E	296.28
3R		S 01°58'30" W	145.09		S 01°58'29" W	145.10
4R		S 16°31'38" W	446.44		S 16°31'33" W	446.46
5R		S 12°47'21" W	167.15		S 12°47'17" W	167.16
6R		S 53°14'58" W	192.20		S 53°14'48" W	192.20
7R		S 25°33'27" W	95.19		S 25°33'20" W	95.19
8R	739458.12	2838347.93	P203	739419.96	2478479.70	
	S 06°17'44" E	73.57		S 06°17'43" E	73.57	
9R		S 22°58'37" E	135.77		S 22°58'33" E	135.77
10R		S 11°05'37" E	155.91		S 11°05'35" E	155.91
11R		S 44°47'24" E	193.04		S 44°47'20" E	193.04
12R		S 63°55'29" E	261.63		S 63°55'27" E	261.62
13R		S 77°46'45" E	222.03		S 77°46'47" E	222.02
14R		S 45°45'11" E	591.90		S 45°45'07" E	591.89
15R		S 61°24'55" E	177.65		S 61°24'53" E	177.65
16R		S 52°42'38" E	300.41		S 52°42'35" E	300.40
17R		S 16°55'39" E	144.25		S 16°55'36" E	144.25
18R		S 17°40'09" W	260.28		S 17°40'04" W	260.29
19R		S 10°20'55" W	233.80		S 10°20'51" W	233.81
20R		S 08°50'42" E	396.72		S 08°50'41" E	396.73
21R		S 48°14'57" E	162.19		S 48°14'53" E	162.19
22R		S 31°22'49" E	165.16		S 31°22'45" E	165.16

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>	
23R	S 10°10'32" E	356.61		S 10°10'31" E	356.62	
24R	S 23°08'04" W	351.24		S 23°07'57" W	351.25	
25R	S 06°47'41" W	236.66		S 06°47'38" W	236.67	
26R	S 40°34'41" E	265.96		S 40°34'37" E	265.96	
27R	S 27°38'05" E	215.59		S 27°38'01" E	215.59	
28R	N 59°31'13" E	203.06		N 59°31'03" E	203.06	
29R	S 71°54'04" E	431.34		S 71°54'04" E	431.33	
30R	S 59°56'21" E	337.38		S 59°56'19" E	337.37	
31R	S 39°26'06" E	138.54		S 39°26'02" E	138.54	
32R	S 04°53'07" W	234.85		S 04°53'05" W	234.86	
33R	S 01°25'30" E	201.06		S 01°25'31" E	201.07	
34R	S 23°57'45" W	167.43		S 23°57'38" W	167.43	
35R	S 06°27'32" E	160.02		S 06°27'32" E	160.03	
36R	S 11°07'22" W	171.25		S 11°07'18" W	171.26	
37R	734346.97	2841071.96	P204	734308.70	2481203.66	
	S 51°00'37" W	135.04		S 51°00'27" W	135.04	
38R	S 09°17'19" E	216.84		S 09°17'18" E	216.85	
39R	S 02°14'59" W	280.22		S 02°14'57" W	280.23	
40R	N 33°28'35" E	297.32		N 33°28'27" E	297.33	
41R	N 26°39'08" E	294.27		N 26°39'01" E	294.28	
42R	N 28°58'58" E	91.37		N 28°58'50" E	91.37	
43R	734358.93	2841331.27	P218	734320.66	2481462.97	
	N 13°43'45" E	188.46		N 13°43'41" E	188.47	
44R	N 56°04'36" E	136.18		N 56°04'26" E	136.18	

**Section 23
T40N,R43E**

**Section 14
T40N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
45R	N 90°00'00" E	129.00		N 89°59'55" E	129.00
46R	S 11°34'19" E	248.60		S 11°34'18" E	248.61
47R	734374.45	2841667.87	P219	734336.19	2481799.56
	S 52°49'44" E	205.98		S 52°49'41" E	205.98
48R	S 01°40'51" E	443.19		S 01°40'52" E	443.21
49R	S 31°19'15" W	275.09		S 31°19'07" W	275.10
50R	S 19°12'04" W	212.84		S 19°11'58" W	212.85
51R	S 51°49'47" E	493.53		S 51°49'44" E	493.52
52R	S 30°34'45" E	587.74		S 30°34'41" E	587.75
53R	S 19°35'02" E	220.77		S 19°34'59" E	220.77
54R	S 03°35'37" W	207.41		S 03°35'35" W	207.42
55R	S 30°39'02" W	313.85		S 30°38'54" W	313.86
56R	S 55°30'29" W	230.08		S 55°30'19" W	230.08
57R	731744.71	2842030.37	P249	731706.37	2482162.06
	S 13°25'14" W	61.43		S 13°25'10" W	61.43
58R	S 31°01'53" W	84.06		S 31°01'45" W	84.06
59R	S 43°21'22" W	53.75		S 43°21'13" W	53.75
60R	S 09°24'07" E	76.40		S 09°24'06" E	76.40
61R	S 8°21'18" W	100.95		S 08°21'15" W	100.95
62R	S 09°03'19" E	50.85		S 09°03'18" E	50.85
63R	S 03°14'30" W	145.94		S 03°14'28" W	145.95
64R	S 15°26'23" W	64.12		S 15°26'18" W	64.12
65R	S 29°57'12" W	121.04		S 29°57'04" W	121.04
66R	S 55°09'01" W	183.33		S 55°08'51" W	183.33

**Section 23
T40N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>
	Bearing & Horizontal Distance			Bearing & Horizontal Distance	
67R	S 37°08'52" W	66.43		S 37°08'43" W	66.43
68R	S 74°28'34" W	148.63		S 74°28'26" W	148.63
69R	S 31°31'11" W	151.02		S 31°31'3" W	151.02
70R	S 55°54'03" W	165.94		S 55°53'53" W	165.94
71R	N 86°17'40" W	137.27		N 86°17'44" W	137.27
72R	S 23°29'44" W	46.88		S 23°29'38" W	46.88
73R	S 23°29'44" W	117.26		S 23°29'38" W	117.26
74R	S 06°59'17" E	59.20		S 06°59'16" E	59.20
75R	S 43°00'11" E	33.44		S 43°00'07" E	33.44
76R	S 43°00'11" E	62.73		S 43°00'07" E	62.73
77R	730346.00	2841176.17		730307.59	2481307.89
	S 43°00'11" E	16.70		S 43°00'07" E	16.70
78R	S 26°38'44" E	159.73		S 26°38'40" E	159.73
79R	S 58°20'10" E	185.63		S 58°20'08" E	185.63
80R	730093.57	2841417.19		730055.16	2481548.91
	S 58°20'10" E	32.17		S 58°20'08" E	32.17
81R	S 69°31'24" E	106.95		S 69°31'24" E	106.95
82R	S 51°31'35" E	93.72		S 51°31'32" E	93.72
83R	S 37°12'30" E	64.85		S 37°12'26" E	64.85
84R	729929.31	2841657.35	P246	729890.90	2481789.06
	S 37°12'30" E	20.85		S 37°12'26" E	20.85
85R	S 18°57'50" E	115.68		S 18°57'47" E	115.68
86R	S 09°50'41" E	158.58		S 09°50'40" E	158.58
87R	S 01°14'34" W	108.41		S 01°14'33" W	108.41
88R	S 09°05'50" W	168.39		S 09°05'47" W	168.40

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
89R		S 18°49'50" W 40.96		S 18°49'45" W 40.96		
90R	729333.63	2841692.47	P245	729295.20	2481824.18	
		S 18°49'50" W 69.62		S 18°49'45" W 69.62		
91R		S 20°10'12" W 133.67		S 20°10'06" W 133.67		
92R		S 01°02'59" W 114.32		S 01°02'58" W 114.32		
93R	729027.96	2841621.82	P244	728989.52	2481753.54	
		S 01°02'59" W 16.86		S 01°02'58" W 16.86		
94R		S 08°35'14" E 88.42		S 08°35'13" E 88.42		
95R		S 07°32'17" E 105.86		S 07°32'16" E 105.86		
96R		S 20°10'00" W 143.19		S 20°09'54" W 143.19		
97R		S 03°00'37" W 105.02		S 03°00'35" W 105.02		
98R		S 12°38'40" E 101.12		S 12°38'38" E 101.12		
99R		S 45°46'42" E 143.88		S 45°46'38" E 143.88		
100R		S 12°26'23" E 132.53		S 12°26'21" E 132.53		
101R		S 72°14'26" E 116.06		S 72°14'26" E 116.06		
102R		S 47°43'05" E 111.48		S 47°43'02" E 111.48		
103R		S 00°02'21" W 103.72		S 00°02'20" W 103.72		
104R		S 09°03'21" W 70.54		S 09°03'18" W 70.54		
105R		S 23°49'08" E 153.65		S 23°49'05" E 153.65		
106R		S 05°12'09" E 56.69		S 05°12'09" E 56.69		
107R		S 09°08'25" E 14.91		S 09°08'24" E 14.91		
108R	727755.50	2841998.90	P243	727717.02	2482130.61	
		S 22°13'33" E 238.20		S 22°13'30" E 238.20		
109R		S 20°20'00" W 391.39		S 20°19'54" W 391.40		
110R		S 04°01'00" E 414.02		S 04°01'00" E 414.03		

**Section 26
T40N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>
	Bearing & Horizontal Distance			Bearing & Horizontal Distance	
111R	S 16°34'21" E	476.81		S 16°34'19" E	476.82
112R	S 11°57'32" W	294.39		S 11°57'28" W	294.40
113R	S 21°06'23" W	597.05		S 21°06'17" W	597.07
114R	S 41°11'34" W	788.04		S 41°11'25" W	788.05
115R	S 13°39'02" W	432.21		S 13°38'58" W	432.23
116R	S 10°00'29" E	310.73		S 10°00'28" E	310.74
117R	S 43°04'41" W	210.84		S 43°04'32" W	210.84
118R	S 02°20'17" W	261.23		S 02°20'15" W	261.24
119R	723718.99	2841120.34	P206	723680.35	2481252.10
	S 27°10'20" E	224.80		S 27°10'21" E	224.81
120R	S 07°12'22" W	263.08		S 07°12'21" W	263.09
121R	S 35°31'16" W	399.31		S 35°31'15" W	399.32
122R	S 49°03'34" W	439.51		S 49°03'33" W	439.53
123R	S 38°54'55" W	280.18		S 38°54'54" W	280.19
124R	S 19°06'57" E	186.27		S 19°06'58" E	186.28
125R	S 19°57'06" W	155.32		S 19°57'05" W	155.33
126R	S 60°50'23" W	158.03		S 60°50'22" W	158.03
127R	S 12°55'57" E	138.51		S 12°55'58" E	138.51
128R	N 66°54'02" E	303.32		N 66°54'01" E	303.33
129R	S 79°55'10" E	228.53		S 79°55'11" E	228.54
130R	S 65°24'59" E	271.62		S 65°25'00" E	271.63
131R	S 50°05'03" E	199.48		S 50°05'04" E	199.49
132R	S 57°49'24" E	283.55		S 57°49'25" E	283.56

**Section 35
T40N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>		<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
133R	S 31°58'08" E	332.42		S 31°58'09" E	332.43
134R	S 76°54'07" E	207.40		S 76°54'08" E	207.41
135R	S 61°40'21" E	290.83		S 61°40'22" E	290.84
136R	N 76°50'20" E	206.42		N 76°50'19" E	206.43
137R	N 55°17'04" E	356.45		N 55°17'03" E	356.46
138R	S 79°11'54" E	154.74		S 79°11'55" E	154.75
139R	S 34°56'21" E	178.10		S 34°56'22" E	178.11
140R	S 17°56'43" W	185.00		S 17°56'42" W	185.01
141R	S 36°10'00" W	423.63		S 36°09'59" W	423.64
142R	S 69°08'12" W	283.59		S 69°08'11" W	283.60
143R	S 43°46'37" W	828.21		S 43°46'36" W	828.24
144R	S 64°07'18" W	522.38		S 64°07'17" W	522.40
145R	S 07°34'34" W	409.58		S 07°34'33" W	409.59
146R	S 26°30'10" E	412.33		S 26°30'11" E	412.34
147R	S 11°41'08" W	531.74		S 11°41'07" W	531.76
148R	718447.28	2841284.30	P207	718408.46	2481416.08
	S 24°39'58" E	241.30		S 24°39'55" E	241.30
149R	S 01°21'50" W	210.06		S 01°21'49" W	210.07
150R	S 14°31'27" W	398.74		S 14°31'23" W	398.75
151R	S 46°30'11" W	242.62		S 46°30'02" W	242.62
152R	S 21°41'47" W	405.74		S 21°41'41" W	405.75
153R	S 18°29'23" W	331.09		S 18°29'18" W	331.10
154R	S 33°32'54" W	224.38		S 33°32'46" W	224.39

**Section 2
T39N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
155R	S 19°45'41" W	286.90		S 19°45'36" W	286.91
156R	S 13°01'37" W	399.28		S 13°01'33" W	399.29
157R	S 16°11'07" W	459.20		S 16°11'03" W	459.22
158R	S 32°33'21" W	518.47		S 32°33'14" W	518.48
159R	S 20°50'51" W	368.10		S 20°50'46" W	368.11
160R	S 41°26'54" W	205.46		S 41°26'46" W	205.46
161R	S 34°06'52" W	374.43		S 34°06'44" W	374.44
162R	S 24°50'33" W	297.53		S 24°50'27" W	297.54
163R	S 11°13'54" W	287.51		S 11°13'51" W	287.52
164R	S 15°43'55" W	368.82		S 15°43'51" W	368.83
165R	S 28°52'55" W	310.80		S 28°52'48" W	310.81
166R	713062.85	2839222.88	P208	713023.80	2479354.73
	S 28°18'57" W	233.20		S 28°18'50" W	233.21
167R	712857.55	2839112.26	P209	712818.49	2479244.11
	S 06°31'41" E	305.54		S 06°31'40" E	305.55
168R	S 36°08'42" W	537.44		S 36°08'34" W	537.45
169R	S 32°45'32" W	245.09		S 32°45'25" W	245.10
170R	711913.89	2838697.38	P243-A	711874.79	2478829.24
	S 13°28'24" W	57.23		S 13°28'20" W	57.23
171R	S 55°56'49" W	58.70		S 55°56'40" W	58.70
172R	711825.37	2838635.41	P242	711786.27	2478767.28
	S 55°56'49" W	57.24		S 55°56'40" W	57.24
173R	S 33°24'35" W	84.50		S 33°24'28" W	84.50
174R	S 43°02'01" W	120.53		S 43°01'53" W	120.53
175R	S 36°33'10" W	119.17		S 36°33'02" W	119.17
176R	S 35°40'13" W	144.13		S 35°40'05" W	144.13

**Section 11
T39N,R43E**

**Section 10
T39N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>	
177R	711421.86 S 35°40'13" W 60.14	2838304.19 60.14	P241	711382.73 S 35°40'05" W 60.14	2478436.07 60.14	
178R	S 20°28'29" W 212.43	212.43		S 20°28'24" W 212.44	212.44	
179R	S 24°40'11" W 108.56	108.56		S 24°40'05" W 108.56	108.56	
180R	S 04°16'54" E 122.63	122.63		S 04°16'54" E 122.63	122.63	
181R	S 00°23'48" W 211.95	211.95		S 00°23'47" W 211.96	211.96	
182R	S 03°22'22" E 261.32	261.32		S 03°22'22" E 261.33	261.33	
183R	S 04°11'39" E 256.56	256.56		S 04°11'39" E 256.57	256.57	
184R	S 15°55'17" W 234.16	234.16		S 15°55'13" W 234.17	234.17	
185R	709999.20 S 21°20'32" W 93.68	2838127.09 93.68	P240	709960.02 S 21°20'27" W 93.68	2478258.97 93.68	
186R	709911.95 S 21°20'32" W 123.29	2838093.00 123.29	P239	709872.77 S 21°20'27" W 123.29	2478224.88 123.29	
187R	S 30°04'24" W 230.22	230.22		S 30°04'17" W 230.23	230.23	
188R	S 32°06'47" W 207.54	207.54		S 32°06'40" W 207.55	207.55	
189R	709422.10 S 32°06'47" W 28.76	2837822.44 28.76	P238	709382.89 S 32°06'40" W 28.76	2477954.33 28.76	
190R	S 02°07'12" W 99.09	99.09		S 02°07'11" W 99.09	99.09	
191R	709298.72 S 02°07'12" W 23.24	2837803.48 23.24	P237	709259.51 S 02°07'11" W 23.24	2477935.37 23.24	
192R	S 00°31'22" W 64.23	64.23		S 00°31'21" W 64.23	64.23	
193R	S 40°43'23" W 195.43	195.43		S 40°43'15" W 195.43	195.43	
194R	S 39°09'55" W 139.71	139.71		S 39°09'47" W 139.71	139.71	
195R	S 46°48'21" W 165.27	165.27		S 46°48'13" W 165.27	165.27	
196R	S 51°23'58" W 246.47	246.47		S 51°23'49" W 246.47	246.47	
197R	S 21°51'56" W 15.17	15.17		S 21°51'51" W 15.17	15.17	
198R	708673.87 S 21°51'56" W 271.59	2837267.54 271.59	P236	708634.63 S 21°51'51" W 271.60	2477399.45 271.60	

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
199R	S 26°59'56" W	196.01		S 26°59'50" W	196.02
200R	S 02°52'37" E	241.26		S 02°52'37" E	241.27
201R	S 04°00'25" W	147.65		S 04°00'24" W	147.66
202R	S 28°57'48" W	11.45		S 28°57'42" W	11.45
203R	707848.92	2837073.66	P235	707809.64	2477205.57
	S 28°57'48" W	150.10		S 28°57'42" W	150.10
204R	S 52°11'52" W	101.11		S 52°11'43" W	101.11
205R	707655.62	2836921.09	P210	707616.33	2477053.01
	S 27°14'34" W	130.61		S 27°14'28" W	130.61
206R	S 45°08'15" W	294.80		S 45°08'07" W	294.80
207R	N 78°58'16" W	80.36		N 78°58'18" W	80.36
208R	707346.92	2836573.47	P234	707307.61	2476705.39
	S 62°01'49" W	170.12		S 62°1'41" W	170.12
209R	707267.13	2836423.22	P233	707227.82	2476555.15
	S 62°01'49" W	32.29		S 62°01'41" W	32.29
210R	S 09°36'45" W	135.13		S 09°36'43" W	135.13
211R	S 47°13'31" W	247.17		S 47°13'23" W	247.17
212R	S 40°48'01" W	125.29		S 40°47'53" W	125.29
213R	S 34°47'16" W	187.44		S 34°47'09" W	187.44
214R	706702.11	2836001.90	P232	706662.77	2476133.84
	S 26°42'54" W	124.81		S 26°42'48" W	124.81
215R	S 33°02'11" W	101.05		S 33°02'04" W	101.05
216R	S 63°18'57" W	63.08		S 63°18'49" W	63.08
217R	706477.59	2835834.34	P231	706438.24	2475966.28
	S 63°18'57" W	127.66		S 63°18'49" W	127.66
218R	S 53°43'23" W	185.52		S 53°43'14" W	185.52
219R	S 49°43'35" W	90.61		S 49°43'27" W	90.61
220R	706251.92	2835501.59	P230	706212.55	2475633.54
	S 49°43'35" W	144.63		S 49°43'27" W	144.63

**Section 15
T39N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
221R	S 53°10'45" W	86.99		S 53°10'36" W	86.99
222R	S 58°43'16" W	64.58		S 58°43'08" W	64.58
223R	S 89°51'01" W	137.02		S 89°50'56" W	137.02
224R	N 70°17'34" W	134.38		N 70°17'35" W	134.38
225R	S 58°33'05" W	163.82		S 58°32'57" W	163.82
226R	S 50°07'35" W	110.09		S 50°07'27" W	110.09
227R	S 08°09'59" W	178.19		S 08°09'57" W	178.20
228R	S 05°21'54" W	192.55		S 05°21'53" W	192.56
229R	S 08°19'17" W	93.95		S 08°19'15" W	93.95
230R	S 11°09'25" E	58.52		S 11°09'23" E	58.52
231R	705443.20	2834733.05	P229	705403.79	2474865.01
	S 11°09'25" E	296.99		S 11°09'23" E	297.00
232R	S 11°43'24" E	17.96		S 11°43'22" E	17.96
233R	705134.24	2834794.17	P228	705094.82	2474926.13
	S 11°43'24" E	126.10		S 11°43'22" E	126.10
234R	S 20°48'39" W	103.35		S 20°48'34" W	103.35
235R	S 12°54'23" W	8.84		S 12°54'20" W	8.84
236R	704905.54	2834781.10	P227	704866.11	2474913.06
	S 12°54'23" W	61.21		S 12°54'20" W	61.21
237R	S 17°34'52" W	142.17		S 17°34'48" W	142.18
238R	S 10°58'27" W	86.11		S 10°58'24" W	86.11
239R	S 23°58'19" W	144.95		S 23°58'14" W	144.95
240R	S 09°54'35" W	103.93		S 09°54'33" W	103.93
241R	S 02°33'20" E	57.49		S 02°33'20" E	57.49
242R	704333.55	2834633.88	P226	704294.10	2474765.85
	S 11°59'04" W	142.19		S 11°59'01" W	142.20

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>		<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
243R	N 73°06'18" E	122.73		N 73°06'11" E	122.73
244R	S 31°51'26" E	114.55		S 31°51'23" E	114.55
245R	S 39°40'49" E	74.25		S 39°40'46" E	74.25
246R	704075.69	2834829.66	P215	704036.23	2474961.62
	S 39°40'49" E	45.95		S 39°40'46" E	45.95
247R	S 64°35'43" E	88.03		S 64°35'43" E	88.03
248R	S 45°48'06" E	144.34		S 45°48'03" E	144.34
249R	S 37°03'44" E	181.79		S 37°03'41" E	181.79
250R	S 33°26'10" E	387.81		S 33°26'07" E	387.81
251R	S 15°56'15" E	88.61		S 15°56'13" E	88.61
252R	S 02°14'38" E	122.57		S 02°14'38" E	122.57
253R	S 14°53'46" W	197.76		S 14°53'43" W	197.77
254R	S 09°42'18" W	163.45		S 09°42'16" W	163.46
255R	702873.34	2835315.98	P216	702833.85	2475447.94
	S 09°42'18" W	8.98		S 09°42'16" W	8.98
256R	S 7°43'07" W	109.27		S 07°43'05" W	109.27
257R	S 32°46'11" E	112.60		S 32°46'08" E	112.60
258R	S 16°10'14" E	45.45		S 16°10'12" E	45.45
259R	S 07°57'42" W	166.32		S 07°57'40" W	166.33
260R	S 07°51'57" W	156.53		S 07°51'55" W	156.54
261R	702298.10	2835328.94	P220	702258.59	2475460.90
	S 07°51'57" W	24.56		S 07°51'55" W	24.56
262R	702273.77	2835325.57	P212	702234.26	2475457.53
	S 31°31'44" W	96.04		S 31°31'38" W	96.04
263R	S 21°30'06" W	56.07		S 21°30'01" W	56.07
264R	S 11°23'12" W	159.50		S 11°23'09" W	159.51

**Section 22
T39N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
265R	S 14°40'52" W	87.68		S 14°40'49" W	87.68	
266R	S 06°00'55" W	88.60		S 06°00'53" W	88.60	
267R	S 06°13'09" E	74.68		S 06°13'08" E	74.68	
268R	S 09°38'50" W	269.78		S 09°38'48" W	269.79	
269R	S 20°51'28" W	118.06		S 20°51'24" W	118.06	
270R	S 53°31'39" W	117.24		S 53°31'31" W	117.24	
271R	S 61°52'33" W	101.24		S 61°52'25" W	101.24	
272R	S 27°16'31" W	205.07		S 27°16'25" W	205.08	
273R	S 49°30'07" W	55.22		S 49°29'59" W	55.22	
274R	S 44°33'01" W	39.62		S 44°32'53" W	39.62	
275R	700996.14	2834765.32	P225	700956.57	2474897.29	
	S 44°33'01" W	33.81		S 44°32'53" W	33.81	
276R	S 39°04'53" W	71.83		S 39°04'46" W	71.83	
277R	700916.29	2834696.32	P224	700876.72	2474828.29	
	S 39°04'53" W	61.19		S 39°04'46" W	61.19	
278R	S 19°58'02" E	134.96		S 19°57'59" E	134.96	
279R	S 13°27'06" W	21.14		S 13°27'03" W	21.14	
280R	700721.38	2834698.91	P223	700681.80	2474830.88	
	S 13°27'06" W	183.08		S 13°27'03" W	183.09	
281R	S 22°16'30" W	225.76		S 22°16'25" W	225.77	
282R	S 54°10'08" W	212.17		S 54°10'00" W	212.17	
283R	S 88°17'39" W	53.89		S 88°17'34" W	53.89	
284R	700208.60	2834344.87	P214	700169.00	2474476.85	
	S 70°47'37" W	142.96		S 70°47'29" W	142.96	
285R	S 47°05'30" W	194.65		S 47°05'22" W	194.65	
286R	S 22°02'29" W	241.33		S 22°02'24" W	241.34	

**Section 21
T39N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i>	<i>HARN-Easting</i>	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
287R		S 07°43'47" W 38.34		S 07°43'45" W 38.34		
288R	699767.36	2833971.57	P222	699727.73	2474103.56	
		S 07°43'47" W 122.74		S 07°43'45" W 122.74		
289R		S 87°38'20" W 254.23		S 87°38'15" W 254.23		
290R	699635.26	2833701.04		699595.62	2473833.03	
		S 18°25'01" W 129.92		S 18°24'57" W 129.92		
291R		S 04°45'49" E 84.29		S 04°45'48" E 84.29		
292R		S 57°07'07" E 117.89		S 57°07'05" E 117.89		
294R		N 71°33'54" E 56.92		N 71°33'47" E 56.92		
295R		S 62°06'10" E 96.18		S 62°06'09" E 96.18		
296R		S 08°35'20" W 114.27		S 08°35'18" W 114.27		
297R		S 06°42'35" E 119.82		S 06°42'34" E 119.82		
298R		N 60°08'23" E 110.35		N 60°08'15" E 110.35		
AP	(Angle Point)	N 69°43'33" E 57.89		N 69°43'25" E 57.89		
AP		N 85°18'51" E 61.20		N 85°18'45" E 61.20		
AP		S 62°03'42" E 35.04		S 62°03'41" E 35.04		
AP	699168.58	2834143.96		699128.94	2474275.94	
		S 77°25'58" E 145.92		S 77°26'00" E 145.92		
302R		N 60°07'32" E 103.29		N 60°07'24" E 103.29		
303R		N 45°04'40" E 175.20		N 45°04'32" E 175.20		
305R		N 06°50'34" W 50.36		N 06°50'33" W 50.36		
306R		N 50°07'23" E 102.94		N 50°07'15" E 102.94		
307R		S 77°59'19" E 48.05		S 77°59'21" E 48.05		
308R		S 83°36'20" E 116.73		S 83°36'23" E 116.73		
309R		N 41°07'54" E 199.15		N 41°07'47" E 199.15		

**Section 22
T39N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
310R	N 55°47'03" E	64.54	N 55°46'55" E	64.54
AP	699591.29	2834920.37	699551.68	2475052.34
	N 55°47'03" E	26.16	N 55°46'55" E	26.16
311R	N 83°28'49" E	35.23	N 83°28'43" E	35.23
312R	S 03°00'46" W	38.05	S 03°00'45" W	38.05
313R	S 38°43'50" W	252.23	S 38°43'43" W	252.24
314R	N 86°18'31" W	62.13	N 86°18'35" W	62.13
315R	S 32°46'34" E	185.10	S 32°46'31" E	185.10
316R	S 70°44'09" E	116.31	S 70°44'10" E	116.31
317R	S 20°59'06" E	78.19	S 20°59'03" E	78.19
318R	N 51°31'56" W	93.24	N 51°31'54" W	93.24
319R	S 60°01'06" W	30.02	S 60°00'58" W	30.02
320R	S 12°57'50" E	184.20	S 12°57'48" E	184.20
321R	S 11°07'31" W	53.50	S 11°07'29" W	53.50
322R	S 23°19'04" W	63.16	S 23°18'59" W	63.16
323R	S 14°02'10" W	82.46	S 14°02'07" W	82.46
324R	N 38°53'04" W	39.82	N 38°53'01" W	39.82
325R	S 74°37'25" W	41.48	S 74°37'18" W	41.48
326R	S 03°34'35" W	16.03	S 03°34'34" W	16.03
327R	N 82°52'30" W	24.19	N 82°52'33" W	24.19
328R	S 51°20'25" W	57.63	S 51°20'17" W	57.63
329R	N 75°57'50" W	41.23	N 75°57'52" W	41.23
330R	S 81°25'58" W	63.55	S 81°25'52" W	63.55

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

**Section 21
T39N,R43E**

PT#	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	NAD27-Northing	NAD27-Easting	PT NAME	HARN-Northing	HARN-Easting	
	Bearing & Horizontal Distance			Bearing & Horizontal Distance		
331R		N 74°29'13" W 110.17		N 74°29'15" W 110.17		
332R		S 81°26'49" W 134.58		S 81°26'43" W 134.58		
333R	698766.23	2834402.90	P436	698726.47	2474535.00	
AP	698718.31	2834085.94		698678.54	2474218.037	
AP		S 81°26'49" W 320.54		S 81°26'43" W 320.54		
AP		S 78°39'17" W 168.78		S 78°39'10" W 168.78		
AP		N 76°37'42" W 70.21		N 76°37'44" W 70.21		
AP		S 75°40'31" W 28.90		S 75°40'24" W 28.90		
AP		N 73°55'37" W 74.20		N 73°55'38" W 74.20		
335R		N 62°45'21" W 113.32		N 62°45'20" W 113.32		
336R		N 73°27'28" W 149.87		N 73°27'29" W 149.87		
337R		N 49°56'48" W 148.57		N 49°56'46" W 148.57		
			Spokane Placer			
338R	698904.89	2833394.71	Corner 15	698865.22	2473526.71	
		N 63°51'57" W 141.21		N 63°51'57" W 141.21		
			Spokane Placer			
339R	698967.09	2833267.94	Corner 14	698927.42	2473399.94	
		N 88°12'08" W 140.25		N 88°12'12" W 140.25		
340R		S 70°22'32" W 222.36		S 70°22'24" W 222.36		
341R		S 67°58'05" W 111.45		S 67°57'57" W 111.45		
342R		S 58°18'57" W 143.04		S 58°18'49" W 143.04		
343R		S 45°11'12" W 105.74		S 45°11'04" W 105.74		
344R		S 35°49'20" W 120.05		S 35°49'13" W 120.05		
345R		S 27°02'24" W 102.42		S 27°02'19" W 102.42		
			Spokane Placer			
346R	698516.77	2832501.44	Corner 9	698477.07	2472633.45	
		S 22°11'29" W 156.76		S 22°11'25" W 156.77		
347R		S 13°23'15" W 165.12		S 13°23'12" W 165.13		
348R						

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
349R	S 07°09'14" W	665.68		S 07°09'13" W	665.70
350R	S 03°03'19" W	149.32		S 03°03'18" W	149.33
351R	S 09°05'18" W	321.26		S 09°05'16" W	321.27
352R	S 03°02'29" W	98.27		S 03°02'28" W	98.27
	S 08°11'55" E	54.58		S 08°11'54" E	54.58
353R	696932.01	2832264.96	P400	696892.25	2472396.98
	S 00°57'03" E	53.88		S 00°57'03" E	53.88
354R	S 08°12'34" W	72.32		S 08°12'32" W	72.32
355R	S 08°46'24" E	269.84		S 08°46'23" E	269.85
356R	S 22°43'59" E	159.22		S 22°43'56" E	159.22
357R	S 44°12'23" E	76.36		S 44°12'20" E	76.36
358R	S 52°48'34" E	126.21		S 52°48'32" E	126.21
359R	S 60°29'57" E	174.64		S 60°29'56" E	174.64
360R	S 33°27'25" E	250.52		S 33°27'22" E	250.52
361R	S 46°06'35" E	207.88		S 46°06'32" E	207.88
362R	S 52°22'10" E	260.21		S 52°22'08" E	260.21
363R	S 23°46'16" E	280.30		S 23°46'13" E	280.31
364R	S 08°01'04" E	315.56		S 08°01'03" E	315.57
365R	S 26°45'50" W	128.80		S 26°45'45" W	128.80
366R	S 05°33'54" E	90.58		S 05°33'53" E	90.58
367R	S 19°38'10" W	119.13		S 19°38'06" W	119.13
368R	S 42°44'59" W	91.52		S 42°44'52" W	91.52
369R	S 27°35'34" W	169.75		S 27°35'29" W	169.76
370R					

**Section 28
T39N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
371R	S 56°32'37" W	272.08		S 56°32'29" W	272.08
372R	S 22°23'49" W	292.26		S 22°23'45" W	292.27
373R	S 40°47'49" W	88.22		S 40°47'42" W	88.22
374R	S 10°35'41" E	141.41		S 10°35'39" E	141.41
375R	S 14°03'48" W	211.25		S 14°03'45" W	211.26
376R	S 10°31'10" W	70.86		S 10°31'08" W	70.86
377R	S 25°14'12" W	95.53		S 25°14'07" W	95.53
378R	S 26°19'04" W	154.28		S 26°18'59" W	154.29
379R	S 37°56'44" W	395.42		S 37°56'37" W	395.43
380R	S 14°25'09" W	142.37		S 14°25'06" W	142.38
381R	S 45°00'00" W	60.81		S 44°59'53" W	60.81
382R	S 18°13'02" W	83.17		S 18°12'59" W	83.17
383R	S 64°17'24" W	59.93		S 64°17'16" W	59.93
384R	S 33°06'41" W	302.05		S 33°06'35" W	302.06
385R	S 25°16'20" W	257.66		S 25°16'15" W	257.67
386R	S 13°16'20" E	50.45		S 13°16'18" E	50.45
387R	S 32°15'14" W	403.11		S 32°15'08" W	403.12
388R	S 48°25'59" W	65.23		S 48°25'51" W	65.23
389R	S 26°43'47" W	134.08		S 26°43'42" W	134.08
	S 37°22'55" W	195.22		S 37°22'48" W	195.23
390R	691642.94	2831434.24	P402	691602.97	2471566.27
391R	S 12°27'47" W	70.60		S 12°27'45" W	70.60
392R	S 80°08'03" W	23.34		S 80°07'57" W	23.34

**Section 33
T39N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
393R	S 47°10'29" W	55.90		S 47°10'21" W	55.90
394R	S 31°42'54" W	104.62		S 31°42'48" W	104.62
395R	S 65°52'44" W	73.41		S 65°52'36" W	73.41
396R	S 43°27'07" W	52.34		S 43°27'00" W	52.34
397R	S 12°05'41" W	85.91		S 12°05'39" W	85.91
398R	S 71°12'41" W	102.46		S 71°12'34" W	102.46
399R	N 82°05'34" W	145.38		N 82°05'37" W	145.38
400R	N 53°31'51" W	57.20		N 53°31'49" W	57.20
401R	N 07°14'13" E	63.51		N 07°14'12" E	63.51
402R	N 55°25'33" W	89.87		N 55°25'31" W	89.87
403R	S 79°33'45" W	77.28		S 79°33'39" W	77.28
404R	N 54°09'44" W	66.61		N 54°09'42" W	66.61
405R	N 87°38'48" W	146.12		N 87°38'52" W	146.12
406R	S 73°03'03" W	109.77		S 73°2'56" W	109.77
407R	S 68°11'55" W	134.33		S 68°11'48" W	134.33
408R	S 82°01'49" W	50.49		S 82°01'43" W	50.49
409R	S 61°28'03" W	117.24		S 61°27'55" W	117.24
410R	S 89°11'35" W	142.01		S 89°11'30" W	142.01
411R	S 77°52'59" W	181.03		S 77°52'52" W	181.03
412R	S 45°00'00" W	100.41		S 44°59'53" W	100.41
413R	S 54°00'06" W	144.62		S 53°59'58" W	144.62
414R	S 20°05'43" W	174.63		S 20°05'39" W	174.64

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

<i>PT#</i>	<u>North American Datum of 1927</u>			<u>High Accuracy Reference Network</u>		
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>	<i>PT NAME</i>	<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>	
415R	S 69°34'02" W	54.42		S 69°33'55" W	54.42	
416R	S 19°36'15" W	77.49		S 19°36'11" W	77.49	
417R	S 02°32'44" W	294.32		S 02°32'44" W	294.33	
	690565.97	2829509.93	P404	690525.92	2469641.99	
418R	S 05°27'30" W	83.35		S 05°27'29" W	83.35	
419R	S 00°11'03" E	311.00		S 00°11'03" E	311.01	
420R	S 11°15'08" W	194.74		S 11°15'06" W	194.75	
421R	S 11°34'31" E	84.72		S 11°34'29" E	84.72	
	S 23°37'46" W	52.39		S 13°59'22" W	54.28	
422R	689845.34	2829468.88	P433	689805.27	2469600.94	
423R	S 08°23'46" E	76.15		S 08°23'44" E	76.15	
424R	S 40°05'18" E	181.69		S 40°05'15" E	181.69	
425R	S 25°46'10" E	32.20		S 25°46'07" E	32.20	
	S 58°25'26" E	99.53		S 58°25'25" E	99.53	
426R	689549.88	2829695.79	P405	689509.80	2469827.84	
	S 11°19'43" W	24.54		S 11°19'41" W	24.54	
427R	689525.82	2829690.97	P406	689485.74	2469823.02	
428R	N 62°55'54" W	70.72		N 62°55'54" W	70.72	
429R	N 53°58'21" W	40.80		N 53°58'19" W	40.80	
430R	N 77°07'30" W	35.90		N 77°07'32" W	35.90	
431R	S 28°26'34" W	54.59		S 28°26'29" W	54.59	
	S 07°20'39" W	67.77		S 07°20'38" W	67.77	
432R	689474.78	2829525.34	P432	689434.70	2469657.39	
433R	S 24°32'17" E	69.01		S 24°32'14" E	69.01	
	S 50°19'25" E	22.42		S 50°19'23" E	22.42	
434R	689397.69	2829571.26	P407	689357.60	2469703.31	
435R	S 55°48'14" E	49.26		S 55°48'13" E	49.26	
436R	S 18°36'37" E	103.41		S 18°36'34" E	103.41	

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
437R	S 46°01'25" E	129.44		S 46°01'22" E	129.44
438R	S 16°23'07" E	119.99		S 16°23'04" E	119.99
439R	S 10°55'22" W	58.05		S 10°55'20" W	58.05
440R	S 21°48'05" E	48.47		S 21°48'02" E	48.47
441R	S 01°08'45" E	300.06		S 01°08'45" E	300.07
442R	S 22°41'38" E	59.62		S 22°41'35" E	59.62
443R	S 20°13'30" W	161.99		S 20°13'26" W	162.00
444R	S 14°11'49" E	90.12		S 14°11'47" E	90.12
445R	S 00°31'37" E	97.64		S 00°31'37" E	97.64
446R	S 16°52'16" E	152.37		S 16°52'13" E	152.37
447R	S 25°37'06" E	71.19		S 25°37'03" E	71.19
448R	S 03°33'15" W	161.31		S 03°33'15" W	161.32
449R	S 05°46'04" E	199.01		S 05°46'03" E	199.02
450R	S 29°21'28" W	73.43		S 29°21'23" W	73.43
451R	S 00°43'56" W	313.02		S 00°43'56" W	313.03
452R	S 06°25'10" W	134.83		S 06°25'09" W	134.83
453R	S 01°41'39" E	92.40		S 01°41'38" E	92.40
454R	S 15°46'44" W	175.26		S 15°46'41" W	175.27
455R	S 00°13'27" W	109.16		S 00°13'27" W	109.16
456R	S 11°39'44" E	178.16		S 11°39'42" E	178.17
457R	S 21°25'14" E	238.70		S 21°25'11" E	238.70
	S 25°23'04" E	173.20		S 25°23'01" E	173.20
458R	686269.67	2829957.01	P409	686229.48	2470089.05

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

**Section 4
T38N,R43E**

<i>PT#</i>	<u>North American Datum of 1927</u>		<i>PT NAME</i>	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>		<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
459R	S 31°44'20" E	257.67		S 31°44'17" E	257.67
460R	S 27°37'24" E	128.82		S 27°37'21" E	128.82
461R	S 35°36'55" E	140.06		S 35°36'52" E	140.06
462R	S 29°24'05" E	476.97		S 29°24'02" E	476.98
463R	S 45°35'51" E	55.19		S 45°35'49" E	55.19
464R	S 24°27'56" E	37.48		S 24°27'53" E	37.48
465R	S 41°47'07" E	40.58		S 41°47'04" E	40.58
466R	S 63°26'06" E	76.03		S 63°26'06" E	76.03
	S 88°56'25" E	24.66		S 88°56'30" E	24.66
467R	685269.54	2830642.65	P410	685229.33	2470774.69
	N 67°28'42" E	88.77		N67°28'35" E	88.77
468R	685303.55	2830724.65	P415	685263.35	2470856.68
	S 50°17'36" E	17.81		S 50°17'34" E	17.81
469R	685292.17	2830738.35	P416	685251.97	2470870.38
	S 60°21'44" W	65.70		S 60°21'36" W	65.70
470R	685259.68	2830681.25	P411	685219.47	2470813.29
	S 27°05'15" E	89.50		S 27°05'12" E	89.50
471R	S 5°01'54" E	40.26		S 05°01'53" E	40.26
472R	S 39°34'23" E	111.16		S 39°34'20" E	111.16
473R	S 50°05'45" E	75.16		S 50°05'43" E	75.16
474R	S 20°45'18" E	93.18		S 20°45'15" E	93.18
475R	S 11°23'11" W	35.56		S 11°23'09" W	35.56
476R	S 34°37'25" E	49.07		S 34°37'22" E	49.07
477R	S 11°26'09" E	53.90		S 11°26'07" E	53.90
478R	S 19°40'20" E	140.66		S 19°40'17" E	140.66
479R	S 08°07'43" E	222.90		S 08°07'42" E	222.91
480R					

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
481R	S 00°39'49" W	358.94		S 00°39'49" W	358.95
482R	S 07°14'42" W	209.34		S 07°14'41" W	209.35
483R	S 33°30'57" W	85.44		S 33°30'51" W	85.44
484R	S 13°53'21" E	63.72		S 13°53'19" E	63.72
485R	S 10°53'54" W	146.16		S 10°53'52" W	146.17
486R	S 03°19'17" W	92.63		S 03°19'17" W	92.63
487R	S 32°49'43" W	73.78		S 32°49'37" W	73.78
488R	S 15°27'05" W	184.25		S 15°27'02" W	184.26
489R	S 27°18'05" W	162.09		S 27°18'00" W	162.10
490R	S 32°09'34" W	284.05		S 32°09'29" W	284.06
491R	S 40°15'12" W	135.69		S 40°15'06" W	135.69
492R	S 19°51'13" W	89.71		S 19°51'10" W	89.71
493R	S 40°48'58" W	133.00		S 40°48'51" W	133.00
494R	S 64°32'48" W	84.49		S 64°32'41" W	84.49
495R	S 29°32'20" W	68.96		S 29°32'15" W	68.96
496R	S 69°40'37" W	57.58		S 69°40'30" W	57.58
497R	S 20°37'28" W	66.01		S 20°37'25" W	66.01
498R	S 03°33'11" W	45.80		S 03°33'11" W	45.80
499R	S 32°47'27" W	58.42		S 32°47'22" W	58.42
500R	S 78°39'48" W	27.02		S 78°39'42" W	27.02
501R	S 48°23'21" W	104.03		S 48°23'14" W	104.03
502R	S 86°31'54" W	33.06		S 86°31'49" W	33.06

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

<i>PT#</i>	<u>North American Datum of 1927</u>		<i>PT NAME</i>	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>		<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
503R	S 19°26'24" W	90.14		S 19°26'21" W	90.14
504R	S 48°39'51" W	143.84		S 48°39'44" W	143.84
	S 27°54'57" W	43.64		S 27°55'06" W	43.66
505R	682021.44	2829864.57	P412	681981.10	2469996.61
506R	S 41°11'04" W	87.64		S 41°10'58" W	87.64
507R	S 25°16'12" W	34.82		S 25°16'08" W	34.82
508R	S 58°17'55" W	79.92		S 58°17'48" W	79.92
509R	S 22°54'22" W	205.23		S 22°54'18" W	205.24
510R	S 46°37'30" W	139.42		S 46°37'23" W	139.42
511R	S 30°19'48" W	45.43		S 30°19'43" W	45.43
512R	S 45°05'16" W	92.00		S 45°05'09" W	92.00
513R	S 66°37'54" W	53.03		S 66°37'47" W	53.03
514R	S 39°16'42" W	99.64		S 39°16'36" W	99.64
515R	S 29°58'32" W	86.06		S 29°58'27" W	86.06
516R	S 16°07'34" W	146.17		S 16°07'31" W	146.18
517R	S 13°09'28" W	146.56		S 13°09'26" W	146.57
	S 32°11'52" W	130.88		S 32°11'47" W	130.88
518R	680926.44	2829156.22	P413	680886.05	2469288.27
519R	S 47°34'18" W	37.65		S 47°34'11" W	37.65
520R	S 24°30'35" W	60.56		S 24°30'31" W	60.56
521R	S 38°18'03" W	57.31		S 38°17'57" W	57.31
522R	S 20°39'25" W	64.65		S 20°39'22" W	64.65
523R	S 38°14'08" W	189.01		S 38°14'02" W	189.02
524R	S 04°06'40" E	147.52		S 04°06'39" E	147.52

**Section 5
T38N,R43E**

**Section 8
T38N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>		<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
525R	S 15°53'10" W	100.08		S 15°53'08" W	100.08
526R	S 48°21'48" W	107.42		S 48°21'41" W	107.42
527R	N 77°12'39" W	36.80		N 77°12'41" W	36.80
528R	S 10°17'32" W	48.44		S 10°17'31" W	48.44
529R	S 46°25'34" W	45.24		S 46°25'27" W	45.24
530R	S 17°16'49" W	60.95		S 17°16'46" W	60.95
531R	S 27°42'10" W	104.28		S 27°42'06" W	104.28
532R	S 01°57'52" W	85.12		S 01°57'52" W	85.12
533R	S 37°30'01" W	64.20		S 37°29'55" W	64.20
534R	S 60°51'57" W	69.83		S 60°51'50" W	69.83
535R	N 40°51'19" W	97.84		N 40°51'16" W	97.84
536R	S 60°19'17" W	107.04		S 60°19'10" W	107.04
537R	S 88°49'08" W	97.02		S 88°49'03" W	97.02
538R	S 74°28'33" W	205.50		S 74°28'26" W	205.50
539R	S 63°08'31" W	179.38		S 63°08'24" W	179.38
540R	S 05°15'12" W	170.83		S 05°22'44" W	166.87
	679602.85	2827956.33	P430	679562.39	2468088.39
541R	S 26°50'21" E	45.78		S 26°50'18" E	45.78
542R	S 79°10'37" E	29.59		S 79°10'40" E	29.59
543R	N 71°26'55" E	114.90		N 71°26'48" E	114.90
544R	S 73°18'03" E	62.64		S 73°18'05" E	62.64
545R	S 84°22'57" E	61.29		S 84°23'01" E	61.29
546R	S 64°37'30" E	95.92		S 64°37'30" E	95.92

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>		<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
547R	S 44°27'26" E	41.88		S 44°27'24" E	41.88
548R	S 17°36'36" E	55.74		S 17°36'33" E	55.74
549R	S 41°05'34" E	59.54		S 41°05'31" E	59.54
550R	S 13°08'02" E	61.61		S 13°08'00" E	61.61
551R	S 49°51'19" W	59.29		S 49°51'12" W	59.29
552R	S 25°28'13" E	26.33		S 25°28'10" E	26.33
553R	S 57°49'20" E	28.13		S 57°49'19" E	28.13
554R	N 64°27'41" E	55.62		N 64°27'34" E	55.62
555R	S 87°58'05" E	49.53		S 87°58'09" E	49.53
556R	S 81°33'31" E	83.41		S 81°33'34" E	83.41
557R	S 31°05'43" W	65.89		S 31°05'38" W	65.89
558R	S 52°00'29" E	60.82	P426	S 52°00'27" E	60.81
	679179.15	2828607.88		679138.69	2468739.93
559R	N 65°53'43" W	88.60		N 65°53'43" W	88.60
560R	S 33°00'44" W	62.41		S 33°00'39" W	62.41
561R	N 81°38'24" W	71.24		N 81°38'27" W	71.24
562R	N 46°58'48" W	98.36		N 46°58'46" W	98.36
563R	N 30°46'30" W	83.26		N 30°46'27" W	83.26
564R	N 78°58'02" W	47.50		N 78°58'05" W	47.50
565R	N 61°40'36" W	35.64		N 61°40'36" W	35.64
566R	N 78°17'30" W	42.86		N 78°17'33" W	42.86
567R	N 83°12'06" W	78.58		N 83°12'10" W	78.58
568R	N 23°13'18" W	84.56		N 23°13'15" W	84.56

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
569R	N 80°36'34" W	71.72		N 80°36'37" W	71.72
570R	S 68°58'54" W	59.44		S 68°58'47" W	59.44
571R	679402.90	2827937.94	P431	679362.43	2468070.00
572R	S 52°54'46" W	146.04		S 52°54'39" W	146.04
573R	S 28°11'53" W	275.05		S 28°11'49" W	275.06
574R	S 20°29'14" W	180.23		S 20°29'11" W	180.24
575R	S 30°51'58" W	200.40		S 30°51'53" W	200.41
576R	S 39°34'19" W	115.12		S 39°34'13" W	115.12
577R	S 32°48'28" W	335.54		S 32°48'23" W	335.55
578R	S 11°51'32" W	53.16		S 11°51'30" W	53.16
579R	S 35°01'55" W	73.24		S 35°01'50" W	73.24
580R	S 17°36'16" W	114.92		S 17°36'13" W	114.92
581R	S 47°22'26" W	65.80		S 47°22'19" W	65.80
582R	S 13°10'25" W	53.45		S 13°10'23" W	53.45
583R	S 38°17'51" W	152.71		S 38°17'45" W	152.71
584R	S 17°25'36" W	49.49		S 17°25'33" W	49.49
585R	S 49°22'48" W	133.30		S 49°22'41" W	133.30
586R	S 33°14'41" W	146.59		S 33°14'36" W	146.59
587R	S 45°02'53" W	197.31		S 45°02'46" W	197.32
588R	S 41°39'00" W	407.18		S 41°38'54" W	407.19
589R	S 36°34'41" W	99.86		S 36°34'35" W	99.86
590R	S 48°19'48" W	95.26		S 48°19'41" W	95.26

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
591R	S 36°40'20" W	233.25		S 36°40'14" W	233.26
592R	S 18°45'38" W	52.56		S 18°45'35" W	52.56
593R	S 34°52'20" W	71.03		S 34°52'15" W	71.03
594R	S 42°15'00" W	179.82		S 42°14'54" W	179.83
595R	S 31°34'37" W	206.02		S 31°34'32" W	206.03
596R	S 26°29'21" W	233.16		S 26°29'17" W	233.17
597R	S 23°42'19" W	273.91		S 23°42'16" W	273.92
598R	S 13°23'22" W	128.09		S 13°23'20" W	128.09
599R	S 24°44'23" W	108.34		S 24°44'19" W	108.34
600R	S 12°43'03" W	263.46		S 12°43'02" W	263.47
601R	S 43°09'09" W	43.86		S 43°09'03" W	43.86
AP	S 02°40'03" W	38.69		S 02°40'03" W	38.69
	S 36°45'03" W	37.77		S 36°44'58" W	37.77
602R	675434.92	2825463.09	P417	675394.25	2465595.16
603R	S 03°24'40" W	77.47		S 03°24'40" W	77.47
604R	S 14°34'30" W	446.98		S 14°34'28" W	447.00
605R	S 12°44'23" E	137.34		S 12°44'21" E	137.34
606R	S 27°24'43" W	46.24		S 27°24'39" W	46.24
607R	S 03°25'23" E	140.06		S 03°25'22" E	140.06
608R	S 02°00'34" W	147.22		S 02°00'34" W	147.23
609R	S 10°18'29" W	135.25		S 10°18'28" W	135.26
610R	S 05°34'20" E	164.78		S 05°34'19" E	164.79
611R	S 12°36'31" W	77.88		S 12°36'30" W	77.88

**Section 17
T38N,R43E**

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	NAD27-Northing Bearing & Horizontal Distance	NAD27-Easting		HARN-Northing Bearing & Horizontal Distance	HARN-Easting
612R	S 23°21'20" W	47.93		S 23°21'17" W	47.93
613R	S 05°57'02" W	66.64		S 05°57'02" W	66.64
614R	S 15°31'44" W	199.31		S 15°31'42" W	199.32
615R	S 10°36'40" W	145.17		S 10°36'39" W	145.18
616R	S 27°01'51" W	55.01		S 27°01'47" W	55.01
617R	S 10°03'38" W	125.94		S 10°03'37" W	125.94
618R	S 26°49'40" W	97.49		S 26°49'36" W	97.49
619R	S 05°55'50" E	60.13		S 05°55'48" E	60.13
620R	S 15°49'43" W	59.44		S 15°49'41" W	59.44
621R	S 33°10'13" W	59.66		S 33°10'08" W	59.66
622R	S 30°33'47" W	97.70		S 30°33'43" W	97.70
623R	S 31°26'18" W	116.04	P419	S 31°26'13" W	116.04
	673034.93	2824983.16		672994.17	2465115.22
624R	S 30°32'13" W	79.54		S 30°32'09" W	79.54
625R	S 20°41'55" W	118.83		S 20°41'52" W	118.83
626R	S 44°24'39" W	164.36		S 44°24'33" W	164.36
627R	S 41°23'30" W	125.11		S 41°23'24" W	125.11
628R	S 74°34'31" W	190.99		S 74°34'24" W	190.99
629R	S 58°11'01" W	88.09		S 58°10'54" W	88.09
630R	S 50°49'52" W	241.45		S 50°49'45" W	241.46
631R	S 61°38'52" W	43.18		S 61°38'45" W	43.18
632R	S 50°44'57" W	80.83		S 50°44'50" W	80.83
633R	S 57°48'05" W	157.16		S 57°47'58" W	157.16

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

**Section 18
T38N,R43E**

<i>PT#</i>	<u>North American Datum of 1927</u>		<i>PT NAME</i>	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i> Bearing & Horizontal Distance	<i>NAD27-Easting</i>		<i>HARN-Northing</i> Bearing & Horizontal Distance	<i>HARN-Easting</i>
634R	S 54°17'55" W	178.57		S 54°17'48" W	178.57
635R	S 61°43'48" W	177.57		S 61°43'41" W	177.57
636R	S 57°34'29" W	216.72		S 57°34'22" W	216.72
637R	S 71°43'24" W	99.96		S 71°43'17" W	99.96
638R	S 55°16'31" W	122.89		S 55°16'24" W	122.89
639R	S 30°20'10" W	295.71		S 30°20'06" W	295.72
640R	S 22°16'53" W	161.66		S 22°16'50" W	161.67
641R	S 19°13'53" W	474.69		S 19°13'51" W	474.71
642R	S 01°11'24" W	113.10		S 01°11'25" W	113.10
643R	S 18°00'13" W	90.02		S 18°00'11" W	90.02
644R	S 23°44'46" W	179.65		S 23°44'43" W	179.66
645R	S 17°07'29" W	75.82		S 17°07'27" W	75.82
646R	S 11°43'33" W	206.05		S 11°43'32" W	206.06
647R	S 01°21'06" W	96.68		S 01°21'07" W	96.68
648R	S 26°06'50" W	56.80		S 26°06'47" W	56.80
649R	S 10°31'15" E	71.20		S 10°31'13" E	71.20
	S 02°29'00" E	108.64		S 02°28'59" E	108.64
650R	670016.46	2822799.71	P421	669975.54	2462931.77
	S 23°43'16" E	39.61		S 23°43'13" E	39.61
651R	S 12°13'50" W	94.24		S 12°13'49" W	94.24
652R	S 44°57'59" E	55.13		S 44°57'57" E	55.13
653R	S 15°43'19" E	55.79		S 15°43'16" E	55.79
654R	S 19°17'38" E	104.76		S 19°17'35" E	104.76
655R					

**Table A.1-3
FERC BOUNDARY – RIGHT BANK**

PT#	<u>North American Datum of 1927</u>		PT NAME	<u>High Accuracy Reference Network</u>	
	<i>NAD27-Northing</i>	<i>NAD27-Easting</i>		<i>HARN-Northing</i>	<i>HARN-Easting</i>
	Bearing & Horizontal Distance			Bearing & Horizontal Distance	
656R	S 00°03'44" W	109.49		S 00°03'45" W	109.49
657R	S 18°28'46" E	116.97		S 18°28'43" E	116.97
658R	S 03°14'53" W	149.64		S 03°14'53" W	149.65
659R	S 17°01'44" E	125.02		S 17°01'41" E	125.02
660R	S 34°33'20" E	169.62		S 34°33'17" E	169.62
661R	S 54°03'57" E	190.67		S 54°03'56" E	190.67
662R	S 68°49'14" E	208.36		S 68°49'15" E	208.36
663R	S 62°37'04" E	288.48		S 62°37'04" E	288.48
	S 69°38'31" E	197.88		S 69°38'32" E	197.88

<p>END FERC BOUNDARY</p>

Appendix 2. Private Shoreline Development Analysis Data

Table A.2-1. Land capacity parcel database.

PID ¹	Land Use	Current Zoning	Comprehensive Plan Designation	Acreage ²	Total Acreage ³	Maximum Lots ⁴	Shoreline Designation	Geologic Hazards		NWI Wetland	Frequently Flooded Areas
								Seismic Site Class	Liquefaction Susceptibility		
22	8800 Designated	TB20	NR-20	122.82	126.84	6	Conservancy	C, D	Very low to low		Yes
38	8800 Designated	TB20	NR-20	4.01	0	0	NA	D	Very low		No
24	9100 Undeveloped	TB20	NR-20	7.84	7.84	1	NA	D	Very low		No
55	8800 Designated	MI20	NR-20	18.38	18.38	1	Conservancy	B	Bedrock		No
56	8590 Mining Claim	MI20	NR-20	5.38	5.38	1	Conservancy	B	Bedrock		No
84	8800 Designated	TB20	NR-20	318.85	318.85	15	Conservancy	D	Very low	PSS1C	Yes
102	1100 Res-Single	TB20	NR-20	42.22	42.22	2	Conservancy	D	Very low		No
113	8800 Designated	TB40	NR-40	81.26	81.26	2	Conservancy	D	Very low		No
135	8800 Designated	RU20	Rural-20	132.90	132.90	6	Conservancy	B	Bedrock	POWH	Yes
153	8800 Designated	MI20	NR-20	15.05	50.30	2	Conservancy	B	Bedrock		Yes
154	8800 Designated	MI20	NR-20	3.31	0	0	Conservancy	B	Bedrock		Yes
156	8800 Designated	MI20	NR-20	19.43	0	0	Conservancy	B	Bedrock		Yes
157	8800 Designated	MI20	NR-20	12.52	0	0	Conservancy	B	Bedrock		Yes
155	8800 Designated	MI20	NR-20	12.45	12.45	1	Conservancy	B	Bedrock		Yes
158	8590 Mining Claim	MI20	NR-20	5.69	5.69	1	Conservancy	B	Bedrock		Yes
159	8590 Mining Claim	MI20	NR-20	6.28	6.28	1	Conservancy	B	Bedrock		Yes
195	8800 Designated	RU20	Rural-20	7.99	7.99	1	Conservancy	B	Bedrock		Yes
198	8800 Designated	TB20	NR-20	4.20	4.20	1	Conservancy	B	Bedrock		Yes
200	9100 Undeveloped	TB20	NR-20	2.97	2.97	1	Conservancy	B	Bedrock		No
221	8590 Mining Claim	INCORP	Residential	0.55	0.55	3	Urban	D	Very low		Yes
231	8800 Designated	RU2.5	Rural-5	21.78	21.80	4	Conservancy	D	Very low		No
233	9100 Undeveloped	TB20	NR-20	0.70	0.70	1	Conservancy	D	Very low		No
234	1100 Res-Single	TB20	NR-20	0.39	0.39	1	Conservancy	D	Very low		No
235	1100 Res-Single	TB20	NR-20	0.55	0.55	1	Conservancy	D	Very low		No
236	1100 Res-Single	RU2.5	Rural-5	11.44	11.44	2	Conservancy	D	Very low		No
240	7191 Historic	INCORP	Residential	1.91	1.91	13	Urban	D	Very low		Yes
244	1100 Res-Single	INCORP	Residential	0.50	0.50	3	Urban	D	Very low		No
245	1100 Res-Single	INCORP	Residential	0.35	0.35	2	Urban	D	Very low		No
246	9100 Undeveloped	INCORP	Residential	0.13	0.13	1	Urban	D	Very low		No
247	1100 Res-Single	INCORP	Residential	0.55	0.55	4	Urban	D	Very low		No
248	1100 Res-Single	INCORP	Residential	0.43	0.43	3	Urban	D	Very low		No
249	9100 Undeveloped	INCORP	Residential	0.25	0.25	1	Urban	D	Very low		No
250	1100 Res-Single	INCORP	Residential	0.36	0.36	2	Urban	D	Very low		No

Table A.2-1, continued...

PID ¹	Land Use	Current Zoning	Comprehensive Plan Designation	Acreage ²	Total Acreage ³	Maximum Lots ⁴	Shoreline Designation	Geologic Hazards		NWI Wetland	Frequently Flooded Areas
								Seismic Site Class	Liquefaction Susceptibility		
251	9100 Undeveloped	INCORP	Residential	1.88	1.88	13	Conservancy	D	Very low		Yes
252	1100 Res-Single	INCORP	Residential	2.08	2.08	15	Conservancy	D	Very low		No
254	1100 Res-Single	INCORP	Residential	2.35	2.35	17	Conservancy	D	Very low		Yes
258	9100 Undeveloped	INCORP	Residential	2.41	2.41	17	Conservancy	D	Very low		Yes
261	1100 Res-Single	INCORP	Residential	0.83	0.83	6	Urban	D	Very low		No
268	1100 Res-Single	AG20	NR-20	1.55	42.53	2	Conservancy	B	Bedrock		Yes
	1100 Res-Single	AG20	NR-20	40.98	0	0	Conservancy	B	Bedrock		Yes
271	1100 Res-Single	RU10	Rural-10	4.29	4.29	1	Conservancy	D	Very low		No
274	9100 Undeveloped	INCORP	Residential	0.19	0.19	1	Urban	D	Very low		No
275	9100 Undeveloped	INCORP	Residential	0.19	0.19	1	Urban	D	Very low		No
276	1100 Res-Single	INCORP	Residential	0.20	0.20	1	Urban	D	Very low		No
277	1150 MH (Real)	INCORP	Residential	0.20	0.20	1	Urban	D	Very low		No
278	8800 Designated	RU2.5	Rural-5	2.11	2.11	1	Conservancy	D	Very low		No
280	1100 Res-Single	INCORP	Residential	0.39	0.39	2	Urban	D	Very low		No
281	1500 M H Courts	RU2.5	Rural-5	0.30	0.30	1	Conservancy	D	Very low		No
282	1100 Res-Single	INCORP	Residential	0.39	0.39	2	Urban	D	Very low		No
283	1100 Res-Single	INCORP	Residential	1.57	1.57	11	Urban	D	Very low		No
284	1100 Res-Single	INCORP	Residential	0.66	0.66	4	Urban	D	Very low		No
297	1150 MH (Real)	INCORP	Residential	0.53	0.53	3	Urban	D	Very low		No
298	1100 Res-Single	INCORP	Residential	0.34	0.34	2	Urban	D	Very low		No
300	1100 Res-Single	INCORP	Residential	0.31	0.31	2	Urban	D	Very low		No
315	9100 Undeveloped	INCORP	Residential	2.62	2.62	19	Urban	D	Very low		Yes
332	8800 Designated	INCORP	Residential	0.05	0.05	1	Conservancy	D	Very low		Yes
401	8300 Ag (OS)	AG20	NR-20	47.65	47.65	2	Conservancy	D	Very low	PSS1CH, PEM1FH	Yes
402	1100 Res-Single	RU10	Rural-10	10.52	10.52	1	Conservancy	D	Very low		Yes
403	1100 Res-Single	RU10	Rural-10	3.50	3.50	1	Conservancy	D	Very low		Yes
404	1150 MH (Real)	RU10	Rural-10	12.26	12.26	1	Conservancy	D	Very low		Yes
411	9100 Undeveloped	RU20	Rural-20	0.12	0.12	1	Conservancy	D	Very low		Yes
412	8800 Designated	TB20	NR-20	5.35	87.75	4	Conservancy	D	Very low		Yes
	8800 Designated	TB20	NR-20	82.40	0	0	Conservancy	D	Very low		Yes
453	8590 Mining Claim	MI20	NR-20	8.00	8.00	1	Conservancy	B	Bedrock		Yes
502	9100 Undeveloped	RU2.5	Rural-5	6.61	47.30	0	Conservancy	D	Bedrock, Very Low		Yes

Table A.2-1, continued...

PID ¹	Land Use	Current Zoning	Comprehensive Plan Designation	Acreage ²	Total Acreage ³	Maximum Lots ⁴	Shoreline Designation	Geologic Hazards		NWI Wetland	Frequently Flooded Areas
								Seismic Site Class	Liquefaction Susceptibility		
	9100 Undeveloped	RU2.5	Rural-5	40.69	0	9	Conservancy	D	Bedrock, Very Low		Yes
504	9100 Undeveloped	RU2.5	Rural-5	27.83	27.83	5	Conservancy	D	Very low		Yes
507	8800 Designated	RU2.5	Rural-5	0.25	0.25	1	Conservancy	D	Very low		Yes
508	1100 Res-Single	RU2.5	Rural-5	15.26	15.26	3	Conservancy	D	Very low		No
509	1100 Res-Single	RU20	Rural-20	1.38	1.38	1	Conservancy	B	Bedrock		Yes
515	9100 Undeveloped	RU2.5	Rural-5	6.23	8.23	1	Conservancy	D	Very low		Yes
	9100 Undeveloped	RU2.5	Rural-5	2	0	0	Conservancy	D	Very low		Yes
517	1150 MH (Real)	RU20	Rural-20	27.68	27.68	1	Conservancy	D	Very low		Yes
576	9100 Undeveloped	RU20	Rural-20	1.22	9.22	1	Conservancy	D	Very low		Yes
	9100 Undeveloped	RU20	Rural-20	8	0	0	Conservancy	D	Very low		Yes
578	9100 Undeveloped	RU20	Rural-20	0.65	8.65	1	Conservancy	B	Bedrock		Yes
	9100 Undeveloped	RU20	Rural-20	8	0	0	Conservancy	B	Bedrock		Yes
580	9100 Undeveloped	RU10	Rural-10	0.59	9.59	1	Conservancy	B	Bedrock		Yes
	9100 Undeveloped	RU10	Rural-10	9	0	0	Conservancy	B	Bedrock		Yes
582	1100 Res-Single	RU2.5	Rural-5	0.65	9.65	1	Conservancy	D	Very low		Yes
	1100 Res-Single	RU2.5	Rural-5	9	0	0	Conservancy	D	Very low		Yes
583	1100 Res-Single	RU2.5	Rural-5	11.18	11.18	2	Conservancy	D	Very low		Yes
584	1100 Res-Single	TB20	NR-20	2.40	2.40	1	Conservancy	D	Very low		Yes
602	1100 Res-Single	RU2.5	Rural-5	2.46	2.46	1	Conservancy	D	Very low		Yes
622	9100 Undeveloped	TB20	NR-20	6.17	10.50	1	Conservancy	B	Bedrock		Yes
624	9100 Undeveloped	TB20	NR-20	0.37	0	0	Conservancy	B	Bedrock		Yes
625	9100 Undeveloped	TB20	NR-20	0.11	0	0	Conservancy	B	Bedrock		Yes
626	9100 Undeveloped	TB20	NR-20	0.91	0	0	Conservancy	D	Very low		Yes
628	9100 Undeveloped	TB20	NR-20	2.94	0	0	Conservancy	D	Very Low		Yes
631	9100 Undeveloped	RU20	Rural-20	20.21	20.21	1	Conservancy	D	Very low	PEM1CH	Yes
682	9100 Undeveloped	RU20	Rural-20	20.65	20.65	1	Conservancy	D	Very low		Yes
683	9100 Undeveloped	RU20	Rural-20	9.95	9.95	1	Conservancy	D	Very low		Yes
703	9100 Undeveloped	RU2.5	Rural-5	3.90	3.90	1	Conservancy	D	Very low		Yes
704	1100 Res-Single	TB20	NR-20	4.30	4.30	1	Conservancy	D	Very low		Yes
705	9100 Undeveloped	TB20	NR-20	2.59	2.59	1	Conservancy	D	Very low	L2USCH	No
721	9100 Undeveloped	RU20	Rural-20	16.15	21.15	1	Conservancy	D	Very low		Yes
	9100 Undeveloped	RU20	Rural-20	5	0	0	Conservancy	D	Very low		Yes
722	1100 Res-Single	RU20	Rural-20	11.91	11.91	1	Conservancy	D	Very low		Yes
723	8800 Designated	RU20	Rural-20	21.16	21.16	1	Conservancy	D	Very low		Yes

Table A.2-1, continued...

PID ¹	Land Use	Current Zoning	Comprehensive Plan Designation	Acreage ²	Total Acreage ³	Maximum Lots ⁴	Shoreline Designation	Geologic Hazards		NWI Wetland	Frequently Flooded Areas
								Seismic Site Class	Liquefaction Susceptibility		
724	1100 Res-Single	RU20	Rural-20	11.77	11.77	1	Conservancy	D	Very low		Yes
725	9100 Undeveloped	RU20	Rural-20	10.89	10.89	1	Conservancy	D	Very low		Yes
726	8800 Designated	RU20	Rural-20	22.13	22.13	1	Conservancy	D	Very low		Yes
851	8800 Designated	TB40	NR-40	51.15	60.15	1	Conservancy	D	Very low		Yes
	8800 Designated	TB40	NR-40	9	0	0	Conservancy	D	Very low		Yes
919	1100 Res-Single	TB20	NR-20	0.02	0.02	1	Conservancy	D	Very low		No
					1512.00	261					

Notes:

- 1 Row entries with no number in the PID column represent additional land within the same tax parcel.
- 2 Acreage for PIDs is as indicated in the SPU database (see Table 5.1-1). Some tax parcels were split by rights-of-way into multiple PIDs. The PIDs not adjacent to the Project boundary were not included in the SPU database, but their acreage needed to be included in the land capacity analysis. Acreage for these polygons was estimated from maps; estimated acreage is indicated in bold.
- 3 The total acreage was derived by combining the acreage for multiple PIDs within a single tax parcel. Acreage for the parcel is indicated in the row for the first PID, with zeros entered for subsequent PIDs in the parcel.
- 4 Maximum lots are calculated for each tax parcel; for parcels with multiple PIDs, the number of lots is indicated in the row for the first PID, with zeros entered for subsequent PIDs in the parcel.

Appendix 3. Road Condition Reference Information

- Appendix 3a. USFS Handbook with road maintenance level descriptions
- Appendix 3b. USFS road management objectives table

Appendix 3a. USFS Handbook with road maintenance level descriptions

FSH 7709.58 - TRANSPORTATION SYSTEM MAINTENANCE HANDBOOK
WO AMENDMENT 7709.58-95-1
EFFECTIVE 7/28/95

CHAPTER 10 - MAINTENANCE OF FOREST DEVELOPMENT ROADS

2. Maintenance Level Descriptions. Maintenance levels 1-5 (operational and objective) are described in the following paragraphs:

Roads assigned to maintenance levels 2-5 are either constant service roads or intermittent service roads during the time they are open to traffic. See exhibit 01 for the relationship between maintenance levels.

a. Level 1. Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed 1 year. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate."

Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic, but may be open and suitable for non-motorized uses.

b. Level 2. Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to (1) discourage or prohibit passenger cars or (2) accept or discourage high clearance vehicles.

c. Level 3. Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.

Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.

d. Level 4. Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.

e. Level 5. Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is "encourage."

Appendix 3b. USFS road management objectives table

Road Rating as of 12/05/2006

ST	ID	BMP	EMP	Begin_Termini	END_Termini	JUR	OP1	OB1	Cost Share	SU	SUR	TSL	QD	PG	Comments
EX	3165000	O	2.026	WA-31	Boundary Dam Vista	FS	3	3		05	BST	B	153	8	Was closed gate @ 1.742 for Homeland Security reasons. Termination order lifted.
EX	3165200	0	0.15	3165	NW SEC 2	P	2	1		05	NAT	D	153	8	
EX	3265200	0.15	1	3165	NW SEC 2	FS	2	1		05	NAT	D	153	8	
EX	3165340	0	0.4	3165	NW SEC 11	FS	1	1		05	NAT	D	153	8	Closed gate
EX	3165350	0	0.3	3165	Boundary Dam	FS	2	1		05	NAT	D	153	8	
EX	6200348	0	0.9	C2975	FS Bdry SEC 10	FS	2	1		05	NAT	D	153	8	

Notes:BMP

Beginning milepost

EMP

Ending milepost

ST = Route Status

EX = Existing

JUR = Jurisdiction

FS = Forest Service

PO = Private/Other

SU = Subunit

05 = Sullivan Lake

OP = Operational Maintenance Level

1 = Closed

2 = High Clearance Vehicle

3 = Suitable for Passenger Cars

OB = Objective Maintenance Level

Same as above

SUR = Surface Type

NAT = Native

BIT = Bituminous AC Asphalt

TSL = Traffic Service Level

B = Congested during heavy traffic

D = Slow flow or maybe blocked

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