

APPENDIX E.7.1

***TECHNICAL MEMORANDUM FOR
RECREATIONAL USE SURVEY***

APPENDIX E.7.1

TECHNICAL MEMORANDUM FOR RECREATIONAL USE SURVEY

1.0 INTRODUCTION

This Technical Report describes the visitor intercept survey conducted in the vicinity of Enloe Dam (Okanogan County, Washington) in 2006 as part of the process of developing the Public Utility District No. 1 of Okanogan County's (District) License Application to the Federal Energy Regulatory Commission (FERC) for the Enloe Hydroelectric Project (FERC Project No. 12569). It includes a description of the survey objectives and methodology and an analysis of the survey outcomes. Copies of the survey instrument, maps, data reports, and worksheets, are included as a series of displays at the end of the report.

The information gathered in conducting the survey has been used to develop a proposal for measures and facilities to preserve and enhance recreational opportunities in the Enloe Hydroelectric Project Area, and to ensure the safety of the public in its use of the Project Area.

2.0 SURVEY PURPOSE

The survey described in this Technical Report was undertaken to provide information used in completing the License Application Report on Recreation Resources (Exhibit E.7), which includes:

- A detailed description of existing recreational facilities within the project vicinity, and the public recreational facilities which are to be provided by the applicant at its sole cost or in cooperation with others no later than three years from the date of first commercial operation of the proposed project and those recreation facilities planned for future development based on anticipated demand.
- Estimates of existing and future recreational use at the project, in daytime and overnight visitation (recreation days), with a description of the methodology used in developing these data

There have been no previous visitor surveys of the area, and little information on existing use is available. The applicant's 1991 license application used demographic

data, state and regional planning documents, and information generated during interviews with local residents, business people, and agency representatives to evaluate recreational demand and needs.

3.0 SURVEY GOAL AND OBJECTIVES

The goal of the survey was to gather information that would allow the applicant to estimate visitor use of the Project Area and prepare a proposal for development and maintenance of measures and facilities for recreation and visitor safety.

Specific objectives aimed at achieving that goal were as follows:

- Describe the types and levels of recreational use in the Project Area;
- Assess visitor preferences regarding preservation and enhancement of recreational opportunities in the Project Area;
- Evaluate visitor attitudes regarding the need for additional safety facilities in the Project Area; and
- Assess the need for other measures to enhance visitors' recreational experiences in the Project Area

A visitor intercept survey was used to obtain information related to each of the objectives.

4.0 STUDY AREA

Background

Enloe Dam is located on the Similkameen River in rural north central Washington State, approximately 50 miles from the nearest metropolitan area (Penticton, British Columbia, Canada). Because of its remoteness, the Project Area is lightly used. Most of the land in the vicinity of Enloe Dam is publicly owned and accessible. Public recreational access to Project lands and waters is widely available and dispersed. There are no developed recreation facilities in the Project Area, and few in the vicinity.

The FERC Project Boundary encompasses approximately 136.4 acres including the Enloe Dam and its pool, the area in which the District proposes to build a new access road, and the river corridor extending downstream from the dam 0.25 mile. See Figure 2 for a map of the Project Area; see Exhibit 9.0 for a detailed description of the Project Area.

Within the Project Area are several sites that have historically been used for primitive camping, an abandoned road that is used by visitors for recreational access to areas below the dam, an unimproved boat take-out, and several dirt roads and user trails providing access to the river and shoreline areas. Steep and rugged terrain limits access to parts of the Project Area.

Upstream of the Project Area, several areas of level ground between the Loomis-Oroville Road and the river are used for primitive camping. The largest is known as Miners' Flat and is located just upstream of the Project Area. It is a large bench above the river on the left bank, with 6-8 fire rings scattered around the area and several trails and one rough road that provide access to the river.

Farther from the Project Area, there are a number of developed recreational use areas. Those areas are shown in Map 2, and include:

- Osoyoos Lake State Veterans' Memorial Park, located on Lake Osoyoos, approximately four miles southwest of Enloe Dam.
- The Oroville Golf Course, approximately one mile downstream of Enloe Dam.
- Similkameen Camp, a primitive campground operated by the BLM and located approximately three miles upstream of the Project Boundary. The BLM reports average use of 1,000 visitor days per year at this site.¹
- Palmer Lake, roughly 15 miles upstream of Enloe Dam, offers fishing, swimming, camping, picnicking, and boating, as well as small resorts.

An abandoned railroad right-of-way follows the right bank of the Similkameen River adjacent to the Project Area (see Figure 3). Okanogan County is pursuing conversion of the right-of-way to a non-motorized multi-use trail. At present the right-of-way receives some recreational use; however, there is no legal public access to the rail corridor.

As noted above, roads and user trails offer several opportunities for river access above Enloe Dam. The part of the Study Area downstream of the dam is far less accessible, due to terrain. Below the dam and falls, the Similkameen River is confined between nearly sheer rock walls until the canyon opens just below the Railroad Trestle, approximately two miles downstream from Enloe Dam. Other than game trails, there are no trails up the Canyon. The railroad grade on the right bank is nearly 100 feet above the river. The only practical access to the area is by boat, either floating downstream or, when flows are high enough, using a power boat to travel upstream.

¹ Pers. comm., Diane Priebe, June 6 2006.

Defining the Study Area

Surveys were conducted in a Study Area that is larger than the Project Area (see Figure 3). The Study Area includes the river corridor from Miners' Flat (approximately one-half mile upstream of the FERC Project Boundary) downstream to the rail trestle (approximately two miles downstream of the FERC Project Boundary).

The expanded Study Area was used because of the small size of the Project Area and the fact that the Similkameen River is used for raft, canoe, and kayak trips that cover some distance. It was assumed that visitors might begin using the river upstream of the Project Area and complete their trips within the Project Area or, conversely, begin using the river within the Project Area and complete those trips outside of the Project Area.

The larger area covered by the survey does not mean that the applicant (the Okanogan County Public Utility District) intends to plan or implement recreational improvements outside of the Project Area.

5.0 GENERAL APPROACH

Preliminary windshield surveys and interviews with staff of the District (the applicant) and the Bureau of Land Management (the primary land owner in the area) suggested that the river corridor in the vicinity of Enloe Dam is lightly used, with no developed camping or recreation facilities.

Conversations with city and county staff, recreation providers, and local businesses suggested that boating, recreational gold mining, and hunting would be the primary recreational activities in the Study Area, with swimming, fishing, and sightseeing secondary. The survey was designed and conducted to reach as many users as was practical.

Survey Design

The Enloe recreation intercept survey was designed to assess visitor use and preferences in the vicinity of the Enloe Dam hydroelectric project. The survey instrument is presented in Figure 4.

The visitor intercept survey consisted of 17 questions asking visitors about their trips to the Study Area, the types of activities in which they participated during their visits, and their satisfaction with the facilities, management, and recreational experience. An additional five questions addressed visitor demographics.

The main sources of randomness in the survey design comes from user choices as to the time, date, location, and nature of their activity within the Study Area; and from surveyor choices regarding the time and duration of the survey period on any given day.

Survey Dates

The survey period (June 1-October 15) was selected to coincide with the peak recreational use season, particularly the July 1-September 30 recreational gold mining season.

The survey schedule was designed to provide a representative framework for estimating use by location, season, and day of the week. The sampling schedule included both random and nonrandom selection of dates. Nonrandom selections were made to ensure that field interviews were conducted during peak use times such as holidays or recreational events.

Twelve days non-randomly selected included: Fathers' Day weekend (two survey days), the Fourth of July (four days), Northwest Miner's Rally (three days), Labor Day/Blues Festival (three days), and first weekend of deer hunting season (two days). The remaining field days were eight days randomly selected between June 1, 2006 and October 15, 2006, using a random numbers table, and one test day, June 3. Survey dates are listed in Table 1, below.

Table 1: Survey Dates

Dates	Number of days	Selection		Event
		Random	Non-random	
June 3	1		Test	Tonasket Founders' Day Rodeo
June 16	1		X	Fathers' Day weekend
June 18	1		X	Fathers' Day weekend
July 1-4	4		X	Fourth of July, Canada Day
July 10	1	X		
July 20	1	X		
August 6	1	X		
August 9	1	X		
August 18-20	3		X	Northwest Miners' Rally
August 25	1	X		
September 2-4	3		X	Labor Day, Rendezvous Blues Festival
September 16	1	X		
October 14-15	2		X	Opening weekend of deer hunting with modern firearms ("General Deer Season")

Survey Locations

The field team interviewed users at the following locations:

- On and adjacent to the two access roads leading from the Loomis-Oroville Road to Enloe Dam
- At the dam and in the immediate vicinity of the dam
- Within the river corridor, on both sides of the river and both upstream and downstream from the dam
- Along the Loomis-Oroville Road

Although two access roads lead from the Loomis-Oroville Road to Enloe Dam, one is very steep and badly eroded, and not suitable for use by passenger vehicles. The other road was inundated during the early part of the survey season. The field team drove to the dam when possible and walked to the dam from the Loomis-Oroville Road when it was not feasible to drive.

Access to the river corridor above and below the dam and in its immediate vicinity varies. Upstream of the dam, the Loomis-Oroville Road is close to the river throughout most of the Study Area. Although the road is considerably higher than the river in many places, the river is generally visible, and it was reasonably easy for the survey team to see whether anyone was in or adjacent to the water. At Miners' Flat, where the river is some distance from the road, dirt roads provide access to the river corridor. When the water level was high enough, the field team used inflatable kayaks to travel all or part of the corridor between Miners' Flat (the upper end of the Study Area) and the reservoir above Enloe Dam. Traveling by boat allowed the team to interview users on the far side of the river.

Downstream of the dam, the river runs through a steep, narrow canyon; access is more difficult. During the early part of the survey season, most of the canyon was accessible only by boat. Later in the year, it was possible to travel up to one mile below the dam on foot. Low water limited boat access during the later part of the season.

Conducting the Survey

Because of the remoteness of the area, steep terrain, the use of watercraft, and other safety considerations, teams of two were used to conduct the surveys. The length of each survey period varied depending on the time of year and the level of the Similkameen River and on the number of visitors encountered. Each survey period lasted for at least three hours. When it was possible to use kayaks, some survey periods were considerably longer due to logistical considerations. Times of day were varied, as well, in order to reach visitors who began and ended their activities in the Study Area at different hours.

- During each survey period, the survey team sought to interview as many visitors to the Study Area as practical, using the following parameters:

- The survey team actively sought and interviewed visitors at specified locations (see Figure 3):
 - Enloe Dam and the area around the dam;
 - Miners' Flat;
 - The river corridor between Miners' Flat and Enloe Dam;
 - The river corridor below Enloe Dam, including the area around the falls just below the dam.
- When driving from one location to another, the survey team stopped and interviewed any visitors who were encountered stopped or traveling on foot or by bicycle along the Loomis-Oroville Road or access roads within the Study Area.
- The team did not stop vehicles traveling on the Loomis-Oroville Road or dam access roads.

On approaching visitors, survey team members gave a brief explanation of the survey and its purpose and asked whether the visitors were willing to be interviewed. The survey was then administered to those visitors who agreed to participate. There were only a few visitors who were not willing to be interviewed.

Each field day began at an overlook adjacent to the Loomis-Oroville Road, which provides a view of the dam and allowed the field team to make a preliminary assessment of activity at the dam. While at that location the team recorded the time, temperature, and weather conditions and any general observations. The team then proceeded up river, continuing to look for vehicles in the area of the dam or on either of the access roads. If visitors were observed in the vicinity of the dam, the survey team walked or drove to the location and administered the questionnaire. When no visitors were seen, the survey team proceeded upstream to Miners' Flat.

The team interviewed visitors at Miners' Flat and then either kayaked downriver or traveled to the dam. Depending on conditions and time constraints, the survey team kayaked to the reservoir above the dam or took out between Miners' Flat and the reservoir.

After boating, or when boats were not used, the team interviewed any visitors in the dam area, including the area around the falls just below the dam. When feasible, the team traveled below the dam to conduct interviews—either traversing the entire Study Area by boat or traveling on foot as far as was practical given time, water level, and terrain constraints.

When kayaking or walking in the river corridor, the team surveyed any persons encountered in or along the river.

Each survey period generally included a return to Miners' Flat. The survey team also returned to the dam area if team members observed visitors or vehicles in that area while traveling out of the Study Area from Miners' Flat.

6.0 RESULTS

Fifty-nine surveys, representing 177 visitors, were completed within the Study Area, Of the total, 29 surveys representing 82 visitors were completed within the Project Area. Figure 5 shows individual locations surveyed. The surveys represent three different sampling periods with the following distribution:

- Peak days²: 46 completed surveys
- Weekends (excluding peak days): 6 completed surveys
- Weekdays (excluding peak days):: 7 completed surveys

The information gathered was recorded in a computerized database and analyzed. Key findings are shown below. Data and worksheets are contained in Figure 6.

Levels of Recreational Use

Survey results were used to estimate the number of visitors to the Project Area, including the number of overnight visitors. The results also enabled the authors to estimate the number of visitors to the Project Area who camp elsewhere in the Study Area.

Generally, data about level of use that were gathered outside the Project Area were used only to estimate use within the Project Area. Survey respondents interviewed outside the Project Area were asked whether they had visited the Project Area or expected to visit the Project Area during their stay in the Study Area. Thus, the authors were able to estimate use by individuals who were outside the Project Area at the time they were interviewed.

There is one exception to the generalization about using data about level of use only to estimate use within the Project Area. The data were also used to estimate the number of visitors to the Project Area who camped outside of the Project Area, for the purpose of estimating the impact of the Project and developing an appropriate recreation plan.

² Days coinciding with holidays or recreational events, including Fourth of July (4 days), Northwest Miner's Rally (3 days), Labor Day/Blues Festival (3 days), and first weekend of deer hunting season (2 days).

The methodology for estimating use of the Project Area was adapted from *Sampling and Estimating Recreational Use*³, a Forest Service report developed to provide guidance on the execution of sampling strategies to estimate recreational use in settings such as National Forests.

1. Estimate the number of recreation hours (H) in each day. For each month, the number of recreation hours in each day was estimated based on times of sunrise and sunset. Recreation hours/day were estimated as follows:

Table 2: Example—Estimating Recreation Hours per Day

Month	Recreation hours/day
June	16
July	16
August	14
September	13
October	11

2. For each survey day, calculate the fraction of the recreation day during which surveys were conducted (f) by dividing the number of hours during which surveys were conducted (h) by the number of recreation hours in each day (H).

$$f = h/H$$

For example, 16 recreation hours/day in June ÷ 4 survey hours on June 18th = 0.25 or ¼ of the day spent surveying.

3. For each survey day, divide the number of individuals in parties responding to surveys (I) by the fraction of the recreation day during which surveys were conducted (f) to estimate the number of individuals using the area during that day. Assumption: Level of use stays constant throughout daylight hours.

$$I/f = \text{estimated number of individuals using the area on a given day}$$

For example, on June 18th, one survey, of a party comprising four individuals (I), was conducted in the Project Area. Based on the calculation above, ¼ of the day was spent surveying (f). Dividing I by f gives an estimate of the number of individuals who used the area on that day.

³ Gregoire, Timothy G., and Gregory J. Buhyoff. *Sampling and Estimating Recreational Use*. [Portland, OR:] U.S. Forest Service, Pacific Northwest Research Station [1999]. 7 December 2006. <http://www.fs.fed.us/pnw/pubs/gtr_456.pdf>.

$$l \div f = 4 \div 0.25 = 16$$

4. Surveys were conducted on three types of days: weekdays, weekend days, and peak days. For each month, estimate the average number of users on days of each type by adding the estimated number of individuals using the area on all survey days of a given type (l/f) and dividing by the number of survey days of that type. For example, surveys were conducted on three peak days in June. The estimated average numbers of users per survey day in June were as follows:

Table 3: Example—Estimating Number of Users on Days of Each Type

Date	l/f
June 3	0
June 16	9
June 18	16

The average number of users per day can be estimated as follows:

$$(0 + 9 + 16) \div 3 = 8.38$$

5. Count the number of days of each type (N) in the month. Days in June, for example, were as follows:

Table 4: Example—Days of Each Type per Month

Type of day	Number
Weekday	21
Weekend day	5
Peak day	4
TOTAL	30

6. For each month, determine the estimated number of users on each type of day by multiplying the average number of users per day of that type by the number of days of that type in the month and rounding to the nearest whole number. For example, in June, 8.38 users/peak day multiplied by 4 peak days gives an estimate of 34 users on peak days.

$$8.38 \times 4 = 34$$

7. Add the number of users on each type of day for a given month to estimate the total number of users for that month. For example, in June, estimated use was as follows:

Table 5: Example—Estimating Number of Users per Month

Type of day	Number of days	Number of users
Weekday	21	176
Weekend day	5	42
Peak day	4	34
TOTAL	30	251

In several months, no surveys were conducted in the Project Area on days of a given type. (For instance, in June, no surveys were conducted in the Project Area on weekdays.) In those cases, assumptions were made about similarity. For instance, for the sake of estimating use of the Project Area, the authors assumed that the level of use on weekdays in June was the same as the level of use on weekdays in July.

8. Add the estimated number of users for each month to estimate the level of use during the peak recreation season.

Levels of Use

Based on the survey results, recreational use of Project Area is estimated at 1,378 user days during the June 1-October 15 peak recreation season.

Recreational use estimates are based on 59 survey records completed with respondents in the field on 21 days in June through mid-October, 2006. Due to the small number of samples, the results should be considered a rough estimate. Surveys were conducted on weekdays, weekend days, and peak days.

Use of the Project Area peaked in July, as shown in Table 6, below.

Table 6: Estimate of User Days by Month—Project Area

Month	Estimated User Days	
	#	%
June	190	13.8
July	346	25.1
August	267	19.4
September	278	20.2
October	297	21.6
TOTAL	1,378	100.00

Use of the Project Area was highest on peak days. Weekend use was estimated to be similar to weekday use. See Table 7, below.

Table 7: Estimate of User Days by Type of Day—Project Area

	Estimated User Days	
	#	Per day
Peak days	540	14
Weekend days	190	6
Weekdays	648	6
TOTAL	1,378	

Of the 177 individuals represented in the survey results, 82 reported using the Project Area. Thirty-nine (39.8%) of those who reported using the Project Area were overnight visitors. Only two of the parties (four individuals; 4%) were camped within the Project Area. Assuming that the ratio of overnight visitors to day users is representative, visitors to the Project Area spend an estimated 56 nights per year within the Project Area and an additional 492 nights per year at other locations within the Study Area (primarily Miner's Flat).

Types and Importance of Recreational Use

Survey results were used to assess the types of recreational activities pursued by visitors to the Project Area. This section also includes a comparison with activities within the Study Area but outside of the Project Area, which shows the impact of the existing facilities on recreational use.

Survey participants were asked to report all of their recreational activities during their visits to the Study Area, and also to indicate which activity was most important. In the Study Area as a whole, mining outstripped all other activities, with 22 surveys, representing 30.5% of the total individuals, listing it as the primary activity. Fifteen other surveys listed mining as an additional activity. Overall, 37 surveys—62.7% of the total—listed mining as a primary or additional activity.

Boating, shore fishing, and sightseeing were the next most popular activities. Boating took first place in seven surveys. Five surveys listed sightseeing as the respondent's primary activity, and four others showed it as an additional activity. Shore fishing was the primary activity shown on five surveys, and appeared as an additional activity on two more.

The responses to questions about types of use in the Study Area as a whole are tabulated in Table 8.

Table 8: Types of Recreational Activities—Study Area

Activity	Primary Activity			Additional Activity		
	Surveys (number)	Individuals (number)	Individuals (percent)	Surveys (number)	Individuals (number)	Individuals (percent)
Mining	22	54	30.5%	15	41	42.7%
Boating	7	32	18.1%	0	0	0.0%
Sightseeing	5	22	12.4%	4	13	13.5%
Shore Fishing	5	13	7.3%	2	8	8.3%
Floating Tubes	1	12	6.8%	1	2	2.1%
Camping	2	11	6.2%	2	7	7.3%
Not Available	3	7	4.0%	0	0	0.0%
Rattlesnake Hunting	1	7	4.0%	1	7	7.3%
Hunting	3	3	1.7%	1	3	3.1%
Swimming	3	3	1.7%	2	6	6.3%
Photography	1	3	1.7%	1	3	3.1%
Spiritual Fish Place	1	2	1.1%	0	0	0.0%
Scoping	1	2	1.1%	1	2	2.1%
Geocaching	1	2	1.1%	1	2	2.1%
Butterfly Hunting	1	2	1.1%	0	0	0.0%
Running	1	1	.6%	0	0	0.0%
Working on Pump	1	1	.6%	0	0	0.0%
Bicycling	0	0	0.0%	1	2	2.1%
Total	59	177	100%	32	96	100%

Table 9, below, shows aggregated totals for primary and additional activities. The first column (“Surveys (number)”) shows the number of surveys that reported a given activity as either a primary or additional activity. The second column (“Surveys (percent)”) shows the percentage of surveys on which a given activity was reported as either primary or additional.

The third column shows the number of individuals represented by surveys on which a given activity was reported as either primary or additional. Because some surveys reported more than one activity, the total number of individuals in Column 3 (273) is greater than the number of individuals represented by the 59 completed surveys (177, as shown in Column 2 of Table 8).

The fourth column shows overall participation in each activity, given as a percentage of the 177 individuals represented by all 59 surveys. For example, the 95 individuals represented by the 37 surveys on which mining was reported as a primary or additional activity equal 53.7% of the population of 177 individuals represented by all 59 surveys.

It is worth noting that over half the surveys listed mining as either a primary or additional activity—far more than for any of the other recreational activities listed.

Table 9: Types of Recreational Activities—Aggregated (Primary and Additional Activities)—Study Area

Activity	Aggregate (Primary and Additional Activity)			
	Surveys (number)	Surveys (percent)	Participants (number)	Participation (percent, based on 177 individuals)
Mining	37	62.7%	95	53.7%
Sightseeing	9	15.3%	35	19.8%
Boating	7	11.9%	32	18.1%
Shore Fishing	7	11.9%	21	11.9%
Swimming	5	8.5%	9	5.1%
Hunting	4	6.8%	6	3.4%
Camping	4	6.8%	18	10.2%
Not Available	3	5.1%	7	4.0%
Rattlesnake Hunting	2	3.4%	14	7.9%
Floating Tubes	2	3.4%	14	7.9%
Photography	2	3.4%	6	3.4%
Scoping	2	3.4%	4	2.3%
Geocaching	2	3.4%	4	2.3%
Spiritual Fish Place	1	1.7%	2	1.1%
Butterfly Hunting	1	1.7%	2	1.1%
Bicycling	1	1.7%	2	1.1%
Running	1	1.7%	1	0.6%
Working on Pump	1	1.7%	1	0.6%
Total			273	

When surveys completed within the Project Area are tabulated, the results are somewhat different. Shore fishing was the most popular activity, with six respondents listing it as their primary activity. Sightseeing and mining tied for second place—each was listed as the primary activity by four respondents. Boating tied with floating on inner tubes as the next most popular primary activity. It is worth noting that, although mining remains in the top three activities, it is reported by far fewer respondents within than outside the Project Area—just four as opposed to 21⁴.

⁴ Very little recreational mining was observed in the area inundated by the Enloe Dam impoundment, and then only at Shankers' Bend, near the upstream end of the impoundment. Observation suggests that most recreational miners prefer swift water. The swift-flowing reach between Miners' Flat and Shankers Bend, and outside the Project Area, is

When results of surveys conducted within the Project Area are aggregated, nine surveys (31.0%) list shore fishing as a primary or additional activity. Seven surveys (24.1%) report mining, and 6 (20.7%) report sightseeing. Again, when results are aggregated, mining remains important in the Project Area, but far less so than in the Study Area.

The analysis points to significant differences between the primary recreational activities within the Project Area versus the Study Area. The most obvious reason is the existence of the reservoir. Nearly all of the boaters encountered during the survey would take-out their boats in the Shanker's Bend area to avoid the flat water backed up behind the Dam.

Miners work those parts of the river above and below the reservoir, with only one active miner encountered within the Project Area, at the outside of Shanker's Bend. Observation suggests that most recreational miners prefer swift water. The swift-flowing reach between Miners' Flat and Shanker's Bend, and outside the Project Area, is fairly accessible. Swift water below Enloe Dam and within the Project Area is more difficult to reach, and equipment must be brought to the site by boat or packed in on foot. We postulate that access to swift water explains the lower level of mining activity in the Project Area. The one exception—the party mining at the outside of Shanker's Bend—may be a function of gold deposition caused by the change in hydraulics at the bend.

The reservoir provides attractive conditions for fishing and swimming, while Miner's Flat and Similkameen Camp offer environments more suited to camping. In the case of Miner's Flat, proximity to an area suitable for mining also makes camping attractive.

The responses to questions about types of use from visitors surveyed within the Project Area are tabulated in Table 10.

fairly accessible. Swift water below Enloe Dam and within the Project Area is more difficult to reach, and equipment must be brought to the site by boat or packed in on foot. We postulate that access to swift water explains the lower level of mining activity in the Project Area.

Table 10: Types of Recreational Activities—Project Area

Activity	Primary Activity			Additional Activity		
	Surveys (number)	Individuals (number)	Individuals (percent)	Surveys (number)	Individuals (number)	Individuals (percent)
Shore Fishing	6	16	19.5%	3	10	30.3%
Sightseeing	4	15	18.3%	2	6	18.2%
Mining	4	8	9.8%	3	6	18.2%
Floating Tubes	3	14	17.1%	1	2	6.1%
Boating	3	6	7.3%	0	0	0.0%
Swimming	2	7	8.5%	1	2	6.1%
Hunting	1	5	6.1%	0	0	0.0%
Photography	1	3	3.7%	1	3	9.1%
Camping	1	2	2.4%	1	2	6.1%
Spiritual Fish Place	1	2	2.4%	0	0	0.0%
Scoping	1	2	2.4%	1	2	6.1%
Running	1	1	1.2%	0	0	0.0%
Working on Pump	1	1	1.2%	0	0	0.0%
Total	29	82	100%	13	33	100%

Table 11, below, shows aggregated totals for primary and additional activities reported within the Project Area. Mining is far less important within than outside the Project Area.

Table 11: Types of Recreational Activities—Aggregated (Primary and Additional Activities)—Project Area

Activity	Aggregate (Primary and Additional Activity)			
	Surveys (number)	Surveys (percent)	Participants (number)	Participation (percent, based on 82 individuals)
Shore Fishing	9	31.0%	26	31.7%
Mining	7	24.1%	14	17.1%
Sightseeing	6	20.7%	21	25.6%
Floating Tubes	4	13.8%	16	19.5%
Boating	3	10.3%	6	7.3%
Swimming	3	10.3%	9	11.0%
Photography	2	6.9%	6	7.3%
Scoping	2	6.9%	4	4.9%
Camping	2	6.9%	4	4.9%
Hunting	1	3.4%	5	6.1%
Spiritual Fish Place	1	3.4%	2	2.4%
Working on Pump	1	3.4%	1	1.2%
Running	1	3.4%	1	1.2%

Access to the river corridor below the dam is important to visitors. Half of the respondents indicated that they either visited sites below the dam within the Project Area (18 surveys), or traversed the Project Area to reach areas downstream of it (12 surveys). Access to sites below Enloe Dam via the Project Area is shown in the following table.

Table 12: Access to River Corridor Below Dam

	Surveys		Individuals	
	Number	Percent	Number	Percent
Using Project Area below dam	18	31%	66	37%
Traversing Project Area to reach sites below dam	12	20%	48	27%
Neither of the above <i>or</i> information not available	29	49%	63	36%
TOTAL	59	100%	177	100%

Levels of Visitor Satisfaction

The results reported in this section are based on an analysis of the surveys completed within the Project Area.

The majority of the respondents who reported on their level of satisfaction (Question 9, “How satisfied are you with the quality of the recreational experience you had today?”) reported being “Very satisfied” or “Somewhat satisfied” with their recreational experiences in the Study Area, as shown in the following table.

Table 13: Level of Visitor Satisfaction within Project Area

	Very satisfied	Somewhat satisfied	Somewhat dissatisfied	Very dissatisfied	N/A	Total
Number of surveys	15	7	1	0	6	29
Percentage of surveys F ⁵	51.7	24.1	3.4	0	20.7	100

Fewer than 30% of the respondents who answered the question about the need for facilities at the Enloe Dam site (Question 15, “How would you rate the need for the following facilities along the Similkameen River and specifically at the Enloe Dam site?”) saw a high need for any improvements.

Only Porta-potties, picnic facilities, and improved river access were seen as high priorities by more than a quarter of the respondents. Porta-potties, garbage collection, and improved river access were the improvements for which visitors saw that greatest need, with over 50% of responses indicating “high” or “medium” need. Picnic facilities were rated slightly lower, with 48.3% of responses in the “high” and “medium” categories. Porta-potties were by far the most popular of the four, with 65.5% of responses indicating “high” or “medium” need.

Developed campsites are the facilities desired by the fewest respondents, with 48.3% indicating a “low” need. The following table shows the percentage of respondents who indicated a low, medium, and high need for each of the facilities and measures listed in the survey. Also included is the sum of the “high” and “medium” responses for each of the facilities and measures.

⁵ Refers to percentage of surveys on which the question regarding level of satisfaction was answered. Percentages may not total 100 due to rounding

Table 14: Need for Facilities (% of Respondents within Project Area)

Need for facilities	Developed campsites	Interpretive displays	Porta potties	Safety facilities	Garbage collection	Picnic facilities	Parking	River access
Low	48.3	37.9	20.7	37.9	27.6	37.9	41.4	34.5
Medium	20.7	31.0	37.9	27.6	31.0	20.7	27.6	20.7
High	13.8	13.8	27.6	13.8	24.1	27.6	10.3	31.0
NA	17.2	17.2	13.8	20.7	17.2	13.8	20.7	13.8
Total %	100	99.9	100	100	99.9	100	100	100
High + Medium	34.5	44.8	65.5	41.4	55.1	48.3	37.9	51.7

Most users of the Enloe Dam area appear to be satisfied with the existing measures and facilities.

Origin of Recreational Users

Most of the visitors surveyed in 2006 are Washington residents. More than 95% of the survey respondents listed Washington ZIP codes. Nearly 40% of respondents stated that they live in Okanogan County. Out-of-state visitors included one party from Colorado and one reporting a home address in British Columbia, Canada. One party reported both an in-state and a Utah address. See Figure 6 for a list of ZIP codes.

Conclusions/Summary/Key Issues

- Use of the Project Area is estimated at 1,378 user days during the June 1-October 15 peak recreation season
- Most camping is done outside the Project Area. It appears that very few visitors camp within the Project Area
- Mining is the most popular use in the Study Area, followed by boating, shore fishing, and sightseeing. Most mining is done outside the Project Area
- Shore fishing and boating are the most popular uses in the Project Area
- Access to the river corridor below the dam is important to visitors
- Most visitors to the Project Area are satisfied with the recreational opportunities available
- Few visitors to the Project Area expressed a desire for safety features
- Few visitors to the Project Area saw a high need for additional facilities

- Porta-potties, garbage collection, and improved river access were the improvements for which visitors saw that greatest need
- Picnic facilities were nearly as popular as the three improvements above, and were seen as a high priority by more than a quarter of the respondents

7.0 STUDY SCHEDULE

Survey development: May, 2006

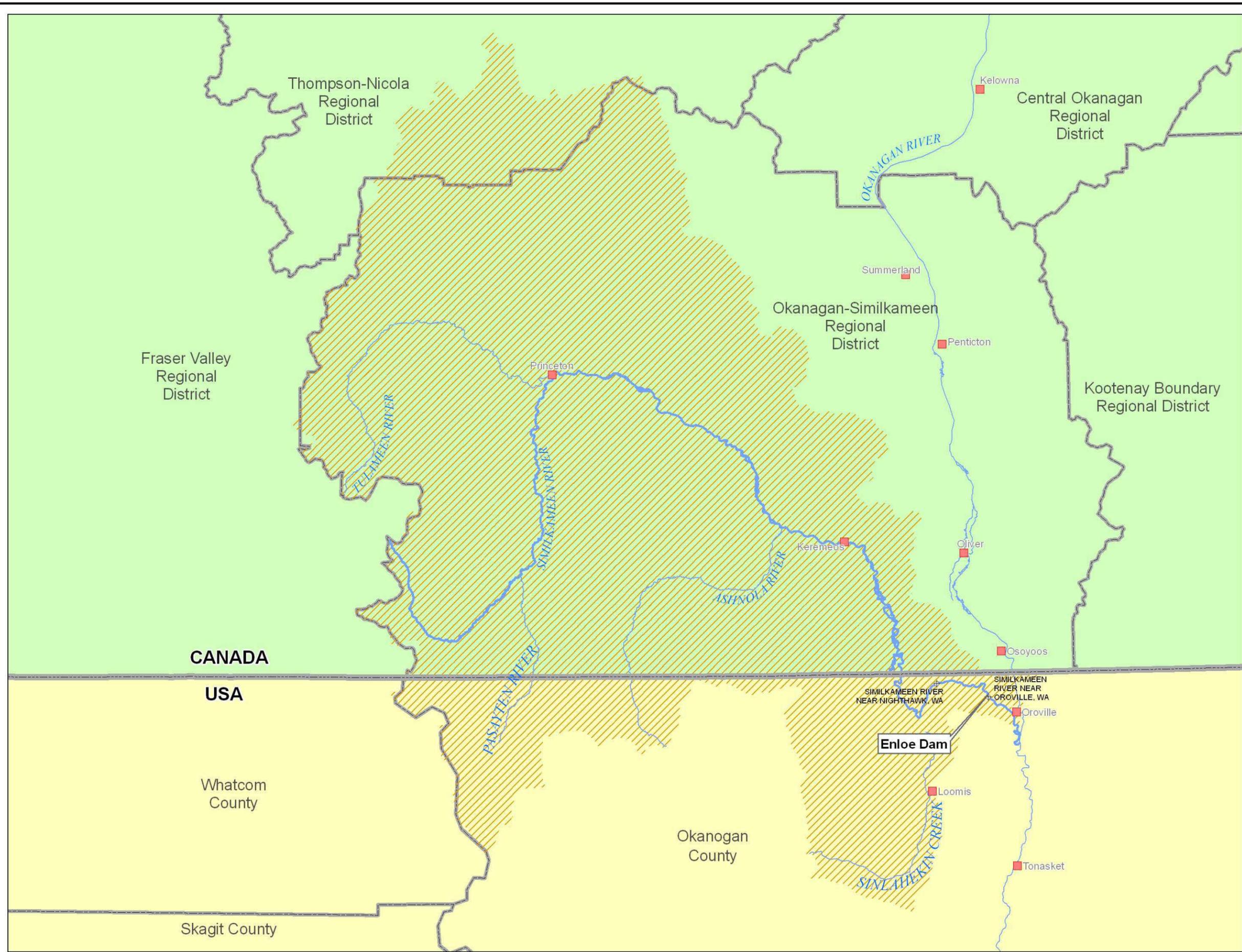
Data collection: June 1, 2006 through October 15, 2006.

Data analysis and report writing: October, 2006.

Interim Report due: December, 2006.

Draft Final Report due: April, 2007.

[App E.7.1 - Figure 1 Similkameen River Watershed]



- Legend**
- City
 - ⊕ USGS Stream Gage on Similkameen River
 - Major River
 - Similkameen River
 - ▨ Similkameen River Watershed
 - ▭ US-Canada Border
 - ▭ Canadian Division and County
 - ▭ US County



0 2.5 5 10 Miles

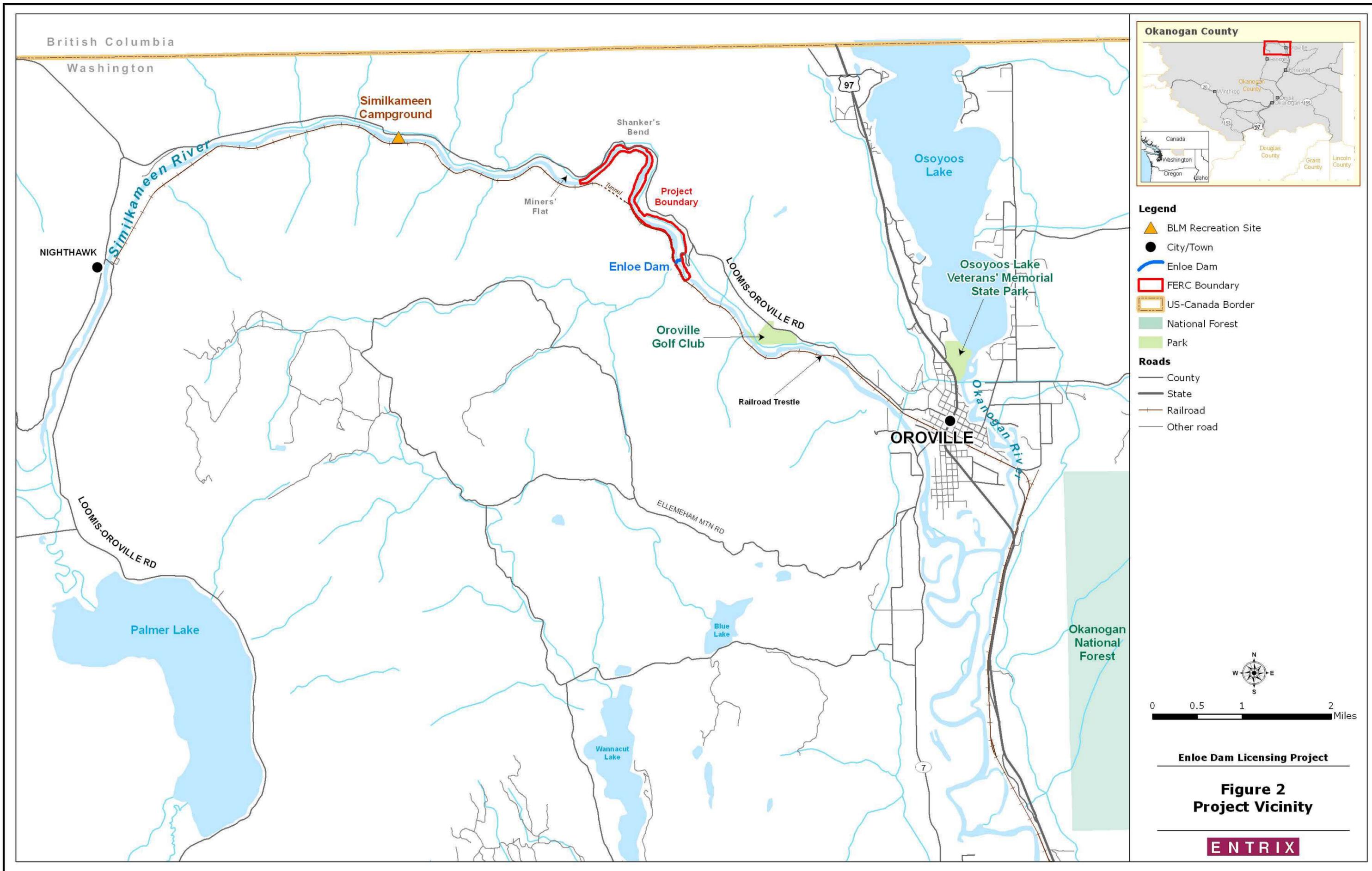
Data sources: BC WATERSHED ATLAS 50K, Washington Dept. of Ecology

Enloe Dam Licensing Project

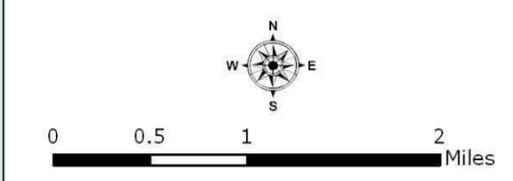
**Figure 1
Similkameen River
Watershed**



[App E.7.1 - Figure 2 Project Vicinity]



- Legend**
- ▲ BLM Recreation Site
 - City/Town
 - Enloe Dam
 - FERC Boundary
 - US-Canada Border
 - National Forest
 - Park
- Roads**
- County
 - State
 - Railroad
 - Other road

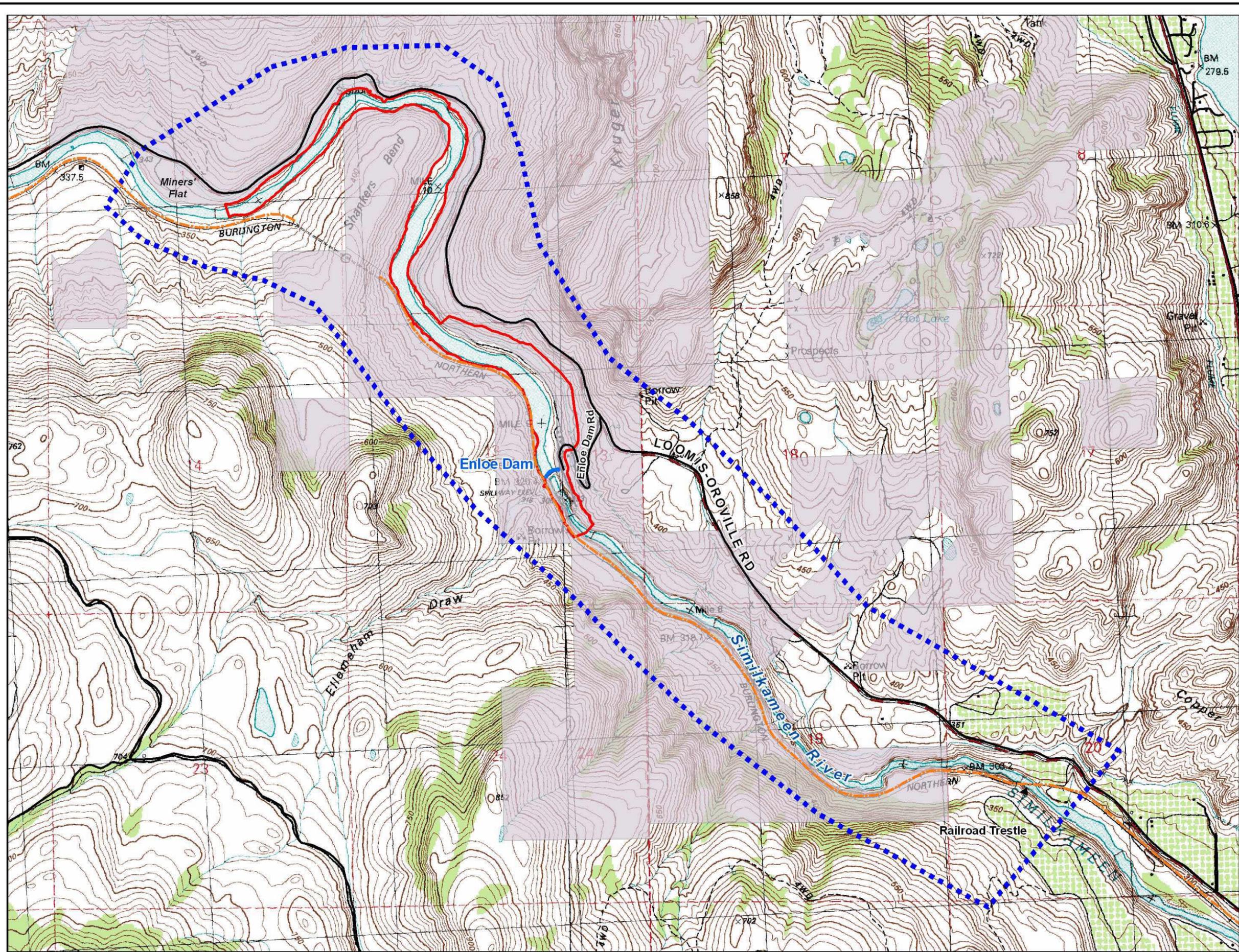


Enloe Dam Licensing Project

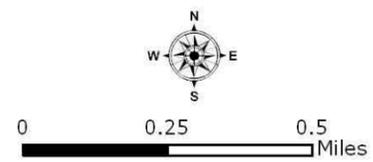
**Figure 2
Project Vicinity**



[App E.7.1 - Figure 3 Recreational Study Area]



- Legend**
- Proposed Oroville-Nighthawk Trail
 - Road
 - Enloe Dam
 - - - Study Area
 - FERC Boundary
 - BLM Managed Land



Enloe Dam Licensing Project

**Figure 3
Recreation Study Area**



Figure 4: Survey Questionnaire

ENLOE DAM INTERCEPT SURVEY DATA RECORD

NAME: _____ ID#: _____ (0001-9999)

DATE: _____ TIME: _____ WEEKDAY: _____
(mo/day/yr) (24 hr clock — numerical) (M=1 Tu=2 W=3 Th=4 F=5 Sa=6 Su=7)

WEATHER: _____ INTERVIEW LOCATION: _____
(1=Rainy, 2=Cloudy, 3=Partly Cloudy, 4=Sunny) (code 1 - 5, see list)

Willing to be interviewed? _____ (1=yes, 2=no)
 How many in group? _____ (1 - 999)

Q1. Why did you choose the Enloe Dam area? (circle one)

01 Close to home
 02 Happened to be in the area
 03 Special qualities of this area, please explain _____
 04 Other reason/Don't know _____

Q2. This is a map of the Enloe Dam area. Please indicate . . .

01 Where you entered or started your activities today
 02 What areas you have used or plan to use
 03 Where you plan to end today's activities

Q3. When did you begin your activities today?

01 _____
 02 _____
 03 _____

Q4. When do you plan to end your activities today?

01 _____
 02 _____
 03 _____

Q5. How many days are you planning to spend on this trip in the Enloe Dam area shown on this map? _____
INTERVIEWER: Ask Q6 and Q7 only of those on multiple day trips

Q6. If you did not begin your visit today, when and where did you first enter the Enloe Dam area shown on this map?

01 _____
 02 _____

Q7. If you do not plan to end your trip today, when and where do you plan to end your activities?

01 _____
 02 _____

Q8. How many people are in your group?

01 Adults (18 and over) _____
 02 Children (17 and under) _____

Q9. How satisfied are you with the quality of the recreational experience you had today?

01 Very satisfied
 02 Somewhat satisfied
 03 Somewhat dissatisfied
 04 Very dissatisfied

Q10. What type of trip are you on?

01 Commercial
 02 Non-Profit Organization
 03 Private individual or group
 04 With family or friends
 05 Other, Please describe _____

Q11. What did you do today? Did you do any of the following activities?

01 Shore fishing
 02 Boat fishing
 03 Boating
 04 Hunting
 05 Sightseeing
 06 Gold panning/dredging
 07 Birdwatching
 08 Photography
 09 Camping
 10 Hiking
 11 Picnicking
 12 Horseback riding
 13 ORV trail riding
 14 Bicycling
 15 Cross-country skiing
 16 Snowmobiling
 17 Other _____

Q12. Which of these activities was your most important today?
(list #'s from above) _____; _____; _____

Q13. About how many hours will you spend today in your most important activity? _____

Figure 4: Survey Questionnaire

Q14. About how many hours in total do you plan to spend today recreating? _____

Q15. How would you rate the need for the following facilities along the Similkameen River and specifically at the Enloe Dam site?

Facilities	Low	Medium	High
01 Developed camp sites			
02 Interpretative displays			
03 Porta-potties			
04 Safety features			
05 Garbage collection			
06 Picnic facilities			
07 Parking			
08 Improved river access			
09 Other _____			

Q16. Were any of the following a problem during your trip?

- 01 Number of people/vehicles
- 02 Enforcement of laws, rules and regulations
- 03 Litter
- 04 Toilet facilities
- 05 Access to river or trails
- 06 Quality/number of campsites

Q17. What is the zip code of your home address? _____
(If you live outside the U.S., what is your home country?)

INTERVIEWER: you may hand the respondent the data record to fill out answers to the demographic profile, Q31 – Q35

Q18. (Interviewer: Record gender)

Q19. What is your age?

Q20. What is the highest level of education you have completed?

- 01 Not high school graduate
- 02 High school graduate/GED
- 03 Some college or vocational school
- 04 College graduate
- 05 Some graduate work
- 06 An advanced college degree

- 01 over 70
- 02 60-69
- 03 50-59
- 04 40-49
- 05 30-39
- 06 20-29
- 07 10-19
- 08 0-9

Q20. What is your current employment status?

- 01 Self-employed
- 02 Employed full-time
- 03 Employed part-time
- 04 Retired
- 05 Student
- 06 Homemaker
- 07 Not employed

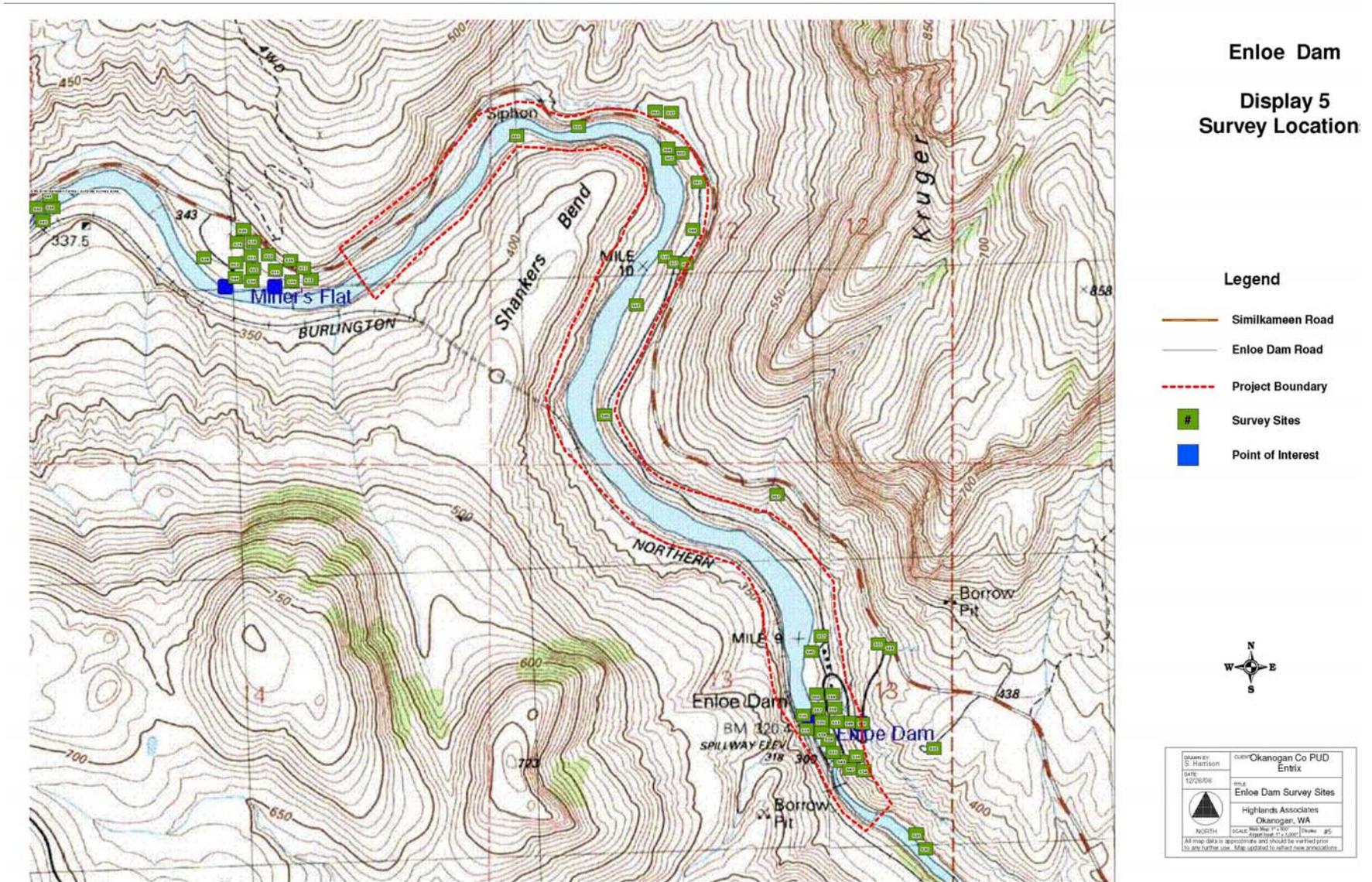
Q21. Which of these broad categories best describes your total household income in 2005?

- 01 Less than \$10,000
- 02 \$10,000 to \$20,000
- 03 \$20,000 to \$40,000
- 04 \$40,000 to \$60,000
- 05 \$60,000 to \$80,000
- 06 \$80,000 to \$100,000
- 07 Over \$100,000

Thank you for participating in our study.

Q22. Do you have any additional comments about the Enloe Dam and its management policies or this survey?

Interviewer may hand page to respondent to hand write answer – make sure it is legible!



This page is left intentionally blank.

Figure 6: Comments

Problems

LITTER, TOILET ACCESS
 SHADE, WATER
 TOO MUCH REGULATION
 SOME LITTER
 CAMPSITES COULD BE IMPROVED
 POISON OAK, BORDER PATROL
 LITTER IN IRRIGATION DITCH
 GRAFFITI
 LITTER, TOILET, QUALITY/#CAMP
 LITTER
 LITTER

Comments

They are "self-contained" campers
 Looking for a rare type of butterfly in area - orange colored
 Green area to camp; locals mining for something to do
 Saw mountain sheep; really like area
 Quicker way to other side would be nice; saw osprey
 Bathrooms would be nice and better campsites; a bit rundown, but free
 Likes free camping; road improvements needed to dam; take own garbage out
 Saw 15 floaters Saturday
 Do not want any changes made
 Usually take out at Shankar's Bend; lower part today 1st time
 Use more shade near water
 Private charter pilot waiting for flight out every day; lots of people but no facilities for them
 Comes here with friend who's been here before. His first time here.
 Attend Miner's Festival this year and last year; saw bald eagle
 Would like to see increase in hose allowed on dredges; not getting enough gold; saw bald eagle and osprey
 Would like to see no changes in development or access
 Have to have "fish & gold book" for mining in Washington; keep motorized access
 Bike trail if tunnel needs to be cleared
 Not enough time to survey
 Developed campsites won't happen; port-a-potties will; MAKE RECREATION AT RIVER LEVEL
 Would like to see bridge across river below dam
 Too busy right now for survey
 Fish only jump at right side - where is powerhouse proposed?; have seen 7-8 eagles at once; spiritual place sacred to native people; talk with
 Indians before doing anything; artifacts; Native people fished here w with net sets
 Would be sad to see this area adversely affected; dredging loosens gravel and enhances fish habitat; would like to see fish laws more accepting
 of miners. The greater the dam is, the more congested. More people would need more access points.
 Use pamphlets, not signs; very clean
 Cascade Bicycle Club
 No fish ladder installation. Fish have not been able to travel upstream of natural falls. Most beautiful area in Okanogan County.
 On foot, no time for survey
 Use what's there. Renewable energy
 Area is undeveloped, need to look out for fish; heard that dam has used up habitat? Saw deer with fawn, and heard of bear attack
 Favor dams; hydro power most environmentally sound
 No fish ladder installation; NEEDS SHADE, WORK WITH MINERS AS MUCH AS POSSIBLE; SITE IS A MESS
 Extreme Adventures guided raft trip/father & 2 boys; other activities while in NW Washington
 Supplementing social security, Attending Miner's Rally in Oroville
 Working (volunteer) maintenance on irrigation pump for Oroville Golf Course
 Margaret Wilder Band playing at Blues Festival; guy from band grew up in Oroville area...showing others around
 Real smoky, might not stay again. Killed a rattlesnake on trail down below dam
 Swimming below Shanker's Bend, own property at 9-Mile
 Local kids sightseeing for 1/2 hour
 Native American father with 5 children shore fishing and hiking about; fish need to go upstream to spawn; native beliefs
 Liked looks of this area; need to plant more trout above the dam
 Don't need anything, would be vandalized - came here for the solitude, beauty, and nature qualities
 not surveyed??
 Safety barrier have sound? Has it been tested? Picnic facilities equal too many people; pick up trash
 State park full all summer, would rather camp here; more secluded
 If more human use will need porta potties facilities

Figure 6: Zip Codes of Individuals Surveyed

Total # Individuals	Zip Code	City or Town	State	% total
1	80421	Bailey	CO	1%
1	98026	Edmonds	WA	1%
1	98258	Snohomish	WA	1%
2	98092	Auburn	WA	1%
2	98023 / 98844	Auburn	WA	1%
2	98249	Freeland	WA	1%
2	98829	Malott	WA	1%
2	98841	Omak	WA	1%
2	98844 / 98841	Oroville / Omak	WA	1%
2	98367	Port Orchard	WA	1%
2	98075	Sammamish	WA	1%
2	98507	Seattle	WA	1%
2	98112 / 99026	Seattle / Nine Mile Falls	WA	1%
2	98103 / 98105	Seattle / University	WA	1%
2	98296	Snohomish	WA	1%
3	99001	Airway Heights	WA	2%
3	98926 / 98844	Ellensburg / Oroville	WA	2%
3	NA	Kelowna	BC	2%
3	98597	Yelm	WA	2%
4	99336	Kennewick/Finely	WA	2%
4	98264	Lynden	WA	2%
4	98177 / 98225	Shoreline / Bellingham	WA	2%
4	V3C 1K9	Vancouver	BC	2%
4	98671	Washougal	WA	2%
4	98671 / 84032	Washougal / Utah	WA/UT	2%
5	98103	Seattle	WA	3%
5	98588	Tahuya	WA	3%
8	98801	Wenatchee	WA	5%
9	98225	Bellingham	WA	5%
9	NA	NA		5%
9	99202	Spokane	WA	5%
11	99116	Republic	WA	6%
24	98844	Tonasket	WA	14%
34	98844	Oroville	WA	19%
177				100%

2% - 3%
 5% - 10%
 10% or more

Figure 6: Level of Satisfaction

ID	# people	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	NA
		1	2	3	4	0
4	1	1				
5	1	1				
6	1	1				
8	4	1				
9	2	1				
12	2	1				
13	2		1			
14	3		1			
16	2		1			
17	12		1			
20	3	1				
21	2					1
26	2	1				
27	5					1
32	2	1				
36	2	1				
37	1					1
38	2	1				
40	1	1				
43	4	1				
45	1					1
46	4	1				
47	2		1			
48	2					1
49	5					1
50	6			1		
51	1		1			
55	2	1				
60	5		1			

82						
SURVEYS	15 51.7%	7 24.1%	1 3.4%	0 0.0%	6 20.7%	29 Total Surveys 100% Surveys
PEOPLE	33 40.2%	27 32.9%	6 7.3%	0 0.0%	16 19.5%	82 Total people 100% People

Figure 6: Facilities Desired

Many	Developed Sites	Interpretive Displays	Porta Potties	Safety Features	Garbage Collection	Picnic Facilities	Parking	River Access	other
1	L	L	M	L	M	L	L	L	
1	L	L	M	L	M	L	L	L	
1	L	L	M	M	M	L	M	H	
4	L	H	M	M	M	H	M	M	
2	L	L	M	L	L	L	L	L	a quicker way to the other side would be nice
2	L	L	L	L	L	L	L	L	
2	L	L	M	M	L	M	L	M	
3	M	H	M	H	M	L	M	L	
2	L	M	M	M	M	L	M	L	
12	NA	NA	NA	NA	NA	NA	NA	NA	
3	M	M	H	L	L	H	M	H	
2	H	L	H	NA	H	H	NA	H	
2	L	M	L	L	L	M	L	M	BIKE TRAIL
5	NA	NA	NA	NA	NA	NA	NA	NA	
2	H	H	H	M	H	M	L	H	BETTER FENCE, PICNIC & ROADS
2	L	L	L	L	L	L	L	L	
1	NA	NA	NA	NA	NA	NA	NA	NA	
2	L	L	L	L	L	L	L	L	EVERYMAN FOR HIMSELF
1	M	M	M	M	M	M	M	M	all good ideas, anything to bring money into the area
4	M	M	H	M	H	H	H	H	BETTER ACCESS
1	M	M	M	H	H	H	M	M	
4	H	M	H	H	H	M	M	M	
2	L	M	M	M	L	M	L	H	
2	M	H	H	L	M	H	H	H	ACCESS TO RAILBED
5	NA	NA	H	NA	NA	H	NA	NA	
6	NA	NA	NA	NA	NA	NA	NA	H	FISH LADDER
1	H	M	H	H	H	H	H	H	RIVER ACCESS
2	L	L	L	L	M	L	L	L	
5	L	L	L	L	H	L	L	L	

82

Developed Sites	Interpretive Displays	Porta Potties	Safety Features	Garbage Collection	Picnic Facilities	Parking	River Access	
Low	Low	Low	Low	Low	Low	Low	Low	TOTAL # LOWS
14	11	6	11	8	11	12	10	83
48.3%	37.9%	20.7%	37.9%	27.6%	37.9%	41.4%	34.5%	35.8%
Med	Med	Med	Med	Med	Med	Med	Med	TOTAL # MEDIUMS
6	9	11	8	9	6	8	6	63
20.7%	31.0%	37.9%	27.6%	31.0%	20.7%	27.6%	20.7%	27.2%
High	High	High	High	High	High	High	High	TOTAL # HIGHS
4	4	8	4	7	8	3	9	47
13.8%	13.8%	27.6%	13.8%	24.1%	27.6%	10.3%	31.0%	20.3%
NA	NA	NA	NA	NA	NA	NA	NA	TOTAL # OF INFO NOT AVAIL.
5	5	4	6	5	4	6	4	39
17.2%	17.2%	13.8%	20.7%	17.2%	13.8%	20.7%	13.8%	16.8%
								232
29	29	29	29	29	29	29	29	100.0%

Figure 6: Length of Stay

ID#	Individuals	Length of Stay
59	5	1/2 DAY
17	12	0
4,5	1	1
6	1	1
7	6	1
8	4	1
10	5	1
13	2	1
16	2	1
20	3	1
32	2	1
35	2	1
40	1	1
43	4	1
45	1	1
48	2	1
49	5	1
50	6	1
55	2	1
56	4	1
58	2	1
1	6	2
23	3	2
47	2	2
51	1	2
53	2	2
21	2	2+
9	2	2 OR 3
28	3	2 to 3
2	2	3
12	2	3
14	3	3
15	2	3
19	1	3
24	1	3
26	2	3
38	2	3
46	4	3
52	5	3
57	3	3 TO 4
36	2	4 TO 5
18	7	5
30	2	5
41	4	5
42	5	5
60	5	5
11	1	6
29	1	7
34	4	7
44	1	7
39	1	9
3	4	14
33	6	2 WKS
22	4	3 WKS
25	1	NA
27	5	NA
31	2	NA
37	1	NA
54	1	NA

177

Length of stay	surveys	individuals	surveys %	individuals %
1 day or less	22	72	37%	41%
2 days	5	14	8%	8%
3-5 days	20	59	33%	33%
6-10 days	5	8	8%	5%
10 more days	3	14	5%	8%
na	5	10	8%	6%
Total	60	177	100%	100%

Figure 6: Day of Week/Holiday

Date	ID#	# people	Description of survey date	
6/3/2006	1	6	Tonasket Founder's Day Rodeo	
6/3/2006	2	2		
6/16/2006	3	4	Father's Day weekend	
6/16/2006	4	1		
6/16/2006	5	0		
6/16/2006	6	1		
6/18/2006	7	6		
6/18/2006	8	4		
7/1/2006	9	2	Canada Day, Independence Day	
7/1/2006	10	5		
7/2/2006	11	1		
7/2/2006	12	2		
7/3/2006	13	2		
7/3/2006	14	3		
7/3/2006	15	2		
7/3/2006	16	2		
7/4/2006	17	12		
7/10/2006	18	7		weekday
7/10/2006	19	1	weekday	
7/20/2006	20	3	weekday	
7/20/2006	21	2	weekday	
8/6/2006	22	4	weekend	
8/6/2006	23	3	weekend	
8/9/2006	24	1	weekday	
8/9/2006	25	1	weekday	
8/18/2006	26	2	Miner's Festival, Oroville Heritage Days	
8/18/2006	27	5		
8/18/2006	28	3		
8/18/2006	29	1		
8/19/2006	30	2		
8/19/2006	31	2		
8/19/2006	32	2		
8/19/2006	33	6		
8/19/2006	34	4		
8/19/2006	35	2		
8/20/2006	36	2		
8/20/2006	37	2		
8/20/2006	38	1		
8/20/2006	39	1		
8/20/2006	40	1		
8/20/2006	41	4		
8/20/2006	42	5		
8/25/2006	43	4	weekday	
9/2/2006	44	1	Rhythm & Blues Festival	
9/2/2006	45	1		
9/2/2006	46	4		
9/3/2006	47	2		
9/3/2006	48	2		
9/3/2006	49	5		
9/3/2006	50	6		
9/4/2006	51	1		
9/16/2006	52	5		weekend
9/16/2006	53	2		weekend
9/16/2006	54	1	weekend	
9/16/2006	55	2	weekend	
10/14/2006	56	4	Barter Faire, Opening weekend of Hunting Season	
10/14/2006	57	3		
10/14/2006	58	2		
10/14/2006	59	5		
10/14/2006	60	5		

177

	Surveys	% Surveys	People	% People
Holiday or Event weekend	47	78%	132	75%
Non Event weekend	6	10%	35	20%
Weekday	7	12%	10	6%
Total	60	100%	177	100%

Figure 6: Complete Survey Results

Date	RD#	pk	pk	acc	other	problems	zip code	igen	age	led	temp	inc	comments		
8/19/2006	35	L	L	M	Better access to water, but not at dam	NO	98801 Wenatchee	M	4	4	2	5	"self-contained" campers		
6/3/2006	2	L	L	L	WATER ACCESS, NOT DAM	NO	98075 Sammamish	M	F	2	6	4	NA	looking for a rare type of butterfly in area - orange colored	
9/3/2006	47	M	L	M	NO	NO	98844 Oroville	M	F	4	2	4	1	Green area to camp; locals mining for something to do	
7/1/2006	10	L	L	L	NO	LITTER, TOILET ACCESS	98855 Tonasket	M	F	4	3	7	3		
7/3/2006	13	L	M	H	NO	NO	98855 Tonasket	F	2	5	2	3			
7/2/2006	12	L	L	L	More irrigation needed	NO	99166 Republic	M	F	3	3	1	NA		
7/4/2006	17	M	M	M	NO	NO	98264 ryden	M	4	1	1	5		Saw mountain sheep; really like area	
8/19/2006	30	L	L	L	a quicker way to the other side would be nice	NO	98367 Port Orchard	M	6	2	2	5		Quicker way to other side would be nice; saw osprey	
6/16/2006	45	L	L	L	a bit run down, they camped here because it's free	NO	98103 Seattle	M	4	4	2	6		Bathrooms would be nice and better campsites; a bit rundown, but free	
6/16/2006	6	L	L	M	NO	NO	98844 Oroville	M	3	1	7	1		Likes free camping; road improvements needed to dam; take own garbage out	
6/3/2006	1	L	L	L	NO	NO	98249 Freeland	NA	3	4	4	3			
10/14/2006	56	M	L	M	NO	NO	98023/98844 Auburn	M	6	6	2	6		Saw 15 floaters Saturday	
10/14/2006	60	M	L	L	FISHING ACCESS	NO	98844 Oroville	M	F	3	4	NA	NA		
10/14/2006	57	L	L	L	SIGNAGE	NO	98092 Auburn	M	F	4	3	2	5		
6/18/2006	7	L	M	L	L	NO	98841 Omak	M	3	4	2	5		Do not want any changes made	
8/25/2006	43	NA	NA	NA	NA	NO	98844 Oroville	M	F	6	NA	NA	NA	usually take out at Shank's Bend; lower part today 1st time	
9/16/2006	53	M	M	H	CELL COVERAGE, BRIDGE ACROSS	SHADE, WATER	98226 Bellingham	M	F	7	3	2	NA	Use more shade near seats	
8/18/2006	29	L	L	H	BRIDGE ACROSS	NO	99202 Spokane	M	4	5	2	6		Private charter pilot waiting for flight out every day; lots of people but no facilities for them	
6/16/2006	3	H	M	H	NO	NO	98844 Tonasket	M	5	NA	1	3			
7/2/2006	11	H	NA	H	NO	NO	98307 Seattle	M	6	NA	NA	NA		Comes here with friend who's been here before. His first time here.	
7/3/2006	15	L	L	H	ACCESS FROM OTHER SIDE	NO	98671/984032 Washougal/Utah	M	2	2	4	4		Attend Miner's Festival this year and last year saw bald eagle	
7/3/2006	16	L	L	L	NO	NO	98926/98844 Ellensburg/Oroville	M	3	2	1	7		Would like to see increase in hose allowed on dodges; not getting enough gold; saw bald eagle and osprey	
7/10/2006	19	L	L	H	NO	NO	99224 Spokane	M	NA	NA	NA	NA		Would like to see no changes in development or access	
7/20/2006	21	H	H	H	NO	NO	99116 Republic	M	2	3	4	4		Have to have "fish & gold book" for mining in Washington; keep motorized access	
8/6/2006	22	M	L	M	BIKE TRAIL	NO	98829 Mabot	M	4	3	3	3		BIKE trail if tunnel needs to be cleared	
8/6/2006	23	NA	NA	NA	NO	NO	NA	NA	NA	NA	NA	NA		Not enough time to survey	
8/9/2006	24	L	L	L	NO	NO	99001 Airway Heights	M	2	2	4	7		developed campites won't happen; port-a-potties will; MAKE RECREATION AT RIVER LEVEL	
8/9/2006	25	L	L	L	no	too much regulation	98026 Edmonds	M	3	3	1	2			
8/18/2006	26	L	M	H	BRIDGE ACROSS	SOME LITTER	99207 Spokane	M	5	4	7	1		Would like to see bridge across river below dam	
8/20/2006	39	NA	NA	NA	NA	NO	NA	NA	NA	NA	NA	NA		too busy right now for survey	
9/2/2006	44	M	L	H	BETTER FENCE, PICNIC & ROADS	NO	98844/98841 Oroville/Omak	M	F	4	2	1		Fish only jump at right side - where is powerhouse proposed?; have seen 7-8 eagles at once; spiritual place sacred to native people; talk with Indians before doing anything; artifacts; Native people fished here w/ fish nets	
9/16/2006	52	L	L	L	WATER; SHOWERS OR DUMP SITE IN TOWN	NO	98855 Tonasket	F	3	3	6	4		greater the dam is, the more congested. More people would need more access points	
8/20/2006	38	L	L	L	get rid of POISON IVY!!!	NO	98671 Washougal	F	2	3	4	NA		Use pamphlets, not signs, very clean	
8/20/2006	42	M	H	H	no	NO	98103/98105 Seattle/University	M	3	4	4	4		Cascade Bicycle Club	
8/20/2006	36	L	L	L	NO	NO	98844 Oroville	M	3	2	7	2		No fish ladder installation. Fish have not been able to travel upstream of natural falls. Most beautiful area in Okanogan County	
8/19/2006	33	L	L	L	EVERYMAN FOR HIMSELF	NO	98855 Tonasket	M	2	3	4	1			
8/19/2006	34					NO								On foot, no time for survey	
7/1/2006	9	M	L	L	PICNIC AT DAM	NO	80421 Bailey, CO	M	2	2	1	3		Use what's there. Renewable energy	
7/3/2006	14	M	M	M	all good ideas, anything to bring money into the area	NO	98844 Tonasket	M	6	3	2	3		Area is undeveloped; need to look out for fish; heard that dam has used up habitat? Saw deer with fawn, and heard of bear attack	
7/10/2006	18	L	L	L	PEOPLE SHOULD PACK IN AND CARRY OUT	NO	99336 Kennewick/Finley	M	F	4	3	2	3		Favor dams; hydro power most environmentally sound
8/18/2006	26	M	L	L	BIKE TRAIL OR HIKING BELOW DAM	CAMPITES COULD BE IMPROVED	98855 Tonasket	M	5	1	1	2		No fish ladder installation; NEEDS SHADE, WORK WITH MINERS AS MUCH AS POSSIBLE; SITE IS A MESS	
7/20/2006	20	H	H	H	BETTER ACCESS	POISON OAK, BORDER PATROL	V3C IK9 Vancouver, BC	M	4	NA	NA	NA		Extreme Adventures guided raft trip; father & 2 boys; other activities while in NW Washington	
8/20/2006	40	M	L	H	PITS YES, TABLES NO; ACCESS OTHER SIDE	NO	98250 Snohomish	M	2	3	4	1		Supplementing social security. Attending Miner's Rally in Oroville	
9/4/2006	51	M	M	M	LITTER IN IRRIGATION DITCH	NO	98844 Oroville	M	4	2	2	4		Working (volunteer) maintenance on irrigation pump for Oroville Golf Course	
9/3/2006	50	M	M	M	GRAFITTI	NO	98177/98225 Shoreline/Bellingham	M	F	NA	3	2	NA	Margaret Wilder Band playing at Blues Festival; guy from band grew up in Oroville area...showing others around	
9/2/2006	46	M	L	H	NO	NO	98801 Wenatchee	M	F	6	4	3		Real smoker, might not stay again. Killed a rattlesnake on trail down below dam	
9/3/2006	49	H	H	H	ACCESS TO RAILBED	NO	98112/99036 Seattle/Nine Mile	M	F	NA	NA	NA		Swimming below Shank's Bend, own property at 9 Mile	
10/14/2006	58	H	NA	NA	NO	NO	98844 Oroville	M	F	7	1	5		Local kids sightseeing for 1/2 hour	
6/18/2006	8	M	L	L	NO	LITTER, TOILET, QUALITY@CAMP	99206 Spokane	M	2	2	2	4			
10/14/2006	59	NA	NA	NA	FISH LADDER	NO	98844 Oroville	M	NA	NA	NA	NA		Native American father with 5 children shore fishing and hiking about; fish need to go upstream to spawn; native beliefs	
9/16/2006	55	H	H	H	RIVER ACCESS	NO	98844 Oroville	M	2	5	2	5		Kind looks of this area; need to plant more trout above the dam	
8/19/2006	32	L	L	L	NO	NO	98844 Oroville	M	3	2	1	3		Don't need anything, would be vandalized - came here for the solitude, beauty, and nature qualities	
8/20/2006	41					NO								not surveyed??	
9/3/2006	48	L	L	L	NO	NO	98225 Bellingham	F	4	4	2	7			
9/2/2006	45	M	L	L	PICNIC AT DAM	NO	99166 Republic	M	F	3	4	2	5		
8/18/2006	22	L	L	H	SIGNAGE	LITTER	98597 Helm	M	3	4	2	5		Safety barrier have sound? Has it been tested? Picnic facilities equal too many people; pick up trash	
8/19/2006	31	M	H	H	SAFETY features needed if it's a family area	NO	98296 Snohomish	M	3	3	2	5		State park full all summer, would rather camp here; more secluded	
8/20/2006	37	L	L	L	KEEP REMOTE	NO	98844 Tonasket	F	5	6	2	5		If more human use will need port-a-potty facilities	
9/16/2006	54	L	L	L	NO	LITTER	98588 Tahuya, WA	M	4	2	1	6			

Figure 6: Complete Survey Results

Date	ID#	Name	Time	Many	Why	Reason	Start Area	End Area	Days	Begin Trip	End Trip	Adults	Youth	Subs	Type	Activities	Describe Favorite	Hours	site	ids	poth	leaf	grw	
8/19/2006	35 SS MJ		8:30 AM	2	4	love wilderness and scenery	DAM OVERLOOK	DAM OVERLOOK		1	OROVILLE	2	0	1		3:05,07,09,09,11,14	BIKES, BIG, SIGHTSEEING	1	TO 5					
8/3/2006	2 KD-SH-SS		2:40 PM	2	3	3 BUTTERFLY	SEE MAP	SEE MAP		3	OMAK	2	0	NA	1		17 BUTTERFLY	6	TO 8					
9/3/2006	47 KD-SH		11:30 AM	2	4	LIVED HERE BEFORE, GOOD FOR TRAP SHOOTING	ACROSS FROM POWERHOUSE	ACROSS FROM POWERHOUSE		2	OROVILLE	2	0	2		4:05,07,09,10	CAMPING & HIKING	NA	H	H	H	H	H	
7/1/2006	10 SS-MV		7:00 PM	5	3	Home property, visiting	SIMIL KAMBEEN CAMP	SIMIL KAMBEEN CAMP		1	NA	2	3	2		3:09,17	CAMPING & SWIMMING	2	L	M	M	M	M	
7/3/2006	13 KD-SH		1:40 PM	2	4	FISHING	DAM OVERLOOK	DAM OVERLOOK		1	WHITSTONE	2	0	2		4:01,03,05	FISHING	3	L	M	M	M	M	
7/2/2006	12 SS		11:15 AM	2	3	SUNSHINE	SHANKER'S BEND	SHANKER'S BEND		3	SHANKER'S BEND	1	1	1		3:03,09,17	FLOATING	6	L	M	M	M	M	
7/4/2006	17 KD-SH		12:48 PM	12	1	1 CLOSE TO HOME	DAM OVERLOOK	DAM OVERLOOK		0	SHANKER'S BEND	11	1	2	4		3 FLOATING TUBES	6	TO 8					
8/19/2006	30 SS MJ		9:30 AM	2	4	GEOCACHING	BELOW DAM	BELOW DAM		2	OROVILLE	2	0	2		4:05,06,09,10,13	GEOCACHING, TRAILS	6	L	M	M	M	M	
6/16/2006	43 KD-SH		3:22 PM	1	1	LOCAL	OUTSIDE AREA	OUTSIDE AREA		1	LUPPER DAM	1	0	1	3		3 GUIDED RAFT	10	M	M	M	M	M	
6/16/2006	6 KD-SH		3:22 PM	1	1	LOCAL NEVER RAFTED	OUTSIDE AREA	PULL OUT SEE MAP		1	LUPPER DAM	1	0	1	3		3 GUIDED RAFT	2	L	M	M	M	M	
6/3/2006	1 KD-SH-SS		2:20 PM	6	4	SCOUT TRIP BOOK	Palmer Lake	Palmer Lake		2	PALMER LAKE	2	4	2	3		3 HAD CANIKS	1	5	L	M	M	M	
10/14/2006	36 SS MJ		10:50 am	4	3	hunted here before	SHANKER'S BEND	SHANKER'S BEND		1	UPSTREAM ACCESS	4	0	1	4		4 HUNTING	2	TO 3					
10/14/2006	60 SS MJ		1:50 PM	5	4	good deer hunting	SHANKER'S BEND	SHANKER'S BEND		5	OROVILLE	3	2	2	4		4 HUNTING	NA	M	M	M	M	M	
10/14/2006	37 SS MJ		11:30 AM	3	3	beautiful, been camping here 9 years	DAM OVERLOOK	DAM OVERLOOK	1	3	TO 4	DAM OVERLOOK	2	1	1		4:05,05,09	HUNTING & CAMPING	NA	H	M	M	NA	L
6/16/2006	7 KD-SH		11:20 AM	6	4	BEEN HERE BEFORE	SEE MAP	SEE MAP		1	OROVILLE	6	0	1	3		3 KAYAKERS	ALL DAY	L	M	M	M	M	
8/25/2006	43 KD-SH		1:12 PM	4	4	VERANDA BEACH	BELOW DAM	BELOW DAM		1	MOLSON CHESAWE	2	2	1	4		3 KAYAKERS	NA	NA	NA	NA	NA	NA	
9/16/2006	33 SS MJ		12:40 PM	2	3	BEAUTY & solitude	BELOW DAM	BELOW DAM		2	BELOW DAM	2	0	1	1		4:05,06,07,08	MINING & PHOTOGRAPHY	NA	M	M	H	M	H
8/18/2006	29		6:00 PM	1	3	MINING	MINER'S FLAT	MINER'S FLAT		2	Orville	1	0	2		3:17,05,09,09,10,11	MINER'S RALLY	2	L	M	M	M	M	
6/16/2006	3 KD-SH		2:48 PM	4	4	Green	MINER'S FLAT	MINER'S FLAT		14	MINER'S FLAT	4	0	1	1		4:05,06,09,10	MINING	2	TO 3				
7/2/2006	11 SS		9:30 AM	1	3	GOLD	MINER'S FLAT	MINER'S FLAT		6	MINER'S FLAT	1	0	2		3:06,09	MINING	ALL DAY	H	L	H	NA	H	
7/3/2006	15 KD-SH		3:04 PM	2	3	BOOK ON MINING	MINER'S FLAT	MINER'S FLAT		3	LOST LAKE	2	0	2		4:06,8,09	MINING	ALL DAY	L	L	L	L	L	
7/3/2006	16 KD-SH		3:43 PM	2	1	looking for gold	MINER'S FLAT	MINER'S FLAT		1	BC	2	0	2	4		6 MINING	3	TO 5					
7/10/2006	19 KD-SH		11:10 AM	1	4	BEEN HERE BEFORE	MINER'S FLAT	MINER'S FLAT		3	OMAK	1	0	2	3		6 MINING	NA	L	L	L	L	L	
7/20/2006	21 KD-SH		7:12 PM	2	4	BEEN HERE BEFORE	DAM OVERLOOK	DAM OVERLOOK	2+		DAM OVERLOOK	2	0	NA		4:03,06,09	MINING	NA	H	L	H	M	M	
8/6/2006	23 KD-SH		9:08 AM	4	3	MINING	MINER'S FLAT	MINER'S FLAT	3	WKS	MINER'S FLAT	4	0	2		4:05,06,08,09	MINING		4	L	M	L	L	
8/6/2006	23 KD-SH		1:00 PM	3	3	MINING	BELOW DAM	BELOW DAM		2	TOP OF DAM	3	0	2	3		6 MINING	NA	NA	NA	NA	NA	NA	
8/9/2006	24 KD-SH		7:08 AM	1	3	MINING	MINER'S FLAT	MINER'S FLAT		1	UPSTREAM	1	0	2	4		6 MINING	3	M	L	L	L	L	
8/9/2006	25 KD-SH		7:40 AM	1	3	MINING	MINER'S FLAT	MINER'S FLAT	NA		MINER'S FLAT	1	0	1	4		6 MINING	5	L	H	L	L	L	
8/18/2006	26 SS MJ		5:50 PM	3	3	mining	MINER'S FLAT	MINER'S FLAT	2	to 3	MINER'S FLAT	2	1	1		4:06,08,09,10	MINING	NA	M	H	L	M	M	
8/20/2006	39 SS MJ		11:00 AM	1	3	MINER'S RALLY	MINER'S FLAT	MINER'S FLAT		1	OROVILLE	1	0	2		3:05,06,09,10,11	MINING	NA	NA	NA	NA	NA	NA	
9/2/2006	44 KD-SH		9:48 AM	1	3	MINING	MINER'S FLAT	MINER'S FLAT		7	OROVILLE	1	0	3	3		6 MINING		1	H	H	H	M	H
9/16/2006	52 SS MJ		9:45 AM	5	3	MINING	MINER'S FLAT	MINER'S FLAT		3	MINER'S FLAT	5	0	2	4		6 MINING	3	TO 4					
8/20/2006	38 SS MJ		10:30 AM	2	3	gold	CHINA ROOK	CHINA ROOK		3	CHINA ROOK	2	0	1	1		4:06,09,17	MINING, CLAM HUNTING	5	5	L	M	L	L
8/20/2006	42 SS MJ		1:15 PM	5	3	MINING	CHINA ROOK	CHINA ROOK		3	TOMASKET	3	2	1	4		6 MINING, FISH WATCHING	9	M	H	H	H	H	
8/20/2006	36 SS MJ		9:15 AM	2	4	scenery & steelhead	DAM OVERLOOK	below dam	4	TO 5	DAM OVERLOOK	2	0	1	1		4:05,06,07,10,11	MINING, SIGHTSEEING	5	L	L	L	L	L
8/19/2006	33 SS MJ		12:00 PM	6	3	MINING	MINER'S FLAT	MINER'S FLAT	2	WKS	MINER'S FLAT	5	1	1		4:05,06,09	MINING, CAMPING	6	L	L	L	L	L	
8/19/2006	34 SS MJ		12:30 PM	4	4	view of mouth	MINER'S FLAT	MINER'S FLAT		4	0	1	1	1		4:06,09	MINING, CAMPING							
7/1/2006	9 SS-MV		8:40 PM	2	4	Mom has property	DONT KNOW	DONT KNOW	2	OR 3	Orville	2	0	1		3:01,06,17	MINING, HANGING OUT	5	TO 6					
7/3/2006	14 KD-SH		1:54 PM	3	4	SCENERY	OUTSIDE AREA	OUTSIDE AREA		3	OROVILLE	3	0	2		3:01,02,03,05,08,10	PHOTOS	3	M	M	M	M	M	
7/10/2006	18 KD-SH		9:30 AM	7	4	looking for rattlesnakes	TOP OF DAM	TOP OF DAM		5	PALMER LAKE	7	0	3		4:03,09,17	RATTLESNAKES	1	L	M	L	L	L	
8/18/2006	26 SS MJ		5:14 PM	2	4	On way to fairport	downriver side of SHANKER'S BEND	SHANKER'S BEND		3	OROVILLE	2	0	1		4:03,05,07,08,10,11,14,17	SCOPING, SWIMMING	9	H	H	L	L	L	
7/20/2006	20 KD-SH		7:00 PM	3	4	PREVIOUS VISITS	DAM OVERLOOK	DAM OVERLOOK		1	DAM OVERLOOK	2	1	1	4		1 SHORE FISHING	2	TO 3					
8/20/2006	40 SS MJ		12:20 PM	1	1	like quiet place, close to home	SHANKER'S BEND	SHANKER'S BEND		1	SHANKER'S BEND	1	0	1	3		1 SHORE FISHING	3	L	M	M	H	H	
9/4/2006	51 KD-SH		10:50 AM	1	3	scenery, looks like good fishing	SHANKER'S BEND	SHANKER'S BEND		2	OROVILLE	1	0	2	3		1 SHORE FISHING	3	M	M	M	H	H	
9/3/2006	50 KD-SH		5:36 PM	6	1	1 CLOSE TO HOME	TOP OF DAM	TOP OF DAM		1	OROVILLE	1	5	3		4:01,10	SHORE FISHING & HIKING	2	H	M	H	H	H	
9/2/2006	46 KD-SH		11:05 AM	4	4	BILLES FESTIVAL	ROAD TO DAM	ROAD TO DAM		3	OROVILLE	4	0	1	4		5 SIGHTSEEING	NA	L	M	M	M	M	
9/3/2006	49 KD-SH		5:36 PM	5	1	1 CLOSE TO HOME	TOP OF DAM	TOP OF DAM		1	OROVILLE	0	5	NA	4		5 SIGHTSEEING	3	M	H	L	M	M	
10/14/2006	38 SS MJ		11:45 AM	2	3	seeking PICTOGRAPHS, just bought place	DAM OVERLOOK	DAM OVERLOOK		2	OROVILLE	2	0	1		4:05,08	SIGHTSEEING	1	NA	NA	H	NA	NA	
6/18/2006	8 KD-SH		11:28 AM	4	4	camping near area	DAM OVERLOOK	spec lake		1	SPEC LAKE	4	0	1		4:05,06,08,09	SIGHTSEEING & CAMPING	6	L	H	H	H	H	
10/14/2006	39 SS MJ		1:00 AM	5	1	1 CLOSE TO HOME	BELOW DAM	BELOW DAM	1	2	DAY	OROVILLE	2	3	1	4		5 SIGHTSEEING & HIKING	5	TO 6				
9/16/2006	53 SS MJ		2:15 PM	2	2	dependent to be in area	TOP OF DAM	TOP OF DAM		1	OMAK	2	0	1		4:05,08,17	SIGHTSEEING & MOTORCYCLE	2	H	M	H	H	H	
8/19/2006	32 SS MJ		10:40 AM	2	1	1 salmon spawning grounds	BELOW DAM	BELOW DAM		1	DAM OVERLOOK	2	0	1	4		17 SPIRITUAL FISH PLACE	6	TO 7					
8/20/2006	41 SS MJ		3:00 PM	4	3	husband dredges here	CHINA ROOK	CHINA ROOK		2	2	2	2	1		4:06,09,17	SWIMMING							
9/3/2006	48 KD-SH		4:30 PM	2	1	property at 9 mile	SHANKER'S BEND take out	SHANKER'S BEND		1	9 MILE	2	0	NA		3:17,06	SWIMMING & MINING	9	5	L	L	L	M	
9/2/2006	45 KD-SH		10:20 AM	1	4	PUMP WORK	PUMP AT DAM	PUMP AT DAM		1	GOLF COURSE	1	0	NA	3		17 WORKING ON PUMP	NA	L	L	L	L	M	
8/18/2006	27 SS MJ		5:12 PM	NA	NA	NA	NA	NA	NA	NA	NA	5	0	1			NA	NA	M	H	H	H	H	
8/19/2006	31 SS MJ		9:50 AM	2	NOT SURVEYED	NOT SURVEYED	BELOW DAM	BELOW DAM	NA	NA	NA	2	0	NA	NA	NA	NA	1	5	M	H	H	M	H
8/20/2006	37		9:30 AM	1	running	running	shanker's bend	shanker's bend	NA	NA	NA	1	0	1			17 RUNNING							
9/16/2006	54		1:45 PM	1	0	na	na	na	na	na	na	1	0	1			na							
				177								143	34										177	