Boundary Hydroelectric Project (FERC No. 2144)

Study No. 21

Recreation Resource Study

Final Report

Prepared for
Seattle City Light

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TABLE OF CONTENTS

1 Introduction 1

2 Study Objectives 1

2.1. Recreation Surveys 1
2.2. Regional Recreation Analysis 2
2.3. Dispersed Recreation Use, Access, and Condition Analysis 3
2.4. Future Recreation Use Analysis 4
2.5. Recreation Carrying Capacity Analysis 4

3 Study Area 5

4 Methods 9

4.1. Recreation Surveys 9
4.1.1. Implementation Planning Process 9
4.1.2. Visitor Counts, Registries, and Questionnaires 10
4.1.3. Area Resident Questionnaires 14
4.1.4. Local Area Focus Groups 16
4.1.5. Other Data Collection Activities 17
4.2. Regional Recreation Analysis 18
4.2.1 Determine Regional Study Area Boundary 18
4.2.2 Collect and Analyze Regional Data 18
4.3. Dispersed Recreation Use, Access, and Condition Analysis 19
4.3.1. Dispersed Recreation Inventory and Condition Analysis 19
4.3.2. Public Access Analysis 21
4.4. Future Recreation Use Analysis 22
4.4.1 Assess Regional Population and Use Trends 23
4.4.2 Estimate Future Recreation Use in the Project Area 23
4.5. Recreation Carrying Capacity Analysis 24

5 Results 25

5.1. Recreation Surveys 25
5.1.1. Review Existing Regional Survey and Public Input Data 25
5.1.2. Visitor Counts 27
5.1.3. Visitor Questionnaires 50
5.1.4. Area Resident Questionnaires 93
5.1.5. Supplemental Survey Analysis 128
5.1.6. Local Area Focus Groups 146
5.1.7. Local Area Recreation Providers 150
5.2. Regional Recreation Analysis 152
5.2.1 Regional Recreation Resources 152

5.2.2. Regional Recreation Activity Patterns 177
5.2.3. North Pend Oreille Scenic Byway/International Selkirk Loop 182
5.2.4. Future Regional Recreation Demand 184
5.2.5. Regional Context of the Boundary Project Area Resources 185
5.3. Dispersed Recreation Use, Access, and Condition Analysis 186
5.3.1. Dispersed Recreation Site Inventory and Conditions 186
5.3.2. Public Access Analysis 206
5.3.3. Dispersed Recreation Use 233
5.4. Future Recreation Use Analysis 235
5.4.1. Current and Projected Future Population 235
5.4.2. Recreation Use Trends and Projections 239
5.4.3. Estimated Future Recreation Use for the Project Area 257
5.5. Recreation Carrying Capacity Analysis 260
5.5.1. Boundary Project Carrying Capacity Indicators 260
5.5.2. Limiting Factors 277
5.5.3. Carrying Capacity Recommendations and Standards/Guidelines 284

6 Conclusions 285
6.1. Recreation Surveys 285
6.1.1. Survey Coverage and Applicability 285
6.1.2. Visitor Counts 286
6.1.3. Visitor and Area Resident Questionnaires 287
6.1.4. Other Recreation Survey Tasks 288
6.2. Regional Recreation Analysis 289
6.3. Dispersed Recreation 290
6.3.1. Dispersed Recreation Site Inventory 290
6.3.2. Public Access Analysis 291
6.3.3. Dispersed Recreation Use 293
6.3.4. Future Recreation Analysis 293
6.3.5. Recreation Carrying Capacity Analysis 294

7 Variances from FERC-Approved Study Plan and Proposed Modifications 294

8 References 295

Appendices

Appendix 1: Recreation Surveys Implementation Plan
Appendix 2: Visitor Count Documentation
- 2a: Visitor Count Forms
- 2b: Visitor Count Summaries
- 2c: Vista House Visitor Registry Data
- 2d: Visitor Use Estimate Calculations

Appendix 3: Visitor Survey Documentation
- 3a: Visitor Questionnaire and Survey Map
- 3b: Sampling Log for Recreation Surveys
- 3c: Complete List of ZIP/Postal Codes Identified in Visitor Survey Responses
- 3d: Question 21, Importance/Satisfaction Ratings for Recreation Facilities/Opportunities
- 3e: Verbatim Responses to Visitor Survey Questions

Appendix 4: Area Resident Survey Documentation
- 4a: Resident Questionnaire and Survey Map
- 4b: Verbatim Responses to Resident Survey Questions

Appendix 5: Dispersed Site Inventory Documentation
- 5a: Dispersed Site Inventory Forms
- 5b: Site Inventory Entries

Appendix 6: Recreation Focus Group Meeting Summaries

List of Tables

Table 4.1-1. Geographic sectors for field sampling activities. 12
Table 4.1-2. Time distribution of planned sampling activity and total actual effort, 2007 Boundary recreation season. 13
Table 4.1-3. Allocation of weekend and weekday sampling effort by sector....14
Table 5.1-1. Summary of the Vista House visitor count results. 29
Table 5.1-2. Summary of Tailrace Recreation Area visitor count results. 30
Table 5.1-3. SCL Tailrace Recreation Area use by month, 2007. 31
Table 5.1-4. Summary of SCL Forebay Recreation Area campground visitor count results. 33
Table 5.1-5. Summary of SCL Forebay Recreation Area boat ramp activity in 2007. 34
Table 5.1-6. Summary of SCL Forebay Recreation Area observed day use by activity type. 34
Table 5.1-7. Summary of Olympic Security recreation log for the Forebay Recreation Area in 2007. 35
Table 5.1-8. Summary of Metaline Waterfront Park boat ramp operations activity. 37
Table 5.1-9. Summary of Metaline Waterfront Park day use by activity type. 38
Table 5.1-10. Summary of Sweet Creek Falls Rest Area visitor count results. 39
Table 5.1-11. Number of boats by type and number of visitors counted for Sector 5, North Reservoir. 41
Table 5.1-12. Visitor activities observed for Sector 5, North Reservoir. 41
Table 5.1-13. Number of boats by type and number of visitors counted for Sector 6, South Reservoir. 42
Table 5.1-14. Visitor activities observed for Sector 6, South Reservoir. 42
Table 5.1-15. Boundary Reservoir watercraft and people summary. 43
Table 5.1-16. Boundary Reservoir activity summary. 43
Table 5.1-17. Boundary Project study area recreation use estimates by facility/use area.[1] 47
Table 5.1-18. Boundary Project reservoir-related recreation use estimates by activity. 49
Table 5.1-19. Visitor questionnaire distribution and returns by location during 2007 sampling period. 51
Table 5.1-20. Completed visitor surveys by month of distribution. 53
Table 5.1-21. Number of people in visitors' groups. 55
Table 5.1-22. Number of males per group. 56
Table 5.1-23. Number of females per group. 56
Table 5.1-24. Primary residence of respondents, based on reported ZIP or postal codes. 59
Table 5.1-25. Primary recreation activity for visitors to the Boundary Reservoir Area. 61
Table 5.1-26. Ratings for overall quality of the recreation experience at Boundary Reservoir Area. 62
Table 5.1-27. Number of people fishing per party at Boundary Reservoir area. 62
Table 5.1-28. Number of days fished per party at Boundary Reservoir area. 63
Table 5.1-29. Average number of hours fished per party per day at the Boundary Reservoir Area. 63
Table 5.1-30. Number of triploid trout reported caught by anglers. 67
Table 5.1-31. Number of other trout reported caught by anglers. 67
Table 5.1-32. Number of smallmouth bass reported caught by anglers. 68
Table 5.1-33. Number of largemouth bass reported caught by anglers. 68
Table 5.1-34. Ratings for satisfaction with fishing opportunities at Boundary Reservoir. 69

Table 5.1-35. Mean scores for importance of and satisfaction with recreation facilities and services at Boundary Reservoir Area. 73
Table 5.1-36. Primary destination for visitors to the Boundary Reservoir Area. 78
Table 5.1-37. Reported levels of crowding at visitor's primary destination at Boundary Reservoir Area. 78
Table 5.1-38. Number of visits to the Boundary Reservoir Area made in the past year. 83
Table 5.1-39. Number of years that visitors have been coming to the Boundary Reservoir Area. 83
Table 5.1-40. Other lakes or rivers in the region visited for recreation by Boundary Reservoir Area visitors. 86
Table 5.1-41. Other places in the region visited by respondents. 87
Table 5.1-42. Overall rating of visual quality at the Boundary Reservoir Area. 87
Table 5.1-43. Locations from which visitors reported seeing structures associated with the Project. 89
Table 5.1-44. Effect of seeing facilities associated with the Project on enjoyment of the scenery. 89
Table 5.1-45. Mean estimated expenses on this trip to the Boundary Reservoir Area. 90
Table 5.1-46. Zero expenditures reported for this trip to the Boundary Reservoir Area. 91
Table 5.1-47. Age group reported for individual visitors to the Boundary Reservoir Area. 92
Table 5.1-48. Ages reported for other people in respondents' group (mean number of people by age group). 92
Table 5.1-49. Summary of area resident questionnaire distribution and response. 94
Table 5.1-50. Reasons area residents have not visited the Boundary Reservoir Area for recreation. 97
Table 5.1-51. Main reason for visiting the Boundary Reservoir Area for recreation. 98
Table 5.1-52. Number of people in area residents' groups when visiting Boundary Reservoir Area for recreation. 98
Table 5.1-53. Where area residents usually stayed overnight at the Boundary Recreation Area. 99
Table 5.1-54. Primary recreation activity for area residents visiting the Boundary Reservoir Area. 102
Table 5.1-55. Area resident ratings for the quality of recreation opportunities at the Boundary Reservoir Area. 103
Table 5.1-56. Number of years that area residents have been fishing in the Boundary Reservoir Area. 103
Table 5.1-57. Number of days area residents fished, by season, in the Boundary Reservoir Area. 104
Table 5.1-58. Number of fish typically caught by area residents on a fishing trip at the Boundary Reservoir Area. 107
Table 5.1-59. Size range of fish typically caught by residents in the Boundary Reservoir Area. 107
Table 5.1-60. Area residents' satisfaction with fishing opportunities in the Boundary Reservoir Area. 108
Table 5.1-61. Number of years residents have been boating on Boundary Reservoir. 109
Table 5.1-62. Number of days area residents reported boating on Boundary Reservoir, by season. 109

Table 5.1-63. Area residents who reported problems with water conditions while boating on Boundary Reservoir. 111
Table 5.1-64. Area residents' ratings for importance and satisfaction with recreation facilities and services at the Boundary Reservoir Area. 113
Table 5.1-65. Primary destination for area residents when visiting the Boundary Reservoir Area. 117
Table 5.1-66. Levels of crowding reported at area residents' primary destinations in the Boundary Reservoir Area. 117
Table 5.1-67. Area residents' last visit to the Boundary Reservoir Area for recreation, by month and year. 120
Table 5.1-68. Number of visits to the Boundary Reservoir Area for recreation in the past year. 121
Table 5.1-69. Other lakes and rivers in region frequently visited by area residents for recreation. 124
Table 5.1-70. Area residents' ratings of the visual quality of the scenery at the Boundary Reservoir Area. 124
Table 5.1-71. Effect of seeing Project structures on area residents' enjoyment of the scenery at the Boundary Reservoir Area. 126
Table 5.1-72. Ages of other people in your group visiting the Boundary Reservoir Area. 126
Table 5.1-73. Age groups reported by area residents. 127
Table 5.1-74. Number of years that area residents have been living at their present address. 127
Table 5.1-75. Number of people living at present address. 128
Table 5.1-76. Most common primary activities identified by visitors and area residents. 130
Table 5.1-77. Comparison of visitors' rating of the experience with duration of stay. 132
Table 5.1-78. Comparison of visitors' rating of the experience with water conditions. 134
Table 5.1-79. Comparison of visitors' rating of the experience with maintenance of facilities at the primary destination. 135
Table 5.1-80. Comparison of visitors' ratings of the experience and visual quality. 136
Table 5.1-81. Comparison of fishing satisfaction with water conditions. 137
Table 5.1-82. Comparison of fishing satisfaction with means of fishing 138
Table 5.1-83. Comparison of fishing satisfaction with fishing success. 139
Table 5.1-84. Comparison of recreation experience rating with boat launch used. 140
Table 5.1-85. Comparison of water conditions with operation of a boat. 141
Table 5.1-86. Comparison of primary recreation activity with response on improvements needed to facilities. 142
Table 5.1-87. Comparison of primary destination and facility maintenance response. 143
Table 5.1-88. Comparison of primary recreation activity and crowding response. 144
Table 5.1-89. Comparison of primary recreation activity and conflict response. 145
Table 5.1-90. Comparison of primary destination with intention to adjust recreation plans. 146
Table 5.2-1. Incorporated communities within the regional study area. 173
Table 5.2-2. Recreation supply summary for the five-county study area. 176
Table 5.3-1. Inventoried dispersed recreation sites. 188
Table 5.3-2. Estimated dispersed site capacity. 200
Table 5.3-3. Dispersed site access means. 201
Table 5.3-4. Percent shade cover at dispersed sites. 202
Table 5.3-5. Human use condition at dispersed sites. 203

Table 5.3-6. Facilities observed at dispersed sites. 205
Table 5.3-7. Watercraft use hazard level assumed at dispersed sites. 206
Table 5.3-8. Potential future trail access opportunities....227
Table 5.3-9. Occupancy summary for dispersed recreation sites. 234
Table 5.4-1. Study area population by state and county for 1990, 2000, and 2007/2008. 236
Table 5.4-2. Study area population projections by state and county for 2010, 2020, and 2030....238
Table 5.4-3. State Park and National Park System unit attendance in Washington, 1998–2006....244
Table 5.4-4. Total annual visitation, Washington state parks in the study region, 2000–2007....245
Table 5.4-5. Total recreation and camping visits, Lake Roosevelt National Recreation Area, 1990–2007. 246
Table 5.4-6. Hunting and fishing license transactions, statewide and region, 2001–2005. 247
Table 5.4-7. Washington vessel registrations by county of moorage, 2004–2008. 248
Table 5.4-8. Anticipated 20-year changes in outdoor recreation activity participation in Washington. 250
Table 5.4-9. Hunting and fishing licenses as a percentage of the population, Washington and region....254
Table 5.4-10. Average annual daily traffic volumes for selected locations on the International Selkirk Loop, 1990–2007. 255
Table 5.4-11. Expected 20-year rates of change in recreation activity for the Project area. 257
Table 5.4-12. Estimated future recreation use by facility/resource. 259
Table 5.5-1. Recorded observations at dispersed recreation sites. 266
Table 5.5-2. Visitor and area resident ratings for crowding at their primary destination. 270
Table 5.5-3. Visitor and area resident responses for experiencing conflict at their primary destination. 271
Table 5.5-4. Visitors' ratings of crowding at their primary destination. 272
Table 5.5-5. Visitor and area resident respondents who experienced conflict, by primary destination. 273
Table 5.5-6. Visitor and area resident intent to adjust recreation plans due to crowding or conflict at their primary destination. 274
Table 5.5-7. Crowding responses from visitor and area resident boat operators at Boundary Reservoir. 275
Table 5.5-8. Summary of current use relative to capacity for study-area resources....284

List of Figures

Figure 3.0-1. General study area for Recreation Resource Study....7
Figure 3.0-2. Study area for the Regional Recreation Analysis. 8
Figure 5.1-1. Responses to Question 1: Was this your first visit to Boundary Reservoir? (569 respondents)....54
Figure 5.1-2. Response to Question 2: Would you visit Boundary Reservoir again? (207 respondents) 55

Figure 5.1-3. Responses to Question 4: Are you staying overnight on this visit? (577 respondents) 57
Figure 5.1-4. Responses to Question 5: Where are you staying overnight? (328 responses)....58
Figure 5.1-5. Participation in recreation activities at Boundary Reservoir Area (597 respondents). 60
Figure 5.1-6. Responses to Question 11: How did you go fishing? (227 respondents)....64
Figure 5.1-7. Responses to Question 12: In what places did/will you go fishing during this visit? (225 respondents) 65
Figure 5.1-8. Responses to Question 13: What species of fish do you want to catch? (491 responses)....66
Figure 5.1-9. Responses to Question 16: Did you operate or ride in a boat during this visit? (548 respondents) 69
Figure 5.1-10. Responses to Question 17: Which boat launch did you use during this visit? (236 respondents)....70
Figure 5.1-11. Responses to Question 18: Did the boat launch that you used adequately meet your needs? (228 respondents)....71
Figure 5.1-12. Responses to Question 19: Did the water conditions cause any problems for you during this visit? (555 respondents) 72
Figure 5.1-13. Importance and satisfaction ratings for recreation opportunities and facilities at the Boundary Reservoir Area (variable number of respondents; mean scores calculated based on a 1–5 continuous response scale)....74
Figure 5.1-14. Are there any improvements to the existing recreation opportunities at Boundary Reservoir that you think are needed? (558 respondents) 75
Figure 5.1-15. Recreation sites visited at Boundary Reservoir Area (586 respondents)....77
Figure 5.1-16. Responses to Question 25: Did you experience conflict or problems with other visitors during this visit to Boundary Reservoir Area? (576 respondents)....79
Figure 5.1-17. Responses to Question 26: Do you intend to adjust your recreation plans to avoid other visitors at this site in the future? (555 respondents) 80
Figure 5.1-18. Responses to Question 27: How do you intend to adjust your recreation plans? (41 respondents)....81
Figure 5.1-19. Responses to Question 28: Did you find the facilities at your primary destination to be adequately maintained? (570 respondents)....82
Figure 5.1-20. Responses to Question 31: In what seasons of the year do you visit the Boundary Reservoir Area? (429 respondents)....84
Figure 5.1-21. Responses to Question 32: What do you particularly like about visiting the Boundary Reservoir Area? (584 respondents)....85
Figure 5.1-22. Responses to Question 36: Percentage of visitors reporting seeing Boundary Hydroelectric Project structures (563 respondents). 88
Figure 5.1-23. Responses to Question 40: Are you male or female? (586 respondents)....91
Figure 5.1-24. Response to Question 1: Have you visited the Boundary Reservoir Area for the purpose of recreation? (523 respondents) 96
Figure 5.1-25. Responses to Question 5: Do you usually stay overnight when visiting the Boundary Reservoir Area? (276 respondents)....99
Figure 5.1-26. Responses to Question 7: Participation in recreation activities by area residents at Boundary Reservoir Area (4,467 total responses). 101

Figure 5.1-27. Responses to Question 12: How do you usually go fishing? (150 respondents) 104
Figure 5.1-28. Responses to Question 13: In what area(s) do you usually fish when you visit the Boundary Reservoir Area? (147 respondents) 105
Figure 5.1-29. Responses to Question 14: What species of fish do you usually try to catch? (145 respondents)....106
Figure 5.1-30. Responses to Question 17: Area residents who reported using a boat on Boundary Reservoir (264 respondents). 108
Figure 5.1-31. Responses to Question 20: Which boat launch do you usually use at Boundary Reservoir? (124 respondents)....110
Figure 5.1-32. Responses to Question 21: Do the boat launches adequately meet your needs? (120 respondents)....111
Figure 5.1-33. Area residents' ratings of recreation facilities/opportunities at the Boundary Reservoir Area (104 to 244 respondents per variable). 114
Figure 5.1-34. Responses to Question 24: Are there improvements to the existing recreation opportunities at the Boundary Reservoir Area that are needed? (273 respondents) 115
Figure 5.1-35. Responses to Question 25: Recreation sites in the Boundary Reservoir Area often visited by residents (277 respondents)....116
Figure 5.1-36. Responses to Question 28: Did area residents experience conflict or problems with others at their primary destination at the Boundary Reservoir Area? (270 respondents)....118
Figure 5.1-37. Responses to Question 29: Area residents' intent to adjust recreation plans to avoid the presence or behaviors of other visitors at their primary site in the future (262 respondents)....119
Figure 5.1-38. Responses to Question 31: Do you find the facilities at your primary destination to be adequately maintained? (272 respondents)....120
Figure 5.1-39. Responses to Question 34: Seasons of the year in which area residents visit the Boundary Reservoir Area for recreation (256 respondents). 122
Figure 5.1-40. Responses to Question 35: Area residents reporting they have a special place for recreation in the Boundary Reservoir Area (249 respondents)....123
Figure 5.1-41. Responses to Question 38: Percentage of residents reporting seeing Boundary Hydroelectric Project structures (269 respondents). 125
Figure 5.2-1. Study area for the Regional Recreation Analysis, Stevens County, WA....154
Figure 5.2-2. Study area for the Regional Recreation Analysis, Pend Oreille County, WA.....155
Figure 5.2-3. Study area for the Regional Recreation Analysis, Bonner County, ID....156
Figure 5.2-4. Study area for the Regional Recreation Analysis, Kootenai County, ID....157
Figure 5.2-5. Study area for the Regional Recreation Analysis, Spokane County, WA. 158
Figure 5.3-1. Inventory of dispersed recreation sites....190
Figure 5.3-2. Existing road access conditions. 214
Figure 5.3-3. Approximate former/remnant trail locations....219
Figure 5.3-4. Potential future road access conditions. 224
Figure 5.3-5. Potential future water access conditions. 230

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Study No. 21: Recreation Resource Study
Final Report
Boundary Hydroelectric Project (FERC No. 2144)

1 INTRODUCTION

Study No. 21, the Recreation Resource Study (RRS), 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 2007a) 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 report describes the field efforts, analyses, and conclusions relative to recreation resources in the study area and represents the completion of the RRS.

The RRS data will be used to develop a Recreation Needs Analysis (RNA) specific to the Project. In the RNA, SCL will synthesize data from all five RRS components to develop an integrated assessment of existing and potential future recreation needs for the Project area. SCL will then develop a Recreation Resource Management Plan for the Project that defines the scope, cost, timing, and other parameters for proposed recreation actions identified through the needs analysis. The RNA is an independent effort; it is not considered an element of the RSP.

2 STUDY OBJECTIVES

The overall goal of the RRS was to provide information necessary to analyze current and future recreational use, opportunities, and needs related to the Project. The RRS comprised the following five study elements:

- Recreation surveys
- Regional recreation analysis
- Dispersed recreation use, access, and condition analysis
- Future recreation use analysis
- Recreation carrying capacity analysis

Objectives for each of the five study elements are described below.

2.1. Recreation Surveys

The main objective of the Recreation Surveys was to characterize existing levels and patterns of recreational use and visitor characteristics, preferences, needs, and attitudes in the Project area and vicinity. Specific objectives of the Recreation Surveys were as follows:

- *Quantify existing recreational use in the Project area*—Identify the amount of use, activity types, daytime and overnight use, and spatial and temporal distribution of

existing use within the Project area, including developed recreation sites, dispersed recreation use, and boating on the reservoir.

- *Quantify visitor perceptions relative to Project-related recreation facilities, use areas, and opportunities*—Collect information on visitor characteristics, attitudes and preferences, as well as existing and/or anticipated future unmet need of the Project area's primary visitor populations (e.g., boaters, picnickers, sightseers, anglers) and populations who may be represented in the future.

The results from the Recreation Surveys were applied to varying degrees in the other components of the RRS. The Regional Recreation Analysis (Section 2.2) included a comparison of Project-area resources and use levels, as determined through the Recreation Surveys, to resources and use levels within a larger region surrounding the Project. The Future Recreation Use Analysis (Section 2.4) utilized data developed through the Recreation Surveys as a baseline for projecting future use levels and demand for various facility and activity types. The Recreation Carrying Capacity Analysis (Section 2.5) evaluated data on current use developed through the Recreation Surveys relative to various types of carrying capacity indicators to assess appropriate direction for future recreation management.

2.2. Regional Recreation Analysis

The objective of the Regional Recreation Analysis study element was to analyze recreation information related to the supply and demand of regional recreation resources near the Project and to place the Project in the proper regional context. This was an important step in determining the role of the Project area in meeting a portion of regional recreation demand and in planning for potential future recreational development, if needed, on or near Project lands.

As described in the RSP, the Regional Recreation Analysis was designed to address the following objectives:

- Define approximate boundaries of the region by zone (likely including the local area, vicinity, more distant areas of Pend Oreille County and potentially adjacent Washington State counties such as Spokane County, and nearby areas of the northern Idaho panhandle and southern British Columbia within the Scenic Byway corridor).
- Identify similarities, differences, and relative significance of the Project area's recreational resources and opportunities within the context of the Project area and the broader regional context.
- Document existing regional recreation opportunities by zone including the number of specific facilities, use areas, and capacities.
- Identify regional alternatives to Project area facilities, use areas, and opportunities by zone.
- Broadly assess current use levels for regional recreation opportunities, facilities, and use areas by zone.
- Identify relevant regional trends in recreation participation and demand.
- Understand the role and significance of the Scenic Byway (State Route [SR] 31), a component of the International Selkirk Loop, to the region and to the Project area,

including existing and projected use of the Scenic Byway and existing and planned facility components and visitor programs.

Review of data from the recreation visitor survey conducted in 2007 indicated that Spokane County represented the largest single source of visitors to the Project area, accounting for approximately 30 percent of the total. Slightly more than 20 percent of the visitors came from the adjacent local communities of northern Pend Oreille County, with smaller percentages from southern Pend Oreille County and adjacent counties in Washington and Idaho. In response to this visitor origin information, SCL proposed to relicensing participants in March 2008 that a study area comprising three counties in Washington (Pend Oreille, Stevens, and Spokane) and two counties in Idaho (Bonner and Kootenai) be used for the regional analysis, rather than calculating distance zones around the Project. With the caveat that the role and significance of the Scenic Byway and the Selkirk Loop be incorporated into the analysis, the proposed approach for the regional study area was adopted during the Recreation, Land Use and Aesthetics Workgroup WebEx meeting on March 3, 2008.

Although the Regional Recreation Analysis was broader in scope and geographic context compared to the other study elements, the primary focus was on Project-related recreational activities and opportunities with a Project nexus.

2.3. Dispersed Recreation Use, Access, and Condition Analysis

In addition to developed recreation facilities, dispersed recreation sites and use areas and public access/trails to and along the reservoir shoreline and water surface are important recreational components to be considered in the Project area. For this study element, the definition of trails (land and water) followed the same definition as provided in the Washington State Trails Plan (IAC 1991). Dispersed recreation sites and use areas included undeveloped day use and overnight recreation sites/use areas that are user-defined and may be accessible by foot, watercraft, or vehicle.

Specific objectives of the Dispersed Recreation Use, Access, and Condition Analysis included the following:

- Identify and document/map existing and potential dispersed recreation use areas and sites in the Project area. Define physical attributes of existing sites (e.g., location, slope, vegetation, access). Inventory user-created facilities (e.g., campfire rings, benches and tables, tent pads, trails, excavated sandy beaches, boat mooring poles). Identify likely users based on anecdotal information (e.g., access to each site, impacts observed, and observations).
- Identify and document/map existing road, foot trail, and/or watercraft access routes used by the public and SCL to access the Project shoreline, Project facilities, or along the reservoir water surface. In addition, potential road and/or trail routes that may potentially be developed in the future for enhanced public access will be noted. Information obtained along existing routes includes the qualitative condition of site features and/or routes; presence of fencing, gates, or other barriers (natural or man-made); presence of posted signs that may direct or prohibit public access; impacts observed along these routes such as erosion; and an assessment of the likely users of

these land and water routes. Additional detailed information on Project-related roads and their condition has been collected and analyzed in Study 22, Land and Roads Study Revised Final Report (SCL 2009a).

- Identify and document/map trail and dispersed site-related ecological impacts (e.g., vegetation damage or removal, wetland impacts, exposed soil and compaction, accumulated litter and debris, sanitation issues). Identify the likely users of these areas or sites based on observed impact and access, such as off-highway vehicle use. Evaluate and quantify the location, timing, and extent of user-related impacts to sensitive Project area lands, waters, and resources.
- Identify opportunities and constraints to maintaining or enhancing dispersed recreation use areas, sites, and public road/trail access within the Project area.
- Identify the potential effects of projected future private shoreline development directly adjacent to, but outside of, the Project boundary on dispersed recreation use areas, sites, and public road and trail access in the Project area. Identify the potential effects of current and potential future Project operations on dispersed recreation use areas, sites, and public road/trail access.

2.4. Future Recreation Use Analysis

It is important to estimate future use levels in the Project area to appropriately plan for anticipated recreation needs over the term of the new FERC license. Specific objectives of the Future Recreation Use Analysis included the following:

- Analyze recreation activity demand and user data by activity type collected during the recreation surveys and the regional recreation analysis.
- Estimate recreation use levels and demand for different activity types within the study area through the anticipated term of the new license (30 to 50 years).
- Identify any specific recreation activities in the Project area that may currently have lower demand, but are anticipated to experience increased (or decreased) rates of participation in the future.

2.5. Recreation Carrying Capacity Analysis

Beyond the traditional biological definition of carrying capacity that defines the capability of a given environment to sustain a specific number of individuals over time, recreation carrying capacity issues are also related to the ecological, social, and managerial aspects of recreational opportunities (McCool 1996). At some point, recreation demand cannot be met without negatively affecting sensitive resources and/or the recreation experience that people expect. The goal for decision-makers is to manage recreation use levels and impacts so that they do not exceed capacity standards.

To address these issues, the specific objectives of the Recreation Carrying Capacity Analysis included the following:

- Use information developed in the other RRS elements to help develop the results of this analysis.

- Establish whether existing recreation use levels are below, approaching, at, or exceeding the Project area's ability to adequately accommodate recreational use without adversely impacting the ecological, social, or managerial capacity of the Project area, including the reservoir surface, developed recreation sites, and dispersed use areas.
- Use the results of the recreation carrying capacity analysis to help define potential capacity indicators and standards/guidelines and determine whether management actions may be needed to maintain use levels at or below established standards/guidelines.

3 STUDY AREA

The study area for the overall RRS included lands and waters within and adjacent to the Project boundary (Figure 3.0-1), with a focus on lands and waters within the Project boundary; however, adjacent public and private lands were also evaluated, as appropriate, driven by the objectives of each RRS study element.

In general, the study area for the Recreation Surveys included the lands and waters within and adjacent to the Project boundary and its vicinity and local communities near the Project (see Figure 3.0-1). For the review of existing survey and public input data, data were gathered within a broader region around the Project, including the three northeastern Washington counties. The primary focus of this assessment was the Project area, including lands and waters of the Project and also public and private lands adjacent to the Project.

Developed recreation sites (as identified in the Pre-Application Document [PAD; SCL 2006]) within the study area and specifically addressed in the Recreation Surveys include:

- SCL Vista House
- SCL Tailrace Recreation Area
- SCL Forebay Recreation Area/Boat Ramp
- Bureau of Land Management (BLM) Boundary Recreation Area
- Town of Metaline Waterfront Park/Boat Ramp
- Pend Oreille County Public Utility District (PUD) Campbell Park/Boat Ramp

In addition to the sites listed above, the Recreation Survey data-gathering effort addressed other public use and recreation sites in the vicinity of the Project used by local residents and visitors. These additional sites include the U.S. Forest Service (USFS) Crescent Lake Recreation Area (a former road used for boating and fishing access and a developed site with picnic facilities) and the Sweet Creek Falls Rest Area. The developed recreation sites referenced in this discussion are indicated on Figure 3.0-1. Additionally, recreation-related input was obtained from residents of communities along or near Boundary Reservoir including Metaline, Metaline Falls, and Ione in Washington, and Salmo, Fruitvale, Montrose, and Trail in British Columbia.

The study area for the Regional Recreation Analysis addresses a larger geographic scope than the other recreation elements, as illustrated on Figure 3.0-2. This study element focused on a five-county region that included Pend Oreille, Spokane, and Stevens counties in Washington and

Bonner and Kootenai counties in Idaho. This regional boundary adequately represented the likely extent of substitute recreation opportunities in the surrounding area. This assessment was not intended to be an exhaustive analysis of all recreation opportunities in the region. Rather, it was intended to focus on surrounding regional recreation resources that may relate to resources found at the Project and that may provide alternatives for Project area visitors.

The study area for the Dispersed Recreation Use, Access, and Condition Analysis was the same as the area for the field sampling component of the Recreation Surveys, as indicated on Figure 3.0-1. In general, this assessment addressed the reservoir and the lands between the reservoir shoreline and major adjoining parallel roads and/or highways, specifically SR 31 to the east and Pend Oreille County Road 2975 to the west. This study area included SCL-owned lands in and adjacent to the Project boundary, the water surface within the Project, and adjacent public and private lands.

The study area for the Future Recreation Use Analysis included the lands and waters within and adjacent to the Project boundary, including SCL-managed developed recreation sites, non-SCL-managed recreation sites within or adjacent to the Project boundary, major dispersed recreation sites and trails within the Project area, and on-water reservoir power boating and non-power boating use. This was essentially the same study area as defined for the Recreation Surveys and Dispersed Recreation Use, Access, and Condition Analysis components of the RRS, as illustrated on Figure 3.0-1.

This analysis also included consideration of recreation activity trends in the broader region from which visitors to the Project area originate. This broader region was defined as the study area for the Regional Recreation Analysis element of the RRS (see Figure 3.0-2), based on analysis of visitor origin data collected in the Recreation Surveys.

The study area for the Recreation Carrying Capacity Analysis also included the lands and waters within and adjacent to the Project boundary, as defined for the Recreation Surveys; the Dispersed Recreation Use, Access, and Condition Analysis; and the Future Recreation Use Analysis.

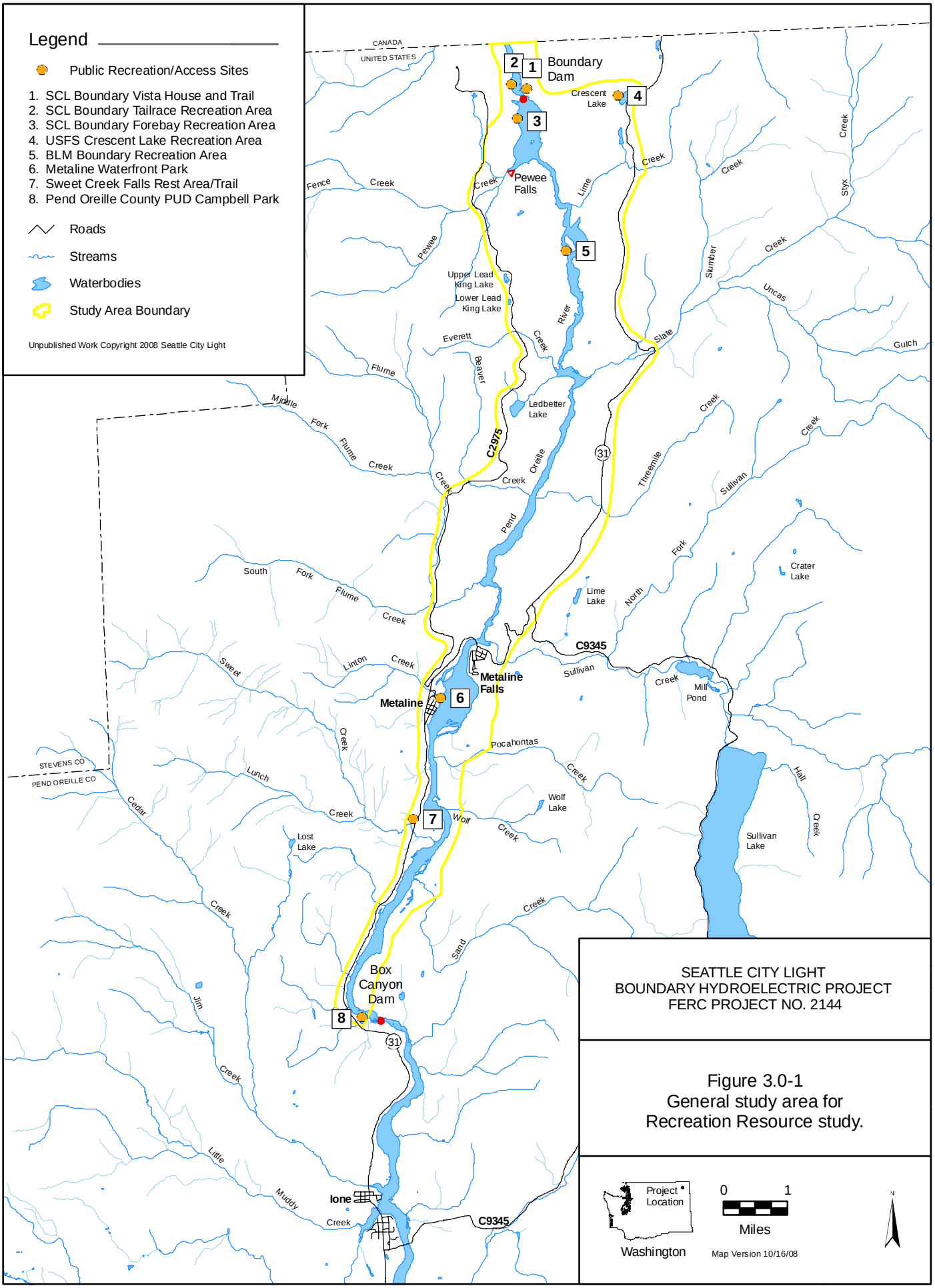
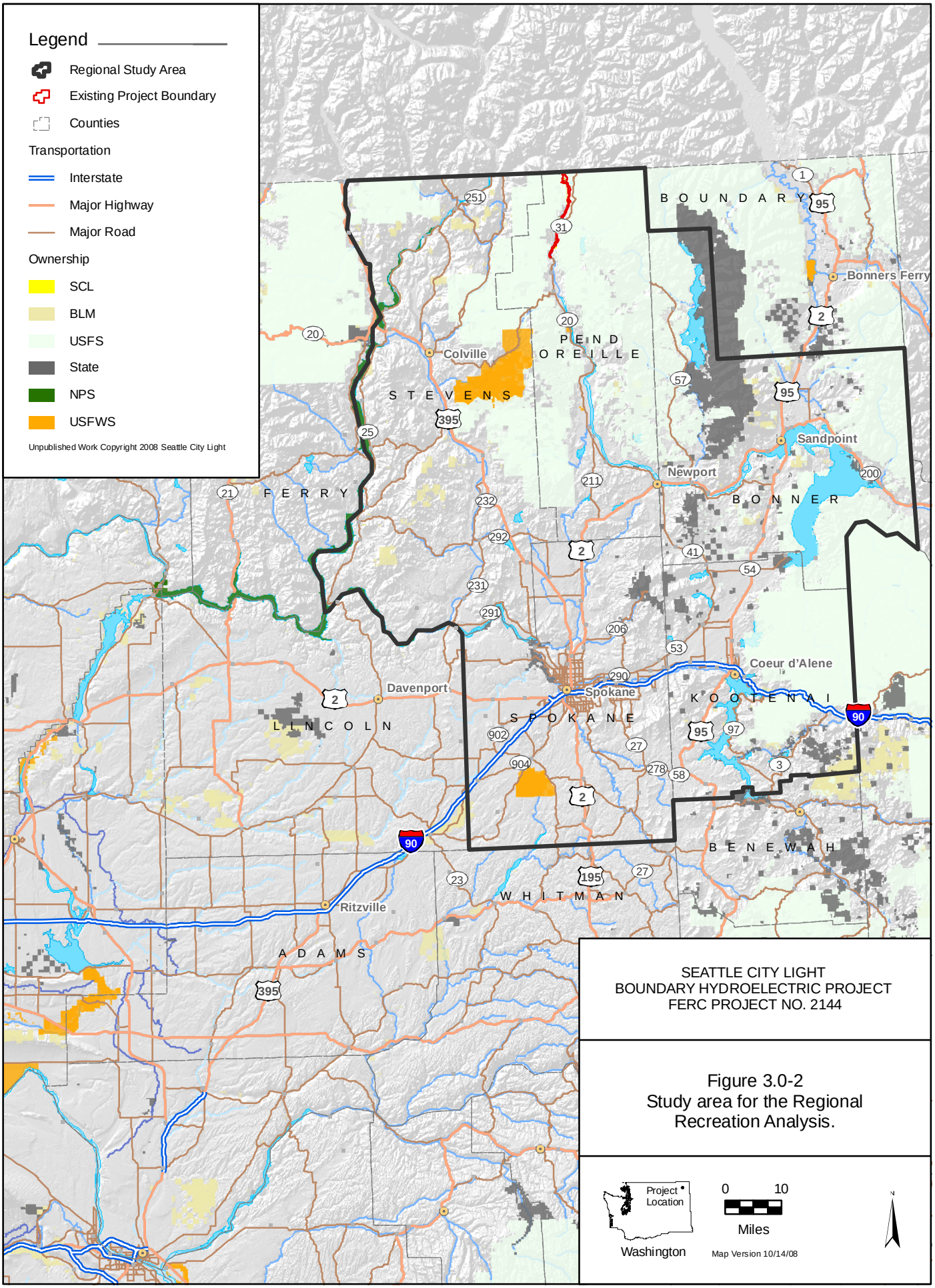


Figure 3.0-1
General study area for
Recreation Resource study.



SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144

Figure 3.0-2
Study area for the Regional Recreation Analysis.

4 METHODS

Five tasks were identified as part of this study:

- Recreation surveys
- Regional recreation analysis
- Dispersed recreation use, access, and condition analysis
- Future recreation use analysis
- Recreation carrying capacity analysis

Methods used for each study element are summarized below.

4.1. Recreation Surveys

The Recreation Surveys study element consisted of four tasks: 1) reviewing existing regional survey and public input data; 2) conducting visitor counts; 3) conducting visitor questionnaires, area resident questionnaires and focus group meetings; and 4) compiling and summarizing recreation surveys results into a report. The first and fourth tasks in this list are self-explanatory and do not require further discussion. The second and third tasks required some additional implementation planning to develop specific study methods and involved more complex study activities; the methods and their development for these two components are discussed in more detail below.

The field-based recreation surveys were conducted over approximately a 6-month period beginning on May 19, 2007, and ending on October 31, 2007. This time period was selected because it represented the primary recreation season, when the Project area receives the majority of visitor and resident use. Additional information on recreational use outside of the primary use season has been collected through other means, including interviews with recreation providers and focus groups comprised of local residents.

4.1.1. Implementation Planning Process

SCL, in collaboration with the relicensing participants, developed an implementation plan for the Recreation Surveys to expand on the direction provided in the RSP (SCL 2007a). The implementation plan described in detail the field sampling program to be undertaken to support the data collection objectives for the Recreation Surveys, primarily the visitor count and visitor questionnaire tasks. It included discussion of sampling objectives, sampling methods and locations, sampling frequency and effort, and staffing and equipment requirements to implement the field data collection effort. The implementation plan prescribed specific procedures for recording visitor counts within various geographic sectors of the study area, and for administration of the visitor questionnaire. The plan also outlined Recreation Surveys data collection activities that would be implemented through means other than active sampling in the field, including operation of visitor registries at key facilities, conducting interviews with local recreation providers, distributing questionnaires to local area residents by mail, and conducting focus group meetings in the local area.

SCL distributed an initial draft of the survey implementation plan to the relicensing participants on March 28, 2007. This draft of the plan included draft visitor count forms and a draft visitor questionnaire as appendices. SCL met with the relicensing participants in Spokane, Washington, on April 5, 2007, to receive comments on the draft materials and to discuss any proposed modifications. Based on input from that review process, SCL circulated a revised implementation plan and appendices on May 1, 2007. With minor subsequent refinements to selected sections, the May 1 survey implementation plan provided the basis for the Recreation Surveys data collection activities.

SCL met with the relicensing participants in Spokane, Washington, again on June 5, 2007, to review proposed refinements to selected elements of the implementation plan and plans for additional activities not addressed in detail in the May 1 implementation plan. Based on observation of conditions in the field during the initial weeks of survey activity, SCL wanted relicensing participant input on field sampling of dispersed areas accessible by road. SCL and the relicensing participants tentatively agreed to these sampling refinements at the June 13 meeting, and concluded agreement on those changes through a conference call on July 19, 2007. SCL subsequently revised the implementation plan to incorporate those refinements in a final version dated August 10, 2007.

Through the process summarized above, all data collection forms for the field component of the Recreation Surveys (questionnaires, user and activity count forms, visitor registry forms, and other data collection forms) and related survey methodologies and protocols (scheduling, logistics, frequency, number of survey days, targeted number of surveys, etc.) were reviewed with relicensing participants prior to use of the respective study tools and before work was implemented in 2007. The final implementation plan and data collection tools reflected the detailed input obtained from the relicensing participants. The complete implementation plan is included as Appendix 1; key components of the plan relating to the 2007 field sampling program, area resident questionnaires, and other data collection activities are described below.

4.1.2. Visitor Counts, Registries, and Questionnaires

4.1.2.1. Objectives and General Approach

The objective for the visitor count component of the Recreation Surveys was to develop data needed to establish an estimate of existing visitor use levels and activity participation in the study area. Visitor counts were conducted during the 2007 primary recreation season at SCL-managed recreation sites (Vista House, Tailrace Recreation Area, and Forebay Recreation Area), and at other managed sites in the study area (Metaline Waterfront Park, Campbell Park/Boat Ramp at Box Canyon Dam, and the Sweet Creek Falls Rest Area on SR 31). The visitor count sampling activity also covered dispersed use in reservoir shoreline areas, along roads near the Project, and watercraft on the reservoir surface. In the process of obtaining visitor counts in dispersed areas, visitor counts were taken at the USFS Crescent Lake Recreation Area and the BLM Boundary Recreation Area.

Through the implementation planning process described above, and prior to beginning field work, SCL developed standardized count forms to be used during the on-site visitor counts. Based on the geographic stratification of the study area used to organize the field sampling

activity, SCL used four separate forms to collect data for developed recreation sites, road-accessible dispersed use, and on-water and shoreline dispersed use in the northern and southern sectors of Boundary Reservoir. Copies of the forms are included in Appendix 2a. Summaries developed from the data entered on these forms during the 2007 sampling season are included in Appendix 2b.

At the SCL-managed recreation sites, a combination of on-site visitor counts and visitor registries was used to gather information on visitor use patterns. In the past, SCL has maintained visitor registries at both the Vista House and Tailrace Recreation Area to obtain information about visitor use. The visitor registry for the Vista House was modified and maintained during the 2007 study season. The original visitor registry for the Visitor's Gallery at the Boundary Dam powerhouse was retained without modification for the 2007 season. Under the security procedures in effect for the 2007 season, visitors wanting to access the powerhouse and Tailrace Recreation Area signed in at the security gate (located along the access road to the dam), and the large majority of these visitors were escorted to the tailrace area by a tour guide. The registration logs at the security gate provided a highly effective source of data on all visitors to the tailrace area, and a summary from these logs was used in place of the registry at the Visitor's Gallery. SCL had planned to develop a new visitor registry form for use at the Forebay Recreation Area during the 2007 season. Because SCL and Tetra Tech staff could not determine a suitable site and means to keep a registry at this location secure and protected from the elements, there was no registry at the Forebay Recreation Area in 2007. Therefore, the only visitor registry employed during the 2007 recreation season as part of the RRS was the registry at the Vista House. A copy of the Vista House registry form used in 2007 is included as Appendix 2c.

The objective for the Visitor Questionnaire component of the Recreation Surveys was to assess the attitudes, perceptions, needs, and characteristics of visitors to developed recreation facilities and dispersed recreation use areas in the study area. Field crews administered visitor questionnaires during the 2007 primary recreation season in conjunction with conducting the visitor counts, as discussed above. Visitor questionnaires were distributed and collected at designated sites within the study area. A copy of the visitor questionnaire form is included as Appendix 3a.

4.1.2.2. Field Sampling Program

Staff from Tetra Tech implemented the visitor count and questionnaire components of the Recreation Surveys through a single, integrated field sampling program. The field program was conducted from May 19, 2007, through the end of October 2007 and employed a multistage cluster sampling method to determine when and where sampling would occur at a given time (Schaeffer et al. 1996). The first stage of the sampling design involved selecting a random sample of weekdays and a complete census of weekends and holidays to ensure extensive coverage of the main recreation season. Because the staff required to sample the entire study area during a given day would have been prohibitively large, the sampling plan included a second stage with randomly selected combinations of sectors (geographic clusters) by day period (time clusters) to cover the various recreation sites and the early and late portions of each sampling day. Field crews attempted to obtain complete data, or a census, from each of the sampled clusters as they occurred on the schedule.

Based on study area geography, access considerations, and the types and locations of recreational use, the study area was divided into six sectors for scheduling and execution of cluster sampling in the field. The six geographic sectors are defined in Table 4.1-1.

Table 4.1-1. Geographic sectors for field sampling activities.

Sector	Area/Sites Included
1. Northeast	Vista House, east bank of river below Boundary Dam, and Tailrace Recreation Area
2. Forebay	Forebay Recreation Area
3. SR 31 South	Sweet Creek Falls Rest Area and Campbell Park
4. Roaded Dispersed	Road-accessible dispersed recreation sites and Crescent Lake
5. North Reservoir	Dispersed sites and reservoir surface north of Metaline Falls
6. South Reservoir	Metaline Waterfront Park, dispersed sites and reservoir surface south of Metaline Falls

Field sampling was accomplished by two-person survey crews based at a facility in Ione. A crew conducted sampling activities within a specific sector each time the sampling calendar required sampling to occur there on a given date and period of the day. For all six sectors, crews recorded visitor counts on standard forms (see Appendix 2a) and contacted visitors to distribute questionnaires. The crews attempted to contact all visitors encountered at each sampled sector during the corresponding time of day. (Under most circumstances, the crews were successful at contacting all visitors. In very limited cases at the Forebay Recreation Area and Metaline Waterfront Park, visitor numbers were large enough that the crews were not able to contact all visitors.) Upon arriving at a site, the survey crews contacted visitors, introduced themselves and the study, and communicated the importance of participating to help understand recreation use at the site. After these introductions, crews asked visitors if they would be willing to complete the survey booklet. Visitors who were willing to participate were handed a questionnaire, a pencil, and a self-addressed, postage-paid envelope. Visitors were instructed to return their completed survey directly to one of the crew members, deposit it in one of several drop boxes that were installed at selected recreation sites in the study area, or return it by mail. When visitors refused to accept a survey, the crew asked them to quickly answer one or two key questions (such as their home ZIP or postal code, primary destination at the Project, or frequency of visits to the Project; these questions varied and were not used in any specified order) to allow later checking for non-response bias (that is, to determine whether the people who refused were different from those who completed and returned the survey).

The cluster sampling program used to implement the visitor count and questionnaire sampling provided comprehensive sampling coverage of developed and dispersed sites, overnight and day users, and water-based and land-based activities within the study area. Sampling in the field was scheduled based on a standard 6-hour block of time for sampling activity (including travel time and related activity, such as launching and trailering boats). For the entire survey period, the following daily sampling periods were used:

- 0600 to 1200 (6 a.m. to 12 p.m.)
- 1200 to 1800 (12 p.m. to 6 p.m.)

Because extended daylight hours occur during most of the summer, sampling was conducted from 1800 to 2000 hours (6 p.m. to 8 p.m.) during July and August. Based on the number of sectors defined for the Project area, two daily time blocks, and the number of days in the season, 274 sampling sessions were proposed to yield adequate coverage of the variability of recreational use at the Project. This estimate ensured that field crews would have sufficient time to conduct visitor counts and observations in addition to administering the visitor questionnaire. Table 4.1-2 provides a summary of the planned distribution of sampling activity conducted for Study 21, as indicated in the implementation plan (Appendix 1). Appendix 3b is a daily log of sampling activity actually conducted during the season; the aggregate figures for the actual sampling activity correspond very closely to the distribution indicated in Table 4.1-2. The actual number of sampling days (114) equaled the planned total, while the actual sampling distribution reflected 2 additional sampling days during the week and 2 less weekend sampling days. This minor shift occurred primarily in October, when weather and staff availability resulted in 8 weekend sampling periods instead of 12 as planned. During that part of the season there was minimal visitor activity on either weekdays or weekends.

Table 4.1-2. Time distribution of planned sampling activity and total actual effort, 2007 Boundary recreation season.

Month	Sampling Days	Weekend/Holiday Sampling Days (sampling periods)	Weekdays (sampling periods)	Field Crews/ Personnel	Sampling Periods Per Day/(Month)
May	7	5 (10)	2 (4)	2/4	2 (14)
June	23	9 (18)	14 (28)	2/4	2 (46)
July	23	10 (30)	13 (39)	3/6	3 (69)
August	23	8 (24)	15 (45)	3/6	3 (69)
September	23	11 (22)	12 (24)	2/4	2 (46)
October	15	6 (12)	9 (18)	2/4	2 (30)
Total – Planned	**114**	**49 (116)**	**65 (158)**	**4-6**	**274**
Total – Actual	**114**	**47 (110)**	**67 (161)**	**4-6**	**274**

To provide the labor resources needed to cover the proposed number of sampling sessions, two full-time, two-person field survey crews worked continuously from spring through fall, providing a baseline level of sampling activity for the entire study period. A third crew was added for the peak summer season, from the beginning of July through Labor Day. Field crews worked one 6- or 7-hour sampling period in the field each day on duty, plus time for preparation and follow-up (for example, data entry before and after field work).

Because overnight camping and multiple day-use activities at the Forebay Recreation Area make it a key recreation site, this sector was over-sampled, that is, it received a level of sampling effort slightly larger than what would result from an even distribution among the six sectors. Likewise, Metaline Waterfront Park was over-sampled because it is highly accessible to visitors and was believed to be a popular site. Based on indications of quite limited roaded dispersed use within the study area, effort allocated to sampling this sector of the study area (Sector 4) was reduced

accordingly. These sampling factors were developed in collaboration with the relicensing participants and are documented in the implementation plan. Table 4.1-3 indicates the actual allocation of sampling effort by sector and type of day during the 2007 season. The actual distribution of sampling periods by sector varied slightly from the planned allocation. The primary factor affecting this minor shift was the week-long period in early September when the reservoir was operated at below normal levels for relicensing study tests. Survey crews were not able to use boats or boat ramps during this period, and some activity scheduled for on-water sampling was necessarily shifted to land-based sampling.

Table 4.1-3. Allocation of weekend and weekday sampling effort by sector.

Sector	Number of Weekend Sample Periods	Number of Weekday Sample Periods
1. Northeast	15	24
2. Forebay	21	34
3. SR 31 South	20	28
4. Roaded Dispersed	21	11
5. North Reservoir	14	31
6. South Res./MWP	19	33
Total	**110**	**161**

Note:
MWP – Metaline Waterfront Park

4.1.3. Area Resident Questionnaires

Differences in visitor perception, use, activity, and needs may exist between local and vicinity residents and Project visitors from outside of the Project vicinity. These potential differences can be identified and explored through the use of an area resident questionnaire. Therefore, a second questionnaire was used to gather information from residents in and near the towns of Metaline, Metaline Falls, and Ione in Washington, and Salmo, Trail, and nearby communities in British Columbia, Canada.

The area resident questionnaire was developed using the same formatting guidelines discussed previously for the Project visitor questionnaire. SCL provided a draft of the area resident questionnaire and an outline of proposed questionnaire administration to the relicensing participants in early June, and reviewed the plans for this component of the Recreation Surveys at a meeting in Spokane, Washington, on June 13, 2007. SCL finalized the questionnaire based on comments from the relicensing participants. The questionnaire focused on recreation-related issues and needs that apply specifically to area residents. It replicated many of the items in the visitor questionnaire, so that data from the two respondent groups could be compared, and included some questions applicable specifically to area residents (as opposed to Project area visitors). A copy of the questionnaire is included as Appendix 4a.

A key objective for the area resident questionnaire effort was to obtain a large enough sample population to achieve a reasonable confidence level and sampling error in the survey results. Targets of a 90–95 percent confidence level and 5–10 percent sampling error were adopted, as

these levels are typically used in recreation and other social research efforts. The mail distribution for the area resident questionnaire was planned to meet these targets.

Results presented in the PAD (SCL 2006) from the 2000 Census indicated the three Washington State towns included a total population of 864 persons, with 395 households. Because drawing a sample from such a small population could produce unacceptable levels of response and sampling error, the objective for distributing questionnaires to the Washington towns was to take a census by mailing a questionnaire to each household. To develop a mailing list for the Washington portion of the study area, Tetra Tech requested a vendor to supply addresses for all resident households receiving mail through the post offices in Metaline, Metaline Falls, and Ione. Further investigation revealed that certain types of Census data, including total population and households, were available for geographic areas termed ZIP Code Tabulation Areas (ZCTAs). Census 2000 population and household data for residents of the 99139 (Ione), 99152 (Metaline), and 99153 (Metaline Falls) ZCTAs amount to a combined total of 1,826 persons and 769 households for the three communities. These figures indicated the total number of households in the three communities and the surrounding unincorporated areas are nearly double the number of target Washington households assumed at the outset.

Upon receipt of the mailing list addresses, Tetra Tech determined that the vendor actually delivered 433 Washington addresses, rather than the 546 indicated when the order was placed. The expected total of 546 addresses represented 71 percent of the total households, according to the ZCTA totals, whereas the 433 addresses received amounted to 56 percent of the households. In view of the shortfall in number of addresses relative to the objective of a complete census of the local Washington population, Tetra Tech conducted a supplemental on-site distribution of approximately 200 questionnaires within the Metaline and Metaline Falls post offices, with the objectives of reaching a larger share of the total population and obtaining a larger number of returned, completed surveys. With this supplemental distribution, it is estimated that the area resident questionnaire was distributed to 620 to 650 Washington addresses.

For the Canadian portion of the local area, the survey implementation plan indicated that the total population was estimated at 10,000 people. In developing a mailing list for the Canadian side of the local area, Tetra Tech determined that the communities of Fruitvale and Montrose (population 1,952 and 1,012, respectively) are located within the same region and are actually situated closer to the Boundary Project than are Trail and Salmo (7,237 and 1,007, respectively). Consequently, the postal codes for Fruitvale and Montrose were added to the geographic area for which an address sample was purchased. Including the rural areas around these four towns, the population of the Canadian portion of the study area was estimated at approximately 14,300 total residents and 6,600 households. Given a local population that was larger than originally anticipated, Tetra Tech purchased a random sample of 1,500 Canadian addresses, rather than the sample size of 1,000 that was originally assumed. Based on this population size, a target of approximately 370 completed surveys would achieve a 5 percent margin of sampling error at the 95 percent confidence level (Salant and Dillman 1994).

Following guidance from Salant and Dillman (1994) for conducting surveys by mail, Tetra Tech used a four-step mailing process to administering the area resident questionnaire:

1. A personalized but short pre-survey notice letter was mailed to all addresses on the mailing list, telling people that the survey was coming and informing them that their participation in this important study would be greatly appreciated.
2. One week after the first mailing, a survey packet including a cover letter, the questionnaire, and a pre-paid return envelope was mailed to all addresses on the mailing list (1,500 in British Columbia and 433 in Washington). At the same time, 200 additional survey packets were distributed through the Metaline and Metaline Falls post offices to box holders not on the mailing list.
3. Approximately 8 to 10 days after the survey packets were mailed, each addressee on the mailing list (minus those determined to be bad addresses, based on undeliverable returns from the first and second mailings) was sent a postcard to thank those who had responded and to remind and encourage those who had not responded to please complete and return the questionnaire.
4. Approximately 4 weeks after the second mailing, a new packet with a new personalized letter, questionnaire, and pre-paid return envelope was sent to all remaining valid addresses on the mailing list from which a survey had not been returned.

4.1.4. Local Area Focus Groups

The RSP indicated that focus group meetings were to be held with area residents to obtain additional, detailed information about recreational use and preferences. The RSP anticipated a total of three focus group meetings, with selection of the groups to be defined by recreational activity types. Invitations to participate in focus group meetings were based on information obtained from user organizations and other contacts within the local communities. The focus group meetings were planned in the vicinity of the Project and covered discussions of use (or non-use) of the Project area and questions related to aesthetic considerations.

The schedule for the RRS provided in the RSP indicates that all elements of the Recreation Surveys would be completed by the end of the first quarter of 2008. The survey implementation plan noted that it would be advantageous to hold the focus group meetings relatively late in the 2007 recreation season, so that participants could base their input on relatively fresh recollections, and that attendance at the meetings would likely be higher if the meetings did not occur during a peak period for vacation activity. Consequently, when the survey implementation plan was issued, SCL was planning to hold the focus group meetings during the early to middle part of September 2007. Following additional discussion of this study element at the June 13, 2007, meeting with relicensing participants, SCL proposed to defer the focus group meetings to the second quarter of 2008 (early May, tentatively). This schedule change for the focus group meetings was expected to fit more efficiently with related or similar activities for the regional recreation analysis and the carrying capacity analysis, and to provide a better opportunity to validate data collected during 2007. Based on agreement from the relicensing participants, the focus group activity was postponed to 2008. SCL conducted the focus group meetings on May 6 and 7, 2008, and the results of these meetings are documented in this final report.

4.1.5. Other Data Collection Activities

Most of the effort during 2007 for the Recreation Surveys involved primary data collection, specifically field data collection for the visitor counts and visitor questionnaire and the mail survey effort for the area resident questionnaire. In addition to those activities, Recreation Surveys activity in 2007 included secondary data collection to obtain certain types of information needed for the study. Specific activities in this category include: 1) review of other existing regional survey and public input data, and 2) informal contacts with private recreation business owners/operators and campground concessionaires to obtain information about their facilities and use patterns.

The RSP identified 12 specific information sources (including recreation and/or tourism survey programs, federal, state and local planning documents, and related data sets) that were to be reviewed as available for information pertinent to the Recreation Surveys scope (see the RSP for the complete list). These data sources were reviewed for the types of data they contain, the geographic scope of the data, and the methods used to collect the data. In general, the identified sources and their respective data have a county-wide, regional, or state-wide focus. In several cases, the referenced sources provide information about tourism activity in general, as opposed to the types of outdoor recreation activities that occur at and near the Project. Because of these characteristics, 10 of the 12 identified sources were considered to be not directly comparable to the types of data developed elsewhere in the Recreation Surveys component of the RRS; however, these sources were reviewed as part of the Regional Recreation Analysis, and the results of that review are documented in this report. The first two entries on the list of existing data sources, pertaining to information on the Colville National Forest (CNF) from the USFS National Visitor Use Monitoring (NVUM) program, were considered to be sufficiently similar in nature and context to the recreation use measures developed through the Recreation Surveys that they are addressed in relationship to the Recreation Surveys. In addition, Tetra Tech identified a recent survey of visitors to northeastern Washington (Jim Lillstrom & Associates 2005) that employed data collection methods and included some specific questions similar to work conducted for the Recreation Surveys. Section 5.1.1 summarizes information from these two sources.

As discussed in the RSP, the Recreation Surveys called for obtaining visitor count data and similar information from private-sector resort/campground operators, including concessionaires operating the Mill Pond and Sullivan Lake campgrounds administered by the USFS. Tetra Tech staff used telephone contacts and in-person interviews with these local provider representatives to request the following types of information:

- Inventory data for facilities, including plans to expand or reduce facilities and services
- Facility use levels and capacity
- Season of operations
- Visitor information including origin, length of stay, party size, activities, etc.
- Anecdotal information about trends (in use levels or patterns)
- Fees charged and average funds expended by recreational vehicle (RV) and tent campers

The results of this activity are documented in Section 5.1.7.

4.2. Regional Recreation Analysis

Three tasks were included within the Regional Recreation Analysis: Determine the regional study area boundary; collect and analyze regional data; and develop regional recreation analysis results. The methodology employed in conducting the first two tasks is discussed in the following subsections. The third task was to compile the report content for this analysis; this work is reflected in the material presented as Section 5.2 of this report. This work was implemented in 2008.

4.2.1 Determine Regional Study Area Boundary

The first task in the Regional Recreation Analysis was to determine an appropriate regional study area boundary, while considering the Project nexus and context. Based on the orientation of the analysis, the regional study area boundary should encompass recreation resources that offer water-based and shoreline-related recreation opportunities similar to those present at the Project area and within a reasonable travel distance to the Project area. Three regional study area distances or zones from the Project area were tentatively proposed in the RSP, including 1) a 5-mile radius, which would include local residents and visitors at or near the Project; 2) a 25-mile radius, which would include residents and visitors in the Project vicinity; and 3) a 50+-mile radius, which would include regional visitors. The RSP indicated that the outer radius distance would need to be further examined during the regional analysis and that these zones might be modified based on further study.

As discussed in Section 2.2, the geographic approach to the regional analysis was modified based on initial RRS study results, primarily the visitor origin information from the recreation visitor survey. Therefore, Section 5.2 summarizes recreation use areas and facilities that offer similar types of reservoir water-based and shoreline-related recreation opportunities within a five-county study area spanning parts of Washington and Idaho. The recreation opportunities available at the Project are within typical day-use travel distance for residents located throughout this regional study area. Pertinent distance considerations within the regional study area are addressed in the discussion of the regional context for the resources found at the Project.

4.2.2 Collect and Analyze Regional Data

To implement this task, information was obtained on relevant recreation facilities, activities, and opportunities that are available in the five-county study area defined for the regional analysis. The data collection effort covered a wide range of recreational facilities and activities that included interpretive and educational (I&E) sites, sightseeing, wildlife observation and photography, power and non-power boating, personal watercraft (PWC) use, boat and bank fishing, hunting, RV and tent camping, picnicking, hiking/walking, and swimming. The effort also specifically addressed the Scenic Byway and the Selkirk Loop, because these are tourism-related programs that are available in the region and that appear to be important factors in drawing people to the region.

The data collection effort for the regional analysis was conducted largely through a standard approach for obtaining secondary data (existing information, as opposed to primary data such as developed through the visitor survey). The RSP identified a lengthy list of potential sources for regional recreation supply and demand information for this analysis, most of whom are recreation providers or entities that have a defined role in recreation. The list included multiple federal agencies, various state agencies in both Washington and Idaho, local governments, and organizations that provide or support recreation opportunities. Specific applicable information developed by these sources was identified, primarily through standard literature and on-line search activities. Follow-up contacts with some of these entities were made as necessary to clarify or interpret information related to regional recreation resources or to acquire more detailed information.

A separate objective of the regional recreation analysis was to characterize the demand for various recreational activities and how this demand may change in the future. Identified topics of interest included potential changes in use levels in the Project area, specifically including the influence of the recent SR 31 National Scenic Byway designation and the increased cost of fuel and its effect on recreational travel; projected changes in regional population and the anticipated impact of population change on recreation activity participation and demand at the Project; and national and regional demand forecasts from recent publications and other sources.

Information on anticipated future regional recreation demand and anticipated changes in demand for various outdoor recreation activities was obtained from various sources. This information corresponds to the future recreation analysis and is reported in Section 5.4.

4.3. Dispersed Recreation Use, Access, and Condition Analysis

Two primary tasks were called for in the Dispersed Recreation Use, Access, and Condition Analysis: 1) dispersed recreation inventory and condition analysis, and 2) public access analysis. Each of these tasks is described below.

4.3.1. Dispersed Recreation Inventory and Condition Analysis

The dispersed recreation inventory and condition analysis identified existing dispersed recreation use areas and sites within the study area along the reservoir and in nearby road-accessible areas. The approach for this effort was to 1) develop a site inventory form and procedures for conducting the inventory; 2) conduct an initial inventory of dispersed sites in the study area early in the 2007 recreation season; 3) check all inventoried sites in the field again in October 2007, to confirm and update the initial inventory; and 4) compile and review the inventory data to assess the condition of each dispersed site, and compare the spring and fall observations.

4.3.1.1. Site Inventory Form and Procedures

Tetra Tech developed a form and procedures for use in conducting the field inventory of existing dispersed recreation use areas and dispersed sites. The site inventory form was based on a variety of forms commonly used to evaluate potential biophysical impacts resulting from public use and recreation (Cole 1989; Hammitt and Cole 1998). SCL distributed these materials to the

relicensing participants in June 2007 and discussed the inventory form and process at a meeting on June 13, 2007.

The site inventory form provided space for general reference data including the date of the inventory, the identity of the field surveyor completing the form, alphanumeric codes for the location and the specific site(s) at each location, a space to mark whether photographs were taken, and an area to draw a sketch map of the site. The remainder of the form provided space (generally blanks or multiple-choice arrays) on which the field crew recorded the following types of information: 1) site delineation, 2) site access, 3) physical setting, 4) human use conditions, 5) site facilities, 6) visual setting, and 7) shoreline conditions. The form also included space to provide any notes about each site. A blank site inventory form is provided as Appendix 5a.

4.3.1.2. Initial Field Inventory

Tetra Tech field crews conducted an initial field inventory of dispersed recreation sites during June and early July of 2007, in conjunction with field sampling activities for the Recreation Surveys. The inventory was guided by background information on previously identified dispersed sites and locations thought likely to include dispersed sites. Sources of this background information included observations from a September 2005 SCL field visit; SCL aerial photographs that were reviewed/marked-up and then confirmed in a July 2006 field visit; a March 2007 site visit by SCL, EDAW, and Tetra Tech staff; a detailed Tetra Tech field reconnaissance in May 2007; and existing USFS mapping and staff observations of dispersed sites.

In addition to visiting known and suspected dispersed sites, the field crews performed a complete, systematic search of the study area to identify any site with evidence of human use. This search included driving or walking existing roads and trails within the study area and making stops at all locations where there was sufficient cleared area to park a vehicle and/or establish a campsite. Dispersed sites along roads and trails often include user-made fire rings that are readily visible and signify the presence of a dispersed campsite, although this is not always the case. The search phase of the inventory process also included a slow sweep by boat of the reservoir shoreline area, with stops at all locations where landing a boat appeared to be possible. At each stop the inventory staff looked for a cleared area sufficient to support a campsite, fire rings, and/or evidence of repeat use such as trampling or accumulated trash. The inventory procedures did not include specific threshold criteria, such as X amount of trash or trampling, that were used to define the existence of a dispersed site.

Specific locations were identified in the field as dispersed recreation sites based on visible evidence of human use that appeared to be repeated or recurring. In most cases, the specific feature that confirmed identification of a given location as a dispersed recreation site was the presence of a user-made fire ring. At each dispersed site, the field crew obtained and recorded a Global Positioning System (GPS) reading of the location, took a series of digital photographs depicting typical site conditions and views to and from the site, and recorded site characteristics for all items identified on the pre-printed site inventory forms.

One site that was not included in the initial inventory was added later in the season (in September 2007), after field sampling for the recreation surveys recorded dispersed recreation use in a site not previously identified and inventoried.

4.3.1.3. Fall Field Inventory

Tetra Tech crews repeated the site inventory process in mid-October 2007, after virtually all recreational activity from the primary recreation season had ceased. The purpose for this second inspection of the sites was to assess the evidence of human use in comparison to the observations recorded early in the season when use levels are expected to be low. Ideally, site conditions observed in October would indicate whether the site had been used during the 2007 season, and provide an impression of the level of use during the season.

For the fall inventory, the field crew carried along photocopies of the original inventory forms completed for the respective sites. These copies were marked up in the field to include new information on site conditions or changes to the original observations that were considered appropriate. The field crew also photographed sites during the fall inventory, but did not duplicate all of the photographs taken in the original inventory.

4.3.2. Public Access Analysis

Evaluating public access conditions for dispersed recreation within the study area requires consideration of both existing and potential future public access routes (land and water) in the study area. As discussed in the RSP, SCL believes it is appropriate to use a phased approach to considering these types of recreation opportunities and their access needs.

In addition to the inventory of dispersed recreation sites discussed above, RRS activities included documenting existing public access conditions within the study area. Existing access conditions were identified and assessed through a variety of means including:

- Reviewing existing resource and land ownership maps, topographic maps, and aerial photography.
- Consulting with SCL, USFS, and BLM staff, and others who know the Project area and/or its history.
- Thorough, repeated travel throughout the study area during the 2007 recreation season to implement the field sampling program for the visitor counts and questionnaires components of the RRS, including sampling of the reservoir and dispersed sites near the shoreline by boat and sampling road-accessible areas by vehicle and on foot.
- Documenting and mapping existing public access routes to and within the Project area in Geographic Information System (GIS) software, including roads and trails (land and water).
- Reviewing existing USFS road inventory data to identify current maintenance objectives (Level 1 to 5) for USFS roads.
- Identification of pertinent access conditions through analysis of responses to the Project visitor and area resident questionnaires administered for the recreation surveys.

Based on these information sources, a detailed review of existing accessibility conditions was conducted within the study area for access by road, trail, and water. Existing public road, trail, and water access opportunities were evaluated at a qualitative level based on the extent and distribution of the respective means of access and the associated ease or difficulty of using each access means (for example, whether road access to a given area is by means of a high-standard road suitable for travel by most passenger vehicles, or by a rough road suitable for use only by high-clearance vehicles). This material is presented in Section 5.3.2.1 of the report, and includes a map that displays the components of the study area road system in a high, medium, and low accessibility classification system.

Potential future opportunities for public access by land and water for dispersed recreation were addressed through the information sources and procedures discussed above for existing access conditions. In addition, suggestions about future access provisions from the focus group meetings were considered as potential opportunities. The RSP indicated that the assessment of potential future access conditions was to include review of USFS Road Management Objectives to be developed as part of the Colville National Forest Plan update, and CNF travel management planning in both cases if the documents were available from the USFS during the study timeframe. Those documents were not available at the time the future access analysis was conducted.

Assessment of potential future opportunities for public access included application of three criteria ratings (high, medium, and low) for potential future public access via land (road), trail, and water. The results of this process are presented in Section 5.3.2.2 of the report. They include a map that displays the study area in high, medium, and low classifications for potential accessibility by road; a tabular summary of location-specific potential trail opportunities, also categorized as having high, medium, or low potential; and a map that displays the reservoir shoreline in high, medium, and low classifications for potential accessibility from the water. The discussion of potential water access focuses on the potential for Boundary Reservoir to be part of a water trail, including consideration of shoreline watercraft put-ins/take-outs and portage sites, constraints to watercraft access along the reservoir water surface such as the falls area, and overnight stop-over sites.

In combination, the descriptive analysis, tables and maps for existing and potential future public access conditions characterize: 1) where the public has reasonable and safe public road and trail access now; 2) where public road and trail access to the shoreline and along the reservoir is highly constrained now and will likely remain so into the future; and 3) where public road and trail access could potentially be created or improved in the future if identified options were further investigated and found to be viable for implementation.

4.4. Future Recreation Use Analysis

The RSP identified three tasks for the Future Recreation Use Analysis: 1) assess regional population and recreation use trends, 2) estimate future recreation use in the Project area, and 3) compile and summarize the results of the analysis. The methodology employed in conducting the first two tasks, which comprise the technical analysis for this study component, is discussed in the following subsections. The third task, which was to compile and summarize the future

recreation use analysis results of the two prior tasks, is reflected in the information provided in Section 5.5.

4.4.1 Assess Regional Population and Use Trends

Applicable sources for data and projections of regional population and recreation use levels were assessed as input for the second task of estimating future recreation use in the Project area. The assessment of regional population and recreation use trends was conducted for the five-county regional study area. Standardized demographic data were researched to compile county-level information on current and projected population for the primary counties of origin for visitors to the Project area. The primary data sources used for this activity were the Washington State Office of Financial Management (WOFM) for the three counties in Washington, and the Idaho Department of Labor, which generally uses data from the U.S. Census Bureau, for the two counties in Idaho.

This task included a similar research and data compilation effort to compile information on recreation use trends and projected recreation use levels. Existing activity participation or demand levels, as well as projections, were also researched. The RSP identified a number of potential sources of information on outdoor activity levels and projections, including the Washington and Idaho Statewide Comprehensive Outdoor Recreation Plans (SCORPs) and their supporting documents; regionally-applicable trend data for specific recreation activities, such as fishing and hunting license sales and CNF survey data on fishing and hunting; and several key sources for national-level recreation trends and projections.

This review process focused on identifying the recreation use trend and projection data most applicable to the task of estimating future recreation use levels in the Project area. Based on this review, activity-specific growth rates for activities occurring within the Project area were derived from recreation use projections prepared by the Washington State Recreation and Conservation Office (RCO), formerly known as the Interagency Committee for Outdoor Recreation (IAC). The RCO is responsible for analyzing and projecting recreation use within the state and preparing periodic updates to the Washington SCORP. The RCO recreation use projections incorporate anticipated changes in both population characteristics and outdoor recreation activity participation rates. Review of planning publications and recreation use data available from the Idaho Department of Parks and Recreation (IDPR), the Idaho agency responsible for SCORP updates and related planning, did not yield any recreation use projections.

4.4.2 Estimate Future Recreation Use in the Project Area

Based on the information developed through the previous task, activity-specific growth rates were applied to existing recreation use levels to derive an estimate of potential future recreation use for the Project area. This estimate included a range of potential future use, based on reasonable alternative assumptions about future use patterns and the level of uncertainty inherent in both the existing use and the recreation growth rate data.

The RSP described the task of developing future recreation use projections based on appropriate use of the following potential sources of information:

- Activity participation rate-based projections—this focuses on applying anticipated changes in regional activity participation rates to existing Project area recreation participation rates. These projections may vary depending upon assumptions about future activity use levels and trends.
- Population change-based projections—this focuses on applying anticipated county-level population changes to current use levels based on the existing counties of origin of visitors to the Project area. Development potential in the Pend Oreille River corridor may also affect use levels in the corridor and was considered as a factor.
- Professional judgment—this focuses on consideration of past, current, and future trend projections unique to the Project area based on professional judgment, the unique physical characteristics and location of the study area, anecdotal information from various sources, input from the local community and from focus groups, and input from site operators and land and resource managers, among other factors.

As indicated above, the estimate of future recreational use in the Project area was based primarily on growth-rate data incorporated within the recreation use projections prepared by the RCO. IDPR did not have projected growth rates; therefore, the Washington data were the primary data used for this study. The projections from these sources were based on both population-change and participation-rate data, and therefore incorporated two of the types of projections identified above. Initial results derived by applying growth rates from the state-level projections were adjusted as appropriate through application of professional judgment, in response to consideration of factors specific to the Project area. These adjustments are described in Section 5.4.3.

4.5. Recreation Carrying Capacity Analysis

As outlined in the RSP, four tasks comprised this study element: 1) compile and review carrying capacity data and information from the other RRS elements; 2) determine carrying capacity levels; 3) recommend potential carrying capacity indicators and standards/guidelines; and 4) compile and summarize recreation carrying capacity analysis results.

The first task involved follow-on work with data collected through other RRS study elements, such as selected results from the visitor and area resident survey responses, data on visitor use levels from the visitor counts obtained in 2007, and information on physical site conditions recorded during the dispersed site inventory. To supplement the existing information, developed recreation sites were visited in the field during 2008 to observe and record current site conditions, and recreation managers for those sites were interviewed for their perspectives on site conditions and use levels.

Data compiled through the first task were used to develop appropriate indicator variables for carrying capacity conditions, specifically with respect to the biophysical (or ecological), social, and management aspects of the carrying capacity concept. These indicator variables were evaluated to determine whether any of them represented a limiting factor on use for any specific site or set of recreation resources, and to derive conclusions as to current use of the respective

resources relative to carrying capacity. These results were also reviewed to determine whether the capacity conditions warranted establishment of carrying capacity indicators or standards/guidelines.

5 RESULTS

This section presents the results of the RRS. As discussed in Section 2.1, the overall goal of the RRS was to provide information necessary to analyze current and future recreational use, opportunities, and needs related to the Project. The data from the RRS presented below will be used to develop a RNA specific to the Project. That analysis will synthesize data collected through the RRS to identify existing and potential future recreation needs in the Project area.

5.1. Recreation Surveys

Results from the 2007 recreation season for the Recreation Surveys are discussed below for the four primary elements of this study task (reviewing existing regional survey and public input data; conducting visitor counts; conducting visitor questionnaires, area resident questionnaires and focus group meetings; and compiling and summarizing recreation surveys results into a report). Because the Recreation Survey activities produced a large volume of data, Section 5.1 provides information at a summary level. More detailed results based on tabulation of survey data are included in Appendices 2 through 5.

5.1.1. Review Existing Regional Survey and Public Input Data

As described in Section 4.1.5, two sources provided visitor survey data considered to be sufficiently similar in nature and context to the recreation use measures developed through the Recreation Surveys that they are addressed in this report. Information highlights from these sources are summarized below.

5.1.1.1. Colville National Forest National Visitor Use Monitoring Results

As discussed in the PAD (SCL 2006), from October 2002 through September 2003, the CNF participated in the USFS NVUM Program. The NVUM Program was implemented "to better understand the use and importance of and satisfaction with National Forest System recreation opportunities" (SCL 2006) and measures trends in visitor use and satisfaction. Compared to the SCL Recreation Surveys, the NVUM survey data reflect an earlier survey period (by 4 to 5 years) and a larger and more diverse respondent population comprising the range of visitors to CNF sites and resources in all three northeastern Washington counties. Similarities between the studies include the fact that some visitors may visit both the Boundary Project and the CNF for recreation (given their close proximity), and that both studies collected information on visitor characteristics, activities, and satisfaction levels.

Results for the CNF indicate that there were a total of 546,260 National Forest visits to the CNF from October 2002 through September 2003 (USFS 2004). (A National Forest visit is defined as "the entry of one person upon a National Forest to participate in recreation activities for an unspecified period of time.") Visitors to the CNF tended to be male (approximately 80 percent),

white (nearly 92 percent), and over 40 years of age (about 57 percent). Additionally, most visitors were from the CNF region (i.e., northeastern Washington), with less than 1 percent from another country.

The most popular activities reported for visitors to the CNF included viewing wildlife, relaxing, viewing natural features, downhill skiing, driving for pleasure, hiking/walking, hunting, developed camping, and gathering forest products. The developed recreation facilities most used by visitors to the CNF included downhill ski areas, forest access roads, developed campgrounds, scenic byways, forest trails, and picnic areas. Visitors were generally satisfied with the developed recreation facilities provided at the CNF (USFS 2004).

5.1.1.2. Northeast Washington Counties 2004 Visitor Profile

The Washington State Department of Community, Trade & Economic Development (CTED), in partnership with several local economic development and tourism organizations, contracted for a survey of visitors to Pend Oreille, Stevens, Ferry, and Spokane counties in northeastern Washington during 2004. The survey was administered by approximately 30 electronic, programmable survey registers at a variety of visitor centers, overnight accommodations, and tourist attractions within the study region. Self-selected respondents answered survey questions addressing visitor origin, household income, age, number of people in the party, length of stay, activities during the trip, and related topics. The complete report is posted on the Washington State Tourism Industry website (www.experiencewashington.com/industry). Selected study results specific to Pend Oreille County visitors who participated in the survey are summarized as follows (Jim Lillstrom & Associates 2005):

- Washington residents accounted for 45 percent of all visitors. The next largest visitor origins were California and Idaho, with 10 percent and 8 percent of the total, respectively. Five percent of the visitors in this survey reported they were from Canada.
- Spokane County residents represented 23 percent of all visitors and just over half of the visitors who originated in Washington. King, Snohomish, and Pierce counties combined accounted for another 10 percent of the visitors.
- Among overnight visitors, 51 percent were from Washington, 11 percent were from California, and 6 percent were from Canada. These figures were all slightly higher than the respective proportions of all visitors from each origin.
- Spokane County accounted for 41 percent of all Washington visitors who made an overnight stay. Visitors from King, Snohomish, and Pierce counties represented another 32 percent of all overnight visitors from Washington counties.
- Among the visitors, 48 percent were making an overnight visit, 28 percent were making a day visit to a site in the county, and 24 percent were just passing through Pend Oreille County on their way to an overnight visit elsewhere.
- The most common type of accommodation for overnight visitors was RV camping, which accounted for 35 percent of the total response. In decreasing order, responses for other accommodation types included: 23 percent staying with friends or family, 16 percent in hotels or motels, 11 percent tent camping, 5 percent in a guest ranch or resort, and 4 percent in a vacation rental.

- The top responses as the primary reason for overnight visits to the four northeast Washington counties were identified as: visiting friends or family (33 percent), visiting an historical or geologic attraction (12 percent), participating in outdoor recreation (10 percent), taking a sightseeing or driving tour (9 percent), shopping (9 percent), business (7 percent), and attending a festival or event (7 percent). No other activities were identified by more than 1 percent of the respondents.
- Among overnight visitors, the most common trip activity reported was a sightseeing/driving tour, which was identified by 69 percent of the total. Responses for outdoor recreation activities included 47 percent for hiking, 40 percent for visiting a historic site, 34 percent for wildlife viewing, 30 percent for boating/water sports, 26 percent for camping, 22 percent for biking, and 16 percent each for bird watching and fishing. A similar range of percentages was reported for a variety of non-outdoor or recreational activities including visiting a museum or gallery (58 percent), shopping (40 percent), attending a family event (26 percent), attending a festival or event (16 percent), and antiquing (16 percent).

There are some similarities between the visitor survey conducted by SCL under the RRS (see Section 5.1.3) and the CTED study of northeast Washington visitors. Both studies used survey-based data collection methods and in both cases the survey included questions about visitor origins, demographic characteristics, trip activities, and satisfaction with the visitor experience. By contrast, the results from the CTED survey reflect an earlier survey period (by only 3 years, however) and a larger and more diverse respondent population with somewhat different travel or visitation purposes. The sample population for the CTED study included a majority of out-of-state residents (only 45 percent of the respondents were from Washington), and only 10 percent identified participating in outdoor recreation as the primary reason for their overnight visit. In comparison, the sample population for the SCL survey consisted predominantly of people for whom some form of outdoor recreation was their primary reason for visiting the study area. Therefore, while the CTED study results may be a reasonable characterization of general tourism visitors to Pend Oreille County, they are not directly applicable to characterizing current or future outdoor recreation demand or needs relative to the Boundary Project study area.

5.1.2. Visitor Counts

Results from the visitor counts are summarized below for the developed recreation sites in the study area and activity on the surface of Boundary Reservoir. Visitor counts were also recorded at dispersed recreation sites in the study area; for the reader's convenience, that information is summarized with other material on dispersed recreation in Section 5.3. Copies of the blank visitor count forms are provided in Appendix 2a, and additional details from the counts are included in Appendix 2b.

The visitor use statistics provided in the following section are generally presented in units of measure commonly stated as recreation visits or recreation days. The two terms are equivalent, representing a single visitor using a specific recreation resource for any portion of a given day. Discussion of visitor participation in specific activities also employs the term "activity occasion," which is a single occurrence of a visitor engaging in a specific activity. Many recreation visitors participate in multiple activities on a given day, and some have multiple

occasions of the same activity in a single day. (For example, a person camping at the Forebay Recreation Area might make separate morning and evening off-site trips by boat to fish in the reservoir. That use pattern would be recorded as a single camping activity occasion and two fishing activity occasions, for three total activity occasions generated by one person on a single day. That same use pattern would be recorded as two recreation days, one each for camping and fishing.)

5.1.2.1. Developed Recreation Site Counts

Survey crews recorded visitor counts and observations at the following developed recreation sites in the study area during the 2007 recreation season (see Figure 3.0-1 for the locations of these sites):

- SCL Vista House
- SCL Tailrace Recreation Area
- SCL Forebay Recreation Area/Boat Ramp
- BLM Boundary Recreation Area
- Town of Metaline Waterfront Park/Boat Ramp
- Pend Oreille County Sweet Creek Falls Rest Area
- Pend Oreille County PUD Campbell Park/Boat Ramp

Although the BLM Boundary Recreation Area has been considered a developed site, for sampling efficiency the visitor counts at this site were conducted as part of sampling for the dispersed recreation sites. In addition, the inventory of dispersed recreation sites identified some user-made recreation features at this site, supplementing the facilities installed by the agency. Based on these conditions and the types of forms used to collect data, site conditions and visitor count results for the BLM site are included within the data summarized in Section 5.3.1 and 5.3.3, respectively. Key sampling results for the remaining developed sites are summarized below.

5.1.2.1.1. SCL Vista House

The Vista House is an SCL-operated viewing and visitor information site located immediately downstream of Boundary Dam on a promontory along the eastern bank of the Pend Oreille River (see Figure 3.0-1). The site is accessed via a secondary road intersecting SR 31 and is generally open daily during the primary recreation season. The recreation facilities consist of the Vista House structure, an outdoor wooden viewing platform, a trail leading to the viewing platform, and a gravel parking area. The Vista House provides interpretive and informational displays, two restrooms, bear-proof trash receptacles, and a picnic area with one picnic table. There is no fee for use of the Vista House, which provides public day use opportunities including sightseeing, picnicking, and hiking, among others. Please refer to Section 4.8.2.1.3 of the PAD (SCL 2006) for additional information about this developed recreation site.

Survey crews sampled visitor activity at the Vista House on 39 total sampling sessions during the 2007 season (Table 5.1-1). (Monitoring activity at the Vista House was started later than at other sites during the 2007 season. The Vista House was closed to the public from late May until approximately June 5 because of roadway reconstruction activity nearby.) The sampling

distribution included 15 sampling periods on weekends and holidays (7 a.m. sessions and 8 p.m. sessions) and 24 weekday sampling periods (15 a.m. and 9 p.m. sessions). Crews observed 0 visitors to the site during 9 of the 39 sampling periods. Over the course of the season, they observed a total of 115 visitor parties and 266 visitors. The overall level of observed visitor activity represents an average of 6.8 visitors per sampling session, or 1.6 people per hour of observation activity.

A table listing the overall count results for the Vista House is included in Appendix 2b. Table 5.1-1 summarizes key aggregate results. The highest observed use at Vista House was 25 people, which occurred on both Saturday, July 7, and Saturday, August 18. The sampling schedule included both a.m. and p.m. sampling at the Vista House on August 18, and the total activity for the day was reported at 16 parties and 45 people. As would be expected based on the specific opportunities available at the Vista House, virtually all of the observed visitor activity at this site was recorded as viewing scenery/photography. A handful of visitors at this site were observed to be just driving through, some were walking pets, a few were engaged in wildlife viewing, and a single visitor was observed picnicking at this site during the course of the season.

Table 5.1-1. Summary of the Vista House visitor count results.

Measure	Number
Sampling Periods	
Weekend/holiday	15
Weekday	24
Total	39
Visitor Activity	
Total parties	115
Total visitors	266
Avg. visitors per sample period	6.8
Avg. visitors per hour	1.6
Minimum no. of visitors	0 (9 periods)
Maximum no. of visitors	25 (2 periods)

5.1.2.1.2. SCL Tailrace Recreation Area

The Tailrace Recreation Area is located immediately downstream of Boundary Dam on the west bank of the Pend Oreille River. It includes facilities for public day-use opportunities including picnicking, sightseeing, and access to the powerhouse, among others. Day-use facilities include a large asphalt parking area, including bus and vehicle-with-trailer spaces; three covered picnic tables with pedestal barbecues; three trash receptacles; a paved viewpoint/flagpole area with several benches; and access to the Visitors' Gallery inside the Machine Hall entrance. The Visitors' Gallery provides interpretive displays, a large viewing area with views onto the generator floor, and two public restrooms. The Tailrace Recreation Area includes a gravel boat launch that provides access to the Pend Oreille River below Boundary Dam. This boat launch is generally not used by the public because it is less than 1 mile from the U.S.-Canada border, and boaters are not permitted to cross the border. Further, the public is discouraged from accessing

the river at this location because of potential safety concerns associated with releases of water from the powerhouse. Please refer to Section 4.8.2.1.2 of the PAD (SCL 2006) for additional information about this developed recreation site.

As part of current security measures followed for the Project, access to the Tailrace Recreation Area is controlled. Visitors must pass through a staffed security checkpoint at the top of the access road to obtain entry to this site. The Tailrace Recreation Area is typically available for use from 10:30 a.m. to 4:30 p.m. daily during the primary recreation season, and there is no fee for recreational use of the site.

As prescribed in the implementation plan (Appendix 1), recreation survey crews observed visitor activity in the Tailrace Recreation Area from a distance (using binoculars), in conjunction with sampling at the Vista House. The level and distribution of sampling activity was therefore the same, with 39 total sampling sessions, including 15 sampling periods on weekends and holidays and 24 weekday sampling periods. Visitors to the tailrace area drive and walk through the same areas as SCL Project employees, so the observation records for the tailrace include both work activities and visitor activities; survey staff noted Project operational activity separately on the count forms, using their best judgment as to the type of activity that was observed.

Under the security procedures in effect for the 2007 season, visitors wanting to access the powerhouse and Tailrace Recreation Area signed in at the security gate on the dam access road, and most were escorted to the tailrace area by a tour guide. Tour activity was observed beginning in late June in 2007, and survey crews did not record any apparent tour activity after the end of August. Table 5.1-2 summarizes key aggregate results from the visitor count activity for this site. Crews observed 0 visitors to the tailrace area during 22 of the 39 sampling periods. Over the course of the season, they observed 48 visitor parties and 177 individual visitors. The level of observed visitor activity represents an average of 4.5 visitors per sampling session, or 1.1 people per hour of observation activity. The busiest day of the season was Saturday, July 7, when crews observed 9 visitor parties and 39 people on tours of the powerhouse area. These figures included a tour bus carrying 20 people.

Table 5.1-2. Summary of Tailrace Recreation Area visitor count results.

Measure	Number
Sampling Periods	
Weekend/holiday	15
Weekday	24
Total	39
Visitor Activity	
Total parties	48
Total visitors	177
Avg. visitors per sample period	4.5
Avg. visitors per hour	1.1
Minimum no. of visitors	0 (22 periods)
Maximum no. of visitors	39

The spreadsheets documenting the visitor counts and activity observations in the tailrace area contain an unavoidable mix of visitor use and SCL administrative and operations activity. Review of the daily records indicates that all of the visitor activities observed in the tailrace area were recorded as viewing scenery/photography or taking a tour of the dam. Use of the tailrace boat ramp was observed on only one occasion during the season, and that involved SCL employees or contractors launching boats for work purposes.

Subsequent to completion of the Study 21 interim report (SCL 2008a), SCL received records of visitor entry to the Tailrace Recreation Area during 2007 from Olympic Security, the firm that provides security personnel for the Project (SCL 2008b). These records were a superior data source to the tallies developed from the 2007 recreation observations, because they were based on logs of visitors who checked in at the security gatehouse and cover the entire calendar year, as opposed to the set of sampling days during the May–October season.

Table 5.1-3 is a summary of the Tailrace Recreation Area use data contained in the Olympic Security logs for 2007. Total use for calendar year 2007 was reported as 2,389 visitors, of whom 75 percent participated in an SCL tour of the facilities and the remaining 25 percent viewed the facilities on their own. Visitation in July and August accounted for 57 percent of the annual total, and use from January through April and October through December was minimal.

Table 5.1-3. SCL Tailrace Recreation Area use by month, 2007.

Months (2007)	Tour Guests	Viewers	Total
Jan.–Apr.	6	2	8
May	168	24	192
June	359	97	456
July	445	214	659
August	494	199	693
September	290	62	352
Oct.–Dec.	22	7	29
Total	**1,784**	**605**	**2,389**

Source: SCL (2008b)

Under security procedures in place for the 2008 season, all visitors to the Tailrace Recreation Area were required to be on a guided tour of the facility. Tours operated on an hourly basis, beginning at 10:30 a.m., from May 19 through September 1. The total visitor count for the 2008 tour season was 1,834, with a peak monthly total of 479 in August and a peak daily count of 92 on August 31 (Olympic Security Company 2008).

5.1.2.1.3. SCL Forebay Recreation Area/Boat Ramp

The Forebay Recreation Area is located on the western shoreline of Boundary Reservoir immediately upstream of Boundary Dam. The Forebay Recreation Area provides public day use

and camping opportunities. Day-use facilities include a boat launch and an adjacent picnic area. The boat launch facility consists of a two-lane concrete boat ramp with an L-shaped boarding dock. Two picnic sites with picnic tables, trash receptacles, and pedestal barbecue grills are located east of and adjacent to the boat launch; these sites are signed as being for day use only. An open asphalt and gravel parking area with room for approximately 20 vehicles serves the boat launch and the day-use area. Facilities for overnight use include 11 defined campsites, each with a graveled parking spur or roadside parking area, picnic table, and a fire pit or pedestal barbecue. A restroom facility located on the west side of the site serves both the day-use area and campground. There is no fee for use of the Forebay Recreation Area. Campers are requested to limit their stays to a six-night maximum.

Following improvements and modifications to the site in 2007 and 2008, current facility conditions are somewhat different from the description provided in Section 4.8.2.1.1 of the PAD (SCL 2006). As noted above, two units closest to the boat ramp in the southeastern corner of the site are designated as day-use (picnic) sites. With units that have been newly constructed or converted, there are now a total of 11 camping units at the Forebay Recreation Area. Two camping units at the northeastern corner of the site, in what had previously been identified as the view area/day use area, are equipped with parking spurs and picnic tables, and are managed for use by campers. North and east of the Manley Cabin are three tent campsites along the edge of the large grassy area. Each of these tent campsites has a new steel-grate fire pit and picnic table, but no constructed tent pad. Two campsites are located south of the restroom and west of the access drive, and have new steel-grate fire pits and picnic tables. There are now four additional campsites with parking spurs and tables along the east side of the access drive, just north of the day-use area. Visitors use the open grassy areas of the site as overflow camping areas on occasion, although there are no defined campsites for this activity.

The overnight and day-use facilities at the Forebay Recreation Area are not physically separated and there is considerable intermingling of activities within the site. Survey crews taking visitor counts at the Forebay Recreation Area attempted to maintain separate, accurate records for occupants and their activities at the campground and day-use/boat launch components of the site, although there is some unavoidable overlap among the counts. Because the uses at this site are intermingled, the visitor count and observation records from the 2007 sampling are difficult to sort, analyze, and report. Therefore, the following discussion focuses on camping occupancy, boat launch use, and the distribution of activity in the day-use and boat launch area by activity type, because these measures can be most readily extracted from the data.

Survey crews logged 55 total sampling sessions at the Forebay Recreation Area campground during the 2007 season. The sampling distribution included 21 sampling periods on weekends and holidays (11 a.m. sessions and 10 p.m. sessions) and 34 weekday sampling periods (20 a.m. and 14 p.m. sessions). The sampling schedule included 5 days on which both a.m. and p.m. sampling occurred at this site, so sampling occurred on 50 days overall.

Table 5.1-4 summarizes the sampling results for the Forebay Recreation Area campground. At least 1 campsite at this area was occupied on all but 5 of the 50 total days sampled during the season. Over the full season, camping occupancy averaged 5.3 sites per sample day. The maximum observed use, at 16 campsites or camping parties, occurred on Sunday, August 19,

2007. On that date campers occupied all of the defined campsites and used undefined overflow areas.

Table 5.1-4. Summary of SCL Forebay Recreation Area campground visitor count results.

Measure	Number
Sampling Periods	
Weekend/holiday	21
Weekday	34
Total	55
Visitor Activity	
Total campsite occupancy	266
Total RV trailer occupancy	191
Total tent occupancy	156
Avg. sites occupied per sample day	5.3
Minimum no. of sites occupied	0 (5 days)
Maximum no. of sites occupied	16 (1 day)
Avg. sites occupied per weekend sample	7.8
Avg. sites occupied per weekday sample	3.9

It is difficult to assign an accurate camping capacity to this area, for a variety of reasons. While the sites intended for camping use are clearly defined, the sites intended for day use are sometimes used for overnight camping. In addition, the site has open areas that on occasion are used to accommodate overflow use when the defined campsites are taken. Based on the sites that have tables, parking spurs, and (in most cases) fire rings, there are 11 individual sites at the Forebay Recreation Area that are commonly used and designated for camping. Based on that measure, the number of camping parties exceeded the available capacity on the maximum-use day. There were 2 occasions during the 2007 sampling season on which 12 campsites were occupied, and 6 other occasions on which 10 or more sites were occupied.

Table 5.1-5 summarizes the results for observed use of the SCL Forebay Recreation Area boat ramp. Survey crews observed at least one boat launch or retrieval operation at this site on all but 6 of the 50 total days sampled during the season. Over the full season, crews observed 344 total launch operations. This represented an average of 6.9 launch operations per sample period, or 1.4 operations per hour of observation activity (based on 246 total hours of observation activity at this site during the season). The busiest day for boat launch use was Saturday, August 19, 2007 (the same weekend on which maximum use of the campground was recorded), when 41 launch operations were recorded between approximately 1:30 p.m. and 7 p.m.

Table 5.1-5. Summary of SCL Forebay Recreation Area boat ramp activity in 2007.

Measure	Number
Sampling Periods	
Weekend/holiday	21
Weekday	34
Total	55
Visitor Activity	
Total boat launch/retrieve activity	344
Avg. launch operations per sample	6.9
Minimum launch activity	0 (6 sample periods)
Maximum launch activity	41 (1 day)
Avg. launch operations per hour	1.4

Through the course of the 2007 sampling season, survey crews observed campground visitors at the Forebay Recreation Area engaged in more than a dozen different activities in addition to camping. Virtually every activity listed on the visitor count form (see Appendix 2a) except for hunting was recorded in the campground observations. The range of activities observed in the day-use/boat launch area was similar in number and type, although boat launching was by far the most common activity. Table 5.1-6 summarizes the distribution of activity by type over the 2007 season for this site; it is based on a more detailed record of daily entries included in Appendix 2b. People who were launching, boarding, and/or unloading from boats accounted for over 47 percent of the total activity occasions observed during the season. The next most common activity was characterized by the survey crews as "drive through," which included people stopping just to use the restroom and those who drove along the access road and either did not stop or stopped briefly but did not engage in any other form of recognizable recreation activity. No other activity accounted for more than 10 percent of the total day use.

Table 5.1-6. Summary of SCL Forebay Recreation Area observed day use by activity type.

Activity	Occasions Observed	Percent of Total
Picnicking	61	4.1
Swimming	135	9.1
View scenery/photography	146	9.9
Fishing	112	7.6
Hunting	0	0
Wildlife viewing	2	0.1
Boat launching	701	47.4
Hiking/walking	2	0.1
Bicycling	1	0.1
Drive through	206	13.9
Motorized recreation	14	0.9
Walking pets	14	0.9

Table 5.1-6, continued…

Sports	4	0.3
Paddling	56	3.8
Other	24	1.6
Total	**1,478**	**100**

In addition to the visitor counts recorded in the RRS, SCL has another record of use at the Forebay Recreation Area in the form of a log of visitors maintained by Olympic Security (SCL 2007b). Security personnel routinely drive through the Forebay Recreation Area to observe conditions/activities at the site. The log for the 2007 recreation season included entries for 96 days from May 8 through October 1, or approximately 66 percent of the dates in that period. Some of the dates for which there were no log entries were presumably days when no visitors were seen during a security check of the area, although there were some dates during the season on which survey crews observed visitor activity and there were no entries on the Olympic Security log. Many of the entries in the log are somewhat imprecise (e.g., reporting numbers of users as a range or a minimum, such as "25-30" or "50+), and the procedures used to derive these records are unknown. Nevertheless, the Olympic Security log provides another set of data that provides an additional perspective on use levels and patterns in 2007 at the Forebay Recreation Area.

Table 5.1-7 is a monthly summary of the use numbers recorded by Olympic Security (SCL 2007b). These records indicate total use of the site by 2,094 people from early May through the first day of October. Daily counts of overnight campers totaled 1,082 for the season, or nearly 52 percent of the total users. (Because the entries for campers and picnickers did not equal the number of total people, there presumably were other day users included in the total but not recorded separately.) Based on the log entries for total people, nearly two-thirds of the total seasonal use occurred in July (35 percent) and August (30 percent).

Table 5.1-7. Summary of Olympic Security recreation log for the Forebay Recreation Area in 2007.

Month	Overnight Campers	Vehicles	Boats	Picnickers	Total People	Percent of Season Total
May	65	86	20	8	142	6.8
June	91	90	30	45	215	10.3
July	281	282	114	89	733	35.0
August	408	299	122	61	632	30.2
September	229	179	84	0	360	17.2
October[1]	8	8	1	0	12	0.6
Total	**1,082**	**944**	**371**	**203**	**2,094**	**100.0**

Note:
1 Use in October recorded only on October 1.
Source: SCL (2007b)

Review of the Tetra Tech visitor counts and the Olympic Security log for the Forebay Recreation Area for days on which both data sets include entries indicates that the two sources are generally

consistent, although they are not directly comparable because they involved different data collection methods. The Tetra Tech counts record cumulative activity observed over multiple-hour blocks of time, whereas the Olympic Security log entries are instantaneous counts of activity at a specific time, usually with only one entry for a particular date. Because the Tetra Tech counts include a substantial number of sampling periods, reflect a long duration of sampling activity, and provide more detailed information on visitor activities, they are used as the basis for developing estimates of annual visitor use for this site (see Section 5.1.2.4).

5.1.2.1.4. BLM Boundary Recreation Area

Survey crews observed users present at the BLM Boundary Recreation Area on 7 of 45 sampling observations during 2007, for an overall seasonal occupancy rate of 16 percent. The observed occupancy rate on weekends was 25 percent (4 of 16 samples). Survey crews recorded the presence of four tents at the site on a single occasion, and from zero to two tents at the other times the site was occupied. Tents were present on six of seven occasions when the site was occupied, with the other occasion apparently consisting of day use. A season total of 11 people who appeared to be camping were noted in the counts, with a maximum of 4 in any sample.

5.1.2.1.5. Town of Metaline Waterfront Park/Boat Ramp

Managed by the Town of Metaline, this park is located along the western shoreline of Boundary Reservoir in Metaline. The shoreline at the park is the only portion of the site within the Project boundary (SCL granted the Town of Metaline an easement for shoreline access). The site provides day-use opportunities including picnicking, boat launching, and shoreline fishing, among others. Facilities at the site consist of a single-lane concrete boat launch with a boarding float, picnic sites, a lawn area, a playground area, a basketball court, and gravel parking areas. There are 10 picnic tables (7 covered), 4 stone fireplaces, 7 trash and recycling receptacles, a dumpster, a restroom with flush toilets, a portable toilet, and 2 covered shelters. There is no fee for use of the Metaline Waterfront Park. Please refer to Section 4.8.2.2.2 of the PAD (SCL 2006) for additional information about this developed recreation site.

Metaline Waterfront Park is somewhat of a hybrid recreation facility, because it provides both local park opportunities for Metaline residents and water access to Boundary Reservoir. Sampling at Metaline Waterfront Park was conducted as part of Sector 6 (South Reservoir), in conjunction with sampling by boat for on-water counts in the upstream portion of the reservoir. The standard procedure was for survey crews to divide each 6- or 7-hour sampling period into three segments, which were to: 1) spend typically 1 to 2 hours observing visitor activity at Metaline Waterfront Park; 2) launch a boat for the reservoir circuit to observe on-water count activity; and 3) after returning to the ramp, spend the remainder of the sampling period again observing activity in the park. Consequently, the survey crews conducted 83 total sampling sessions on 45 days during the 2007 season. The sampling distribution included 29 sampling periods on weekends and holidays (11 a.m. sessions and 18 p.m. sessions) and 54 weekday sampling periods (23 a.m. and 31 p.m. sessions).

Similar to the situation at the Forebay Recreation Area, this site provides varied facilities that support a mix of intermingled or overlapping uses. Some of the activity at Metaline Waterfront Park is oriented to the boat ramp and the reservoir, while much of it consists of typical municipal park use. In addition, the visitor count records for this site are more complicated because they

covered two separate observation sessions at the park within the overall Sector 6 sampling period on most sampling days.

Survey crews observed a total of 41 launch or retrieval operations at Metaline Waterfront Park on the 45 total days sampled during the season (see Table 5.1-8). This represents an average of 0.5 launch operations per sample period, or 0.3 operations per hour of observation activity (based on 139 total hours of observation activity at this site during the season). The peak observed activity for this ramp on a single sampling period was 7 boat launch operations on Sunday, July 8. Survey crews observed 3 launch operations on 4 other sampling sessions (1 weekday and 1 weekend day each in July and August). Because sampling at Metaline Waterfront Park occurred in conjunction with South Reservoir on-water counts, the sampling periods at Metaline were less than the full 6- or 7-hour time blocks for the respective sampling periods. The sampling sessions at Metaline typically included approximately 2.5 to 3.5 hours of observation on a given sampling day.

Table 5.1-8. Summary of Metaline Waterfront Park boat ramp operations activity.

Measure	Number
Sampling Periods	
Weekend/holiday	29
Weekday	54
Total	83
Visitor Activity	
Total boat launch/retrieve activity	41
Avg. launch operations per sample	0.49
Minimum launch activity	0 (19 days)
Maximum launch activity	7 (1 day)
Avg. launch operations per hour	0.30

Because of the mix of water-related and local park uses present, activity observations for Metaline Waterfront Park were difficult to record and need to be interpreted with care. On many days the park received very little activity, whereas on certain occasions large groups were present. For example, the Town of Metaline has an annual community Fourth of July picnic at the park. Survey crews were present at Metaline Waterfront Park on July 4, 2007, and recorded 158 visitors for that sampling period. The data forms for that date include notations “too much activity to track accurately,” so it is possible that the actual number of visitors present exceeded 158. For that particular day all observed visitors were assigned to both the picnicking and “Other” activity categories, even though any number of other specific activities likely occurred that day. This site also appears to be a common location for large-group activities and events, such as large family picnics or reunions and a baseball team picnic. Although not observed in the sampling, local sources have indicated that weddings and church ceremonies are also held occasionally at the park.

Table 5.1-9 summarizes the distribution of activity by type over the 2007 season for this site; it is based on a more detailed record of daily entries included in Appendix 2b. People who were recorded as picnicking accounted for the largest proportion of the activity, with 26 percent of the total activity occasions observed during the season. The count for picnicking includes the large number (158) present for the Fourth of July picnic, which represents 56 percent of the annual total for picnicking, and large sports-team groups that were present on June 29 and June 30. The "Other" activity category (20 percent of total use) in this case includes a variety of common local park activity, such as children using the play equipment or playing in the creek, and people just "hanging out." Similar to the Forebay Recreation Area, the next most common activity class was "drive through," which represented 15 percent of total observed activity. Visitors involved in some way with boat launching accounted for over 9 percent of the activity. Pet-walking was a common activity (8 percent) at this site, which is not surprising given that the park is adjacent to a residential area. Fishing was a relatively infrequent activity, accounting for approximately 4 percent of the activity occasions recorded in the counts.

Table 5.1-9. Summary of Metaline Waterfront Park day use by activity type.

Activity	Occasions Observed	Percent of Total
Picnicking	283	26.0
Swimming	41	3.8
View scenery/photography	43	4.0
Fishing	40	3.7
Hunting	0	0
Wildlife viewing	1	0.1
Boat launching	99	9.1
Hiking/walking	17	1.6
Bicycling	14	1.3
Drive through	162	14.9
Motorized recreation	20	1.8
Walking pets	87	8.0
Sports	67	6.2
Other	214	19.7
Total	**1,088**	**100**

5.1.2.1.6. Pend Oreille County Sweet Creek Falls Rest Area

The Sweet Creek Falls site is a highway rest area facility located on the west side of SR 31 approximately 7 miles north of Ione and 2 miles south of Metaline. Facilities at the site include a paved vehicle access loop and parking area, vault toilets, picnic tables, and an information/map kiosk. There is also a short trail from the parking area to a spot on the creek with a view of the falls. The facility was constructed and is maintained by Pend Oreille County. As the name indicates, the primary function of this facility is to provide a rest stop for travelers on SR 31. The site is located some distance away from Boundary Reservoir and on the opposite side of the highway, and does not have physical or visual access to the reservoir. The primary reason this

site was included in the field sampling for the RRS is that it was expected to be an effective location for distributing surveys to sightseers and pass-through visitors (such as people traveling the North Pend Oreille Scenic Byway) who might otherwise not be contacted.

Survey crews observed visitor activity at the Sweet Creek Falls Rest Area on 48 total sampling sessions during the 2007 season. The sampling distribution included 20 sampling periods on weekends and holidays (8 a.m. sessions and 12 p.m. sessions) and 28 weekday sampling periods (11 a.m. and 17 p.m. sessions). Crews recorded no (0) visitors to the site during only 2 of the 48 sampling periods. Over the course of the season, they observed a total of 274 visitor parties and 576 visitors. The level of observed visitor activity represents an average of 12 visitors per sampling session, or 4.6 people per hour of observation activity.

A table listing the overall count results for Sweet Creek Falls Rest Area is included in Appendix 2b. Table 5.1-10 summarizes those results for the sampling season. The highest observed use at Sweet Creek Falls was 65 people, which occurred on Saturday, September 1 (during the Labor Day weekend). Twenty or more visitors were observed on a total of 10 sampling occasions. As would be expected based on the specific opportunities available at the Sweet Creek Rest Area, most of the observed visitor activity at this site was recorded as drive-through use. Viewing scenery/photography and hiking/walking were also relatively common activities.

Table 5.1-10. Summary of Sweet Creek Falls Rest Area visitor count results.

Measure	Number
Sampling Periods	
Weekend/holiday	20
Weekday	28
Total	48
Visitor Activity	
Total parties	274
Total visitors	576
Avg. visitors per sample period	12.0
Avg. visitors per hour	4.6
Minimum no. of visitors	0 (2 periods)
Maximum no. of visitors	65

5.1.2.1.7. Pend Oreille County PUD Campbell Park/Boat Ramp

Similar to the SCL Forebay Recreation Area near Boundary Dam, Campbell Park/Boat Ramp at Box Canyon Dam provides both overnight and day-use recreation facilities, including a campground, picnic sites, swimming area, visitor center, and a boat launch. The overnight and day-use facilities are located close together and there is considerable intermingling of activities within the site. Survey crews taking visitor counts at this site recorded all types of activities and maintained separate records for occupants and their activities at the campground and boat launch. Because these facilities are operated by Pend Oreille County PUD and their use has already been documented and analyzed for the Box Canyon Project relicensing process, this report focuses

only on the Campbell Park activities that are oriented to Boundary Reservoir. The primary interest is the use at and near the boat ramp, as that activity results in water-based recreation on Boundary Reservoir.

Survey crews logged 47 sampling periods, including 26 weekday and 21 weekend/holiday sessions, covering 124 total hours at Campbell Park/Boat Ramp during the 2007 sampling season. Almost all of the visitor activity observed at Campbell Park occurred at the camping and day-use facilities located to the west of the park access drive, or at the visitor center adjacent to the dam operations yard. The crews observed no (0) launch operations at the boat ramp at Campbell Park on 44 of the 47 sampling periods. Total boat launching activity at this site amounted to five operations. Observation notes indicate that at least four of the five activity occasions were users launching rafts or other non-power boats to float downstream (indicating there would not be a return trip and a retrieval operation at Campbell Park). This minimal boat launching activity at Campbell Park is consistent with anecdotal feedback from local residents that this boat ramp is not a preferred location for launching boats.

Fishing activity at this site occurs both at the lagoon used as the swimming area and in Boundary Reservoir in the vicinity of the boat ramp. Survey crews observed 70 occasions of fishing activity during the 2007 season. The visitor count records do not identify the specific locations for the observed fishing activity, so there is no documented basis to differentiate between bank fishing at the boat ramp and at the lagoon. Therefore, it is assumed that half of the observed fishing activity occurred near the boat ramp and half at the lagoon.

5.1.2.2. Boundary Reservoir Counts

The visitor count portion of the sampling included both the number of watercraft by type and the number of visitors observed either on boats or on shore. Crews counted visitors and activities on both the outbound and return portions of each circuit from the boat launch, and were careful not to double count boats and visitors.

The sampling distribution for the North Reservoir included 14 sampling periods on weekends and holidays and 31 weekday sampling periods, for a total of 45 sampling days. Table 5.1-11 summarizes the count results for watercraft and people observed during the season. Field crews documented 279 boats with 613 visitors on board for Sector 5. This is an average of approximately 2.2 visitors per boat over the season. Observations of the general classification of watercraft indicated most visitors were using power boats (176 boats, 63 percent of the total) during their visit to the reservoir. North Reservoir visitor counts also included 171 people engaged in various activities on the shoreline. Crews observed no visitors on the North Reservoir area during 17 of the 45 sampling periods, or almost 38 percent of the sampling days.

Table 5.1-11. Number of boats by type and number of visitors counted for Sector 5, North Reservoir.

Type of Boat	Number
Total watercraft	279
Power boat	176
Non-power boat (kayaks, canoes, etc.)	87
Personal watercraft	16
People on board	613
People on shore	171
Total people	784

Visitor activities observed in the North Reservoir area are summarized in Table 5.1-12. The most common recreational activity was boating for pleasure, with 337 visitors observed in this activity. Non-power boating (primarily kayaking and canoeing) accounted for the second-highest visitor activity (93 visitors). The total for all types of activity observed during the season amounted to 682 specific activity occasions.

Table 5.1-12. Visitor activities observed for Sector 5, North Reservoir.

Measure	Number
Sampling Periods	
Weekend/holiday	14
Weekday	31
Total	45
Visitor Activity	
Camping	20
Picnicking	23
Swimming	59
Viewing scenery	11
Fishing from boat	90
Fishing from shore	29
Pleasure boating	337
Water skiing	8
Paddling kayak/canoe	83
Personal watercraft	16
Other	6
Total activity observations	682

The sampling distribution for Sector 6 included 19 sampling periods on weekends and holidays and 33 weekday sampling periods, for a total of 52 sampling days. For the South Reservoir, crews documented 102 watercraft with 217 visitors on board (see Table 5.1-13). This is an

average of approximately 2.1 visitors per boat over the season for the South Reservoir area. Most visitors were using power boats (66 boats, or 65 percent of the total) during their visit to the reservoir, whereas 33 boats were classified as kayaks, canoes, or other non-motorized craft. Only 3 personal water craft were observed on the South Reservoir. South Reservoir visitor counts also included 214 people engaged in various activities on the shoreline. Survey crews observed 0 visitors on the South Reservoir area during 26 of the 52 sampling periods, or 50 percent of the time.

Table 5.1-13. Number of boats by type and number of visitors counted for Sector 6, South Reservoir.

Type of Boat	Number
Total watercraft	102
Power boat	66
Non-power boat (kayaks, canoes etc.)	33
Personal watercraft	3
People on board	217
People on shore	214
Total people	431

Visitor activities observed on the southern part of Boundary Reservoir are summarized in Table 5.1-14. The most common recreational activity in this sector was fishing from shore, with 113 visitors observed. Swimming accounted for the second highest visitor activity (112 visitors).

Table 5.1-14. Visitor activities observed for Sector 6, South Reservoir.

Measure	Number
Sampling Periods	
Weekend/holiday	19
Weekday	33
Total	52
Visitor Activity	
Camping	0
Picnicking	0
Swimming	112
Viewing scenery	2
Fishing from boat	84
Fishing from shore	113
Pleasure boating	103
Water skiing	19
Paddling kayak/canoe	21
Personal watercraft	2
Other	20
Total activity observations	476

Table 5.1-15 provides a summary of the watercraft and people counts for Boundary Reservoir, based on the combined counts for Sectors 5 and 6. Comparing the figures for the two portions of the reservoir, the North Reservoir area accounted for 73 percent of all watercraft and 65 percent of all people observed.

Table 5.1-15. Boundary Reservoir watercraft and people summary.

Visitor Use Measure	Sector 5, North	Sector 6, South	Total	Percent of Total
Watercraft Type				
Power boat	176	66	242	63.5%
Non-power boat	87	33	120	31.5%
Personal watercraft	16	3	19	5.0%
Total	**279**	**102**	**381**	
Visitors				
On boats	613	217	830	68.3%
On shore	171	214	385	31.7%
Total	**784**	**431**	**1,215**	–

Table 5.1-16 is a summary of the activity observations for Boundary Reservoir, based on the combined counts for Sectors 5 and 6. Pleasure boating (in motorized boats) accounted for 38 percent of all activity occasions observed. Bank and boat fishing combined represent 27 percent of all activity.

Table 5.1-16. Boundary Reservoir activity summary.

Activity	Sector 5, North	Sector 6, South	Total	Percent of Total
Camping	20	0	20	1.7%
Picnicking	23	0	23	2.0%
Swimming	59	112	171	14.8%
Viewing scenery	11	2	13	1.1%
Fishing from boat	90	84	174	15.0%
Fishing from shore	29	113	142	12.3%
Pleasure boating	337	103	440	38.0%
Water skiing	8	19	27	2.3%
Paddling kayak/canoe	83	21	104	9.0%
Personal watercraft	16	2	18	1.6%
Other	6	20	26	2.2%
Total	**682**	**476**	**1,158**	–

5.1.2.3. Visitor Registries

Appendix 2c documents entries from the visitor registry in place at the Vista House during the 2007 season, organized by place of residence (visitors from Washington, Idaho, other U.S. states, Canada, and other countries). From May 11 through October 18, 2007, entries in the register represented a total of 313 visitor parties and 1,021 visitors. Highlights of the registry entries are as follows:

- There were no entries for approximately 60 of the days during the period of coverage.
- The maximum number of visitor parties was 12 on Sunday, July 29.
- The maximum number of visitors was 61 on Wednesday, July 11, when members of a group of 51 visitors signed the log.
- Other days with similarly high visitation included 10 parties and 59 people on Thursday, August 16, and 9 parties and 31 visitors on Saturday, September 1.

Washington residents accounted for 61 percent of the visitor parties and number of visitors represented by register entries. Visitors from Idaho represented approximately 7 percent of the register entries, whereas other U.S. states accounted for 25 percent and Canada about 6 percent.

The entries in the Vista House register represented an uncertain fraction of all visitors to this site, because not all visitors chose to sign the register. Visitor counts conducted at this site (see Section 5.1.2.1.1) indicated that 115 total visitor parties were observed while survey crews were present at the Vista House during the season, and crews recorded 23 new register entries corresponding to those sampling periods. By that measure, on average someone from approximately 1 in every 5 visitor parties (20 percent of the total) elects to sign the visitor register. If that compliance ratio held true for the entire 2007 season, the numbers of register entries suggest total visitation at the Vista House from mid-May through mid-October would have been approximately 1,565 visitor parties and 5,105 people. Studies of compliance ratios for visitor registries show a wide range, and those studies are usually based on observers who are watching visitor behavior at a distance and are not identifiable to the visitors. In this instance, visitors at the Vista House would have been aware that observers were present and in view; how that knowledge may have influenced their tendency to sign the register is unknown.

5.1.2.4. Seasonal/Annual Use Estimates

Data from the visitor counts and observations, supported as applicable from other on-site logs, have been used to construct overall estimates of recreation use in the Project area for the 2007 season. Based on the manner in which recreational activity was recorded during the season, use estimates can be developed and organized according to the sites or areas where the use occurs or by activity. Most of the collected data on recreation use levels and patterns resulted from a sampling design, with on-site monitoring episodes repeated at representative intervals over the course of the season and amounting to some portion of the total time available during the season. The general approach for developing overall use estimates is to expand the results from the sample data to the full season, based on the proportional coverage of the sampling activity relative to known or assumed timing conditions for a specific site or set of activity.

A variety of specific techniques or expansion factors can be applied to expansion of the sampling data for sites or use areas within the study area. For sites at which user activities are rather uniform and the visit duration is relatively short, such as the Vista House, it can be appropriate to develop seasonal use estimates based on the rate of observed use per unit of time from the sampling data. Additional factors need to be considered in cases where user activities are typically longer in duration, as at a campground, and/or fluid, as on the surface of Boundary Reservoir.

Table 5.1-17 is a summary of the use estimates developed for the respective recreation sites or use area components in the Project study area. Detailed information supporting the summary-level estimates is provided in Appendix 2d. Based on the applicable data, the Forebay Recreation Area is the site or use area receiving the highest level of recreational use. Total use for the 2007 season at this site, combining the figures for the campground and the day-use facilities, is estimated at approximately 6,500 visits or recreation days. (This combined use estimate includes a sizable degree of user overlap, because people camped at the Forebay Recreation Area also generate much of the activity at the boat launch and the adjacent shoreline area. Nevertheless, with respect to evaluating facility use relative to capacity and proper accounting for use volumes by activity and location, it is an appropriate measure.) Including the 2,200 recreation days estimated for the Vista House and 2,400 recreation days for the Tailrace Recreation Area, the three SCL developed facilities account for an estimated total of 11,100 recreation days.

The estimated use level of 1,800 recreation days for Metaline Waterfront Park represents the activities and user volumes at this site that are associated with the reservoir. Based on the visitor count observations for 2007, total use at this site is estimated at 6,100 recreation days (see Appendix 2d). As discussed in Section 5.1.2.1.4, more than half of the total use at this site is generated by local park activities not associated with opportunities specific to Boundary Reservoir. The annual figure for Metaline Waterfront Park also included a large component of picnicking use, approximately 26 percent of the observed activity. The visitor counts indicate that large groups present on special occasions, such as the annual Fourth of July picnic, accounted for approximately 75 percent of the picnicking activity observed in 2007. Consequently, the estimate for reservoir-based activity at Metaline Waterfront Park represents 25 percent of all picnicking activity and all observed use for boating/launching, fishing, and swimming.

Table 5.1-17 includes entries only for the developed recreational facilities and two classes of shoreline dispersed use areas. It does not include entries for use of the Boundary Reservoir surface and shoreline other than activity at the specific developed recreational facilities or dispersed use areas identified in the table. This is because the vast majority of the activity observed on the Boundary Reservoir surface and shoreline, which has been estimated at 7,800 recreation days for the season, was at the Forebay Recreation Area, Metaline Waterfront Park, or the Box Canyon boat launch. Reservoir-based activity that did not originate at one of these developed access points is limited to dispersed fishing and related activity at publicly accessible shoreline locations (such as the USGS stream gage site adjacent to SR 31, which is one of the identified dispersed sites on the reservoir) or access to the river from the relatively small number of privately owned parcels adjacent to the Project.

Adding the estimated use levels for the respective developed sites and use areas listed in Table 5.1-17 results in a figure for aggregate annual Project-related use of 15,000 recreation days. This figure adequately represents all recreational activities occurring at the Project, and is a reasonable representation of total annual use for the Project. There is a degree of double counting in the estimates for the Forebay Recreation Area, because people who are camped at this location also generate a substantial portion of the activity at the day-use facilities. Nevertheless, this is the technically correct way to account for recreation days of use in different activity categories. The total use figure of 15,000 recreation days should also not be misinterpreted as the number of annual *visitors* to the Project; many visitors to the Forebay Recreation Area stay overnight, typically for more than one night, and therefore produce multiple recreation days of camping activity on the same trip. In addition, as discussed in Section 5.1.3, many visitors will also go to multiple sites at the Project on the same trip or the same day. A typical example might be a visitor group that takes a tour of Boundary Dam and stops at the Forebay Recreation Area for a picnic, fishing and/or water activities.

Table 5.1-17. Boundary Project study area recreation use estimates by facility/use area.[1]

Facility/Resource	Estimated Annual Use (Recreation Days)	Use Components, by Activity (with Percentage)
Vista House	2,200	Sightseeing 100%
Tailrace Recreation Area	2,400	Tours (interpretive/educational use) 75%
		Viewers (sightseeing) 25%
Forebay Recreation Area – Campground	1,900	Developed Camping 100%
Forebay Recreation Area – Day Use Area	4,600[2]	Picnicking 5%
		Swimming 9%
		View scenery/photography 10%
		Fishing 8%
		Boating/launching 48%
		Drive through/other 16%
		Paddling 4%
BLM Boundary Recreation Area	100	Primitive Camping 100%
Metaline Waterfront Park (Reservoir-Based Use)	1,800	Picnicking 28%
		Swimming 14%
		View scenery/photography 14%
		Fishing 14%
		Boating/launching 30%
Box Canyon Boat Launch	600	Boating/launching 50%
		Fishing 50%
Reservoir Dispersed Campsites	400	Primitive camping 50%
		Fishing 10%
		Picnicking/general day use 40%
Private Shoreline Use Areas	1,000	Boating/launching 40%
		Fishing 20%
		Picnicking/gen. day use 20%
		Swimming/sunbathing 20%
Total Project-Related Use	**15,000**	

Notes:
1 Based on use observed during the 2007 recreation season.
2 Substantial portion of this use is generated by campers at the site.

Table 5.1-17 does not include recreation use estimates for two developed recreation sites and some of the dispersed recreation sites included within the defined study area boundary and covered in the 2007 sampling activity. The sites omitted from the table are the Sweet Creek Falls Rest Area and the USFS Crescent Lake Recreation Site. The Sweet Creek Falls Rest Area is a relatively busy site, with 576 visitors observed during 127 hours of sampling activity in 2007. Expansion of these visitor counts resulted in an estimate of 9,900 annual visits for this site (see Appendix 2d). As discussed in Section 5.1.2.1.5, however, this is predominantly activity by

highway travelers that is not recreational in nature, and none of the use at this site is generated by or directly related to the Project.

The USFS Crescent Lake Recreation Site is a three-unit developed facility located on Forest Road (FR) 3165 just west of its intersection with SR 31. Visitors use this facility both for overnight camping and day-use activities, primarily fishing and picnicking. Boundary Reservoir is not accessible from this site, and use of the site appears to be oriented to Crescent Lake (see Section 5.3 for additional discussion). The inventory of dispersed recreation sites in the study area identified nine dispersed sites located on or near existing roads and away from Boundary Reservoir. These sites received minimal use during 2007 and do not appear to have any recreation use connection with Boundary Reservoir. Therefore, use of these sites was not considered to be Project-related and they were not included in the tabulation of Project-related recreation.

Table 5.1-18 is an alternative presentation of recreation use estimates organized by activity. The activities listed in this case are the 12 activities that were most commonly observed and for which there were more than isolated occurrences during 2007. By these estimates, sightseeing was the most common activity at the Project, accounting for 3,300 total visits. Seasonal use estimates for fishing, picnicking, and power boating ranged from 2,600 to 3,000.

SCL was not aware of any set of conditions or events occurring during the 2007 sampling season that would limit the applicability of the study results. Weather, access, and related external conditions that can influence recreation use patterns and levels appeared to have been “normal” during the 2007 recreation season. There were no major adverse weather, road construction, or forest fire events that prevented or inhibited access to or use of the study area in 2007. Therefore, the field sampling and survey data collected during 2007 appear to be fully applicable for characterizing recreational use conditions in the study area, and the use estimates based on the 2007 observations are considered to be representative of a typical year and current resource capacity.

Table 5.1-18. Boundary Project reservoir-related recreation use estimates by activity.

Activity	Use Components/Locations	Site Use (Recreation Days)	Total Use, Activity
Sightseeing, Viewing scenery/photography	Vista House	2,200	
	Tailrace	600	
	Forebay	460	
	Metaline Waterfront Park	250	
	Subtotal	3,510	3,510
Interpretive/educational facilities	Tailrace		1,800
Picnicking	Forebay	230	
	Metaline Waterfront Park	500	
	Reservoir dispersed sites	100	
	Private shoreline areas	200	
	Subtotal	1,030	1,030
Swimming/sunbathing	Forebay	410	
	Metaline Waterfront Park	250	
	Reservoir dispersed sites	100	
	Private shoreline access	200	
	Subtotal	960	960
General day use/other	Forebay		740
Developed camping	Forebay		1,900
Primitive camping	BLM Boundary Recreation Area	100	
	Reservoir dispersed sites	100	200
Fishing	Forebay	370	
	Metaline Waterfront Park	250	
	Box Canyon	300	
	Reservoir dispersed sites	100	
	Private shoreline areas	200	
	Subtotal	1,220	1,220
Boating (all types, by access source)	Forebay Recreation Area	2,390	
	Metaline Waterfront Park	550	
	Box Canyon boat launch	300	
	Private shoreline access	400	
	Subtotal	3,640	
Total Estimated Use			**15,000**

5.1.3. Visitor Questionnaires

Blank visitor questionnaires were distributed to recreational visitors in the study area during the sampling period from May 19 through the end of October 2007. Questionnaire distribution was conducted according to the procedures outlined in Section 4.1.2 and described in more detail in the implementation plan (see Appendix 1). The blank questionnaire, including the map distributed with the questionnaire, is provided in Appendix 2a. The blank questionnaires were numbered, and survey crews maintained logs of both the distribution of blank questionnaires and returns of completed questionnaires by date and location. The following sections summarize questionnaire distribution, returns, and responses.

5.1.3.1. Survey Completion Summary

Visitor questionnaires were distributed according to the schedule and methods discussed in Section 4.1.2. The following discussion summarizes overall data for distribution and completion of the visitor questionnaires. The survey results, based on tabulated responses to the individual questions, are provided in Section 5.1.3.2.

5.1.3.1.1. Questionnaire Distribution

A total of 969 blank questionnaires were distributed to visitors during the 2007 study season. Table 5.1-19 summarizes the distribution of questionnaires by sector within the study area. The largest number of surveys, 323 or 33 percent of the total, were distributed to visitors at the SCL Forebay Recreation Area campground and boat launch (as noted in Section 4.1.2, this location was oversampled by design). The next highest distribution of surveys occurred at the Sweet Creek Falls Rest Area and Campbell Park at Box Canyon Dam. The South Reservoir sector accounted for 16 percent of all surveys distributed, with the majority of surveys in this sector given to visitors at Metaline Waterfront Park. Field crews were unable to account for the distribution location for 16 surveys (2 percent of the total).

Table 5.1-19. Visitor questionnaire distribution and returns by location during 2007 sampling period.

Sector/Location	Distribution		Returns	
	Frequency[1]	Percent[2]	Frequency[1]	Percent[2]
1. Northeast[3]	111	11.5	69	
Vista House			(56)	(9.4)
Tailrace/Visitors' Gallery			(13)	(2.2)
2. Boundary Recreation Area[4]	323	33.3	223	37.5
3. SR 31[5]	314	32.4	190	31.7
Sweet Creek Falls Rest Area			(67)	(11.3)
Box Canyon/Campbell Park			(123)	(20.7)
4. Dispersed Roaded[6]	29	3.0	20	3.3
Crescent Lake			(11)	(1.9)
Other Sector 4			(9)	(1.5)
5. North Reservoir[7]	19	2.0	12	2.0
6. South Reservoir[8]	157	16.2	80	13.3
Metaline Waterfront Park			(76)	(12.8)
Other Sector 6			(4)	(0.7)
Location not recorded	16	1.7	6	1.0
Total	969	100.0		

Notes:
1 Number of questionnaires distributed or completed during sampling period
2 Percent of all questionnaires distributed
3 Vista House and Tailrace Recreation Area
4 Forebay Campground and Boat Launch
5 Box Canyon and Sweet Creek Falls Rest Area
6 Secondary roads within the study area
7 On the reservoir surface from Metaline Falls to Boundary Dam
8 On the reservoir surface from Box Canyon to Metaline Falls and at Metaline Waterfront Park

5.1.3.1.2. Questionnaire Response Rate

Of the 969 questionnaires distributed during the 2007 field season, 600 usable surveys were returned. The sample size of 600 completed questionnaires is more than large enough to allow researchers to make inferences about the visitor population within a 5 percent margin of error at the 95 percent confidence level. (That is, if the survey analysis reported that 60 percent of the sample population selected response "a" to a specific survey question, researchers could be 95 percent confident that the true response from the entire population would be within 5 percentage points of that response from the sample population, or that the true response would be between 55 and 65 percent.) While the true size of the visitor population is not known precisely, a sample size of 375 would be sufficient to provide a 5 percent margin of error at the 95 percent confidence level if the visitor population were 15,000 people. The actual sample size of 600 is sufficient to provide a 4 percent margin of error for a population size of 20,000 people.

The 600 completed surveys represent an overall response rate of 62 percent of the total surveys distributed, which is considered a good response rate for a drop-off/mail-back survey.

The survey crews collected addresses from visitors, including non-respondents, at the time they were given a survey. Almost 79 percent (n = 763) of the total stated that they were Washington residents and almost 23 percent (n= 221) of the total were considered local residents (that is, residents from Ione, Metaline, and Metaline Falls). Similarly, approximately 23 percent (n = 219) indicated that they lived in Spokane or the Spokane Valley. Approximately 5 percent (n = 48) of the visitors stated that they were from Canada.

Table 5.1-19 includes the breakdown of returned surveys by the sector and specific location where they were distributed. (When a visitor agreed to take a survey at the Boundary Reservoir Area, field technicians recorded the location and the date on the survey prior to distribution, to allow researchers to track returned surveys by site.) The largest source of returned surveys for the May through October sampling season was the SCL Boundary Recreation Area, which accounted for 223 of the 600 completed surveys (37.5 percent of the total). Approximately 21 percent of the overall returns came from Campbell Park/Boat Ramp at Box Canyon Dam.

Overall, 558 of the completed surveys (93 percent) were from visitors contacted at the developed recreation sites in the study area. Of the remaining completed surveys, 36 surveys (6 percent) were from visitors contacted at dispersed sites or use areas on the reservoir or along nearby roads, and the specific location was not identifiable for 6 surveys (1 percent).

Dates and times recorded on the blank forms allowed the returned surveys to be tracked by date. Table 5.1-20 shows the number of completed surveys that were returned, recorded by the month in which they were distributed. (For example, 34 of the returned surveys, representing 5.8 percent of all completed surveys, were distributed in May.) The timing pattern of the returned surveys follows what is a typical seasonal visitation pattern for many outdoor recreation areas, with the frequency increasing in June, peaking in July, tapering off somewhat in August, and decreasing substantially in September. Thirty-seven percent of the completed surveys were distributed in July and 27 percent in August. Although the sampling effort was relatively evenly divided among the a.m. and p.m. sampling periods, approximately 68 percent of the completed surveys were distributed during p.m. sampling periods over the course of the season. This statistic reflects the general distribution of visitor numbers during the day, because the survey crews contacted essentially all visitors they encountered.

Table 5.1-20. Completed visitor surveys by month of distribution.

Month	Frequency[1]	Percent[2]
May	34	5.8
June	104	17.7
July	217	37.0
August	158	27.0
September	59	10.1
October	14	2.4
Uncertain	14	2.4
Totals	**600**	**100.0**

Notes:
1 Number of completed surveys distributed during the specific month.
2 Percent of all completed surveys.

5.1.3.2. Survey Response Results

The visitor questionnaire included 42 specific questions addressing 10 categories of information. The last page of the questionnaire also included a space for respondents to enter open-ended comments with any additional input they wanted to provide about recreation at the Project. This section of the report provides a summary of the processed results from analysis of the visitor questionnaire responses. The analysis involved tabulating the responses to develop the frequency (number) and percentage distribution for each possible response to each question, and calculating measures of central tendency (for instance, mean and standard deviation) for the responses to a given question for which those measures are meaningful. The percentages reported are based on the number of survey participants responding to each question and not on the total number of completed questionnaires (600). For most questions, the number of respondents was substantially less than 600.

Results are provided for each question in the survey, in sequential order. The subheadings correspond to the categories of questions as they were grouped on the survey. For each survey question, there is a graph or table summarizing the tabulation of responses and a brief narrative. Most of the survey questions included "Other" as the final possible response, with space provided for the respondents to write in specific information. Because those open-ended responses can cover a wide variety of subject matter and can be difficult to interpret, they have not been categorized in tabular or graphical format similar to the results for the pre-specified responses. The open-ended responses have been reviewed, however, and obvious generalizations or tabulations from those data have been included in the discussion for the respective survey question, where appropriate. A complete listing of the open-ended responses is included in Appendix 3e.

The results provided below represent the basic tabulation of responses to the visitor survey questions. Given the time required for entry and processing of the survey data relative to the schedule for sampling, the interim report did not include in-depth or second-stage analysis of the responses. Supplemental analysis of the responses, primarily involving cross-tabulation of

responses to two or more questions to isolate results for specific user groups or recreation sites, was performed during 2008 and the results are provided in this report. Examples of such analyses include respondent satisfaction with recreation facility maintenance by users for specific sites, or respondent satisfaction with the available recreation opportunities by user group (as defined by the primary recreation activity the respondents identified). In addition, a comparison of selected results of the visitor and area resident surveys was conducted. Results from this supplemental survey analysis are addressed in Section 5.1.5 of this final report. Additional review and synthesis of RRS data and applicable results will be performed to help identify recreation needs; this work will be addressed in the RNA.

The following text, tables, and graphics report the survey results using the respective responses as they were stated in the questionnaire (see Appendix 3a for reference). In several cases, the questionnaire employed place names or recreation facility names that do not exactly match the standard terms used elsewhere in this report and in other SCL documents, such as the PAD and the RSP. This was done in response to pre-testing of the questionnaire with SCL Project staff, who recommended using place names that local recreation users would be most likely to recognize.

5.1.3.2.1. Information on Your Visit

Question 1: First Visit to Boundary Reservoir Area. The first question asked survey respondents if they were visiting the Boundary Reservoir Area for the first time. (The "Boundary Reservoir Area" is not a standard geographic term. The introduction to the questionnaire explained the geographic focus of the survey, however, and referred respondents to a map included with the questionnaire that highlighted the area of interest, as indicated in Appendix 3a.) Over 60 percent of the visitors surveyed who answered this question reported that they had visited the Boundary Reservoir Area in the past (Figure 5.1-1). A substantial number of respondents (n = 209) were first-time visitors. Thirty-one respondents did not answer this question.

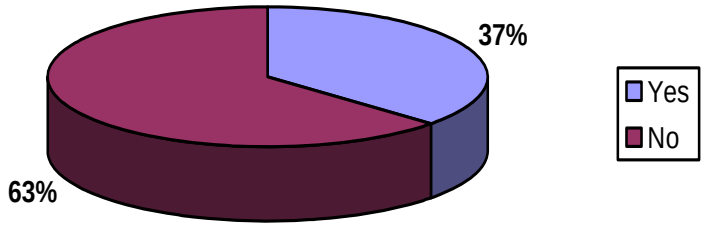


Figure 5.1-1. Responses to Question 1: Was this your first visit to Boundary Reservoir? (569 respondents)

Question 2: Future Visits. For newcomers (those who answered "Yes" to Question 1), 86 percent reported that they would visit the Boundary Reservoir area again (Figure 5.1-2). Thirteen percent of the newcomers were not sure if they would visit the area again, and 1 percent thought that they would not visit the Boundary Reservoir area in the future. Two first-time user respondents failed to answer this question.

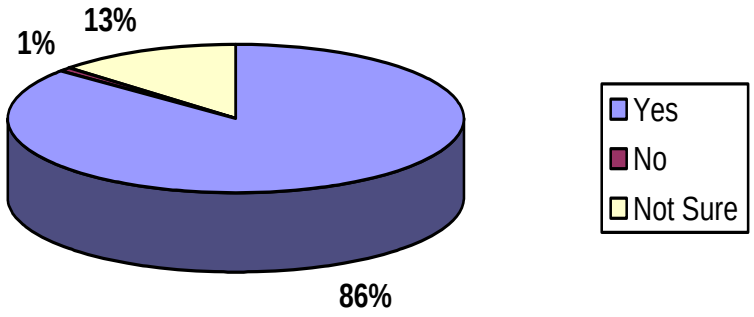


Figure 5.1-2. Response to Question 2: Would you visit Boundary Reservoir again? (207 respondents)

Question 3: Group Size. Slightly more than 35 percent of the respondents visited the Boundary Reservoir Area in groups of two. A large majority (79 percent) reported they came to the area in groups of 1 to 5 people. The size of visitor groups ranged from 1 to 50 individuals, and a substantial number (n = 111, 19 percent) visited the area in groups of 6 to 20 people. The median for this sample is a group size of 2.6 people. Multiplying the group size and frequency results indicates that this sample represented a total of 2,627 visitors to the study area. Table 5.1-21 summarizes results for group size. Thirteen respondents in the total sample did not answer Question 3.

Table 5.1-21. Number of people in visitors' groups.

Group size	Frequency	Percent of sample[1]
1	44	7.5
2	206	35.1
3	73	12.4
4	98	16.7
5	44	7.5
6	35	6.0
7–10	48	8.2
11–20	28	4.7
> 20	11	1.9

Note:
1 587 respondents

Group Size by Gender. In addition to size of group, visitors were asked to differentiate the number of males and females in their groups. Table 5.1-22 summarizes information on the number of males per group. The number of males per group ranged from 0 to 28 individuals. Over 85 percent of the visitors sampled reported having between 1 and 4 males in their group. Over 5 percent of the respondents reported no males in their group (i.e., 5 percent of groups were all female). Twenty-seven respondents failed to answer this item. (Question 40 also asked respondents for gender information about themselves.)

Table 5.1-22. Number of males per group.

Number of Males	Frequency	Percent of Sample[1]
0	30	5.2
1	235	41.0
2	153	26.7
3	64	11.2
4	37	6.5
5–10	45	7.7
>10	9	1.6

Note:
1 573 respondents

Table 5.1-23 summarizes information on the number of females per group. The number of females per group ranged from 0 to 22 individuals. Over 80 percent of the visitors sampled reported having between 1 and 4 females in their group. Nearly 10 percent of respondents reported no females in their group; in other words, 10 percent of groups were all male. Forty-five respondents did not answer this question.

Table 5.1-23. Number of females per group.

Number of Females	Frequency	Percent of Sample[1]
1	232	41.8
2	122	22.0
3	58	10.5
0	53	9.5
4	35	6.3
5–10	45	8.1
>10	10	1.8

Note:
1 555 respondents

The aggregated responses to Question 3 amount to 1,343 total male visitors across all groups and 1,229 total female visitors across all groups, or 2,572 total visitors represented by the sample population. Based on those calculations, the expanded sample population was 52 percent male and 48 percent female.

Question 4: Duration of Visit. The majority (54 percent) of visitors reported that they stayed overnight in the Boundary Reservoir Area (Figure 5.1-3). The total number of nights that they spent in the area ranged from 1 to 20. On average, these visitors stayed for 3 nights (n = 292, mean = 3.0, standard deviation = 2.3, median and mode = 2.0).

About one-third of the sample comprised day visitors who reported stays ranging from 1 to 14 hours. On average, these day visitors stayed 4 hours and 24 minutes (n = 198, mean = 4.4, standard deviation = 2.4, median and mode = 4.0). Thirteen percent of the visitors sampled were passing through the area on their way to another destination. Twenty-three respondents failed to answer this question.

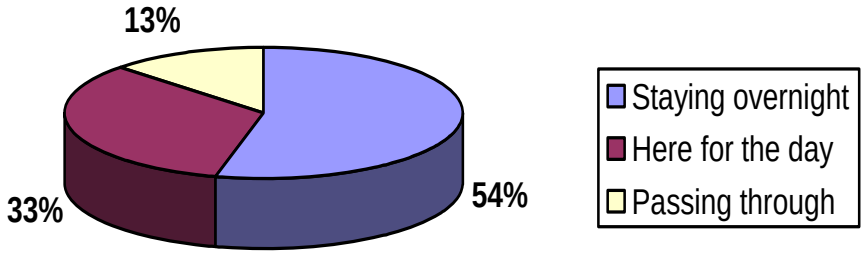


Figure 5.1-3. Responses to Question 4: Are you staying overnight on this visit? (577 respondents)

Question 5: Location of Overnight Stays. Figure 5.1-4 summarizes the results for where respondents reported staying overnight while visiting the Boundary Reservoir Area. A total of 311 respondents (54 percent) stayed overnight. From the list of places provided in the questionnaire, respondents were instructed to circle all that applied. These overnight visitors provided 328 responses when asked where they stayed. The difference between the number of respondents and the number of responses indicates that some visitors who stayed more than one night stayed at more than one location during their visit.

Figure 5.1-4 reports the percentage of responses to this question. For example, the campground at the Forebay Recreation Area (i.e., the Boundary Dam campground) was circled 146 times out of 328 total responses (44.5 percent). For this sample of overnight campers at the Forebay Recreation Area, 56 percent stayed in RVs/campers, and 44 percent stayed in tents.

The second most frequented site reported by overnight visitors (17.4 percent) was the campground at Campbell Park (i.e., Box Canyon campground). For this sample of overnight campers, 50 percent stayed in RVs/campers and 50 percent stayed in tents.

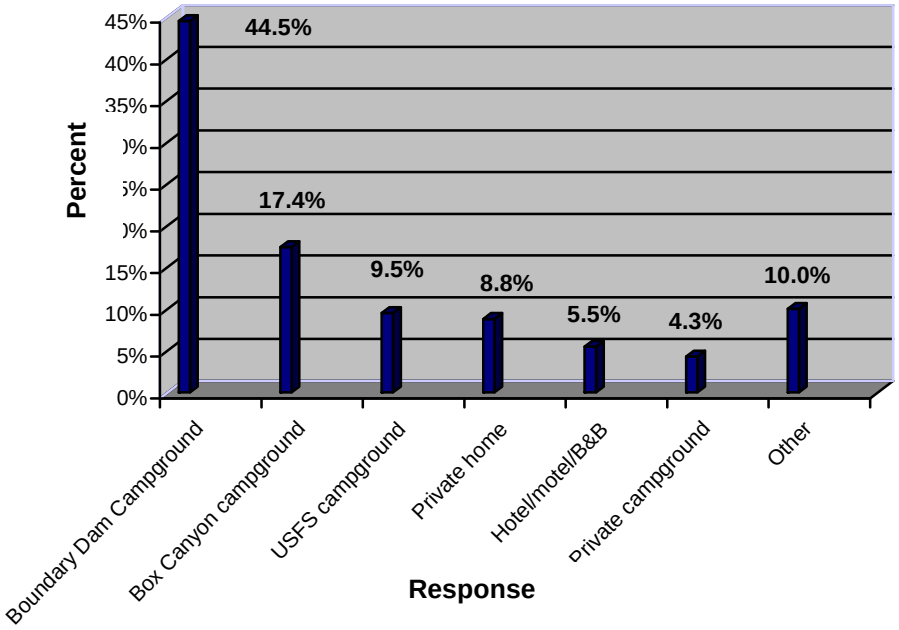


Figure 5.1-4. Responses to Question 5: Where are you staying overnight? (328 responses)

Question 6: ZIP or Postal Code for Primary Residence of Respondents. Respondents reported coming to the area from 212 different postal codes, 35 of which were outside the U.S., mostly from Canada. Table 5.1-24 summarizes results for the most frequent primary residences for this sample of visitors, as reported by postal codes. Visitors with Spokane County ZIP codes amounted to 33 percent of the sample (179 total respondents), representing the largest source of visitors for a single county or area. The three nearby communities of Ione, Metaline, and Metaline Falls accounted for a combined total of 110 respondents, or 18.3 percent of the total. The combined total for northern and southern Pend Oreille County residents is 25 percent of the sample. Appendix 3c provides a complete list of postal codes and frequencies, which provides the basis for aggregation of visitor origin.

Table 5.1-24. Primary residence of respondents, based on reported ZIP or postal codes.

County or Area	State	Frequency	Percent
Northern Pend Oreille County	WA	110	18.3
Southern Pend Oreille County	WA	41	6.8
Spokane County	WA	198	33.0
Stevens County	WA	42	7.0
Ferry County	WA	4	.7
Other Eastern Washington	WA	16	2.7
Western Washington	WA	34	5.7
Central Washington	WA	15	2.5
Kootenai County	ID	18	3.0
Bonner County	ID	10	1.7
Boundary County	ID	1	.2
Other Idaho	ID	6	1.0
Oregon	OR	7	1.2
California	CA	12	2.0
Other U.S. States	–	39	6.5
British Columbia	–	28	4.7
Alberta	--	5	.8
United Kingdom	--	2	.3
Unknown or missing	–	12	2.0
Total		**600**	**100.1**

Notes:
Based on 600 respondents.
See Appendix 3c for the complete list of postal codes.

5.1.3.2.2. Recreation Activities

Question 7: Participation in Recreation Activities. The most frequent recreational pursuit reported by visitors was viewing scenery/sight seeing (identified by 75.9 percent of all respondents). Nearly half of the sample reported swimming (48.9 percent) and picnicking (48.5 percent) during their visit. Socializing (45.9 percent) and photography (42.4 percent) followed in popularity. This sample of visitors (n = 597) generated 3,594 total responses to this item, indicating that visitors engage in numerous activities while visiting the Boundary Reservoir Area. Figure 5.1-5 summarizes results for participation in recreation activities; the values shown on the graph are the percentages of all respondents.

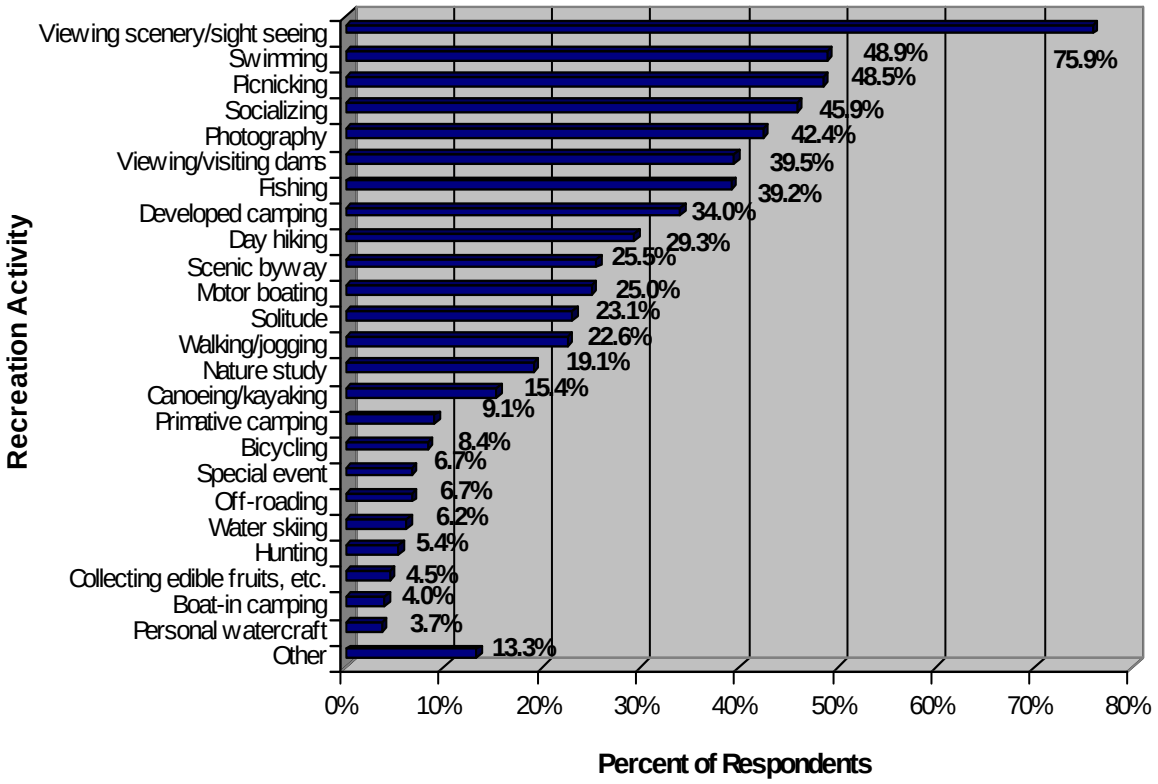


Figure 5.1-5. Participation in recreation activities at Boundary Reservoir Area (597 respondents).

Question 8: Primary Recreation Activity. After visitors responded about the types of recreation activities they had done or planned to do during their visit to the Boundary Reservoir Area, they were asked to indicate which one of these activities was their primary activity for this particular visit, meaning the one they had spent the most time doing. The two most frequent primary activities reported by this sample were viewing scenery/sightseeing (16 percent) and fishing (15.8 percent). Table 5.1-25 summarizes the results for the respondents' primary activity.

Table 5.1-25. Primary recreation activity for visitors to the Boundary Reservoir Area.

Primary Activity	Frequency	Percent of Sample[1]
Viewing scenery/sightseeing	94	16.0
Fishing	93	15.8
Car/tent/RV camping (developed site)	56	9.5
Swimming	51	8.7
Canoeing/kayaking	47	8.0
Motor boating for pleasure	44	7.5
Socializing	40	6.8
Day hiking/nature trails	19	3.2
Picnicking	15	2.5
Traveling SR 31	14	2.4
Special event/festival	12	2.0
Viewing/visiting the dams	11	1.9
Photography	10	1.7
Car/tent/RV camping (non-developed site)	10	1.7
Personal watercraft	7	1.2
Spending time alone	7	1.2
Hunting	7	1.2
Miscellaneous[2]	18	2.9
Other	34	5.8

Notes:
1 589 respondents
2 Miscellaneous includes walking/jogging (3 people), waterskiing (6 people), boat-in camping (3 people), bicycling (2 people), nature study (2 people), and off-road vehicle use (2 people).

Question 9: Quality of the Recreation Experience. Table 5.1-26 summarizes results for the question that asked visitors to rate the overall quality of their recreation experience, on a scale of 1 to 9, for this visit to the study area. The most common rating reported, by 241 respondents or 41 percent of the sample, was "excellent" (mode = 9.0). Only 1.8 percent of the respondents rated their experience as below average (ratings of 4 or less).

Table 5.1-26. Ratings for overall quality of the recreation experience at Boundary Reservoir Area.

Rating	Frequency	Percent of Sample[1]
1 (Very Poor)	1	0.2
2	1	0.2
3	5	0.9
4	3	0.5
5 (Average)	30	5.1
6	34	5.8
7	119	20.2
8	154	26.2
9 (Excellent)	241	41.0

Note:
1 588 respondents; mean = 7.8, standard deviation = 1.3, median = 8.0, mode = 9.0

5.1.3.2.3. Fishing

Questions 10 through 15 addressed fishing activity in the study area. Respondents were requested to answer these questions only if they fished or planned to fish on this visit to the Boundary Reservoir Area. The number of respondents for specific items in this part of the survey ranged from 150 to 227.

Question 10: Group Size for Visitors Fishing. Table 5.1-27 summarizes results for the number of people fishing per party for visitors who reported fishing during this visit to the Boundary Reservoir Area. This table is based on combined results for respondents indicating that they fished on the trip and the group-size information from Question 3. Group size reported by angler respondents ranged from 1 to 14 people. Groups of 2 anglers were the most frequent (the mode), reported by 35 percent of the sample. On average, about 3 people fished together (mean = 2.9, standard deviation = 1.9).

Table 5.1-27. Number of people fishing per party at Boundary Reservoir area.

Fishing Group Size	Frequency	Percent of Sample[1]
1	39	17.4
2	79	35.3
3	41	18.3
4	36	16.1
5	16	7.1
6 or more	13	5.8

Note:
1 224 respondents

Question 10: Number of Days Fished. Table 5.1-28 summarizes results for the number of days fished per party for visitors who reported fishing during this visit to Boundary Reservoir Area.

The number of days fished per party ranged from 1 to 15 days. Over 40 percent of this sample reported fishing with their group for only 1 day. On average, visitors fished with their parties for 2.5 days (mean = 2.5, standard deviation = 2.4, median = 2.0).

Table 5.1-28. Number of days fished per party at Boundary Reservoir area.

Fishing Days	Frequency	Percent of Sample[1]
1	86	41.1
2	48	23.0
3	37	17.7
4	16	7.7
5	10	4.8
6 or more	12	5.7

Note:
1 209 respondents

Question 10: Average Number of Hours Fished. Table 5.1-29 summarizes results for the average number of hours fished per party per day for visitors who reported fishing during this visit to Boundary Reservoir Area. The amount of time ranged from 30 minutes to 12 hours. Nearly 40 percent of this sample reported fishing with their group for an average of 2 to 3 hours per day.

Table 5.1-29. Average number of hours fished per party per day at the Boundary Reservoir Area.

Average Hours Fished/Day	Frequency	Percent of Sample[1]
1	20	9.2
2–3	82	37.8
4	37	17.1
5	16	7.4
6	34	15.7
8	10	4.6
Other[2]	12	5.5

Notes:
1 217 respondents
2 Other = 30 minutes (1 party), 1.5 hours (3 parties), 3.5 hours (3 parties), and >8 hours (5 parties).

Question 11: Means of Fishing. Visitors who reported fishing were asked how they went fishing during this visit to the Boundary Reservoir Area. Nearly the same percentage of anglers reported that they fished from shore as from a boat. Figure 5.1-6 summarizes the results for this survey item. Seven anglers failed to respond.

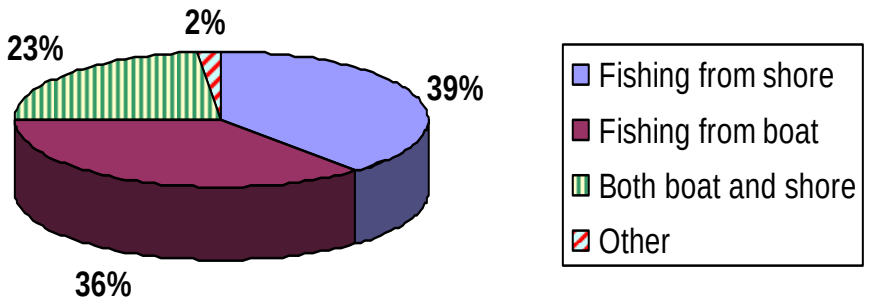


Figure 5.1-6. Responses to Question 11: How did you go fishing? (227 respondents)

Question 12: Fishing Locations. All survey respondents were provided with a map of the Boundary Reservoir Area (see Appendix 3a); anglers were asked to report on where they fished and/or intended to fish during this visit. The anglers who responded (n=225) to this item reported 432 total responses, indicating that some anglers fished in multiple locations during this particular visit. Nearly 40 percent of the sample reported that they fished in the forebay area of Boundary Reservoir between Boundary Dam and the north end of the canyon. The second most frequent location reported for fishing was in the canyon area of Boundary Reservoir. Figure 5.1-7 summarizes the results of this question by reporting percentages of respondents indicating the respective locations.

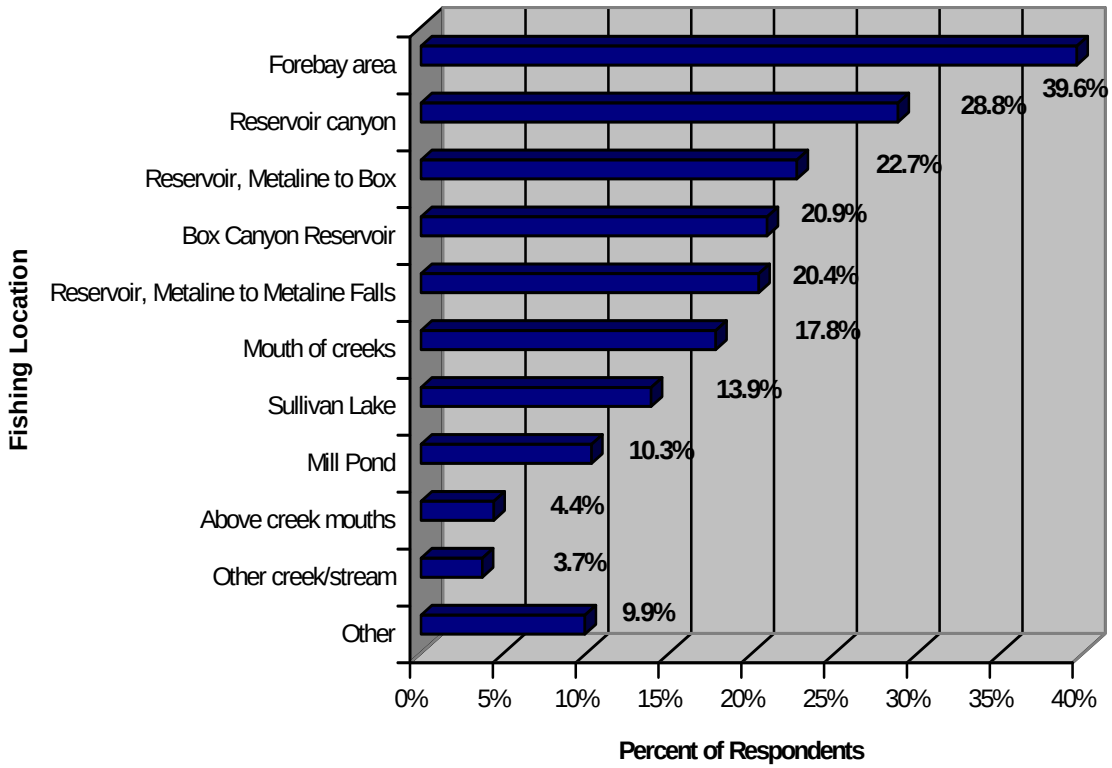


Figure 5.1-7. Responses to Question 12: In what places did/will you go fishing during this visit? (225 respondents)

Question 13: Preferred Species of Catch. Anglers were asked to identify the species of fish they wanted to catch while fishing in the Boundary Reservoir Area. Five choices were listed in the questionnaire item, and respondents were instructed to circle all that applied. This sample (n = 218 respondents) reported 491 total responses, indicating that some anglers were interested in catching more than one species while fishing in the area. Figure 5.1-8 summarizes the results of this item. Triploid trout were most commonly identified in the responses, by slight margins over smallmouth bass and other trout.

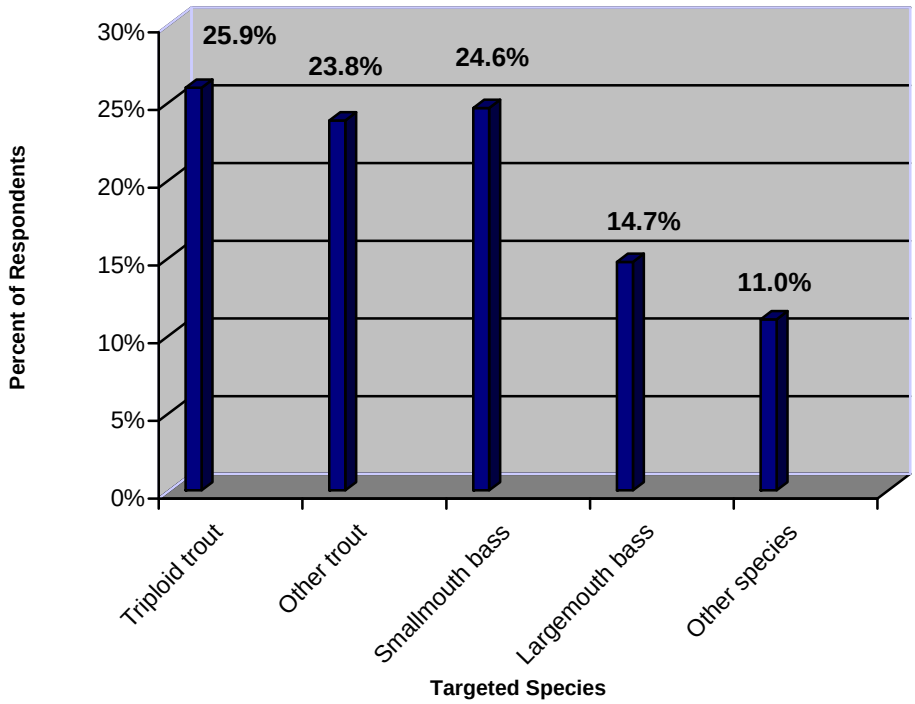


Figure 5.1-8. Responses to Question 13: What species of fish do you want to catch? (491 responses)

Question 14: Description of Fish Caught. Anglers were asked to report the numbers and size of fish caught by species during this particular visit to the Boundary Reservoir Area. Results are summarized below for triploid trout, other trout, smallmouth bass, and largemouth bass (Tables 5.1-30 to 5.1-33).

The anglers sampled in this survey caught between 0 and 15 triploid trout, with the responses representing a combined total of 271 fish. Table 5.1-30 summarizes data for the number of triploid trout caught by this sample of anglers. Most anglers (61 percent) reported catching 0 triploid trout on their visit.

Table 5.1-30. Number of triploid trout reported caught by anglers.

Number of Triploid Trout	Frequency	Percent of Sample[1]
0	100	60.6
1	19	11.5
2	10	6.1
3	12	7.3
4 – 6	9	5.4
8 – 10	11	6.7
>10	4	2.4

Note:
1 165 respondents

Anglers reported various ranges in size for the triploid trout they caught. Overall, responses for triploid trout size ranged from 4 to 27 inches. Thirty-six different sizes and ranges were reported for triploid trout. Of these reported sizes and ranges, 64 percent fell between 10 and 20 inches.

The anglers sampled in this survey caught between 0 and 15 other trout, with the responses representing a combined total of 136 fish. Table 5.1-31 summarizes the data for the number of other trout caught by this sample of anglers. Most anglers (68 percent) reported catching 0 other trout on their visit.

Table 5.1-31. Number of other trout reported caught by anglers.

Number of Other Trout	Frequency	Percent of Sample[1]
0	102	68.0
1	18	12.0
2	11	7.3
3	8	5.3
4	5	3.3
>4	6	4.1

Note:
1 150 respondents

Anglers reported various ranges in size for the other trout that they caught. Overall, responses for other trout ranged in size from 3 to 24 inches. Twenty-four different sizes and ranges were reported for other trout. Of these reported sizes and ranges, 67 percent fell between 10 and 20 inches.

The anglers sampled in this survey caught between 0 and 30 smallmouth bass during this visit, with the responses representing a combined total of 595 fish. Table 5.1-32 summarizes the data for the number of smallmouth bass caught by this sample of anglers. Nearly half (49 percent) of this group reported catching 0 smallmouth bass on their visit.

Table 5.1-32. Number of smallmouth bass reported caught by anglers.

Number of Smallmouth Bass	Frequency	Percent of Sample[1]
0	82	48.8
1–2	29	17.3
3–4	22	13.1
5–10	19	11.3
12–30	16	9.5

Note:
1 168 respondents

Anglers reported catching smallmouth bass ranging in size from 1 to 20 inches. Forty-seven different sizes and ranges were reported for smallmouth bass. Of these reported sizes and ranges, 45 percent fell between 8 and 16 inches.

The anglers sampled in this survey caught between 0 and 6 largemouth bass during this visit, with the responses representing a combined total of 34 fish. Table 5.1-33 summarizes the data for the number of largemouth bass caught by this sample of anglers. Nearly 90 percent of this group reported catching no largemouth bass on their visit.

Table 5.1-33. Number of largemouth bass reported caught by anglers.

Number of Largemouth Bass	Frequency	Percent of Sample[1]
0	128	87.7
1	10	6.8
2–6	8	5.5

Note:
1 146 respondents.

Anglers reported various ranges in size for the largemouth bass that they caught. Overall, largemouth bass ranged in size from 1 to 20 inches. Fifteen different sizes and ranges were reported for largemouth bass. Of these reported sizes and ranges, 67 percent fell between 6 and 16 inches.

Question 15: Fishing Satisfaction. Table 5.1-34 summarizes results for the question that asked anglers to rate their satisfaction with the fishing opportunities at Boundary Reservoir (in this instance, the question was specific to Boundary Reservoir, rather than the Boundary Reservoir Area). The most common rating reported (the mode) was average (5 on the numbered scale). Approximately 14 percent of the respondents rated their satisfaction as below average (ratings of 1 to 4), whereas 62 percent considered their experience to be above average (ratings of 6 to 9).

Table 5.1-34. Ratings for satisfaction with fishing opportunities at Boundary Reservoir.

Rating	Frequency	Percent of Sample[1]
1 (Very Poor)	10	4.6
2	3	1.4
3	10	4.6
4	7	3.2
5 (Average)	52	24.1
6	23	10.6
7	47	21.8
8	27	12.5
9 (Excellent)	37	17.1

Note:
1 216 respondents; mean = 6.3, standard deviation = 2.1, median = 7.0, mode = 5.0

5.1.3.2.4. Boat Launches and Reservoir Use

Question 16: Boat Use. Respondents were asked if they operated or rode in a boat or other watercraft during this particular visit to the Boundary Reservoir Area. The number of respondents for this question was 548. Over 40 percent of the sample used or operated a boat or other watercraft during this visit. Figure 5.1-9 summarizes the results of this survey item. Fifty-two respondents failed to answer this question.

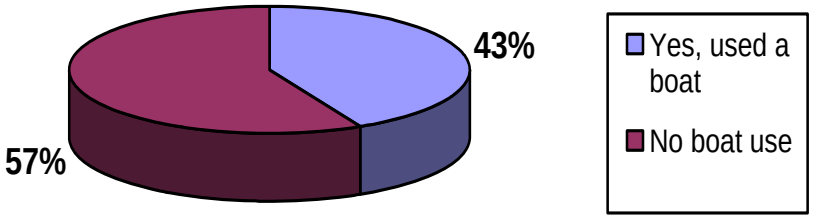


Figure 5.1-9. Responses to Question 16: Did you operate or ride in a boat during this visit? (548 respondents)

Question 17: Location of Boat Launch Used. Visitors who reported using a boat or other watercraft on this visit were asked to identify the boat launch they used, and were instructed to circle all choices that applied. Of those who answered this question (n=236), 78 percent said that they launched at the SCL Forebay Recreation Area. Figure 5.1-10 summarizes the results for

boat launch use in the Boundary Reservoir Area. The values in Figure 5.1-10 are percentages of respondents.

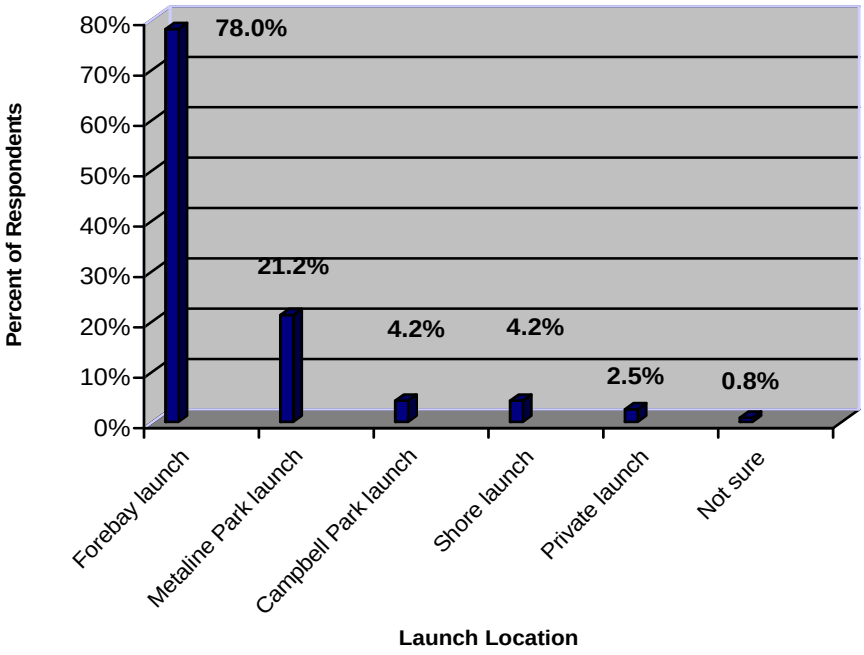


Figure 5.1-10. Responses to Question 17: Which boat launch did you use during this visit? (236 respondents)

Question 18: Boat Launch Adequacy. Visitors who used a boat launch were asked if the launch adequately met their needs for this particular visit. Figure 5.1-11 summarizes the results for this survey item. Over 90 percent of this sample of boaters (228 respondents) responded affirmatively that their needs had been met while using a launch.

Visitors who reported that their needs were not met were asked to describe any problems that they encountered launching their boats. These open-ended comments are listed in Appendix 3e. Although these responses have not been formally categorized, they indicate that most boat launch problems were of two types. The most commonly cited issue concerned the type or conditions of facilities present (or lacking) at the boat launches. At least 19 of the 31 comments included references that docks were either missing or needing repair, and/or that boat ramps were rough, too steep, too narrow, or in need of repair or resurfacing. At least 10 comments included some reference to low, high, or fluctuating water levels in the reservoir that made launching difficult or unreliable.

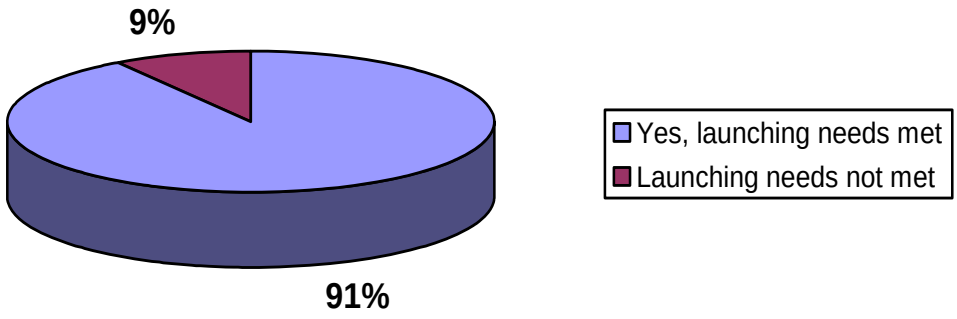


Figure 5.1-11. Responses to Question 18: Did the boat launch that you used adequately meet your needs? (228 respondents)

Question 19: Water Conditions. All respondents (not just those reporting use of a boat) were asked if the water conditions on the river or the reservoir caused them any problems during this particular visit. Figure 5.1-12 summarizes the results for this question. About 20 percent of the sample responded that they did not access the river or the reservoir shoreline during this visit (and by inference had no problems with water conditions). Nearly 70 percent of the sample reported no problems. Approximately 10 percent of the sample reported that they had experienced minor or major problems with water conditions during their visit. Forty-five respondents failed to answer this item.

Visitors who reported that they had experienced problems with water conditions were asked to describe those problems. Forty-one visitors (7.4 percent of this sample) wrote open-ended responses to this part of the question, which are listed in Appendix 3e. In general, the most frequent problem described (in approximately 25 comments) related in some way to low and/or fluctuating water levels. Several of these comments suggested the respondents had some prior knowledge of daily fluctuation patterns (specifically, lower water levels later in the day), and some responses associated low or changing water levels with more difficult fishing conditions. Three open-ended comments referenced problems or uncertainty associated with the rapids at Metaline Falls, and 5 comments identified milfoil as a problem.

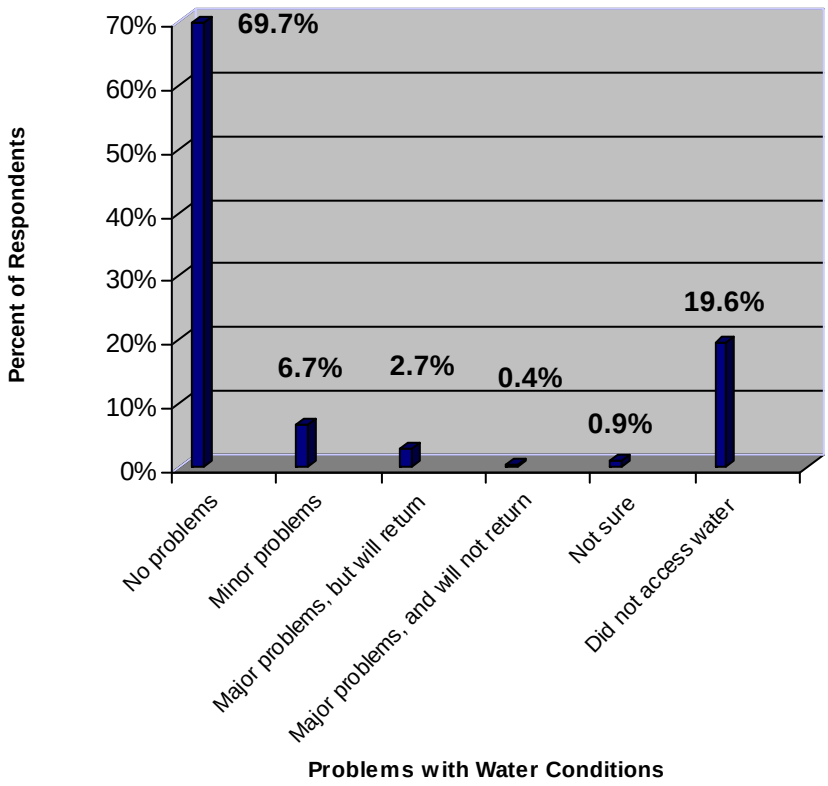


Figure 5.1-12. Responses to Question 19: Did the water conditions cause any problems for you during this visit? (555 respondents)

5.1.3.2.5. Recreation Facilities and Services

Question 20: Importance of and Satisfaction with Facilities and Services. Using a 5-point scale ranging from 1 ("not at all important") to 5 ("extremely important)," respondents were asked to rate the importance of having available 27 different recreation facilities or opportunities. Then, using a similar 5-point scale ranging from 1 ("not at all satisfied") to 5 ("extremely satisfied)," respondents were asked to rate their satisfaction with each of these recreation opportunities at the Boundary Reservoir Area. Table 5.1-35 summarizes the results for this questionnaire item by reporting the arithmetic mean calculated for each item, and the standard deviation associated with each mean. Given that there were 27 different importance and satisfaction variables, the number of respondents varied greatly for each item, ranging from 207 to 527 respondents. Appendix 3d reports the valid percentages of respondents for low, moderate, and high levels of importance and satisfaction for each item listed in Question 20.

Table 5.1-35. Mean scores for importance of and satisfaction with recreation facilities and services at Boundary Reservoir Area.

Opportunity	Mean	Importance[1] Mode	Std. Dev.		Mean	Satisfaction[2] Mode	Std. Dev.
Tent campsites	3.71	5	1.47		4.14	5	.88
RV campsites	3.59	5	1.55		3.97	5	1.01
RV hook-ups/utilities	2.70	1	1.52		3.26	3	1.34
Campsite fees	3.36	5	1.50		4.31	5	1.05
Parking areas	4.08	5	.99		4.30	5	.81
Road access to recreation	4.24	5	.94		4.31	5	.83
Disabled access	3.28	5	1.57		3.94	5	1.06
Drinking water	4.22	5	1.08		3.98	5	1.10
Flush toilets	3.67	5	1.41		3.96	5	1.19
Vault/portable toilets	3.56	5	1.29		3.70	5	1.16
Trash containers/collection	4.32	5	.97		4.32	5	.91
Picnic sites	3.97	5	1.04		4.22	5	.91
Swimming/beach access	4.09	5	1.13		4.19	5	.98
Historic sites/information	3.63	5	1.19		4.07	5	.92
Scenic views/viewpoints	4.17	5	.97		4.32	5	.82
Wildlife viewing/nature trails	4.05	5	1.01		4.08	5	.95
Interpretation/education	3.26	3	1.27		3.73	5	1.15
Hiking trails	3.84	5	1.19		3.89	5	1.03
Boat ramps	3.81	5	1.46		4.12	5	1.07
Boat docks	3.61	5	1.50		3.87	5	1.21
Boating safety information	3.30	5	1.46		3.71	3	1.12
Navigation hazard marking	3.91	5	1.45		3.90	5	1.14
River/shore access for fishing	3.69	5	1.40		3.85	5	1.08
Fishing opportunities	3.87	5	1.39		3.95	5	1.05
Hunting opportunities	3.05	1	1.70		3.86	5	1.14
Boat-in campsites	3.25	5	1.53		3.57	3	1.22
Canoe/kayak access facilities	3.42	5	1.51		3.88	5	1.17

Notes:
1 Importance was measured using a 5-point scale ranging from 1 = "not at all important" to 5 = "extremely important."
2 Satisfaction was measured using a 5-point scale ranging from 1 = "not at all satisfied" to 5 = "extremely satisfied."

To better highlight the information provided by the responses to Question 20, Figure 5.1-13 provides a graphical representation of the mean importance and satisfaction ratings for each item. As a group, visitors assigned the highest importance and satisfaction ratings (over 4.0 on the 5-point scale for both importance and satisfaction) to scenic views/viewpoints, wildlife viewing/nature trails, trash containers/collection, swimming/beach access, picnic sites, parking areas, drinking water, and road access to recreation. RV hookups/utilities had the lowest ratings

(mean importance = 2.7, mean satisfaction = 3.3), and was the only facility/service category to average a rating of less than 3.0 for importance. None of the 27 facilities or service categories received a mean satisfaction rating lower than 3.0. After RV hookups/utilities, boat-in campsites were the second lowest on the satisfaction scale (mean = 3.6).

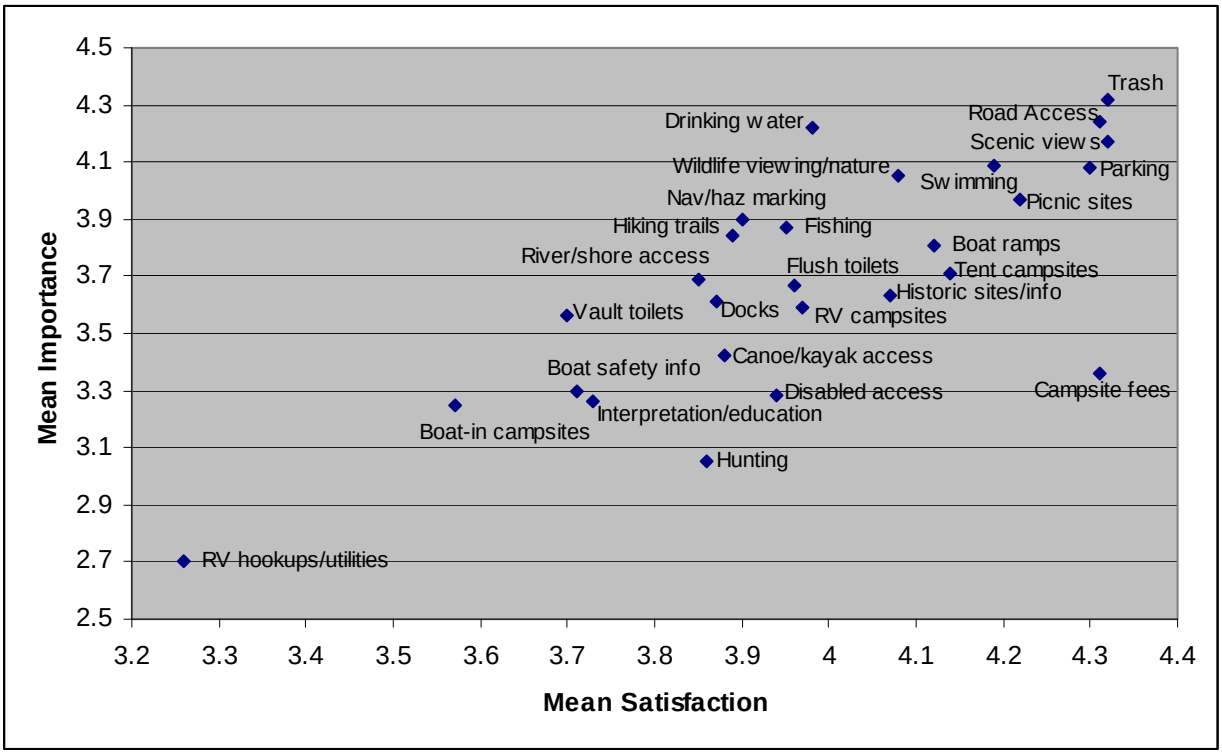


Figure 5.1-13. Importance and satisfaction ratings for recreation opportunities and facilities at the Boundary Reservoir Area (variable number of respondents; mean scores calculated based on a 1–5 continuous response scale).

Question 21: Recreation Improvements Needed. Visitors were asked to report, based on their experiences during this particular visit, whether they thought that any of the existing recreation opportunities in the study area were in need of improvement. Figure 5.1-14 summarizes the results for this survey item. Over 50 percent of the sample reported being satisfied with the recreation activities/facilities that are currently available at the Boundary Reservoir Area. Forty-two respondents failed to answer this question.

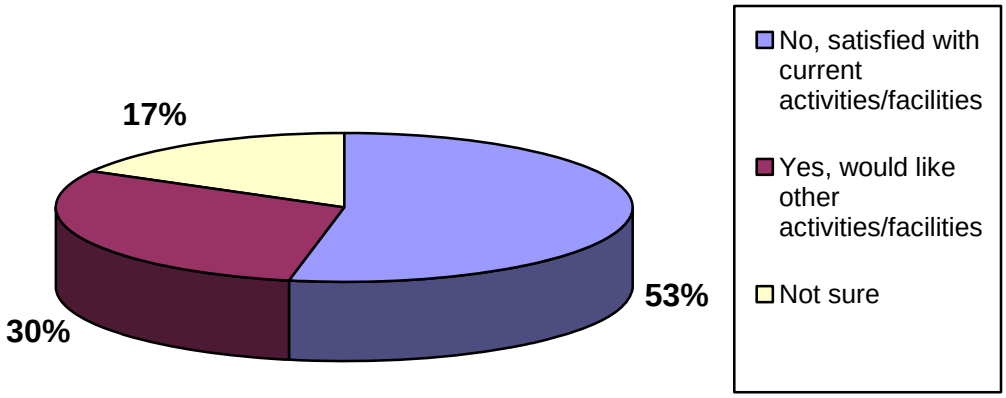


Figure 5.1-14. Are there any improvements to the existing recreation opportunities at Boundary Reservoir that you think are needed? (558 respondents)

Thirty percent of the sample reported that they would like other recreation activities or facilities at the Boundary Reservoir Area. These respondents were asked to list what they would like to have at this destination in addition to what is currently available. The 168 respondents who answered Question 21 affirmatively generated a lengthy list of activities, facilities, or management actions, often in combination (see Appendix 3e).

These open-ended responses have been arranged in alphabetical order in Appendix 3e. A number of the responses include multiple recommendations for new or improved facilities, whereas approximately a dozen or more express thanks or satisfaction but do not actually suggest improvements. Overall, the open-ended responses to Question 21 reflect more than 70 distinct ideas. Quite a few of these are unique (only one response each), such as suggestions for a golf driving range, more water activities, an accessible fishing dock, Frisbee golf, rest areas along roads, guided nature hikes, concessions or vending machines, pay phones, golf cart rentals, restaurants, and a gondola on Hooknose Mountain. Among the open-ended responses that could be grouped together, the most common themes are summarized as follows:

- Improved restroom facilities (more restrooms, flush toilets, better restroom maintenance, etc.)—23 responses
- RV hookups and/or campsites (power and/or water to sites, sites for larger units, more RV sites, etc.)—21 responses

- Boat launch facilities (repair/replace ramps, extend ramps, etc.)—18 responses (also 8 suggestions for boat moorage or more/better boat docks)
- Campsites (more campsites, better campsite conditions, etc.)—13 responses (also 8 suggestions for more boat-in camp and/or picnic sites)
- More/better signage, maps, and/or information for visitors—12 responses
- Playgrounds and/or specific children's play equipment—12 responses
- Improved swimming areas (buoys for demarcation, docks or floats, better beach area, etc.)—10 responses
- Hiking trails (including suggestions for specific locations, such as Pewee Falls)—9 responses (also 5 suggestions for bike trails and 2 for horse trails)
- More privacy and/or trees/shade at campsites—9 responses
- Showers—9 responses

5.1.3.2.6. Your Primary Destination

Question 22: Places Visited. Visitors were asked to report what specific sites in the Boundary Reservoir Area they intended to visit or had already visited. The most frequently selected response (as worded in the survey question) was the campground at Boundary Dam, in reference to the SCL Forebay Recreation Area. The second most common place was on the water in a boat. This sample of visitors generated 1,821 responses to this item, indicating that most respondents visited several different sites during this particular visit to the Boundary Reservoir Area. Figure 5.1-15 summarizes these results by reporting the percent of respondents who circled each site; because respondents were instructed to circle all responses that applied, the percentages total more than 100.

Nineteen percent of the respondents in this sample selected the "Other" response option and named other specific sites in the area. The three sites most frequently listed were Gardner Caves and/or Crawford State Park (at least 15 entries in total); locations or facilities in the Sullivan Lake and Mill Pond area (at least 15 entries), and Pewee Falls (8).

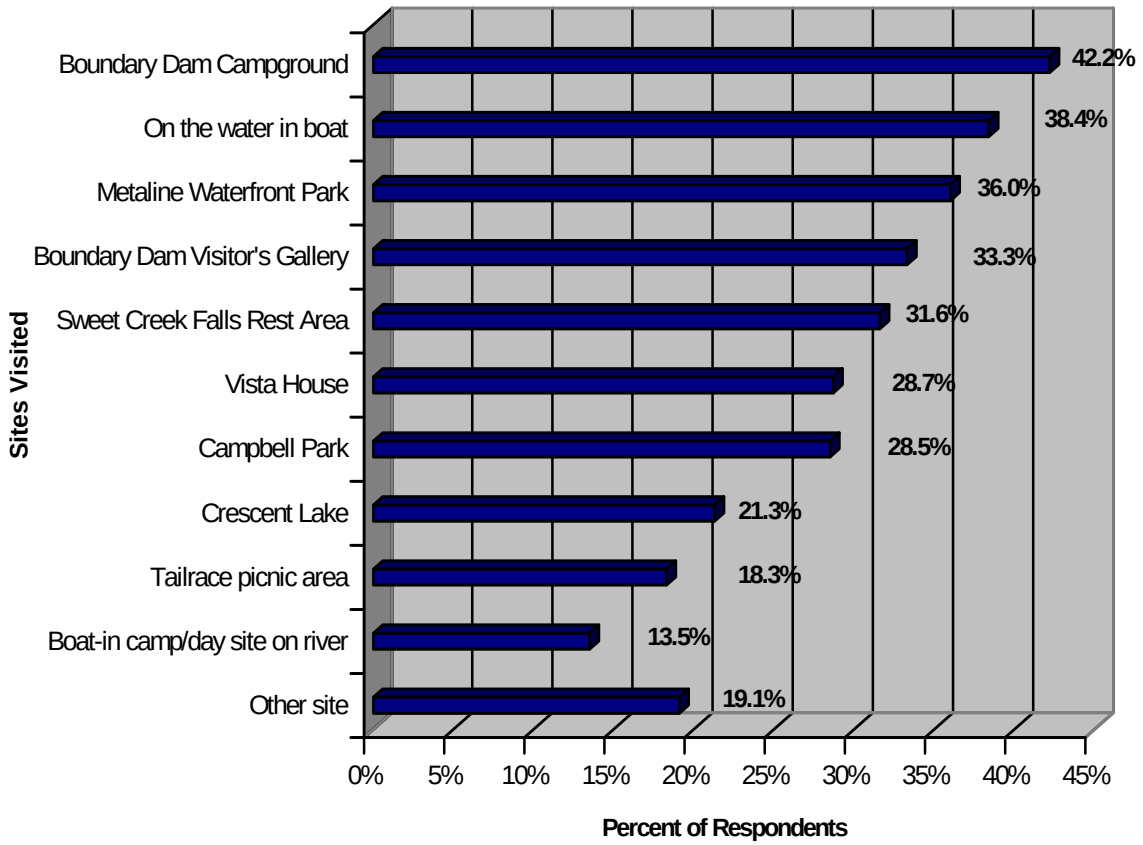


Figure 5.1-15. Recreation sites visited at Boundary Reservoir Area (586 respondents).

Question 23: Primary Destination. As a follow-up, visitors were asked to indicate which *one* of the sites identified in Question 22 was their *primary* destination for this particular visit, meaning the one site where they spent the most time. The two most frequent primary destinations reported were the Boundary Dam campground (the SCL Forebay Recreation Area near Boundary Dam, by 22 percent of all respondents) and on the water in a boat (16 percent). Table 5.1-36 summarizes results for primary destination. Thirty-four respondents did not answer this item, and 65 respondents identified a site listed under "Other" in the response to Question 22. Among the latter group, approximately 18 identified a site or facility in the Sullivan Lake/Mill Pond area as their primary destination.

Table 5.1-36. Primary destination for visitors to the Boundary Reservoir Area.

Primary Destination	Frequency	Percent of Sample[1]
Boundary Dam campground	126	22.3
On the water in a boat	93	16.4
Campbell Park (Box Canyon campground)	82	14.5
Metaline Waterfront Park	60	10.6
Vista House	37	6.5
Sweet Creek Falls Rest Area/trail	37	6.5
Boundary Dam Visitors' Gallery	31	5.5
Boat-in campsite/day-use site on river	13	2.3
Crescent Lake	12	2.1
Tailrace picnic area	10	1.8
Other	65	11.5

Note:
1 566 respondents.

Question 24: Crowding at One's Primary Destination. After respondents identified their primary destination for this particular visit, they were asked whether or how crowded they felt at that destination. Respondents rated the level of crowding they had experienced on a 9-point scale that ranged from 1 ("not at all crowded") to 9 ("extremely crowded"); the midpoint of the scale was 5 ("moderately crowded"). The most common level of crowding reported was not at all crowded (mode = 1.0). Table 5.1-37 summarizes the results for the crowding item. Twenty-one respondents failed to answer this item. Additional analysis of the crowding and related responses is provided in Section 5.1.5.2.5.

Table 5.1-37. Reported levels of crowding at visitor's primary destination at Boundary Reservoir Area.

Rating	Frequency	Percent of Sample[1]
1 (Not at all crowded)	282	48.7
2	96	16.6
3	70	12.1
4	30	5.2
5 (Moderately crowded)	50	8.6
6	27	4.7
7	9	1.6
8	6	1.0
9 (Extremely crowded)	9	1.6

Note:
1 579 respondents; mean = 2.4, standard deviation = 1.9, median = 2.0, mode = 1.0

Question 25: Conflicts at One's Primary Destination. Visitors were asked if they had experienced any problems or conflicts with other visitors that detracted from their enjoyment of

being at their primary destination. Figure 5.1-16 summarizes the results of the recreation conflict question. Twenty-four respondents did not answer this question.

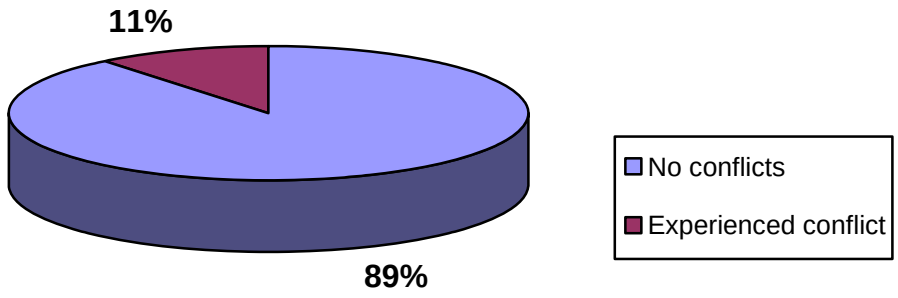


Figure 5.1-16. Responses to Question 25: Did you experience conflict or problems with other visitors during this visit to Boundary Reservoir Area? (576 respondents)

Respondents who answered affirmatively and reported conflicts were asked to describe what had occurred. These visitors generated approximately 75 open-ended comments, many expressed in full paragraph form (see Appendix 3e). Most of the comments addressed some form of conflict associated with the behavior of other visitors, although some involved issues such as maintenance of restrooms. This set of open-ended responses included three relatively common themes. The most common theme (approximately 22 responses) addressed high levels of noise and/or general raucous or uncivil behavior by other people at campgrounds, such as loud music, drinking/drugs, and foul language. An additional 5 comments involved complaints about vehicle noise, mostly from RV generators, all-terrain vehicles (ATVs), or motorbikes. Another common theme (14 responses) was complaints about dogs, including dogs that were unleashed, dangerous and/or loud, and owners who did not clean up after their dogs. Some respondents in these groups suggested posting and enforcing quiet hours, better patrolling of the campgrounds, and having pet control at campgrounds. The third common theme concerned conflicts on the water, with 13 references to motorboats, water skiers/wakeboarders, or personal watercraft creating large wakes, traveling too fast, or making too much noise near kayaks and canoes.

Question 26: Intention to Change Recreation Plans in the Future. Respondents were asked, based on their experiences during this visit to their primary destination, whether they intended to adjust their recreation plans in the future to avoid the presence or behavior of other visitors at their primary destination. Approximately 94 percent of the sample reported that they did not intend to adjust their plans in the future because of adverse experiences at their primary destination. Figure 5.1-17 summarizes the results for this survey item. Forty-five respondents failed to answer this question.

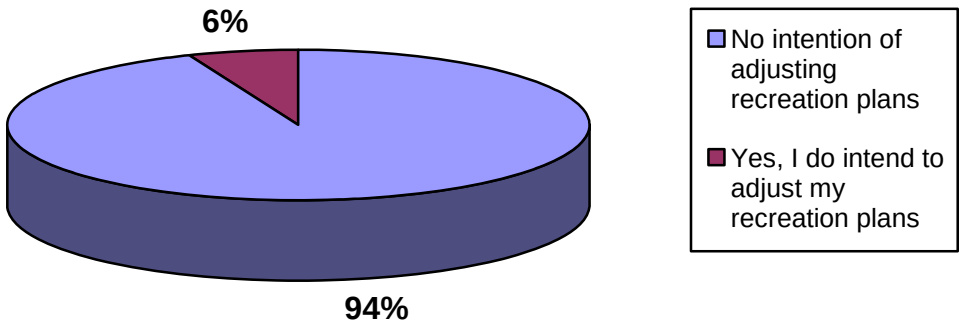


Figure 5.1-17. Responses to Question 26: Do you intend to adjust your recreation plans to avoid other visitors at this site in the future? (555 respondents)

Question 27: How Would You Adjust Your Plans? Those respondents who reported that they did intend to adjust their future plans to avoid other visitors at their primary destination were asked how they would do things differently in the future. Thirty-four respondents intended to adjust their plans, and 7 respondents provided a response to this question without answering the previous item on general intention. Of these 41 respondents, over 40 percent reported that they would prefer to visit their same primary destination on weekdays instead of weekends or holidays. Similarly, over 40 percent reported that they would visit their same primary destination but earlier or later in the year to avoid busier times. A substantially lower proportion of respondents said that they would move to a different site. Because 80 percent of the respondents in this group indicated they still intended to visit their primary destination at a different time rather than shifting to a different site, these results suggest that this relatively small group of visitors may be attached, or loyal, to the primary destination that they reported in this survey. Figure 5.1-18 summarizes the results for this question.

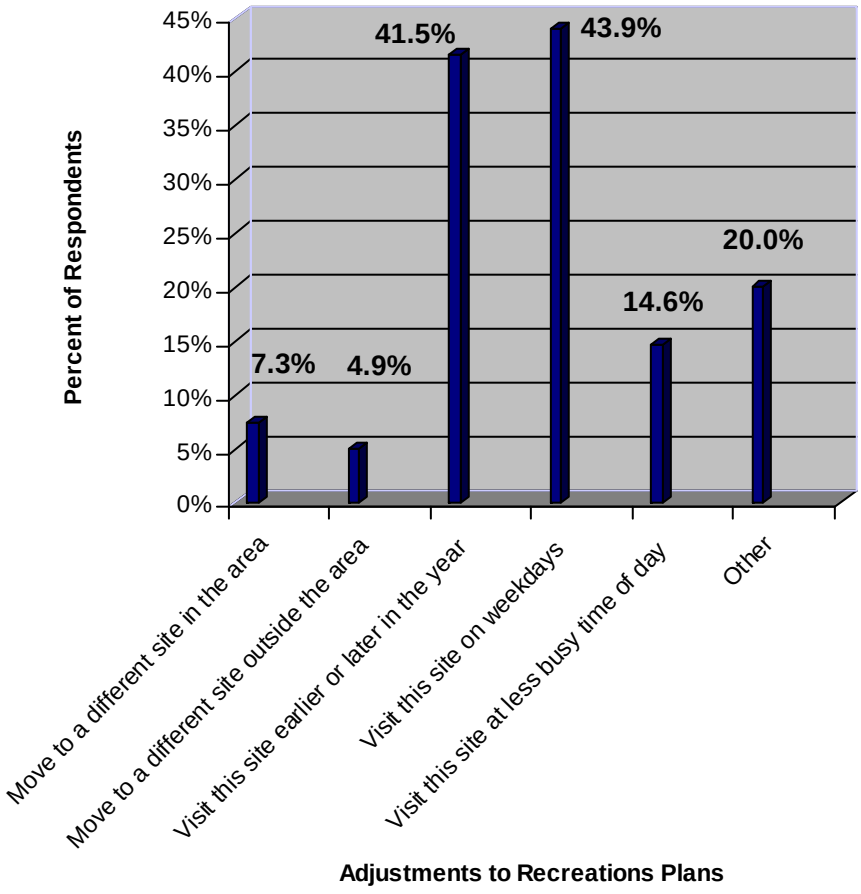


Figure 5.1-18. Responses to Question 27: How do you intend to adjust your recreation plans? (41 respondents)

Question 28: Maintenance of Facilities at Primary Destination. Respondents were asked if they found the facilities at the primary destination they identified in Question 23 to be adequately maintained on this visit. A large majority of the visitors surveyed (90 percent) reported that they found the facilities at their primary destination to be adequately maintained. Figure 5.1-19 summarizes results for this item.

The 10 percent of respondents who reported that the facilities at their primary destination were not adequately maintained were asked to describe any maintenance needs they thought were not currently being met. This group provided approximately 70 open-ended responses, which are listed in Appendix 3e. The descriptions primarily focused on general facility services and maintenance issues such as cleaning and stocking restrooms and more frequent removal of trash from garbage cans. Approximately 30 of the comments referenced bathrooms/restrooms/toilets in some manner, which was the most common topic area. The responses to Question 28 were included in the supplemental survey analysis, as addressed in Section 5.1.5.2.4.

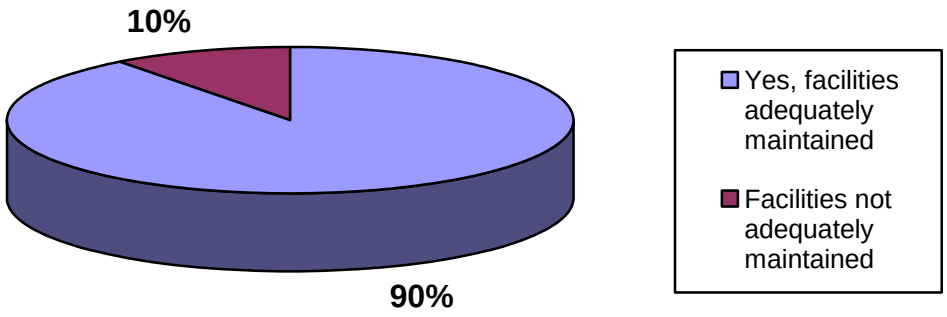


Figure 5.1-19. Responses to Question 28: Did you find the facilities at your primary destination to be adequately maintained? (570 respondents)

5.1.3.2.7. Past Visits

Question 29: Number of Visits to Boundary Reservoir Area in Past Year. To obtain an indication of how much experience visitors have coming to the Boundary Reservoir Area, respondents were asked to report how many visits they had made to the study area in the past 12 months. Table 5.1-38 summarizes results for this item. The most frequent response, received from 32 percent of the visitors, was 1 visit in the past 12 months. A majority (52 percent) of respondents reported visiting more than 1 time during the past 12 months. Approximately 16 percent of respondents were visiting the area for the first time in the past year. Conversely, nearly 85 percent of these respondents indicated they had made 1 or more visits in the past year. These results are somewhat at odds with the responses to Question 1, which reported 63 percent repeat visitors and 37 percent first-time visitors. Seventy-eight respondents failed to answer this question.

Table 5.1-38. Number of visits to the Boundary Reservoir Area made in the past year.

Number of Past Visits[1]	Frequency	Percent of Sample[2, 3]
0	82	15.7
1	167	32.1
2	96	18.4
3–5	87	16.7
6–10	46	8.7
12–25	25	4.8
>25	19	3.6

Notes:
1 Mean based on sample after removing 11 outliers over 40 visits and removing 0 responses (n = 429); range in response is 1–40.
2 Mean = 4.1, standard deviation = 5.8, mode = 1.0
3 522 respondents; range is 0–200 visits.

Question 30: Number of Years Visiting Boundary Reservoir Area. As an additional indicator of past experience at the Boundary Reservoir Area, respondents were asked to report how many years they have been coming to the area. Nearly 30 percent of the sample had been visiting between 0 and 2 years. Nearly one-fourth of the sample had been visiting between 3 and 9 years. About 46 percent of respondents have been coming to the Boundary Reservoir area for 10 or more years, indicating a substantial percentage of long-term, return visitors. Table 5.1-39 summarizes results for this item.

Table 5.1-39. Number of years that visitors have been coming to the Boundary Reservoir Area.

Number of Years	Frequency	Percent of Sample[1, 2]
0	29	6.8
1–2	96	22.6
3–9	105	24.7
10–15	81	19.1
16–20	45	10.6
21–30	42	10.0
>30	27	6.4

Notes:
1 Median = 7.0, mode = 2.0
2 425 respondents; range is 0–80 years.

Question 31: Visitation by Season. Respondents were asked to report the seasons of the year in which they visit the Boundary Reservoir Area, identifying all seasons that apply. Over 90 percent of the sample reported visiting during the summer months. Over 50 percent of the respondents also visit the area in the fall, and 48 percent visit in the spring. Figure 5.1-20 summarizes results for this survey item.

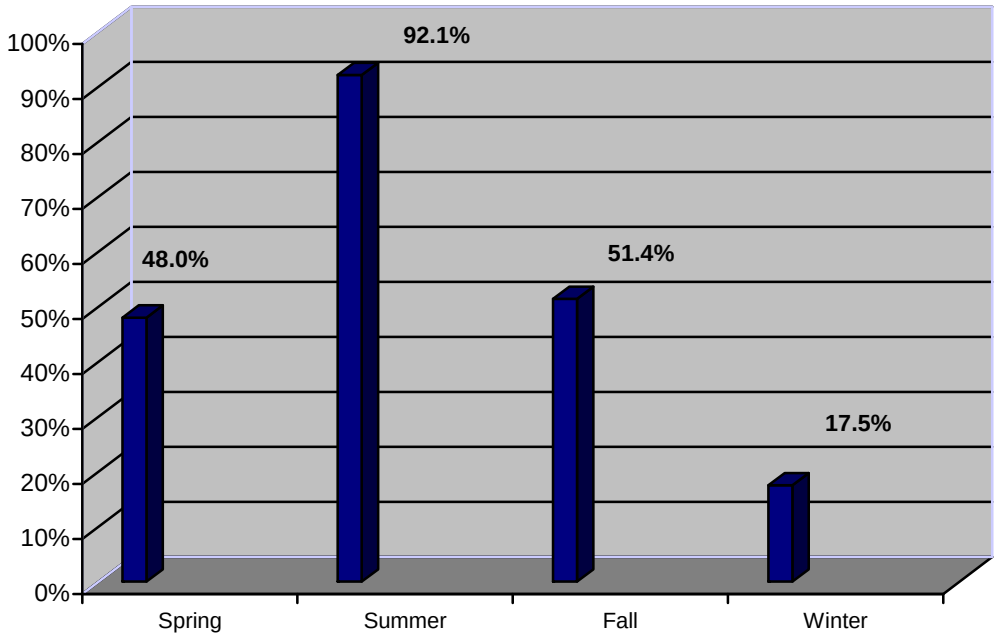


Figure 5.1-20. Responses to Question 31: In what seasons of the year do you visit the Boundary Reservoir Area? (429 respondents)

Question 32: Characteristics of the Boundary Recreation Area that Attract Visitors. Visitors were asked to describe the characteristics of the Boundary Reservoir Area that attracted them; they were given a list of eight pre-specified motivations and the option to identify other reasons. Figure 5.1-21 summarizes the results for this question. Large majorities stated they liked the scenery or the views (81 percent) and/or were drawn to the quiet (76 percent) they can find in the area. Another characteristic selected frequently by visitors was "I like the cost/it's affordable" (57 percent). The 22 percent of the sample choosing the "Other" category provided approximately 80 open-ended responses that are listed in Appendix 3e. The five comments that mentioned Crawford State Park and/or Gardner Caves represented the most common topic among these comments.

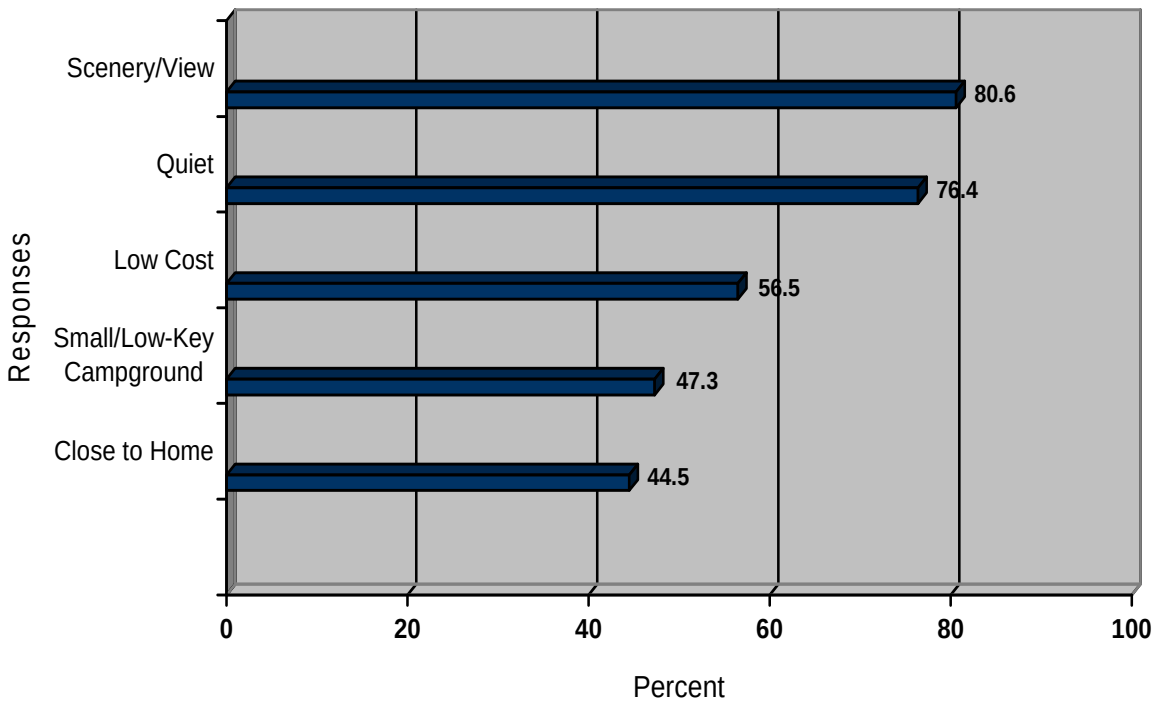


Figure 5.1-21. Responses to Question 32: What do you particularly like about visiting the Boundary Reservoir Area? (584 respondents)

Question 33: Other Lakes and Rivers Visited. Respondents were asked to list up to three other lakes or rivers that they visit in the region for water-based recreation. Only part of this sample provided all three responses, but 404 respondents named at least one other place in the region that they visit. The respondents who answered this item provided a total of 830 responses. Sullivan Lake (16.6 percent) was most frequently listed as an alternate place where these visitors to the Boundary Reservoir Area go for recreation. Table 5.1-40 summarizes the results for this question. Percentages are based on the total number of responses. Appendix 3e contains the total list of responses with locations.

Table 5.1-40. Other lakes or rivers in the region visited for recreation by Boundary Reservoir Area visitors.

Other Lakes or Rivers Visited	Frequency	Percent of Responses[2]
Sullivan Lake	138	16.6
Pend Oreille River	94	11.3
Columbia River	52	6.3
Lake Roosevelt	51	6.2
Priest Lake/River	46	5.5
Lake Coeur d'Alene	45	5.4
Mill Pond	17	2.1
Diamond Lake	15	1.8
Little Pend Oreille Lakes	14	1.7
Crescent Lake	13	1.6
Kootenay Lake/River	13	1.6
Spokane River	12	1.4
Box Canyon Reservoir	11	1.3
Lake Pend Oreille	11	1.3
Yokum Lake	10	1.2
Leo Lake	9	1.1
Long Lake	9	1.1
Other places[1]	270	32.5

Notes:
1 Other places include responses listed less than nine times in frequency. See Appendix 3e for complete list of responses.
2 830 total responses

Question 34: Other Places or Features Visited in the Region. When asked what other places or features in the region they had visited or intended to visit, visitors reported Box Canyon Reservoir and Sullivan Lake as the two most common locations (42 percent each) on the list provided; Spokane followed closely with 41 percent. Table 5.1-41 summarizes the results for this question.

Table 5.1-41. Other places in the region visited by respondents.

Location or Feature	Frequency	Percent of Sample[1]
Box Canyon Reservoir	228	42.4
Sullivan Lake/Mill Pond Area	225	41.8
Spokane, Washington	222	41.3
North Pend Oreille Scenic Byway (SR 31)	203	37.7
Gardner Caves/Crawford State Park	194	36.1
Colville National Forest	175	32.5
Colville, Washington	172	32.0
Newport, Washington	163	30.3
Northern Idaho	162	30.1
British Columbia, Canada	125	23.2
Columbia River/Lake Roosevelt	109	20.3
International Selkirk Loop	91	16.9
Little Pend Oreille Lakes	74	13.8
Little Pend Oreille National Wildlife Refuge	69	12.8
Salmo-Priest Wilderness	57	10.6
Other	53	9.9

Note:
1 538 respondents.

5.1.3.2.8. Scenery

Question 35: Overall Rating for Visual Quality of Scenery at Boundary Reservoir Area. Respondents were asked to rate the overall quality of the scenery at Boundary Reservoir Area on a 9-point scale ranging from 1 ("very poor") to 9 ("excellent"). Almost 50 percent of the respondents rated the visual quality of the scenery as excellent, which was the most common response. No visitors rated the visual quality at less than a 4 (below average) on a 9-point scale. Table 5.1-42 summarizes the results for this question.

Table 5.1-42. Overall rating of visual quality at the Boundary Reservoir Area.

Rating	Frequency	Percent of Sample[1]
1 Very Poor	0	0.0
2	0	0.0
3	0	0.0
4	1	0.2
5 Average	15	2.6
6	30	5.0
7	78	13.0
8	158	26.3
9 Excellent	298	49.7

Note:
1 580 respondents; mean = 8.2, standard deviation = 1.0

Question 36: Views of Facilities Associated with the Boundary Hydroelectric Project. Respondents were asked if they had seen the dam or any structural evidence of the hydroelectric project (e.g., maintenance buildings, utility lines, or towers) during their visit. Nearly 60 percent of the sample reported seeing structures associated with the Project, whereas 35 percent stated they had not (see Figure 5.1-22). Approximately 6 percent of surveyed visitors to the area reported that they were unsure as to whether they had seen structures related to the Project. The total number of respondents to this question was 563.

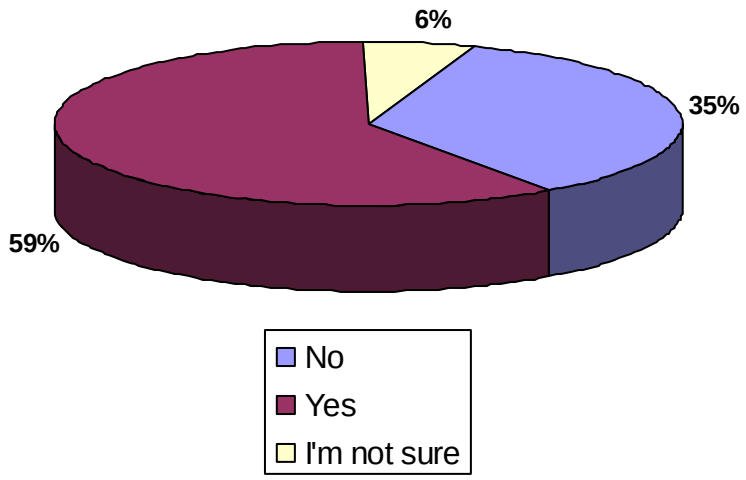


Figure 5.1-22. Responses to Question 36: Percentage of visitors reporting seeing Boundary Hydroelectric Project structures (563 respondents).

Question 37: Where Did You See these Facilities? As a follow-up, visitors who had answered affirmatively to Question 36 (n=335) were asked where they were when they saw these structures. The majority of respondents (53 percent) reported being in the SCL Forebay Recreation Area when they saw facilities or structures associated with the Project. The next highest location category reported was from roads near the reservoir (46 percent). Table 5.1-43 summarizes the results for this question.

Table 5.1-43. Locations from which visitors reported seeing structures associated with the Project.

Location	Percent[1]
Boundary Recreation Area (Forebay Campground)	53.3
Roads near reservoir	45.6
Vista House	36.5
On the water	36.0
Picnic area below Boundary Dam (Tailrace)	23.2
Other	9.9

Note:
1 375 respondents (40 respondents answered this item despite reporting "No" on Question 36)

Question 38: How Did Seeing these Facilities Affect Your Enjoyment of the Scenery? Respondents were asked to rate how seeing the Project facilities and structures affected their enjoyment of the scenery at the Boundary Reservoir Area. A bimodal distribution of response was observed for this item. That is, the majority of visitors fell into two categories, either positive or neutral, regarding how seeing evidence of the Project affected their enjoyment of the scenery. Nearly 37 percent of the sample reported that it greatly enhanced their enjoyment of the scenery, and nearly 40 percent reported that seeing evidence of the Project had no effect on their enjoyment of the scenery. Twenty-eight visitors indicated that seeing the facilities detracted to some degree from their enjoyment of the scenery. Table 5.1-44 summarizes the results for this question.

Table 5.1-44. Effect of seeing facilities associated with the Project on enjoyment of the scenery.

Rating	Frequency	Percent of Sample[1]
1 greatly enhanced	136	36.6
2 slightly enhanced	60	16.1
3 no effect	148	39.8
4 slightly detracted	26	7.0
5 greatly detracted	2	0.5

Note:
1 372 respondents

5.1.3.2.9. Trip Expenses

Question 39: Estimate the Total Amount of Money Spent in Pend Oreille County for this Visit. Respondents were asked if they paid their own expenses for this trip, or if someone else had paid their expenses. Over 80 percent of the sample (445 respondents) reported that they paid their own expenses for this trip.

Those who paid their own expenses were asked to estimate the total amount (in U.S. dollars) they had spent or would spend in Pend Oreille County for this trip. The reported ranges of expenditures were quite large (and surprisingly high, in some cases), as follows:

- Lodging: $0–500

- Camping expenses: $0–2,000
- Eating and drinking establishments: $0–3,000
- Groceries, including beverages: $0–1,200
- Gasoline, oil, auto supplies, and services: $0–4,000
- Boat and recreation rentals: $0–200
- Hunting and fishing: $0–500
- Souvenirs: $0–2,000
- Recreational services (such as guided tours): $0–150

The largest amounts of money were spent on lodging and groceries (mean = $136.58 and $91.52, respectively). The standard deviation on the mean response ranged from $37 to $141, indicating substantial variance in individual expenditures, which is supported by the range on expenditures reported in the list above. Table 5.1-45 summarizes the mean response for this question.

Table 5.1-45. Mean estimated expenses on this trip to the Boundary Reservoir Area.

Type of Expense	n	Mean[1]	Mode	Std. Dev.
Lodging	465	$136.58	$200.00	$124.85
Camping	464	$77.85	$50.00	$141.68
Eating and drinking establishments	464	$64.22	$50.00	$64.58
Groceries: food and beverages	464	$91.52	$100.00	$129.99
Gasoline, oil, auto supplies/services	464	$79.86	$50.00	$92.96
Rentals of boats/RVs	464	$71.82	$100.00	$52.88
Hunting/fishing supplies	464	$42.34	$20.00	$67.85
Shopping/souvenirs	463	$77.27	$50.00	$81.89
Recreation services, guided tours	463	$43.87	$50.00	$37.29
Other	463	$55.33	$100.00	$66.61

Note:
1 Means calculated after removing 0 expenditure responses.

For each category of expenditure, a substantial number of respondents reported spending 0 dollars (Table 5.1-46).

Table 5.1-46. Zero expenditures reported for this trip to the Boundary Reservoir Area.

Type of Expense	Frequency	Percent of Sample[1]
Lodging	415	89.2
Camping	407	87.7
Eating and drinking establishments	253	54.5
Groceries: food and beverages	141	30.4
Gasoline, oil, auto supplies/services	124	26.7
Rentals of boats/RVs	453	97.6
Hunting/fishing supplies	366	78.9
Shopping/souvenirs	398	86.0
Recreation services, guided tours	448	96.8
Other	436	94.2

Note:
1 463–465 respondents

5.1.3.2.10. About You and Your Party

Question 40: Your Gender. Approximately 54 percent of the visitors responding in this question reported their gender as male, while 46 percent indicated they were female. Figure 5.1-23 displays the results for this question.

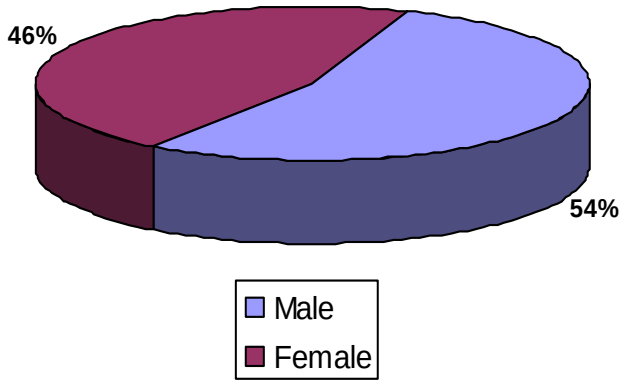


Figure 5.1-23. Responses to Question 40: Are you male or female? (586 respondents)

Question 41: Your Age. Individual visitors to the Boundary Reservoir Area reported ages ranging from under 16 to over 70 years. The most frequent response was from visitors in the 50-to-59 age group, representing approximately 25 percent of all respondents. A substantial proportion of visitors (19 percent) reported being from 60 to 69 years in age and almost 8 percent

stated that they were over 70 years, indicating the visitor population includes a sizable component of older visitors. Table 5.1-47 summarizes results for this question.

Table 5.1-47. Age group reported for individual visitors to the Boundary Reservoir Area.

Age Group (Years)	Frequency	Percent of Sample[1]
Under 16	1	0.2
16–19	12	2.1
20–29	53	9.1
30–39	94	16.1
40–49	123	21.0
50–59	146	25.0
60–69	111	19.0
Over 70	45	7.7

Note:
1 585 respondents

Question 42: Ages of Other People in Your Group. Respondents were asked to report the ages of the other members in their group, by indicating the numbers of people in specific age categories. The most frequent answer for all age categories was that they were alone and were reporting for just one person (0 response). However, there tended to be greater variance for ages under 29, whereas ages over 30 had a lower standard deviation. Table 5.1-48 reports statistics from the analysis of these responses.

Table 5.1-48. Ages reported for other people in respondents' group (mean number of people by age group).

Age	Mean[1]	Median	Mode	Std. Dev.
Under 16	2.5	2.00	1	3.1
16–19	1. 9	1.00	1	2.0
20–29	2.2	1.00	1	3.4
30–39	1.7	1.00	1	1.2
40–49	1.7	1.00	1	1.3
50–59	1.5	1.00	1	1.3
60–69	1.5	1.00	1	1.7
Over 70	1.5	1.00	1	1.2

Note:
1 586 respondents

5.1.3.2.11. Additional Comments

Following Question 42, the visitor questionnaire included space for visitors to provide any additional input or comments they had about how SCL could improve the management of the Boundary Reservoir Area. Respondents to the visitor survey included a total of more than 180

open-ended comments. Appendix 3e includes a complete list of these additional comments. Some of the comments were quite extensive, and many included multiple points. Others were quite brief and simple, including entries such as "Great place, thank you," "Very nice tour of dam," "We really like the wild country," and "Thank you." Approximately 55 to 60 of these comments can be categorized as general expressions of appreciation for the Boundary Reservoir area in general and the respondents' satisfaction with their visit (e.g., "Having an awesome time," "Great area! [We] Loved our stay here!"), or for the recreation facilities and services that SCL and others provide in the area (e.g., "Beautiful campground," "Great place, keep it going," and "Very nice area. Very clean and neat."). Another 20 comments remarked in some way about the area being beautiful or having great scenery. A third, relatively large group of comments reflected a theme that the area should be kept as it currently is and did not need to be changed (e.g., "Hope you can keep it unspoiled," "Don't change anything," "Please don't 'improve' the charm and beauty of it," and "Keep it primitive."). At least 13 responses expressed appreciation for free firewood and/or lack of fees for camping (primarily with respect to the campground at the SCL Forebay Recreation Area, and also for the Campbell Park campground at Box Canyon Dam). The only other response category with more than 10 entries was a group of 15 responses that were various comments about the respondents' companions or what they were doing on their visit (e.g., "Church group ranged from 2 yrs. to 70 yrs. all at Blueslide," "We took our 9-yr-old granddaughter for her vacation").

Approximately 55 comments offered suggestions that related to perceived recreation needs or resource management in the Project vicinity. Many of these additional comments echoed similar points (possibly made by the same respondents) in the responses to certain survey items, such as Questions 21, 25, and 28. The most common topics among these responses referenced boat launch and/or dock facilities (9 responses), signage and information (8), restroom facilities (7), RV sites or facilities (6), and increased security patrolling and/or enforcement of rules in the developed facilities (6).

5.1.4. Area Resident Questionnaires

The area resident questionnaire used in the study was derived from the Project-area visitor questionnaire discussed in Section 5.1.3. The questionnaire included 44 questions addressing 10 categories of information. Most of the questions used in the visitor questionnaire were also used in the area resident questionnaire, with some minor modifications in the wording and/or orientation of the questions. The last page of the questionnaire also included a space for respondents to enter open-ended comments with additional input they wanted to provide about recreation at the Project. This section of the report provides a summary of the processed results from analysis of the resident questionnaire responses. As with the visitor questionnaire, the analysis involved tabulating the responses to develop the frequency and percentage distribution for each possible response to each question, and calculating measures of central tendency (for instance, mean and standard deviation) for the responses to certain questions for which those measures are meaningful.

Question 1 in the area resident questionnaire asked respondents if they had visited the Boundary Reservoir Area (defined as the area including the Pend Oreille River between Boundary and Box Canyon dams and some of the lands next to the river) for the purposes of recreation. Those who answered "Yes" to Question 1 were directed to skip to Question 3 and to complete the remainder

of the survey. Respondents who answered "No" to Question 1 were directed to Question 2, which asked why they had not visited the Boundary Reservoir Area for recreation, and then they were directed to skip to Question 41, where they could answer several questions about themselves and their companions. The instructions in the cover letter also gave potential respondents the option of returning the blank questionnaire (without answering any of the questions) if they were not familiar with the Boundary Reservoir Area or did not use the area for recreation purposes.

Given this questionnaire format, respondents who returned the questionnaire either completed the entire form except Question 2 or completed Questions 1, 2, and (optionally) 41 through 44. The returned questionnaires indicated that a substantial proportion of the area resident respondents (57 percent) had not visited the Boundary Reservoir Area for recreation, and therefore provided responses for only a few questions at the beginning and end of the form.

5.1.4.1. Survey Completion Summary

Area resident questionnaires were distributed through the four-step process described in Section 4.1.3. The first mailing, a pre-survey notice, was mailed during the fourth week of August and the final mailing occurred in the first week of October 2007. A total of 583 survey forms were returned and logged. Among those returned surveys, approximately 330 were in response to the initial distribution of survey packets (the second of four mailings) and were received by approximately October 8, 2007. Another 219 surveys, primarily from the second distribution of survey packets (the last of four mailings) were received through November 5, 2007. An additional 34 surveys trickled in between that date and the middle of December. Among all returned surveys (583 total), 75 (12.9 percent) were entirely blank, 227 (38.9 percent) were partially complete (generally including responses to Questions 1, 2, and 41–44), and 281 (48.2 percent) included responses to all or virtually all questions. Table 5.1-49 summarizes the numbers of surveys distributed and returned.

Table 5.1-49. Summary of area resident questionnaire distribution and response.

Sample Population	Total Addresses	Bad Addresses/ Deceased Recipients	Usable Addresses	Returned Surveys	Response Rate
British Columbia communities	1,500	112	1,388	344	24.8
Washington communities	465	45	420	239	56.9
Total population	1,965	157	1,808	583	32.2

The table entries for bad addresses and deceased recipients are based on mailed pieces that were returned to Tetra Tech with notes to that effect. It is possible there were other cases of mailed items to invalid addresses that were not returned. Returns from the invalid addresses indicate the survey was distributed to a maximum of 1,808 valid addresses. Using this number, the 583 returned surveys that have been logged represent an overall response rate of over 32 percent.

The response rate from the Washington communities within the sample area was 57 percent, more than double the response rate from the British Columbia portion of the sample area. The returns from the Washington and British Columbia portions of the sample area also reflected a distinct difference in the level of completion of the returned survey forms. Washington residents returned 12 blank survey forms, and 85 percent of the respondents from Washington communities returned completed surveys and indicated that they use the Boundary Reservoir Area for recreation. By contrast, 63 blank surveys (many with brief notes indicating the recipients did not use the Boundary area) were returned from British Columbia residents. In addition, less than 23 percent of the surveys returned by British Columbia residents were complete surveys; by far the most common response from British Columbia residents (59 percent of this subtotal) was to enter responses to Questions 1 and 2 (and, usually, Questions 41 through 44), indicating that these respondents did not use the Boundary Reservoir Area for recreation.

The returned surveys indicate that residents of the British Columbia communities near the Project are considerably less likely to use the Boundary Reservoir Area for recreation than are the residents of the nearby Washington communities. That difference in use patterns may well explain the much lower response rate for the British Columbia residents. The difference in use patterns is also generally consistent with information on visitor origin derived from the Project-area visitor questionnaires. As reported in Section 5.1.3.1.2, when survey crews requested addresses from visitors they contacted, only 5 percent of the visitors indicated they were from Canada. The tabulation of postal codes for Question 6 of the visitor survey also reported that 28 of the respondents (4.7 percent of the total) indicated their primary residence was in British Columbia, and 7 of those respondents (1.2 percent) reported postal codes for Trail, Salmo, Fruitvale, or Montrose.

Because of the time required to enter survey responses and analyze the results, only the responses from 400 surveys (primarily returns from the initial distribution of survey packets) had been analyzed as of January 2008 and were presented in Section 5.1.4.2 of the interim report (SCL 2008). Responses from the remaining area resident surveys were processed and analyzed subsequently during 2008, and this final report presents complete results from the entire set of returned surveys.

5.1.4.2. Survey Response Results

Results are provided for each question in the survey, in sequential order. The subheadings correspond to the categories of questions as they were grouped on the survey. For each survey question, there is a graph or table summarizing the tabulation of responses and a brief narrative. The percentages that are reported are based on the number of survey participants responding to each question, and not on the total number of completed questionnaires (528, excluding blank surveys). For most questions, the number of respondents is substantially less than 300 because a relatively large number of returned surveys were blank or provided responses for only a few questions.

Most of the survey questions included “Other” as a possible response, with space provided for the respondents to write in specific information. Because those open-ended responses can cover a wide variety of subject matter and can be difficult to interpret, they have not been categorized, but have been grouped into tabular or graphical format similar to the results for the pre-specified

responses. The open-ended responses have been reviewed, however, and obvious generalizations or tabulations from those data have been included in the discussion for the respective survey question, where appropriate. A complete listing of the open-ended responses is provided in Appendix 4b.

As is the case for the visitor questionnaires, the results provided below represent the basic tabulation of responses to the area resident survey questions, but do not include in-depth or second-stage analysis of the responses. Supplemental analysis of the responses is discussed in Section 5.1.5. Additionally, RRS data and applicable results will be synthesized and used to identify recreation needs and will be utilized in the RNA. As was also noted for the visitor questionnaire results, the area resident questionnaire employed place names or recreation facility names that do not exactly match the standard terms used elsewhere in this report and in other SCL documents, such as the PAD and the RSP.

5.1.4.2.1. Your Recreation Use at Boundary

Question 1: Use of Boundary Reservoir Area for Recreation. The first question asked survey respondents if they have ever visited the Boundary Reservoir Area for the purpose of recreation. Fifty-three percent of the area resident respondents reported that they had visited the Boundary Reservoir Area for recreation in the past, whereas 47 percent indicated they had not (Figure 5.1.-24).

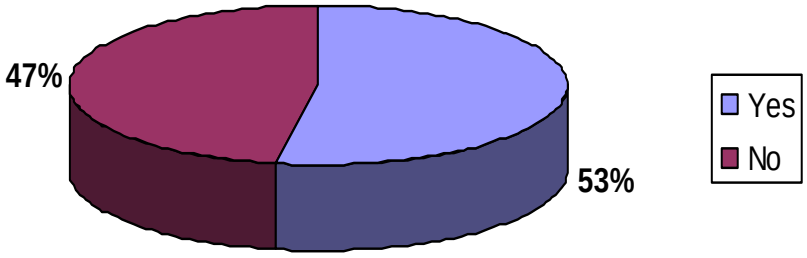


Figure 5.1-24. Response to Question 1: Have you visited the Boundary Reservoir Area for the purpose of recreation? (523 respondents)

Question 2: Reasons for Not Visiting. Respondents who answered "Yes" to Question 1 (276 respondents) were directed to skip to Question 3, while those who answered "No" (247 respondents) were asked why they have not visited the Boundary Reservoir Area for recreation. (Of those respondents who stated "No," 232 chose to answer Question 3 explaining their reasons for not visiting the Boundary Reservoir Area, as is discussed subsequently.) Nearly 60 percent of the non-users selected one of the five predefined reasons for not visiting, with 23 percent indicating they did not have enough time and 17 percent reporting that they preferred other areas

(Table 5.1-50). Approximately 43 percent selected the "Other reason" response, and many of them wrote in a specific reason for not visiting the area. These open-ended responses are listed in Appendix 4b.

Table 5.1-50. Reasons area residents have not visited the Boundary Reservoir Area for recreation.

Reason	Frequency	Percent of Sample[1]
Not enough time	54	23.3
Not interested in types of activities there	34	14.7
Lack of adequate facilities	8	3.4
Prefer other areas	40	17.2
Poor health	32	13.8
Other reason	99	43.0

Note:
1 232 respondents

Some of the general categories that emerged from the other reasons for not visiting included general statements about health ("age and health keep us home" and "husband's poor health"). Other themes that seemed to be common for Canadian respondents included the idea that they have many or more of the same recreation opportunities in Canada, so there was no need to make the trip ("why cross the border when we have opportunities in Canada?"). Related to that issue were problems with crossing the international border due to increased security, whether perceived or actual ("due to security concerns I would rather not cross the border"). Many area residents were unaware of the recreation opportunities at the Boundary Reservoir Area making statements such as, "didn't realize there were so many good facilities in this area" and "didn't know it was there." Finally, some residents stated they simply were not interested in participating in the kinds of recreation opportunities the area offers. Their statements included comments such as, "I don't camp or fish," "do not do camping", and "not campers at all." The complete list of open-ended responses is presented in Appendix 4b.

Question 3: Main Reason for Visiting the Boundary Reservoir Area. Those who answered "Yes" to Question 1 were asked their main reason for choosing the Boundary Reservoir Area for recreation. Over half (56 percent) of these respondents selected the "I live here" response, as shown in Table 5.1-51. Only 4.4 percent (12 respondents) selected the "Other" response; specific responses in that category are listed in Appendix 4b. They include "just passing through" and two respondents reporting "all of the above," indicating that all of the possible responses to the categorical question are why they visit.

Table 5.1-51. Main reason for visiting the Boundary Reservoir Area for recreation.

Reason	Frequency	Percent of Sample[1]
I live here	154	56.0
A good place to do the recreation activities I enjoy	46	16.7
Spend time with family/friends	17	6.2
Scenery/views	23	8.4
A good place to relax	23	8.4
Other reason	12	4.4
Total	**275**	**100.0**

Note:
1 275 respondents

Question 4: Group Size. Area residents who reported they did visit the Boundary Reservoir Area for recreation were asked to indicate how many people were typically in their group when they visited, and the male/female distribution of their group. The size of visitor groups ranged from 1 to 45 individuals. The mean group size overall was 4.47 people, and a group of 2 was the most common response. Among females there were 78 responses each for groups of 1 and 2. Table 5.1-52 summarizes results for group size.

Table 5.1-52. Number of people in area residents' groups when visiting Boundary Reservoir Area for recreation.

Category	Minimum	Maximum	Mean	Median	Mode	Std. Dev.
Group Size[1]	1	45	4.47	4.00	4	3.82
Males[2]	1	30	2.37	2.00	2	2.29
Females[3]	0	15	2.33	2.00	1, 2	1.83

Notes:
1 275 respondents
2 250 respondents
3 248 respondents

Question 5: Overnight Visits. A large majority (81 percent) of the area residents who visited the Boundary Reservoir Area reported that they just visited for the day and did not stay overnight (Figure 5.1-25). Of those residents who reported overnight stays, the total number of nights that they spent in the area ranged from 1 to 10. On average, these visitors stayed for 2.6 nights (n = 45, mean = 2.56, standard deviation = 1.5, median and mode = 2.0).

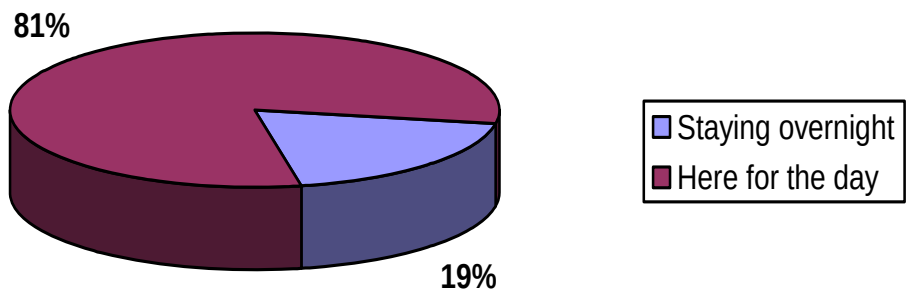


Figure 5.1-25. Responses to Question 5: Do you usually stay overnight when visiting the Boundary Reservoir Area? (276 respondents)

Question 6: Location of Overnight Stays. Respondents who indicated they usually stayed overnight while visiting the Boundary Reservoir Area were asked to identify the overnight facilities that they used. Table 5.1-53 summarizes the results for this question. From the list of places provided in the question, respondents were instructed to circle all that applied. The SCL Boundary Campground (Forebay Recreation Area) was the most commonly selected choice, followed by the campground at Box Canyon Dam (Campbell Park). When respondents chose the USFS Campground, BLM Campground, or Private Campground responses, they were instructed to provide the name of the campground. The USFS campgrounds named (11 total responses) were Sullivan Lake, Crescent Lake, Big Meadow Lake, Noisy Creek, and Kettle Falls. The BLM Campground (named in 1 response) was the site identified as 5NR BLM-1 from the dispersed site inventory (see Section 5.3), and the private campground was Blueslide.

Table 5.1-53. Where area residents usually stayed overnight at the Boundary Recreation Area.

Where	Frequency of Responses	Percent of Responses
Boundary Campground	32	37.2
Box Canyon Campground	22	25.6
USFS Campground	11	12.8
BLM Campground	1	1.2
Private campground	5	5.8
Hotel, motel or resort	5	5.8
Other	10	11.6
Total	**86**	**100.0**

5.1.4.2.2. Recreation Activities

Question 7: Participation in Recreation Activities. The most frequent recreational pursuit reported by area residents who visited the Boundary Reservoir Area was viewing scenery/sightseeing, identified by nearly 74 percent of the respondents. Over half of the sample reported picnicking (55 percent) or fishing (53 percent), whereas almost half reported swimming (49 percent), and resting/relaxing (48 percent). This sample of 282 area residents generated 4,467 "yes" responses to this item, indicating that many respondents identified multiple activities. Figure 5.1-26 summarizes results for participation in recreation activities. Respondents who chose the "Other" response category (8.5 percent of all responses) identified activities such as attending a softball tournament, golfing, caving, and examining the history of the area.

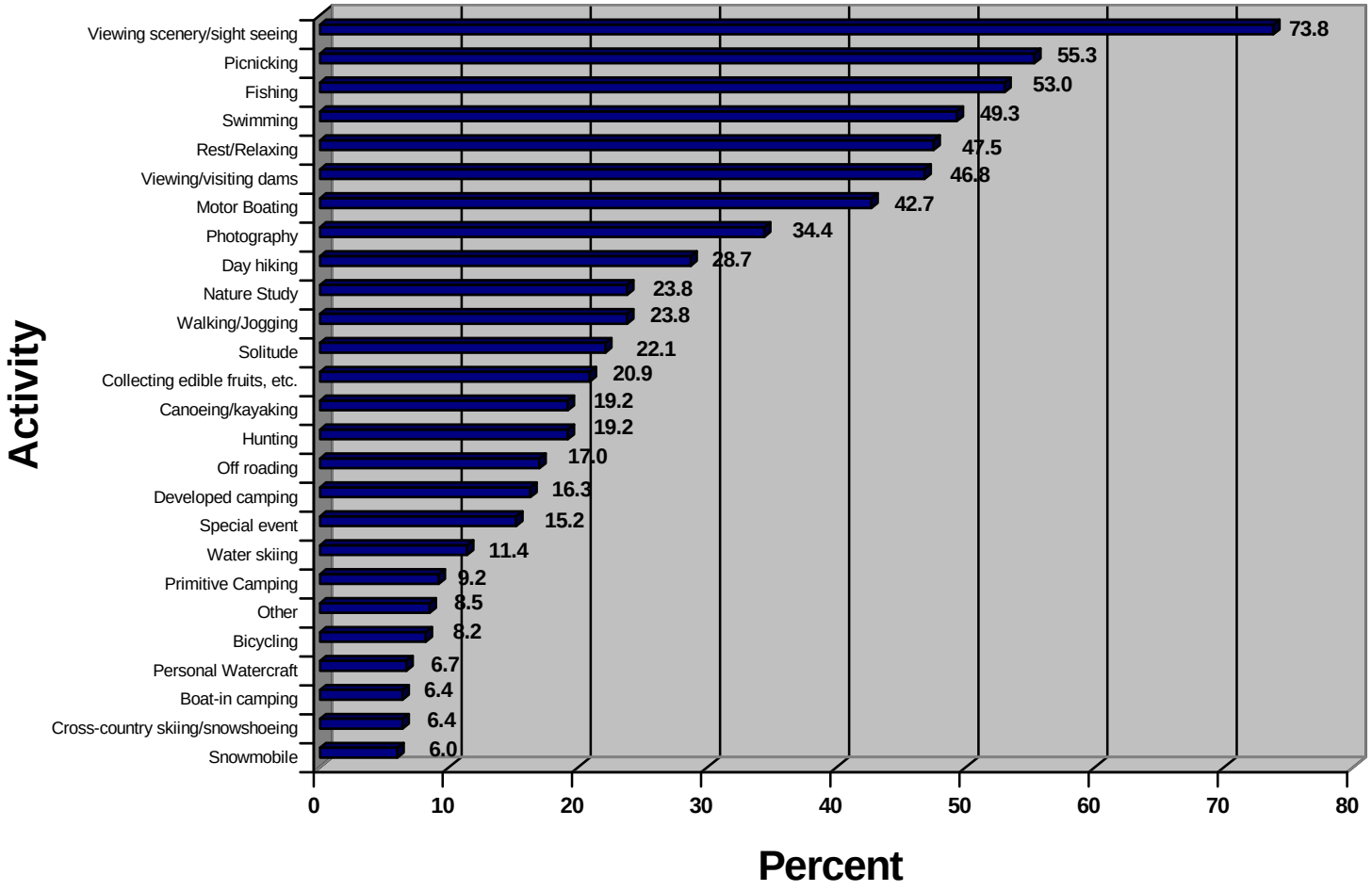


Figure 5.1-26. Responses to Question 7: Participation in recreation activities by area residents at Boundary Reservoir Area (4,467 total responses).

Question 8: Primary Recreation Activity. After asking area residents what types of recreation activities they had participated in while visiting the Boundary Reservoir Area, they were asked to indicate which one of these activities was their main reason for choosing the Boundary Reservoir Area as a place for recreation. The most frequent primary activity reported was viewing scenery/sightseeing, which was identified by 17 percent of the respondents to this question. Motor boating and fishing were reported as the primary activity by 15 percent and 14 percent of the sample, respectively. Table 5.1-54 summarizes the results for the respondents' primary activity.

Table 5.1-54. Primary recreation activity for area residents visiting the Boundary Reservoir Area.

Primary Activity	Frequency	Percent of Sample[1]
Viewing scenery/sightseeing	48	17.3
Motor boating	42	15.1
Fishing	40	14.4
Swimming	21	7.6
Resting/relaxing	18	6.5
Picnicking	16	5.8
Developed camping	13	4.7
Canoeing/kayaking	11	4.0
Viewing/visiting dams	11	4.0
Other	9	3.2
Spending time alone	7	2.5
Hunting	7	2.5
Day hiking	6	2.2
Nature study	6	2.2
Off-roading	5	1.8
Walking/jogging	5	1.8
Photography	3	1.1
Special event	2	0.7
Personal watercraft	2	0.7
Water skiing	2	0.7
Miscellaneous[2]	4	1.4

Notes:
1 278 respondents.
2 Miscellaneous includes cross-country skiing, bicycling, collecting edible fruits, and primitive camping (1 respondent for each category).

Question 9: Quality of the Recreation Opportunities. Table 5.1-55 summarizes results for the question that asked area residents to rate the overall quality of the recreation opportunities available at the Boundary Reservoir Area. Respondents circled a number on a scale ranging from 1 to 9, with a 1 indicating "Very Poor" and a 9 meaning "Excellent." The most common rating reported, by 40 percent of the sample, was a 7 (midway between average and excellent).

Approximately 86 percent of the respondents rated the opportunities as better than average (a rating of 6 or higher), while 4 percent provided below-average ratings (4 or lower).

Table 5.1-55. Area resident ratings for the quality of recreation opportunities at the Boundary Reservoir Area.

Rating	Frequency	Percent of Sample[1]
1 Very Poor	0	0.0
2	1	0.4
3	2	0.7
4	8	2.9
5 Average	27	9.7
6	28	10.1
7	96	34.7
8	71	25.6
9 Excellent	44	15.9

Note:
1 277 respondents; mean = 7.17, standard deviation = 1.35, median = 7.0, mode =7.

5.1.4.2.3. Fishing

Overall, 150 area residents answered questions about fishing in the Boundary Reservoir Area. The area residents who provided an address allowed researchers to determine that Washington residents accounted for 92.9 percent (n = 118) of the area residents who indicated they fished in the Boundary Reservoir area, while the remaining 7.1 percent were Canadian residents.

Question 10: How Long Have Area Residents Been Fishing in the Boundary Reservoir Area. Table 5.1-56 summarizes results for the number of years area residents had been fishing in the Boundary Reservoir Area. The mean number of years across all respondents was just over 16 years. Over 28 percent of this sample reported they had been fishing in the area for more than 20 years, whereas 32 percent had been fishing in the Boundary Reservoir Area for 5 years or less.

Table 5.1-56. Number of years that area residents have been fishing in the Boundary Reservoir Area.

Years Fishing	Frequency	Percent of Sample[1]
0–5	48	32.4
6–10	21	14.2
11–15	18	12.2
16–20	19	12.8
>20	42	28.4

Note:
1 188 respondents; mean = 16.2 years, standard deviation = 13.9, median = 12.0, mode = 2 (6–10 years).

Question 11: Number of Days Per Year Fished. Question 11 asked area residents to identify how many days per year they fished in the Boundary Reservoir Area, by season. Table 5.1-57 summarizes these results. The number of days fished per respondent ranged from 0 to 60 for the spring and fall seasons, and 0 to 100 (a mathematical impossibility) for the summer. The mean number of days fished was highest in the summer, at 8.1 days, decreasing to 4.6 days in the fall and less than 0.6 in the winter.

Table 5.1-57. Number of days area residents fished, by season, in the Boundary Reservoir Area.

Season	Minimum	Maximum	Mean	Median	Mode	Standard Deviation
Spring[1] (Mar–May)	0	60	5.29	2.00	0	8.35
Summer[2] (Jun–Aug)	0	100	8.14	5.00	10	12.15
Fall[1] (Sep–Nov)	0	60	4.55	2.00	0	7.50
Winter[3] (Dec–Feb)	0	15	0.56	0.00	0	2.04

Notes:
1 140 respondents
2 142 respondents
3 138 respondents

Question 12: Means of Fishing. Area residents who indicated they fished in the study area were asked to report how they usually fish in the Boundary Reservoir Area. Thirty-eight percent of the sample of anglers reported that they fished from a boat, while 26 percent usually fished from shore. Figure 5.1-27 summarizes the results for this survey item. Those area residents who reported fishing from a boat were asked to identify the type of boat they used for fishing. The answers varied in specificity and included canoes, row boats, Zodiacs, pontoon boats, and motorboats; the respondent who indicated "other" fished from a float tube. A complete list of these responses is included in Appendix 4b.

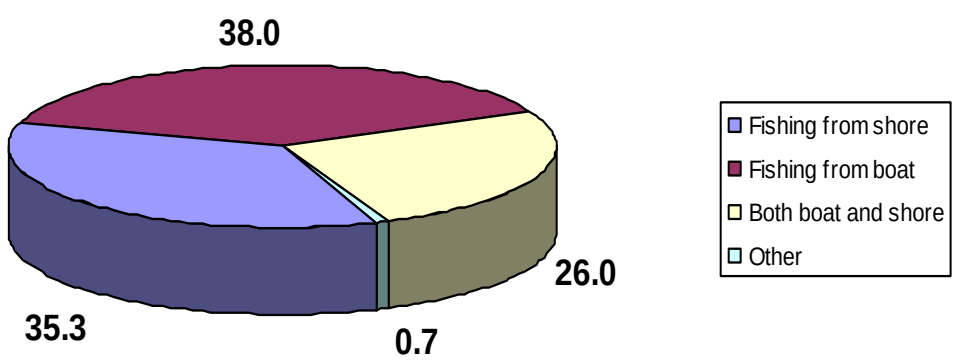


Figure 5.1-27. Responses to Question 12: How do you usually go fishing? (150 respondents)

Question 13: Fishing Locations. A map of the Boundary Reservoir Area was included in the questionnaire and area residents were asked to report where they usually went fishing in the area. The most common response, identified by nearly 50 percent of this sample, was the upper reach of Boundary Reservoir between Metaline and Box Canyon. Sullivan Lake and Mill Pond were the second and third most frequently identified areas. Figure 5.1-28 summarizes the results of this question, showing the percentages of respondents selecting the various locations.

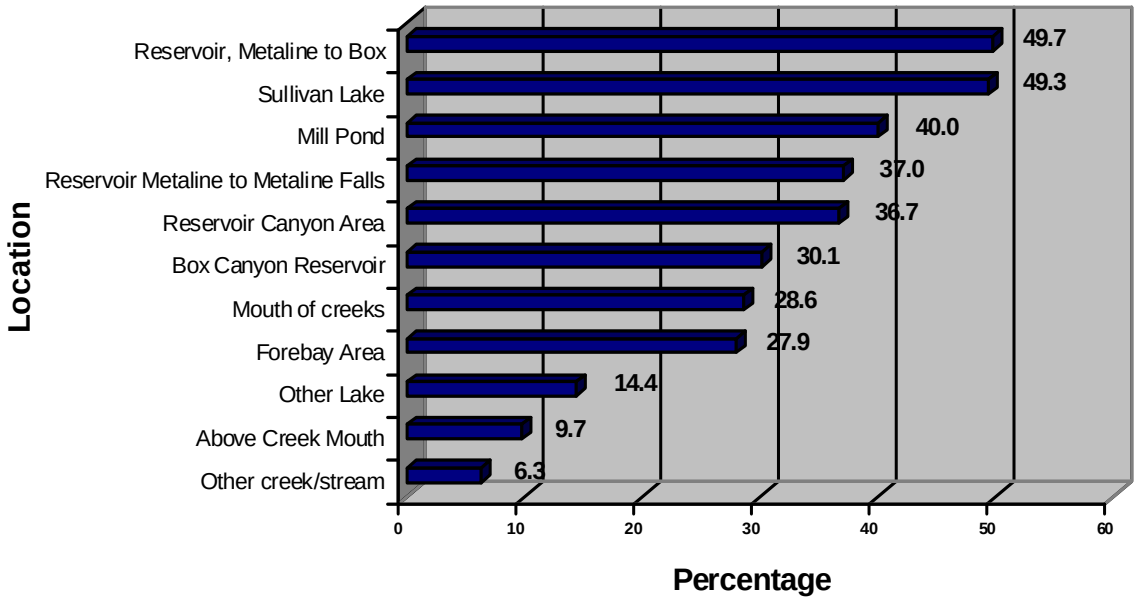


Figure 5.1-28. Responses to Question 13: In what area(s) do you usually fish when you visit the Boundary Reservoir Area? (147 respondents)

Question 14: Preferred Species to Catch. Area resident anglers were asked what species of fish they usually tried to catch while fishing in the Boundary Reservoir Area. There were five choices (including "Other species") listed in the question, and respondents were instructed to circle all that applied. This sample (145 respondents) reported 174 total responses, indicating that many anglers are interested in catching more than one species while fishing in the area. Triploid trout were the most desired fish to catch, followed by other trout. Figure 5.1-29 summarizes the results for this question.

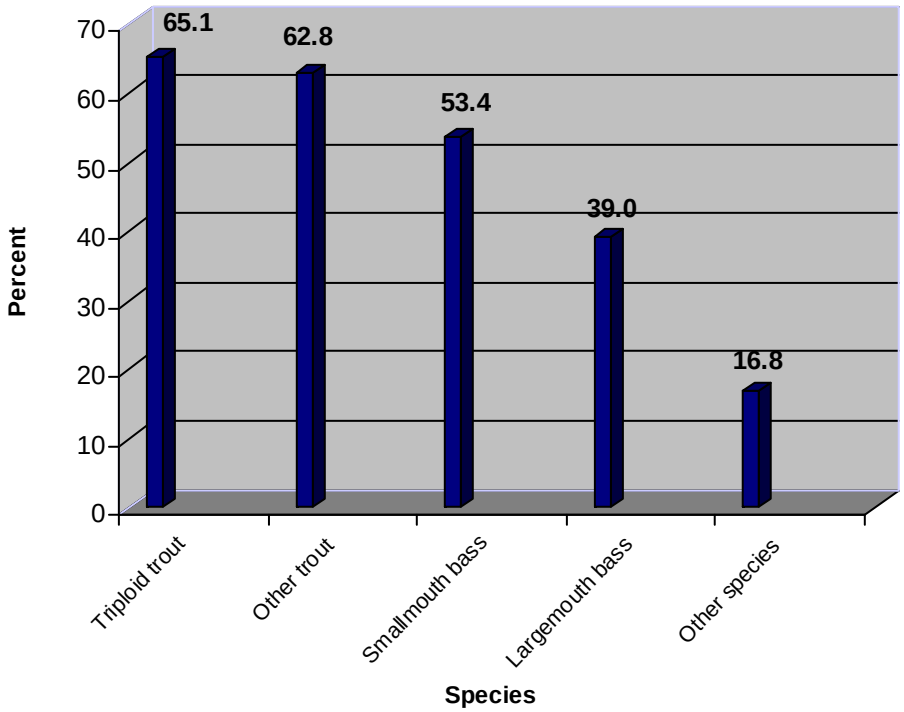


Figure 5.1-29. Responses to Question 14: What species of fish do you usually try to catch? (145 respondents)

Question 15: Description of Fish Caught. Question 15 asked area residents to report the numbers and size of fish they typically catch by species during a fishing trip in the Boundary Reservoir Area. Results are summarized in Table 5.1-58. The anglers in this sample reported catching from 0 to 100 fish on a single trip, with the maximum figure reported for smallmouth bass (and seeming to be an unrealistically high number). The most common response for the number caught per trip (the mode) was 2 fish for all species except largemouth bass. The median reported harvest per trip was also 2 fish for triploid trout, largemouth bass and smallmouth bass, and 3 fish for other trout. Species reported in the other fish category included squawfish (northern pikeminnow), pike, walleye, and tench.

Table 5.1-58. Number of fish typically caught by area residents on a fishing trip at the Boundary Reservoir Area.

Species	Minimum	Maximum	Mean	Median	Mode	Std. Dev.
Triploid	0	24	3.90	2.00	2	3.98
Other trout	1	30	4.58	3.00	2	6.12
Smallmouth bass	0	100	5.67	2.00	2	13.57
Largemouth bass	0	20	3.44	2.00	1	4.17
Other fish 1	1	20	5.35	4.00	2	4.89
Other fish 2	2	4	2.17	2.00	2	1.60

Note:
Table entries are based on data from 162 respondents.

Table 5.1-59 summarizes the fish size component of the responses to Question 15. Based on the range of the responses, the survey analysts established four different size categories. Across all species, the most common sizes reported were in the 10- to 18-inch size class; this category accounted for a combined 54 percent of all responses to this question. Among responses for triploid trout that fit into the size categories (i.e., discounting the "Other size" responses), 70 percent were in the 10- to 18-inch size range and 13 percent were in the over-18-inch category.

Table 5.1-59. Size range of fish typically caught by residents in the Boundary Reservoir Area.

Species	Size Range of Fish (Inches)									
	Under 6		6–9		10–18		Over 18		Other Size[1]	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Triploid	2	1.0	6	3.0	33	16.7	6	3.0	13	6.6
Other trout	2	1.0	2	1.0	33	16.7	2	1.0	12	6.1
Smallmouth bass	2	1.0	6	3.0	21	10.6	3	1.5	16	8.1
Largemouth bass	0	0.0	2	1.0	13	6.6	0	0.0	4	2.0
Other fish	3	1.5	1	0.5	6	3.0	5	2.5	5	2.5
Total	**9**	**4.5**	**17**	**8.5**	**106**	**53.6**	**16**	**8.0**	**50**	**25.3**

Notes:
Table entries based on data from 198 responses.
1 Other Size of fish are responses that were not numbers (i.e., "small") or sizes that did not fit into the size categories

Question 16: Fishing Satisfaction. Table 5.1-60 summarizes results for the question that asked area resident anglers to rate their satisfaction with the fishing opportunities in the Boundary Reservoir Area. The responses were based on a scale ranging from 1 to 9, with 1 representing "Very Poor" and 9 representing "Excellent." The most common rating reported among the nine classes (the mode) was 5, "Average," which was selected by 35 respondents (24.5 percent of this sample). Approximately 19 percent of the respondents rated their satisfaction as below average (combining all ratings of 1 to 4), whereas 57 percent considered the opportunities to be above average (ratings of 6 to 9).

Table 5.1-60. Area residents' satisfaction with fishing opportunities in the Boundary Reservoir Area.

Rating	Frequency	Percent of Sample[1]
1 Very Poor	1	0.7
2	6	4.2
3	7	4.9
4	13	9.1
5 Average	35	24.5
6	25	17.5
7	26	18.2
8	18	12.6
9 Excellent	12	8.4

Note:
1 143 respondents; mean = 6.96, standard deviation = 1.9, median = 5.4, mode = 5.

5.1.4.2.4. Boating and Reservoir Use

Question 17: Boat Use. Area residents were asked if they often operated or rode in a boat or other watercraft for pleasure or travel on Boundary Reservoir when they visit the area for recreation. Approximately 47 percent of the sample reported they did often use or operate a boat or other watercraft on Boundary Reservoir, whereas 53 percent reported no such boat use. Figure 5.1-30 summarizes the results of this survey item.

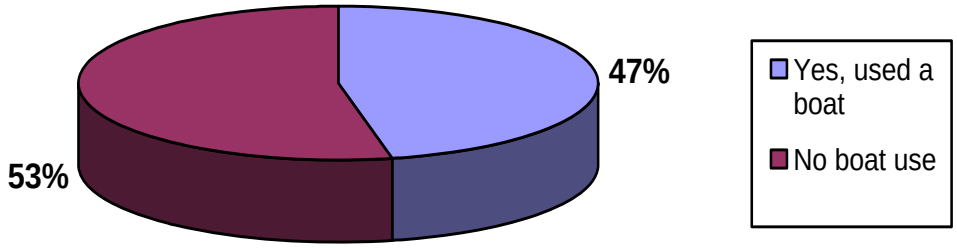


Figure 5.1-30. Responses to Question 17: Area residents who reported using a boat on Boundary Reservoir (264 respondents).

Question 18: Number of Years Boating on Boundary Reservoir. As an additional indicator of past experience at the Boundary Reservoir Area, respondents were asked to report on how many years they have been boating on Boundary Reservoir. Approximately 16 percent of the

respondents had been boating on the reservoir for more than 20 years, whereas 31 percent had 0 to 5 years of local boating experience. The median response was 10 years of boat use on Boundary Reservoir. Table 5.1-61 summarizes results for this item.

Table 5.1-61. Number of years residents have been boating on Boundary Reservoir.

Years	Frequency	Percent of Sample[1]
0–5	36	30.8
6–10	23	19.6
11–15	15	12.8
16–20	24	20.6
>20	19	16.2

Note:
1 117 respondents; mean = 13.28, standard deviation = 9.8, median = 10, mode = 20.

Question 19: Number of Days per Year Boating on Boundary Reservoir. Table 5.1-62 summarizes results for the number of days per year area residents reported boating on Boundary Reservoir. Boating use in the winter was virtually none. The number of days reported for other seasons ranged from 0 to 45 days for the spring and fall, and from 0 to 60 days for the summer. Based on the means calculated from these responses, boating use among this sample averaged 8 days in the summer.

Table 5.1-62. Number of days area residents reported boating on Boundary Reservoir, by season.

Season	Minimum	Maximum	Mean	Median	Mode	Std. Dev.
Spring (Mar–May)	0	45	2.84	0.00	0	6.43
Summer (Jun–Aug)	0	60	8.12	5.00	10	9.95
Fall (Sep–Nov)	0	45	3.49	0.00	0	6.59
Winter (Dec–Feb)	0	24	0.49	0.00	0	2.71

Note:
Table entries based on data from 115 respondents.

Question 20: Location of Boat Launches Used. Of the residents who reported using a boat or other watercraft on Boundary Reservoir, their boat launch use was relatively evenly divided between Metaline Waterfront Park and the SCL Forebay Recreation Area. Seventy percent of the sample indicated they usually used the launch at Metaline, and 69 percent also said that they usually launched at the SCL Forebay Recreation Area (respondents were directed to circle all responses that applied, and many identified multiple launch locations). Figure 5.1-31 summarizes the results for boat launch use on Boundary Reservoir by area residents.

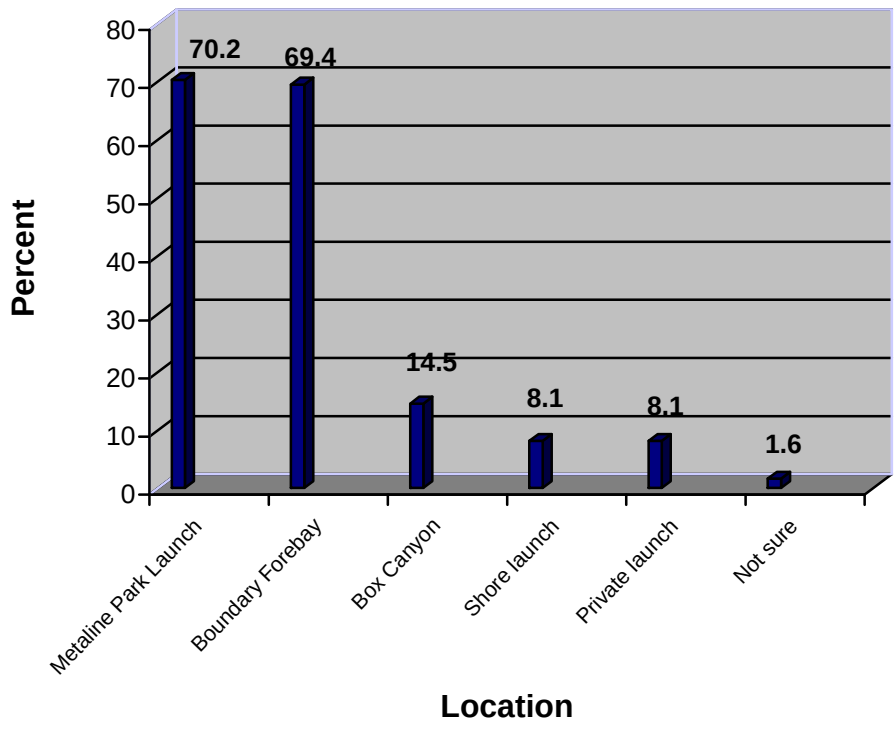


Figure 5.1-31. Responses to Question 20: Which boat launch do you usually use at Boundary Reservoir? (124 respondents)

Question 21: Boat Launch Adequacy. Those who reported using a boat launch were asked if the boat launch adequately met their needs. Approximately 68 percent of boaters responded affirmatively that their needs had been met while using a launch, whereas 32 percent responded "No." Figure 5.1-32 summarizes the results for this survey question. The area residents who reported that their launching needs were not met provided 36 open-ended comments about problems they encountered. These entries included 15 comments that specifically mentioned some aspect of the facilities at the Metaline Waterfront Park launch, and three comments referencing problems with launching a boat at Box Canyon Dam. One respondent reported getting stuck at Forebay during low water, and another pointed out that the ramp at Boundary [Forebay] could not be used when the water is low. Some area residents discussed problems with low or fluctuating water levels, such as returning to a launch in the afternoon and having difficulty taking out their boat. Responses for specific boat launch problems encountered are listed in Appendix 4b.

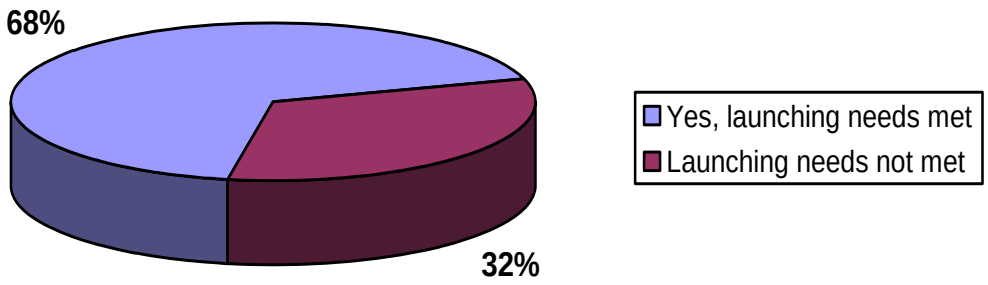


Figure 5.1-32. Responses to Question 21: Do the boat launches adequately meet your needs? (120 respondents)

Question 22: Problems with Water Conditions When Boating. The survey asked respondents if they ever experienced problems with water conditions when boating on Boundary Reservoir. Approximately 44 percent of the sample reported no problems, while another 36 percent reported minor problems. Eighteen respondents (15 percent of the sample) characterized the problems as being major. Table 5.1-63 summarizes the results for this question. This sample provided 38 open-ended responses describing specific problems encountered. These responses included some specific problems, such as difficulty passing through the rapids area near Metaline Falls due to water fluctuations (7 responses) or difficulty launching or retrieving boats due to low or changing water levels (9 responses). Some of the open-ended responses were more general statements such as "low water" or "water levels change daily." A complete list of these comments is included in Appendix 4b.

Table 5.1-63. Area residents who reported problems with water conditions while boating on Boundary Reservoir.

Response	Frequency	Percent of Sample[1]
No problems	54	43.5
Minor problems	45	36.3
Major problems, but would not keep me from returning	18	14.5
Major problems, that would keep me from returning	4	3.2
I'm not sure	3	2.4

Note:
1 124 respondents

5.1.4.2.5. Recreation Facilities and Services

Question 23: Importance of and Satisfaction with Facilities and Services. Using a 5-point scale ranging from 1 ("not at all important") to 5 ("extremely important"), the survey asked

respondents to rate the importance of having available 27 different recreation facilities or opportunities. Then, using a 5-point scale ranging from 1 ("not at all satisfied") to 5 ("extremely satisfied"), respondents rated their satisfaction with each of these recreation opportunities at the Boundary Reservoir Area. Given that there were 27 different importance and satisfaction variables, the number of respondents for each variable varied widely, ranging from 104 to 244 respondents. Table 5.1-64 summarizes statistical measures calculated from the results for this question. As a group, area residents assigned the highest importance ratings to trash containers/collection, scenic views/viewpoints, swimming/beach access, picnic sites, drinking water, navigation hazard marking and road access to recreation; the mean ratings for these response options were all over 4 on the 5-point scale. RV hookups/utilities had the lowest importance ratings, with a mean of 2.7, and was the only facility/service category to average a rating of less than 3. Scenic views/viewpoints received the highest satisfaction rating, with a mean of 4.0. Area residents also reported relatively high satisfaction with picnic sites, campsite fees, and road access to recreation and parking areas. None of the 27 facility or service categories received a mean rating lower than 3; the lowest ratings were 3.32 for RV hookups/utilities and 3.36 for flush toilets.

Table 5.1-64. Area residents' ratings for importance and satisfaction with recreation facilities and services at the Boundary Reservoir Area.

Opportunity	Mean	Importance[1] Mode	Std. Dev.		Mean	Satisfaction[2] Mode	Std. Dev.
Tent campsites	3.29	5	1.45		3.72	3	0.84
RV campsites	3.18	3	1.43		3.669	3	0.95
RV hook-ups/utilities	2.70	1	1.38		3.36	3	1.08
Campsite fees	3.09	5	1.53		3.87	5	1.13
Parking areas	3.99	5	1.02		3.82	4	0.95
Road access to recreation	4.02	5	1.03		3.80	4	0.98
Disabled access	3.51	5	1.43		3.44	3	1.14
Drinking water	4.01	5	1.14		3.64	4	1.04
Flush toilets	3.46	5	1.30		3.51	3	1.01
Vault/portable toilets	3.49	5	1.28		3.58	3	0.90
Trash containers/collection	4.14	5	0.99		3.80	4	1.04
Picnic sites	3.98	5	1.11		3.87	4	0.94
Swimming/beach access	4.05	5	1.09		3.65	3	1.01
Historic sites/information	3.51	3	1.16		3.53	3	0.95
Scenic views/viewpoints	4.06	5	1.05		4.00	4	0.92
Wildlife viewing/nature trails	3.85	4	1.08		3.71	4	0.96
Interpretation/education	3.23	3	1.28		3.51	3	0.90
Hiking trails	3.68	4	1.17		3.43	3	0.96
Boat ramps	3.94	5	1.30		3.58	3	1.16
Boat docks	3.86	5	1.27		3.46	3	1.25
Boating safety information	3.33	5	1.44		3.55	3	1.05
Navigation hazard marking	4.03	5	1.33		3.50	3	1.17
River/shore access for fishing	3.71	5	1.31		3.49	3	1.01
Fishing opportunities	3.87	5	1.25		3.73	4	0.99
Hunting opportunities	3.32	5	1.46		3.72	3	0.92
Boat-in campsites	3.10	4	1.41		3.32	3	1.07
Canoe/kayak access facilities	3.16	4	1.43		3.50	3	0.99

Notes:

1 Importance was measured using a 5-point scale ranging from 1 = "not at all important" to 5 = "extremely important."

2 Satisfaction was measured using a 5-point scale ranging from 1 = "not at all satisfied" to 5 = "extremely satisfied."

To better highlight the information provided by these responses, Figure 5.1-33 provides a graphical representation of the mean importance and satisfaction ratings for each item. The graph shows how area residents, as a group, assigned the highest importance and satisfaction ratings (over 4.0 on the 5-point scale for both importance and satisfaction) to scenic views/viewpoints and picnic sites, with similarly high ratings for trash containers/collection, swimming/beach access, parking areas, drinking water, and road access to recreation.

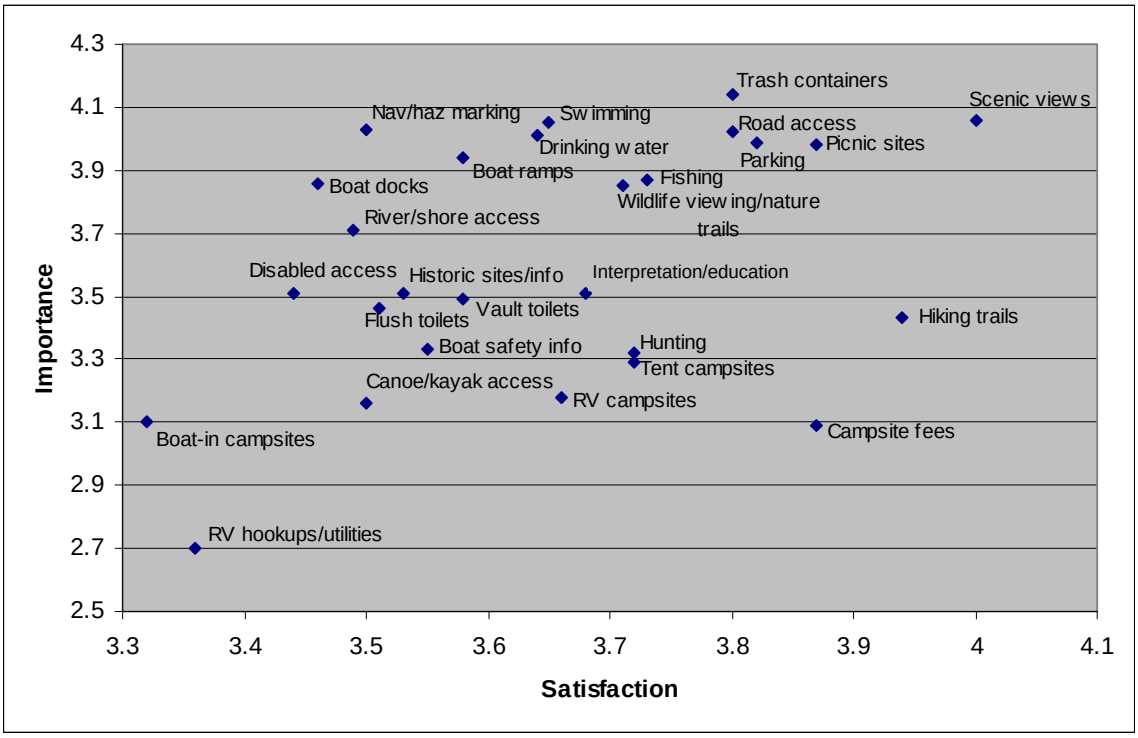


Figure 5.1-33. Area residents' ratings of recreation facilities/opportunities at the Boundary Reservoir Area (104 to 244 respondents per variable).

Question 24: Recreation Improvements Needed. Area residents were asked if, based on their experiences, they thought any of the existing recreation opportunities in the Boundary Reservoir Area were in need of improvement. Figure 5.1-34 summarizes the results for this survey question. The most common response, selected by 39 percent of the sample, was that they were satisfied with the recreation activities/facilities that are currently available at the Boundary Reservoir Area. Approximately 31 percent (85 respondents) indicated they would like to see other recreation activities or facilities. These respondents provided open-ended comments identifying the activity or facility improvements they would like to see. Boating-related input included 24 comments with some reference to more or better boat docks and/or launches. Other facility-related comments included suggestions about disabled access (3 respondents), better maintenance of grounds or more green grass and/or trees (3 respondents), additional bathrooms and trashcans (3 comments), boat-in campsites (4 respondents), trails for hiking/walking, biking or horses (10 comments) and better beach/swimming area (7 respondents). Additionally, 3 respondents addressed a desire to have a trail or viewpoint of Pewee Falls. Appendix 4b includes a complete list of the specific improvements suggested in these open-ended responses.

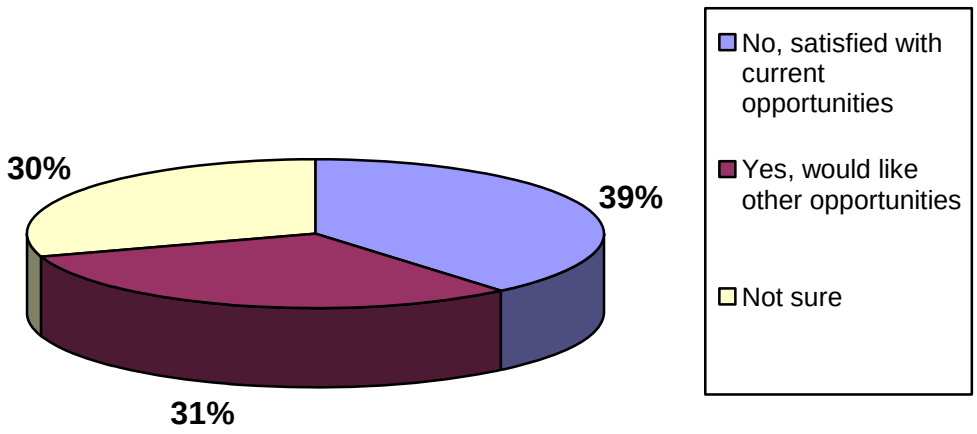


Figure 5.1-34. Responses to Question 24: Are there improvements to the existing recreation opportunities at the Boundary Reservoir Area that are needed? (273 respondents)

5.1.4.2.6. Recreation Sites

Question 25: Specific Sites Visited for Recreation. Question 25 asked area residents to report what specific sites in the Boundary Reservoir Area they usually or often visited for recreation. Among area residents, the most frequently visited site was Metaline Waterfront Park, which was reported by 57 percent of the sample. The SCL Forebay Recreation Area and the Sweet Creek Falls Rest Area were both identified by approximately 43 percent of the respondents. This sample of 277 residents generated nearly 1,000 responses to this item, indicating that most respondents reported visiting several different sites in the Boundary Reservoir Area. Figure 5.1-35 summarizes results for Question 25. Appendix 4b includes a list of "Other" sites visited by local residents.

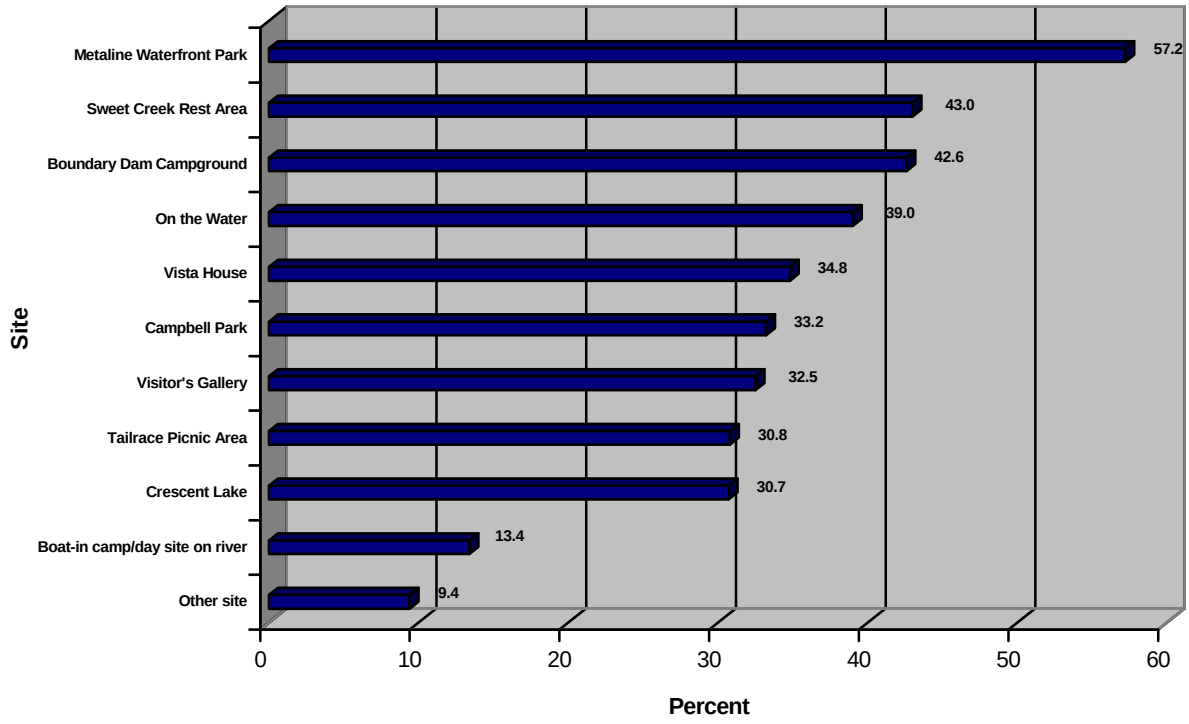


Figure 5.1-35. Responses to Question 25: Recreation sites in the Boundary Reservoir Area often visited by residents (277 respondents).

Question 26: Primary Destination. Area residents were asked to indicate which *one* of the sites identified in Question 25 was the one site where they usually spent the most time when visiting the Boundary Reservoir Area. The sites identified most frequently among the primary destinations reported by this sample were Metaline Waterfront Park (22 percent of the total), the SCL Forebay Recreation Area (13 percent), and Campbell Park at Box Canyon Dam (13 percent). The more general response "On the water in a boat" was selected by almost 20 percent of the sample. Table 5.1-65 summarizes the results for primary destination.

Table 5.1-65. Primary destination for area residents when visiting the Boundary Reservoir Area.

Primary Destination	Frequency	Percent of Sample[1]
Metaline Waterfront Park	59	21.9
On the water in a boat	53	19.6
Boundary Dam Campground	36	13.3
Campbell Park	34	12.6
Crescent Lake	25	9.3
Tailrace Picnic Area	16	5.9
Sweet Creek Falls rest area/trail	14	5.2
Visitors' Gallery	8	3.0
Boat-in campsite or day use site	6	2.2
Vista House	5	1.9
Other	14	5.2

Note:
1 270 respondents

Question 27: Crowding at the Primary Destination. After respondents identified their primary destination, they were asked whether or how crowded they typically felt at that destination. Respondents rated the level of crowding they had experienced on a 9-point scale that ranged from 1 ("not at all crowded") to 9 ("extremely crowded"); the midpoint of the scale was 5 ("moderately crowded"). Table 5.1-66 summarizes the results for the crowding question. The most commonly reported rating was 2, which was selected by 26 percent of the sample. No respondents rated their primary site as extremely crowded; 28 percent of the residents assigned ratings of 5 (moderately crowded) or higher.

Table 5.1-66. Levels of crowding reported at area residents' primary destinations in the Boundary Reservoir Area.

Rating	Frequency	Percent of Sample[1]
1 Not at all crowded	51	18.9
2	71	26.3
3	43	15.9
4	30	11.1
5 Moderately crowded	16	5.9
6	39	14.4
7	9	3.3
8	9	3.3
9 Extremely crowded	2	0.7

Note:
1 270 respondents; mean = 3.37, standard deviation = 2.05, median = 3.0, mode = 2.

Question 28: Problems or Conflicts at the Primary Destination. Question 28 asked area residents if they had ever experienced any problems or conflicts with other people or their behaviors that detracted from their enjoyment at their primary destination in the Boundary Reservoir Area. Figure 5.1-36 summarizes the results of the recreation conflict question. A large majority (84 percent) of the area residents reported no problems or conflicts. Those residents who reported having a conflict entered 41 open-ended responses describing problems or conflicts they had encountered. These comments covered a wide range of topics, with multiple comments addressing unsupervised children, crowding of some type, problems with pets, noise, and drunken behavior. None of these issues were dominant topics. Appendix 4b includes a list of specific responses from those who indicated they had experienced problems or conflicts.

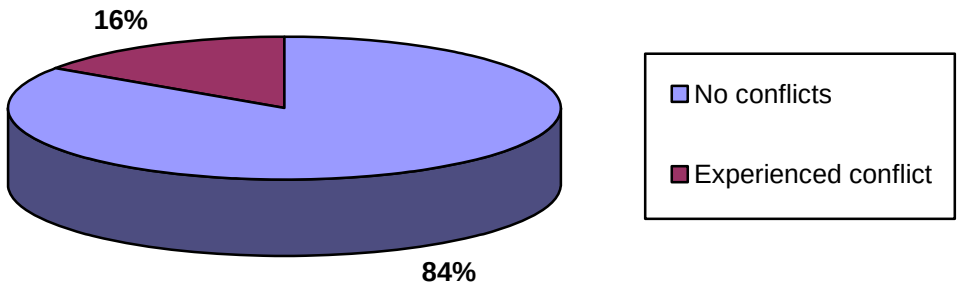


Figure 5.1-36. Responses to Question 28: Did area residents experience conflict or problems with others at their primary destination at the Boundary Reservoir Area? (270 respondents)

Question 29: Intention to Change Recreation Plans in the Future. This question asked respondents, based on their experiences at their primary destination, whether they intended to adjust their recreation plans in the future to avoid the presence or behavior of other visitors at the site. Over 90 percent of the sample reported that they did not intend to adjust their plans in the future because of adverse experiences at their primary destination. Figure 5.1-37 summarizes the results for this survey item.

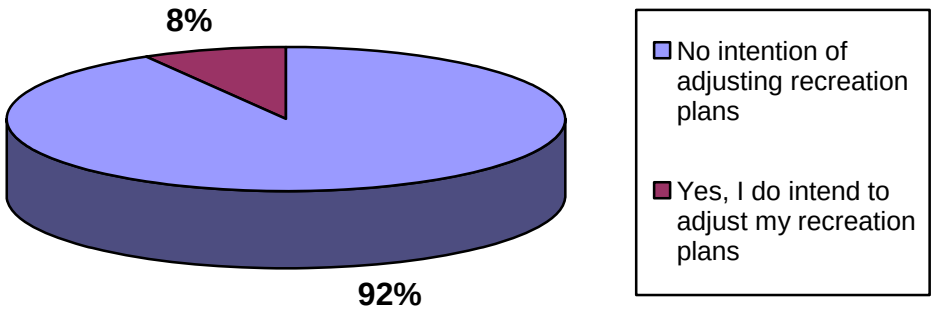


Figure 5.1-37. Responses to Question 29: Area residents' intent to adjust recreation plans to avoid the presence or behaviors of other visitors at their primary site in the future (262 respondents).

Question 30: How Would You Adjust Your Plans. Respondents who reported that they did intend to adjust their future plans to avoid other visitors at their primary destination were asked how they would do things differently in the future. Based on the response to Question 29, with only 8 percent of the respondents indicating they would change their plans, there were only 24 respondents to Question 30. Five of these reported that they would prefer to visit their same primary destination on weekdays instead of weekends or holidays, 7 reported they would visit their same site at less busy times of the day, 5 said they would move to a different site in the Boundary Reservoir Area, and 9 indicated that they would move to a different site in the region.

Question 31: Maintenance of Facilities at Primary Destination. The survey asked respondents if they found the facilities at the primary destination they identified in Question 26 to be adequately maintained. Figure 5.1-38 summarizes results for this question. A large majority of the area residents responding (83 percent) reported that they found the facilities at their primary destination to be adequately maintained. Those who answered "No" to this question identified a number of specific maintenance needs. Those respondents provided 56 open-ended comments that are listed in Appendix 4b. Most comments included some type of reference to bathroom facilities (10 comments), boat launches (10 comments) and trash or litter (7 comments). Specific comments were that bathrooms were unclean or without toilet paper, that better maintenance or more boat launches and docks were needed, and that there was a lot of trash or it was not being picked up on a regular basis.

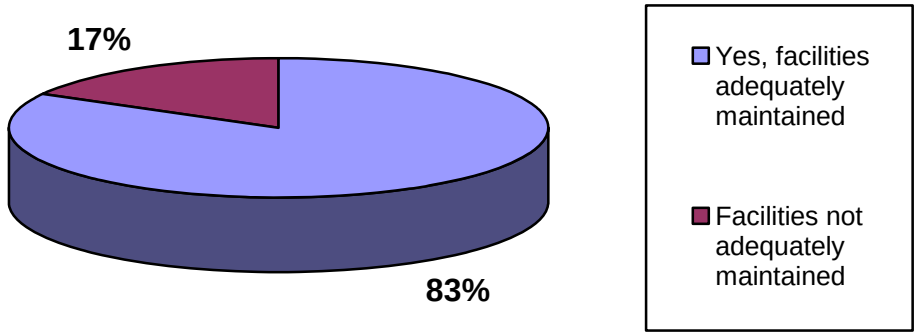


Figure 5.1-38. Responses to Question 31: Do you find the facilities at your primary destination to be adequately maintained? (272 respondents)

5.1.4.2.7. Your History in the Area

Question 32: Last Visit to Boundary Reservoir Area for Recreation. To obtain an indication of how frequently area residents visit the Boundary Reservoir Area, Question 32 asked respondents when (month and year) they had last visited the area for recreation. Table 5.1-67 summarizes results for this question. Over 80 percent of the area residents indicated they had visited the Boundary Reservoir Area for recreation some time during 2007. An additional 17 percent indicated they had visited the area sometime between 2000 and 2006, with the remaining 3 percent stating they had not visited the Boundary Reservoir Area since the 1990s. Based on the months reported in these responses, the summer months (June to August) of 2007 comprised the most frequent response for the time of the last visit; responses in this range were reported by 58 percent of the sample.

Table 5.1-67. Area residents' last visit to the Boundary Reservoir Area for recreation, by month and year.

Year	Spring (Mar–May)		Summer (Jun–Aug)		Fall (Sep–Nov)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1986–1999	1	0.4	6	2.5	0	0.0
2000–2006	2	0.8	33	13.8	5	2.1
2007	15	6.3	140	58.3	38	15.8

Note:
Table entries based on data from 240 respondents.

Question 33: Number of Visits to Boundary Reservoir Area in Past Year. Residents were asked to report how many visits they had made to the Boundary Reservoir Area for recreation in the past 12 months. Table 5.1-68 summarizes results for this question. The most frequent single response (the mode), received from approximately 17 percent of the respondents, was 0 visits in the past 12 months. Conversely, approximately 83 percent of this sample had visited the area for recreation at least one time in the past year. Over 39 percent of the sample reported visiting the area for recreation 6 or more times in the past year, and the mean response was approximately 7 visits.

Table 5.1-68. Number of visits to the Boundary Reservoir Area for recreation in the past year.

Number of Visits	Frequency	Percent of Sample[1]
0	44	17.2
1	30	11.7
2	29	11.3
3–5	51	20.0
6–10	53	20.7
11–25	31	12.1
>25	18	7.0

Note:
1 256 respondents; mean = 10.23, median = 3.0, mode = 0, standard deviation = 28.14.

Question 34: Visitation by Season. Respondents were asked to report the seasons of the year in which they visit the Boundary Reservoir Area for recreation, identifying all seasons that apply. Nearly 95 percent of the sample reported visiting during the summer months. The percentages of respondents visiting in the fall and spring were 55 and 50 percent, respectively, whereas only 17 percent reported use in the winter. Figure 5.1-39 summarizes results for this question.

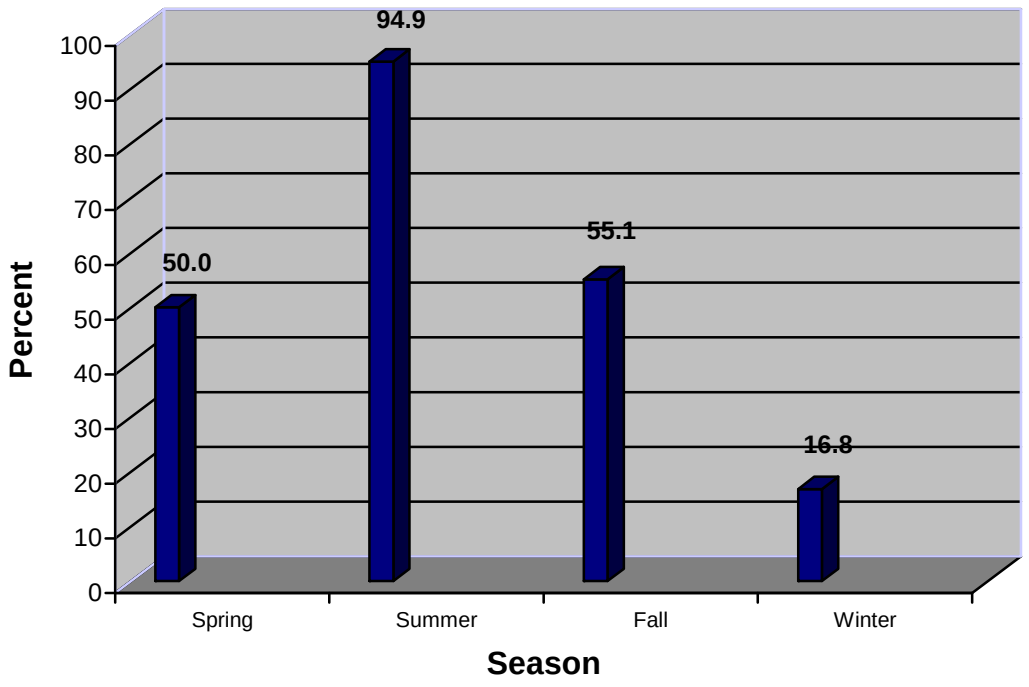


Figure 5.1-39. Responses to Question 34: Seasons of the year in which area residents visit the Boundary Reservoir Area for recreation (256 respondents).

Question 35: Special Places. Question 35 asked residents if there were any sites or locations in the Boundary Reservoir Area that were really special or meaningful to them or their family as a place for recreation. Those who responded "Yes" were asked to list or describe those special places. Figure 5.1-40 summarizes the Yes/No responses for this question. Just over a third (35 percent) of the area residents indicated they did have a special place for recreation in the Boundary Reservoir Area. Verbatim entries for the places these respondents identified are listed in Appendix 4b. Six of these responses included references to the canyon area of Boundary Reservoir or to Z Canyon specifically, and five respondents mentioned Metaline Waterfront Park as a special place. Pend Oreille County PUD Campbell Park, Sweet Creek Falls Rest Area, and Pewee Falls were also mentioned in the verbatim responses.

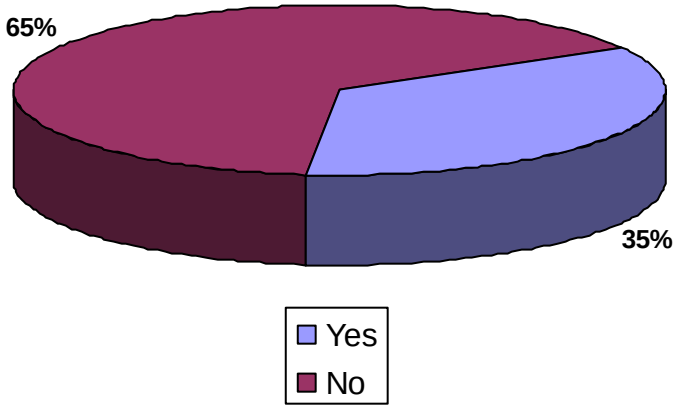


Figure 5.1-40. Responses to Question 35: Area residents reporting they have a special place for recreation in the Boundary Reservoir Area (249 respondents).

Question 36: Other Lakes or Rivers Visited for Recreation. Area residents were asked to name up to 3 other (than Boundary) lakes or rivers in the region that they frequently visited for recreation. Local residents provided a total of 355 responses to Question 36. Table 5.1-69 summarizes how these responses have been aggregated based on frequency; the percentages reported in the table are relative to the total responses, rather than the number of respondents. Sullivan Lake was by far the water body most often identified by respondents, accounting for 27 percent of all responses. Other relatively frequent responses were the Pend Oreille River (presumably reaches other than Boundary Reservoir) and the Columbia River, with 13 percent and 11 percent, respectively. No other lakes or rivers were named in more than 10 responses. Appendix 4b includes a listing of verbatim entries for this question.

Table 5.1-69. Other lakes and rivers in region frequently visited by area residents for recreation.

Other Lake or River	State or Province	Frequency	Percent
Sullivan Lake	WA	95	26.8
Pend Oreille River	WA	47	13.2
Columbia River	WA	39	11.0
Big Meadow Lake	WA	16	4.5
Mill Pond	WA	9	2.5
Leo Lake	WA	9	2.5
Crescent Lake	WA	7	2.0
Yokum Lake	WA	6	1.7
Other Lakes/Rivers in Washington	WA	49	13.8
Lakes/ Rivers in Idaho	ID	20	5.6
Lakes/Rivers in Montana	MT	12	3.4
Lakes/Rivers in Canada	BC	46	13.0

5.1.4.2.8. Scenery

Question 37: Overall Rating for Visual Quality of Scenery at the Boundary Reservoir Area. Area residents were asked to rate the visual quality of the scenery at the Boundary Reservoir Area on a scale of 1 to 9, with 1 meaning "Very Poor" and 9 representing "Excellent." Table 5.1-70 summarizes the results for this question. Almost 37 percent of the area residents rated the visual quality of the scenery as excellent, and 90 percent assigned ratings of above average (6 or higher). The mean of the responses was approximately 7.7, and the median response on the 9-point scale was 8.

Table 5.1-70. Area residents' ratings of the visual quality of the scenery at the Boundary Reservoir Area.

Rating	Frequency	Percent of Sample[1]
1 Very Poor	0	0.0
2	0	0.0
3	1	0.4
4	2	0.7
5 Average	24	8.9
6	23	8.5
7	60	22.1
8	62	22.9
9 Excellent	99	36.5

Note:

1 271 respondents; mean = 7.66, standard deviation = 1.35, median = 8.0, mode =9

Question 38: Views of Facilities Associated with the Boundary Hydroelectric Project. Seventy-four (74) percent of the area residents responding to this question reported seeing

structures associated with the Boundary Hydroelectric Project when visiting the area, whereas 20 percent stated they had not, and 6 percent were not sure if they had seen Project structures (see Figure 5.1-41).

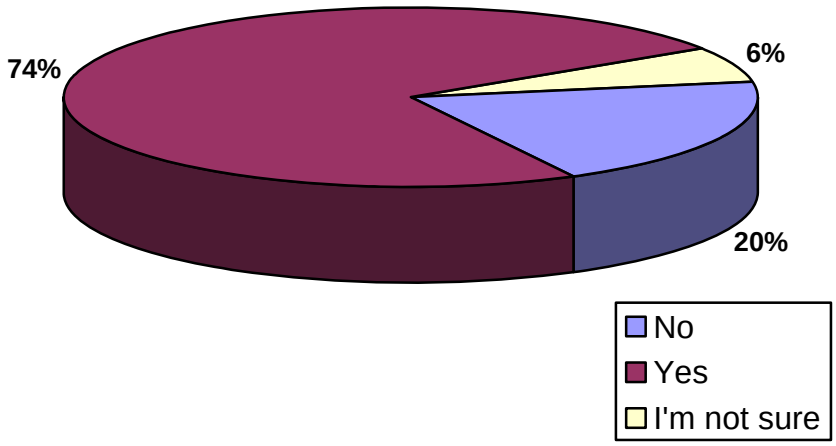


Figure 5.1-41. Responses to Question 38: Percentage of residents reporting seeing Boundary Hydroelectric Project structures (269 respondents).

Question 39: How Did Seeing These Facilities Affect Your Enjoyment of the Scenery. Respondents who reported they had seen Project facilities while visiting the area were asked whether that enhanced or detracted from their enjoyment of the scenery. Table 5.1-71 summarizes the results for this question. The most common response, from 39 percent of the sample, was that seeing these facilities had no effect on their enjoyment of the scenery. Nearly as many (36 percent) of those answering this question reported that the presence of these structures greatly enhanced their enjoyment, whereas another 15 percent stated that the sight of Project facilities slightly enhanced their enjoyment. Twenty-one residents (10 percent of those answering Question 39) indicated that views of the facilities detracted to some degree (slightly, in most cases) from their enjoyment of the scenery. Responses from the 89 residents who described how seeing the Project affected their enjoyment can be found in Appendix 4b.

Table 5.1-71. Effect of seeing Project structures on area residents' enjoyment of the scenery at the Boundary Reservoir Area.

Rating	Frequency	Percent of Sample[1]
Greatly enhanced my enjoyment	75	35.7
Slightly enhanced my enjoyment	32	15.2
No effect	82	39.0
Slightly detracted from my enjoyment	16	7.6
Greatly detracted from my enjoyment	5	2.4

Note:
1 210 responses

5.1.4.2.9. About You and Your Companions

Question 40: Ages of Other People in Your Group. Question 40 asked area residents to report the ages of other people typically in their group when they visit the Boundary Reservoir Area, by indicating the numbers of people in specific age categories. Table 5.1-72 reports statistics from the analysis of these responses. Group sizes ranged from a minimum of 1 to a maximum of 12 for all age categories, with the median group size being 2 for ages up to 49. Based on the calculated means, there was relatively even distribution of group membership in the age classes up through age 49.

Table 5.1-72. Ages of other people in your group visiting the Boundary Reservoir Area.

Age Group (Years)	Min.	Max.	Mean	Median	Mode	Std. Dev.
Under 16	1	10	2.58	2.00	2	1.79
16–19	1	10	2.24	2.00	1	1.57
20–29	1	8	2.15	2.00	1	1.41
30–39	1	12	2.18	2.00	1	1.72
40–49	1	8	2.17	2.00	1	1.49
50–59	1	10	1.88	1.00	1	1.38
60–69	1	5	1.79	1.00	1	1.09
Over 70	1	8	1.72	1.00	1	1.30

Question 41: Your Age. Question 41 asked the area residents to identify their own age group. Table 5.1-73 summarizes the results for this question. Individual responses ranged from the 16–19 to the over-70 age groups. The most common response was from residents in the 50–59 age group, representing 30.4 percent of all respondents who identified their age. A relatively large proportion of residents (22 percent) reported that they were over 70 and almost 21 percent stated they were from 60 to 69 years in age. Altogether, more than 74 percent of the respondents were aged 50 or older, and the median age for the sample population was approximately 48 years.

Table 5.1-73. Age groups reported by area residents.

Age Group	Frequency	Percent of Responses
Under 16	0	0.0
16-19	6	1.2
20-29	9	1.8
30-39	30	6.1
40-49	86	17.4
50-59	150	30.4
60-69	103	20.9
Over 70	110	22.3
Total	**494**	**100.0**

Question 42: Your Gender. Approximately 57 percent of the area residents responding to this question reported their gender as male, and 43 percent indicated they were female.

Question 43: Time at This Address. Respondents were asked to indicate how long, in years and months, they had lived at their current address. Table 5.1-74 summarizes the results. The most common response was 3 years, and nearly 26 percent of the sample had been at their present address for 0 to 5 years. By contrast, 21 percent of the respondents had been at the same address more than 30 years. The median tenure was approximately 14 years.

Table 5.1-74. Number of years that area residents have been living at their present address.

Number of Years	Frequency	Percent[1]
0-5	122	25.5
6–10	70	14.7
11–15	63	13.1
16–20	47	9.9
21–25	32	6.7
26–30	44	9.2
Over 30	100	20.9

Note:
1 478 respondents; mean = 18.98, standard deviation = 16.06, median =14.0, mode = 3

Question 43: People Living at This Address. Respondents were asked to indicate how many people, including themselves, lived at their address. Table 5.1-75 summarizes the results. The most common response was 2 people, with 53 percent of the sample giving this response. Approximately 21 percent of the respondents live in single-person households. The median number of people in the household was 2, and the mean was 2.32.

Table 5.1-75. Number of people living at present address.

Number of People	Frequency	Percent[1]
1	99	20.5
2	256	53.0
3	49	10.1
4	47	9.7
Over 5	32	6.7
Total	**483**	**100.0**

Note:
1 Mean = 2.32, median = 2.0, mode = 2, standard deviation = 1.28

5.1.4.2.10. Additional Comments

At the end of the area resident questionnaire, space was provided for respondents to provide additional input or comments they had about how SCL could improve the management of the Boundary Reservoir Area. Respondents included a total of 67 open-ended comments, some of which were rather extensive. Some of these comments were quite brief and simple, including entries such as "Do not camp," "No thank you," "Please enforce speeding laws!" and "Thanks for caring!!!" Several entries explained why the respondents did not visit the Boundary Reservoir Area, or no longer visited the area. Approximately 12 comments offered general or specific suggestions that appear to relate in some way to perceived recreation needs or resource management in the Project vicinity. These additional comments, which probably reflect similar points made by the same respondents in the responses to survey items such as Questions 21, 24, and 31, will be reviewed and considered in the RNA. Appendix 4b includes a list of these comments.

5.1.5. Supplemental Survey Analysis

SCL conducted selected supplemental analyses of the visitor and area resident questionnaire databases in 2008 to obtain additional insight from the survey responses. Because the visitor and area resident questionnaires contained many of the same questions, one component of this work was to compare the results from the two survey samples to determine if there were notable differences, particularly for survey items that might relate to potential recreation needs or issues. The second component of this analysis was to cross-tabulate responses from multiple survey questions to develop more detailed data about user satisfaction levels, preferences, and concerns related to specific user groups or study area resources. SCL coordinated the scope of the supplemental survey analyses with the relicensing participants in April 2008.

5.1.5.1. Visitor and Area Resident Survey Comparison

By design, the Project-area visitor and area resident questionnaires were administered by different means (the visitor questionnaire through direct contact on site and the area resident questionnaire through a multi-stage mail distribution). The two survey efforts were also intended to reach different sample populations, and review of the respondent data indicates that objective was met. The sample population for the visitor survey includes a relatively widespread

geographic distribution reflecting the origin of the visitors to the Boundary Reservoir Area. On a county basis, the largest component of the visitor survey respondents originated in Spokane County. Pend Oreille County and other nearby counties in Washington and Idaho also accounted for sizable components of the sample population for the visitor survey. By contrast, the area resident questionnaire was only mailed to residents of the northern Pend Oreille County communities of Ione, Metaline, and Metaline Falls, and to residents of four communities near the international border in British Columbia. The two sample populations do have a substantial degree of overlap, in that the residents of Ione, Metaline, and Metaline Falls were the dominant component of the area resident sample population and also accounted for nearly 20 percent of the visitor survey sample population.

Approximately three-quarters of the questions included in the visitor survey were also incorporated into the area resident questionnaire, and vice versa. Review of the respective sets of responses to these shared questions, as presented in Sections 5.1.3 and 5.1.4, indicates that the responses from the two sample populations are much more similar than they are different. A brief comparison of the visitors' and area residents' responses to selected survey questions is summarized below, along with a brief review of demographic and related characteristics.

5.1.5.1.1. Visit Duration

Question 4 in the visitor questionnaire asked respondents whether they were staying overnight in the Boundary Reservoir Area or just visiting for the day, and for the duration of the visit in either case. Question 5 in the area resident questionnaire asked respondents if they stayed overnight when visiting the Boundary Reservoir Area for recreation. The majority of visitors (54 percent) reported they were staying overnight, whereas 19 percent of the area resident respondents indicated they stayed in the study area overnight. In numerical terms this is one of the largest differences in responses between the two sample populations, although this situation did not seem to generate similar differences in subsequent questions about recreational activities and perceptions.

5.1.5.1.2. Recreational Activities

Recreational activities in the study area reported by visitors and area residents (Question 7 in each survey instrument) are indicated in Sections 5.1.3.2.2 and 5.1.4.2.2, respectively. Both the order of the most commonly identified activities and the percentage of respondents for the activities are strikingly similar. Table 5.1-76 highlights the most common responses to Question 8 regarding the primary recreation activity.

Table 5.1-76. Most common primary activities identified by visitors and area residents.

Activity Rank	Visitor Responses		Area Resident Responses	
	Activity	Percent	Activity	Percent
1	Viewing scenery/ sightseeing	16	Viewing scenery/ sightseeing	17
2	Fishing	16	Motor boating	15
3	Developed camping	10	Fishing	14
4	Swimming	9	Swimming	8
5	Canoeing/kayaking	8	Resting/relaxing	7

Although the rank ordering of activities varies somewhat between the two populations, largely because few of the area residents camp in the Boundary Project area, the mix of primary activities and their respective percentages are similar between the two survey groups.

5.1.5.1.3. User Satisfaction Levels

Both questionnaires asked the respondents to rate the overall quality of the recreation experience (Question 9 in both surveys) and their satisfaction with the fishing opportunities at Boundary Reservoir (Question 15 for visitors and Question 16 for area residents). In both cases, the satisfaction levels between the two sample populations were quite similar. Both sets of respondents indicated high levels of overall satisfaction with the recreation experience, with mean responses of 7.8 (on a scale of 1 to 9) for visitors and 7.2 for area residents. Visitors were more likely to rate their experience as excellent (41 percent against 16 percent). Similarly, visitors indicated a slightly higher level of satisfaction with the fishing opportunities. The most common response from both visitors and area residents was average (a 5 on the 9-point scale), whereas the combined totals for above-average ratings were 62 percent among visitors and 57 percent among area residents.

5.1.5.1.4. Boating and Water Conditions

Compared to visitors' responses, the responses from area residents showed a somewhat lower level of satisfaction with conditions of the boat launches at the Boundary Reservoir Area and a greater tendency to experience problems with water conditions while boating. Over 90 percent of the visitor respondents indicated that the boat launch they used met their needs, whereas the corresponding response from area residents was only 68 percent (Questions 18 and 21, respectively). Similarly, only 10 percent of the visitors who used a boat reported having problems with water conditions (Question 19). Among area residents responding to the same question, over half reported encountering some degree of problems; 36 percent characterized the problems as minor and 18 percent as major. Several expected or plausible factors could contribute to the area resident respondents being less satisfied with boat launch conditions and reporting a greater degree of problems with water conditions. A key factor is likely that area residents typically have a longer boating experience on Boundary Reservoir (a large majority had been boating on the reservoir for 6 years or more) and use the reservoir more frequently for boating (e.g., median use of 5 days per year in the summer). That greater level of use is likely to result in a greater probability of encountering problems or encountering the same problem multiple times. In addition, many area residents tend to boat on the reservoir during at least three

seasons of the year whereas visitors are most likely to be present in the summer, and SCL operates the reservoir with a narrower range of pool level fluctuations from Memorial Day through Labor Day. The area resident responses also indicated a greater tendency to use the launch at Metaline Waterfront Park compared to the visitor respondents, and the Metaline boat launch was the most common location for adverse comments about boat launch adequacy and associated problems with reservoir pool level conditions.

5.1.5.1.5. Conditions at the Primary Destination

Both survey instruments included a series of questions about the respondents' primary destination at the Boundary Reservoir Area and the conditions encountered there, including the adequacy of facility maintenance, perceptions of crowding, and conflicts encountered with other users. Large majorities of both sample populations (90 percent for visitors, 83 percent for area residents) reported the maintenance of the facilities at their primary destination was adequate. Visitors and area residents reported similar responses at the low end of the crowding scale, and large majorities of each group (89 percent and 84 percent, respectively) indicated they had not experienced conflicts with other users.

5.1.5.1.6. Population Characteristics

Males accounted for 54 percent of the sample population for the visitor survey and 57 percent of the area resident respondents. Based on the ages reported by the respondents, the area resident sample population is somewhat older than the visitor sample population. Although the most common response in each case was the 50-59 year age group, 74 percent of the area resident respondents were 50 years of age or older, compared to 52 percent among the visitor survey respondents. That result is consistent with applicable area-wide demographic data. WOFM (2007a) data indicate the median population age in Pend Oreille County of 44.5 years is considerably higher than the median age statewide (36.7 years) or in Spokane County (36.9 years).

5.1.5.2. Visitor Survey Cross-Tabulations

Tetra Tech performed a number of cross-tabulations, in which responses to two or more survey questions were processed at the same time, to provide additional interpretation of the survey data. In general, this type of analysis was done to identify specific user groups within the overall survey population, as defined by responses indicating participation in a specific activity or use of a specific recreation site or type of site. The objectives of these cross-tabulations were to search for apparent differences among groups in user satisfaction levels, their perception of the adequacy of the recreation facilities, and their tendency to report feelings of crowding or conflicts with other users.

5.1.5.2.1. Overall Visit Satisfaction

One series of cross-tabulations involved processing of visitors' responses to Question 9, in which they provided ratings for the overall quality of their experience, along with responses to several questions relating to attributes of the users or their trips. The objective of this series of analyses was to identify key factors that might have influenced differences in user satisfaction levels.

Satisfaction Levels for Day Users and Overnight Visitors

Responses to Question 9 were cross-tabulated against those for Question 4 to investigate whether satisfaction with the overall quality of the recreation experience appeared to differ noticeably among day users, overnight visitors and those who were just passing through. No such differences were indicted by the results.

Overall, approximately 46 percent of visitors stated they were visiting for the day (including 13 percent just passing through), whereas the remaining 54 percent indicated they were staying overnight. None of the visitors passing through gave their recreation experience less than an average rating (a 5 on the 9-point scale). Among respondents visiting for the day, just 3 visitors (1.6 percent of the respondents in this group, and 0.6 percent of all respondents to this question) rated their experience lower than average. Only 5 overnight visitors (also 1.6 percent of the overnight visitors, and 0.9 percent of total respondents) rated their recreation experience as less than average. The percentages of each group rating their experience as excellent were 31.4 percent for people passing through, 42.2 percent for day users, and 43.6 percent for overnight visitors.

A comparison of the means calculated from the respective responses indicated no statistical difference in the ratings for the quality of the experience among the different groups (see Table 5.1-77). The group means fell within a close range, from 7.63 for the passing-through group to 7.97 for the overnight visitor group.

Table 5.1-77. Comparison of visitors' rating of the experience with duration of stay.

Visitor Rating of Recreation Experience	Did Visitor Stay Overnight?					
	No, Just Passing Through[1]		No, Just Here Today[2]		Yes, Staying Overnight[3]	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1 Very Poor	0	0.0	0	0.0	1	0.2
2	0	0.0	1	0.2	0	0.0
3	0	0.0	1	0.2	3	0.5
4	0	0.0	1	0.2	1	0.2
5 Average	6	1.1	10	1.8	8	1.4
6	6	1.1	7	1.2	18	3.2
7	18	3.2	43	7.6	55	9.7
8	18	3.2	48	8.5	86	15.2
9 Excellent	22	3.9	81	14.3	133	23.5
Total	**70**	**12.3**	**192**	**33.9**	**305**	**53.8**

Notes:
Percent entries in the table are based on the total population of 567 respondents for the two questions. Statistics calculated for groups are as follows:

1 Group 1 (passing through) Mean=7.63, Std. Dev.=1.25
2 Group 2 (day users) Mean=7.89, Std. Dev.=1.29
3 Group 3 (overnight visitors) Mean=7.97, Std. Dev.=1.25

Influence of Water Conditions on Overall Satisfaction

Responses to Question 9 were also cross-tabulated against those for Question 19 to investigate whether problems encountered with water conditions appeared to have influenced visitors' satisfaction with the overall quality of the recreation experience. In general, the results indicated that the water conditions experienced did not seem to affect visitors' ratings for their recreation experience (see Table 5.1-78). Comparison of the distribution of experience ratings by group is summarized as follows:

- For Group 1 (respondents who did not use the water), 0.9 percent rated their experience as below average, and 35.5 percent rated it as excellent.
- For Group 2 (respondents who used the water and reported no problems with water conditions), 1.0 percent rated their experience as below average, and 45.4 percent rated it as excellent.
- For Group 3 (respondents who used the water and reported minor problems with water conditions), none (0 percent) rated their experience as below average, and 36.1 percent rated it as excellent.
- For Groups 4 and 5 (respondents who used the water and reported major problems with water conditions), 12.5 percent rated their experience as below average, and none rated it as excellent.

A means comparison of experience ratings from these groups did find lower reported quality of the recreation experience for groups who encountered major problems with water conditions than those that had minor problems or did not use the water (Table 5.1-78). The mean experience ratings for Groups 4 and 5 (major problems) were noticeably lower than the ratings for the other groups, at 6.86 and 5.00, respectively, compared to a mean of 7.86 for Group 2 (no problems). The two groups reporting major problems represent very small samples (16 respondents, total), however, and make up only 3 percent of the total respondents and about 4 percent of the respondents who reported using the water.

Table 5.1-78. Comparison of visitors' rating of the experience with water conditions.

Experience Rating	Problems with Water Conditions									
	I Did Not Use the Water[1]		No problems[2]		Minor Problems[3]		Major Problems, Will Return[4]		Major Problems, Not Returning[5]	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1 Very Poor	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0
3	1	0.2	1	0.2	0	0.0	1	0.2	1	0.2
4	1	0.2	2	0.4	0	0.0	0	0.0	0	0.0
5 Average	11	2.0	11	2.0	1	0.2	2	0.4	0	0.0
6	8	1.5	21	3.8	3	0.5	1	0.2	0	0.0
7	21	3.8	76	13.9	9	1.6	3	0.5	1	0.2
8	27	4.9	97	17.7	10	1.8	7	1.3	0	0.0
9 Excellent	38	6.9	174	31.8	13	2.4	0	0.0	0	0.0
Total	**107**	**19.6**	**383**	**70.0**	**36**	**6.6**	**14**	**2.6**	**2**	**0.4**

Notes:
Table percentage entries are based on 547 total respondents. An additional category of "I'm not sure" yielded a total of 5 responses or 0.9 percent of the sample. Statistics calculated for groups are as follows:
1 Mean=7.62, Std. Dev.=1.43
2 Mean=8.01, Std. Dev.=1.17
3 Mean=7.86, Std. Dev.=1.09
4 Mean=6.86, Std. Dev.=1.56
5 Mean=5.00, Std. Dev.=2.83

Influence of Facility Maintenance on Overall Satisfaction

Another cross-tabulation involved responses to Question 9 and those for Question 26, to investigate whether perceptions of facility maintenance conditions appeared to have influenced visitors' satisfaction with the overall quality of the recreation experience. Nearly 90 percent of all visitors felt that the facilities at their primary destinations were adequately maintained, and 85 percent of this group rated their recreation experience as better than average (6 to 9). Similarly, 86 percent of the visitors who did not feel like the facilities were adequately maintained also rated their recreation experience as better than average. Within the "yes" group (facilities adequately maintained), 43 percent rated their recreation experience as excellent. Among the "no" group, the most common overall experience rating (from 41 percent of this group) was a 7 on the 9-point scale, and only 20 percent of this group rated their experience as excellent.

A means comparison indicated a statistical difference between the experience ratings from the two groups (Table 5.1-79). Respondents who felt that the facilities at their primary destination were not adequately maintained reported a lower mean (7.02) for their recreation experience than those who felt their facilities were adequately maintained (7.95). This suggests that visitor perceptions of maintenance quality could have had a negative effect on their experience, although the higher variance around the mean for this group suggests that other factors could have affected the visitors' recreation experience rating. In addition, 83 percent of the people who felt the facilities were not maintained still rated their recreation experience as above

average, indicating that these visitors did have a good recreation experience overall despite their impression of facility maintenance conditions.

Table 5.1-79. Comparison of visitors' rating of the experience with maintenance of facilities at the primary destination.

Experience Rating	Were Facilities at Primary Destination Maintained?			
	Yes[1]		No[2]	
	Frequency	Percent	Frequency	Percent
1 Very Poor	1	0.2	0	0.0
2	1	0.2	0	0.0
3	1	0.2	4	0.7
4	3	0.5	0	0.0
5 Average	19	3.4	6	1.1
6	29	5.2	4	0.7
7	94	16.8	24	4.3
8	138	24.6	9	1.9
9 Excellent	216	38.5	12	2.1
Total	**502**	**89.5**	**59**	**10.5**

Notes:
Table percentage entries are based on 561 respondents. Statistics calculated for groups are as follows:
1 Mean=7.95, Std. Dev.=1.23
2 Mean=7.02, Std. Dev.=1.60

Influence of Visual Quality on Overall Satisfaction

The final cross-tabulation in this series involved responses to Question 9 and Question 35 to investigate whether perceptions of visual quality in the study area appeared to have influenced visitors' satisfaction with the overall quality of the recreation experience. Table 5.1-80 summarizes the findings. Visitor ratings of their overall experience were generally quite high, as indicated previously, and visual quality ratings were similarly high. None of the visitors who responded to Question 35 assigned a visual quality rating below 4. Forty-six (46) percent of the respondents assigned visual quality ratings ranging from 4-6 (just below to just above average). Among this group, 45.7 percent also rated their overall experience in the 4–6 range and 52.2 percent assigned ratings in the 7-9 range, with 13 percent rating the experience as excellent. Among the large majority of visitors (92 percent) who rated visual quality in the 7–9 range, the recreation experience rating was in the 4–6 range for 8 percent and in the 7–9 range for 90.8 percent, including 43.3 percent who rated their recreation experience as excellent.

Similarly, the means calculated for the groups defined by visual quality ratings show a general upward progression: the mean recreation experience rating was 6.73 among those who rated visual quality at 5 (average), while it was 8.38 for those who rated visual quality at 9 (excellent). A Pearson's Correlation test (a statistical test performed to determine whether two sets of results are related) on these means yielded a coefficient of 0.433. This indicates a relationship of only moderate strength but that was significant at a 0.01 confidence level, meaning that visitors who

rate visual quality higher will generally rate their recreation experience higher as well. In this case, there is a general pattern of higher mean recreation experience scores with less variance as the rating for visual quality increases.

Table 5.1-80. Comparison of visitors' ratings of the experience and visual quality.

Visitor Rating	Visual Quality Rating					
	1–3		4–6		7–9	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1 Very Poor	0	0.0	1	0.2	0	0.0
2	0	0.0	0	0.0	1	0.2
3	0	0.0	0	0.0	5	0.9
4	0	0.0	1	0.2	2	0.4
5 Average	0	0.0	11	1.9	17	2.9
6	0	0.0	9	1.6	23	4.0
7	0	0.0	11	1.9	106	18.6
8	0	0.0	7	1.2	143	25.1
9 Excellent	0	0.0	6	1.1	227	39.8
Total	**0**	**0.0**	**46**	**8.1**	**524**	**91.9**

Note:
Table percentages are based on 570 total respondents. Statistics calculated for groups, based on assigned visual quality ratings on the 1-9 scale, are as follows:
4 Mean experience rating = 9.00, No Std. Dev. (1 response)
5 Mean experience rating = 6.73, Std. Dev. = 1.62
6 Mean experience rating = 6.37, Std. Dev. = 1.61
7 Mean experience rating = 7.21, Std. Dev. = 0.40
8 Mean experience rating = 7.58, Std. Dev. = 1.11
9 Mean experience rating = 8.38, Std. Dev. = 1.05

5.1.5.2.2. Angler Preferences and Satisfaction

Another series of cross-tabulations was performed for selected responses from visitors who indicated they had fished during their visit to the Boundary Reservoir Area (in the responses to Question 10). In this series, the anglers' responses to Question 15 (for which they provided ratings for their satisfaction with the fishing opportunities) were processed along with responses to several other questions that logically might relate to fishing satisfaction. The objective of this series of analyses was again to identify factors that might have influenced reported differences in user satisfaction levels.

Influence of Water Conditions on Fishing Satisfaction

Responses to Question 15 were cross-tabulated against those for Question 19 to investigate whether problems encountered with water conditions appeared to have influenced anglers' satisfaction with the fishing opportunities. The majority of anglers (76 percent) indicated that they had no problems with the water conditions during their visit to Boundary Reservoir. Among this angler group, 62 percent rated their fishing satisfaction as above average (6 or better) and 19.6 percent rated it as excellent. Corresponding percentages for the relatively small group

of anglers reporting minor problems (12 percent of this set of respondents) were 72 percent rating their fishing satisfaction as above average and 8 percent rating it as excellent. Among the 15 anglers reporting major problems with water conditions, 46 percent rated their fishing satisfaction as above average and 7.7 percent rated it as excellent.

A means comparison showed that anglers who had reported major problems with the water conditions were less satisfied with fishing opportunities at the Boundary Reservoir Area than those who reported minor or no problems (see Table 5.1-81). The group that had major problems with water conditions but indicated they would return to the area had a large variance in their reported fishing satisfaction, indicating that water conditions may or may not have necessarily influenced their fishing satisfaction. The two groups reporting major problems with water conditions represented a little more than 7 percent of the respondents to this question.

Table 5.1-81. Comparison of fishing satisfaction with water conditions.

Fishing Satisfaction	Problems with Water Conditions									
	I Did Not Use the Water[1]		No Problems[2]		Minor Problems[3]		Major Problems, Will Return[4]		Major Problems, Not Returning[5]	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1 Very Poor	0	0.0	5	2.4	1	0.5	3	1.4	1	0.5
2	0	0.0	1	1.0	0	0.0	1	0.5	0	0.0
3	0	0.0	5	2.4	1	0.5	1	0.5	1	0.5
4	0	0.0	5	2.4	0	0.0	1	0.5	0	0.0
5 Average	2	1.0	43	20.6	5	2.4	1	0.5	0	0.0
6	1	0.5	17	8.1	3	1.4	0	0.0	0	0.0
7	1	0.5	33	15.8	9	4.3	3	1.4	0	0.0
8	1	0.5	17	8.1	4	1.9	2	1.0	0	0.0
9 Excellent	1	0.5	31	14.8	2	1.0	1	0.5	0	0.0
Total	**6**	**2.9**	**158**	**75.6**	**25**	**12.0**	**13**	**6.2**	**2**	**1.0**

Note:
Table percentage entries are based on 209 total respondents. An additional category of "I'm not sure" yielded a total of 5 respondents, or 2.4 percent of the sample. Statistics calculated for groups based on response for water conditions are as follows:
1 Mean=6.67, Std. Dev.=1.63
2 Mean=6.37, Std. Dev.=1.99
3 Mean=6.40, Std. Dev.=1.80
4 Mean=4.85, Std. Dev.=2.99
5 Mean=2.00, Std. Dev.=1.41

Variation in Fishing Satisfaction between Boat and Bank Anglers

Another cross-tabulation was performed to investigate whether the means used for fishing (per the responses to Question 11) appeared to influence fishing satisfaction (Question 15). In general, the method a person used to fish (i.e., shore or boat) did not seem to affect their rating for fishing satisfaction. Above-average satisfaction ratings (6 or better) were reported by 57.5 percent of respondents who said they fished by boat, 61.7 percent of those who fished from shore, and 77.6 percent of those who used both means of fishing. The corresponding percentages

of each group who rated their fishing satisfaction as excellent were 18.8, 13.6, and 18.4 percent, respectively.

A comparison of the fishing satisfaction means calculated for each group showed means between 6 and 7 for all groups (see Table 5.1-82). There was no statistical difference among the group means, which would further indicate that fishing satisfaction among the sample population was not affected by the method of fishing.

Table 5.1-82. Comparison of fishing satisfaction with means of fishing

Fishing Satisfaction	Means of Fishing							
	Boat[1]		Shore[2]		Both[3]		Other[4]	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1 Very Poor	5	2.3	4	1.9	1	0.5	0	0.0
2	2	0.9	1	0.5	0	0.0	0	0.0
3	3	1.4	2	0.9	4	1.9	0	0.0
4	2	0.9	2	0.9	2	0.9	1	0.5
5 Average	22	10.3	22	10.3	6	2.8	1	0.5
6	7	3.3	9	4.2	7	3.3	0	0.0
7	15	7.0	18	8.4	14	6.5	0	0.0
8	9	4.2	12	5.6	6	2.8	2	0.9
9 Excellent	15	7.0	11	5.1	9	4.2	2	0.9
Total	**80**	**37.4**	**81**	**37.9**	**49**	**22.9**	**4**	**1.9**

Note:
Table percentage entries are based on 214 total respondents. Statistics calculated for groups based on response for fishing method are as follows:
1 Mean=6.13, Std. Dev.=2.25
2 Mean=6.23, Std. Dev.=2.01
3 Mean=6.53, Std. Dev.=1.94
4 Mean=6.75, Std. Dev.=2.63

Variation in Fishing Satisfaction with Fishing Success

The final cross-tabulation in this series investigated whether fishing satisfaction (Question 15) was influenced by fishing success (i.e., whether a visitor caught fish on their visit). Table 5.1-83 shows the results of the cross-tabulation of fishing satisfaction and a variable created from the responses to Question 14, in which anglers described the fish they had caught.

Of the 187 visitors who provided a response to Question 14, 141 (75 percent) stated they had caught at least one fish during their visit to the Boundary Reservoir Area, while 25 percent indicated they caught no fish. Above-average satisfaction ratings (6 or better) were reported by 52.2 percent of respondents who said they caught no fish, and 66.7 percent of those who caught at least one fish. The corresponding percentages of each group who rated their fishing satisfaction as excellent were 6.5 and 22.0 percent, respectively. The visitors who did not catch fish reported a lower overall mean of 5.70 for fishing satisfaction, whereas anglers who caught fish had an overall fishing satisfaction mean of 6.53.

Table 5.1-83. Comparison of fishing satisfaction with fishing success.

Fishing Satisfaction	Did the Visitor Catch Fish?			
	No[1]		Yes[2]	
	Frequency	Percent	Frequency	Percent
1 Very Poor	4	2.1	4	2.1
2	0	0.0	1	0.5
3	2	1.1	7	3.7
4	2	1.1	4	2.1
5 Average	14	7.5	31	16.6
6	6	3.2	14	7.5
7	9	4.8	32	17.1
8	6	3.2	17	9.1
9 Excellent	3	1.6	31	16.6
Total	46	24.6	141	75.4

Notes:
Table percentage entries are based on 187 total respondents. Statistics calculated for groups based on whether respondents caught fish are as follows:
1 Mean=5.70, Std. Dev.=2.09
2 Mean=6.53, Std. Dev.=2.01

5.1.5.2.3. Boater Preferences and Satisfaction

Similar to the previous set addressing fishing, a third series of cross-tabulations was performed for selected responses from visitors who indicated they had operated a boat and/or used a boat launch during their visit to the Boundary Reservoir Area. The objective of this series of analyses was again to identify factors related to boating that might have influenced reported differences in user satisfaction levels.

Variation in Satisfaction with Boat Launch Used

Visitors who operated a boat during their visit to Boundary Reservoir Area (based on their response to Question 16) were asked in Question 17 which boat launch they had used. These responses were then analyzed with the responses to Question 9 to investigate whether visitors' ratings for their recreation experience may have differed among boat launch locations.

Seventy-five percent of the visitors reported that they used the boat launch at the Forebay Recreation Area, which was the most common response (see Table 5.1-84). Approximately 21 percent reported use of the launch at Metaline Waterfront Park and 4 percent the launch at Box Canyon Dam. Above-average recreation experience ratings (6 or better) were reported by 85.7 percent of respondents who used the Metaline launch, 95.5 percent of those who used the Forebay launch, and 90 percent of those who used the launch at Box Canyon Dam. The corresponding percentages of each group who rated their recreation experience as excellent were 18.8, 13.6, and 18.4 percent, respectively. No visitors rated their recreation experience as less than 3 (poor or very poor), no matter which launch they used.

The means calculated from the experience ratings provided by these three groups fell into a very narrow range between 7.80 (Box Canyon) and 8.03 (Forebay).

Table 5.1-84. Comparison of recreation experience rating with boat launch used.

Recreation Experience	Boat Launch Used					
	Metaline[1]		Forebay[2]		Box Canyon[3]	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1 Very Poor	0	0.0	0	0.0	0	0.0
2	0	0.0	0	0.0	0	0.0
3	1	0.4	3	1.3	1	0.4
4	0	0.0	1	0.4	0	0.0
5 Average	4	1.7	4	1.7	0	0.0
6	0	0.0	6	2.5	0	0.0
7	12	5.0	33	13.7	2	0.8
8	12	5.0	51	21.4	2	0.8
9 Excellent	20	8.4	81	34.0	5	2.1
Total	**49**	**20.5**	**179**	**75.0**	**10**	**4.1**

Notes:
Table percentage entries are based on 238 total responses. Statistics calculated for groups based on which launch respondents used are as follows:
1 Mean=7.82, Std. Dev.=1.38
2 Mean=8.03, Std. Dev.=1.22
3 Mean=7.80, Std. Dev.=1.87

Water Conditions for Boaters and Non-Boaters

Responses on reported problems with water conditions (Question 19) were cross-tabulated with those regarding boat use (Question 16) to check for similarities or differences between boaters and non-boaters on water conditions (Table 5.1-85). Fifty-seven (57) percent of visitors did not operate a boat during their visit to the Boundary Reservoir Area, whereas 43 percent indicated they had boated. Among the first group, which would include user groups such as bank anglers and swimmers, 34.1 percent did not use the water and 61.6 percent used the water but did not experience any problems with water conditions. The remaining 3.3 percent of this group experienced minor or major problems with water conditions. Nearly 81 percent of the visitors who operated boats indicated no problems with water conditions, whereas 13 percent reported minor problems and 5.2 percent indicated they had major problems with water conditions. Problems with water conditions were clearly more common among boaters than non-boaters, although the incidence of this response was not high.

Table 5.1-85. Comparison of water conditions with operation of a boat.

Water Conditions	Did You Operate a Boat This Visit?			
	No		Yes	
	Frequency	Percent	Frequency	Percent
I did not use water	104	34.1	0	0.0
No problems	188	61.6	185	80.8
Minor problems	5	1.6	30	13.1
Major problems will return	5	1.6	10	4.4
Major problems not returning	0	0.0	2	0.9
I'm not sure	3	1.0	2	0.9
Total	**305**	**100.0**	**229**	**100.0**

Note:
Table percentage entries are based on number of respondents in each group (547 total respondents).

5.1.5.2.4. Facility and Service Adequacy

The final series of cross-tabulations involved processing of responses for various user groups, as defined by their primary activity and destination or recreation site, to questions relating to recreation opportunity or facility and service attributes, perceived crowding, and conflicts with other users. The objective of this series of analyses was to identify key facility or setting factors that might have influenced differences in user satisfaction levels or their response to conditions encountered in the area.

Variation in Satisfaction with Existing Opportunities by Primary Activity

One cross-tabulation sorted respondents into user groups, based on the primary recreation activity they identified in responses to Question 8, and compared their responses to Question 21 concerning needed improvements to the existing recreation opportunities in the study area. Across all respondents, the majority (53 percent) stated that they were satisfied with the existing recreation opportunities at the Boundary Recreation Area, while approximately 30 percent would like other activities or facilities, and 17 percent of visitors were not sure if any improvements were needed.

Table 5.1-86 shows the breakdown of the responses to Question 21 by activity-based user group. In most cases (particularly for primary activities with more than a handful of respondents), large majorities of the respondents were satisfied with the existing opportunities or were not sure if additional activities or facilities were needed. Among the activity groups with approximately 25 or more respondents each (about 5 percent of the total sample), the percentages desiring other activities or facilities were approximately 42 percent for fishing, 29 percent for swimming, 24 percent for motor boating, 39 percent for paddling (canoeing/kayaking), 18 percent for viewing scenery, 34 percent for developed camping, and 32 percent for socializing.

Table 5.1-86. Comparison of primary recreation activity with response on improvements needed to facilities.

Primary Activity	Are There Any Improvements You Think Are Needed?					
	No, I'm Satisfied with Opportunities		I'm Not Sure		Yes, I Would Like Other Activities/Facilities	
	Frequency	%	Frequency	%	Frequency	%
Fishing	40	47.1	9	10.6	36	42.3
Swimming	27	55.2	8	16.3	14	28.6
Picnicking	7	46.7	5	33.3	3	20.0
Motor boating	28	68.3	3	7.3	10	24.3
Water skiing	1	33.3	0	0.0	2	66.7
Canoeing/kayaking	22	53.7	3	7.3	16	39.0
PWC	4	59.1	1	14.3	2	28.6
Viewing scenery	52	58.4	21	23.7	16	18.0
Visiting dams	3	30.0	4.	40.0	3	30.0
Traveling SR31	7	50.0	5	35.7	2	14.3
Day hiking	8	44.4	4	22.2	6	33.3
Walking/jogging	3	50.0	2	33.3	1	16.7
Bicycling	0	0.0	2	100.0	0	0.0
Photography	5	50.0	2	20.0	3	30.0
Nature study	1	50.0	1	50.0	0	0.0
Developed camping	27	43.5	4	6.5	21	34.0
Primitive camping	3	33.3	4	44.4	2	22.2
Boat-in camping	1	50.0	0	0.0	1	50.0
Socializing	17	44.7	9	23.7	12	31.6
Seeking solitude	2	50.0	1	25.0	1	25.0
Off-roading	1	50.0	1	50.0	0	0.0
Hunting	4	57.1	1	14.3	2	28.6
Special event	8	72.7	0	0.0	3	27.3
Other	22	61.7	3	9.1	8	24.2
Total	**293**	**53.3**	**93**	**16.9**	**164**	**29.8**

Note:
Table percentage entries are based on number of respondents in each activity group (550 total respondents).

Variation in Satisfaction with Facility Maintenance by Primary Destination

Respondents were similarly sorted into user groups based on the recreation site they identified as their primary destination in responses to Question 23, and their responses to Question 28 concerning the adequacy of facility maintenance at the primary site. Overall, approximately 90 percent of visitors were satisfied with facility maintenance at the primary destination, while approximately 10 percent felt the facilities were not adequately maintained. Table 5.1-87 shows the breakdown of the responses to Question 28 by site-based user group. At least 75 percent of the visitors in each group felt that the facilities at their primary destination were adequately

maintained. The largest percentages of visitors who reported that facilities were not adequately maintained were 25 percent for Crescent Lake visitors (which includes users of the developed day-use area and the dispersed campsites), 20.7 percent for visitors to Metaline Waterfront Park, and 19.4 percent for visitors to the Sweet Creek Falls Rest Area.

Table 5.1-87. Comparison of primary destination and facility maintenance response.

Primary Destination	Were the Facilities Maintained at Primary Destination?			
	Yes		No	
	Frequency	Percent	Frequency	Percent
Vista House	32	88.9	4	11.1
Visitors' Gallery	31	100.0	0	0.0
Tailrace Recreation Area	7	87.5	1	12.5
Forebay Rec. Area Campground	111	90.2	12	9.8
On the water	85	93.4	6	6.6
Crescent Lake	9	75.0	3	25.0
Metaline Park	46	79.3	12	20.7
Campbell Park	71	87.7	10	12.3
Sweet Creek Falls Rest Area	29	80.6	7	19.4
Boat-in site	12	100.0	0	0.0
Other	59	95.2	3	4.8
Total	**492**	**89.5**	**58**	**10.5**

Note:
Table percentage entries are based on number of respondents in each site group (550 total respondents).

5.1.5.2.5. Crowding and User Conflict

Variation in Perceived Crowding by User Group

User groups defined by the primary recreation activity they identified in responses to Question 8 were compared for their responses to Question 24 concerning whether they felt crowded at their primary destination. Nearly 78 percent of visitors provided a rating of 1 to 3 on the 9-point crowding scale, whereas 18 percent felt moderate to average crowding (ratings of 4 to 6) (see Table 5.1-88). Only 4 percent felt crowded (ratings of 7 to 9) while doing their primary recreation activity. Among the more common user groups, the percentages reporting moderate or higher levels of crowding were highest for motor boating, with 27 percent providing ratings of 4 to 6 and 7 percent providing ratings of 7 to 9. Similarly, among people who identified fishing as their primary activity, 18 percent provided ratings of 4 to 6 and 10 percent provided ratings of 7 to 9. Relatively high percentages of the swimming and canoeing/kayaking groups reported moderate levels of crowding. The mean crowding scores were 3.11 for the motor boating group and 2.84 for the fishing group, both of which are still on the lower side of the crowding scale.

Table 5.1-88. Comparison of primary recreation activity and crowding response.

Primary Recreation Activity	Crowding Ratings						
	1–3		4–6		7–9		Group Mean
	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Fishing	64	71.9	16	18.0	9	10.1	2.84
Swimming	32	68.1	15	31.9	0	0.0	2.60
Picnicking	13	92.9	1	7.1	0	0.0	1.93
Motor boating	29	65.9	12	27.3	3	6.8	3.11
Water Skiing	2	66.7	1	33.3	0	0.0	2.67
Canoeing/kayaking	32	69.6	13	28.3	1	2.2	2.78
PWC use	4	57.1	2	28.6	1	14.3	3.43
Viewing scenery	85	91.4	6	6.5	2	2.2	1.77
Visiting dams	10	90.9	1	9.1	0	0.0	1.55
Traveling SR 31	13	92.9	1	7.1	0	0.0	1.86
Day hiking	12	63.2	7	36.8	0	0.0	2.74
Walking/jogging	6	100.0	0	0.0	0	0.0	1.00
Bicycling	1	50.0	1	50.0	0	0.0	2.50
Photography	10	100.0	0	0.0	0	0.0	1.20
Nature study	2	100.0	0	0.0	0	0.0	2.00
Developed camping	40	75.5	9	17.0	4	7.5	2.70
Primitive camping	7	70.0	1	10.0	2	20.0	3.00
Boat-in camping	1	50.0	1	50.0	0	0.0	4.50
Socializing	35	89.7	4	10.3	0	0.0	1.82
Seeking solitude	6	85.7	1	14.3	0	0.0	2.00
Off-roading	1	50.0	1	50.0	0	0.0	4.00
Hunting	6	85.7	1	14.3	0	0.0	2.43
Special event	5	41.7	7	58.3	0	0.0	3.25
Other	26	83.9	3	9.7	2	6.5	2.16
Total	**442**	**77.5**	**104**	**18.2**	**24**	**4.2**	**2.43**

Note:
Table percentage entries are based on number of respondents in each site group (550 total respondents).
PWC – personal watercraft

Variations in Problems/Conflict by User Group

Another cross-tabulation in this group involved analysis of responses to Question 25, concerning whether visitors had seen or experienced conflict, by user group based on the primary activity. As indicated in Table 5.1-89, 10 activity-based user groups encountered no conflict during their visit to the Boundary Reservoir Area; these activity groups included picnicking, water skiing, visiting the dams, traveling SR31, and photography. For groups that encountered conflict (discounting those groups with very small numbers), the highest reported percentages were 26 percent for canoeing/paddling, 25 percent for developed camping, and 23 percent for swimming. These conflicts (which are typically identified more specifically in the verbatim responses provided in Appendix 3e) could be based on a variety of factors. In the case of paddling, a

potential source of conflict may be motor boat traffic and/or the wakes created by boats. The verbatim responses suggest that conflicts encountered in developed camping often involved the behavior of other users at the recreation site. In other cases the conflict may arise simply from the occurrence of multiple activities at the same location, such as swimming taking place near a boat launch.

Table 5.1-89. Comparison of primary recreation activity and conflict response.

Recreation Activity	Did You Experience Any Conflict?			
	No		Yes	
	Frequency	Percent	Frequency	Percent
Fishing	76	87.4	11	12.6
Swimming	36	76.6	11	23.4
Picnicking	15	100.0	0	0.0
Motor boating	41	95.3	2	4.7
Water skiing	3	100.0	0	0.0
Canoeing/kayaking	34	73.9	12	26.1
PWC use	6	85.7	1	14.3
Viewing scenery	92	98.9	1	1.1
Visiting dams	11	100.0	0	0.0
Traveling along SR 31	14	100.0	0	0.0
Day hiking	19	100.0	0	0.0
Walking/jogging	6	100.0	0	0.0
Bicycling	1	50.0	1	50.0
Photography	10	100.0	0	0.0
Nature study	1	50.0	1	50.0
Developed camping	40	75.5	13	24.5
Primitive camping	9	90.0	1	10.0
Boat-in camping	2	100.0	0	0.0
Socializing	34	89.5	4	10.5
Seeking solitude	7	100.0	0	0.0
Off-roading	1	50.0	1	50.0
Hunting	6	85.7	1	14.3
Special event	12	100.0	0	0.0
Other	30	93.8	2	6.2

Note:
Table percentage entries are based on number of respondents in each site group.
PWC – personal watercraft

Variation in Tendency to Change Plans by Primary Site

The final cross-tabulation in this series was related to the previous question, and involved whether visitors intended to adjust their recreation plans based on experiencing conflict (Question 26). In this instance the responses were compared across groups based on the site the respondents identified as their primary destination. As shown in Table 5.1-90, approximately 94

percent of all respondents stated they had no intention of adjusting their plans, indicating that for most visitors the conditions encountered were not considered serious. None of the respondents in the Vista House, Crescent Lake, or boat-in site groups indicated they would be adjusting their plans. The highest percentage of visitors who did intend to adjust their recreation plans due to experiencing conflict or crowding was 13 percent for the Forebay Recreation Area campground group. About 10 percent of the respondents identifying the Visitors' Gallery and the Tailrace Recreation Area as their primary destination also stated they were going to adjust their plans.

Table 5.1-90. Comparison of primary destination with intention to adjust recreation plans.

Primary Destination	Do You Intend to Adjust Your Recreation Plans?			
	No		Yes	
	Frequency	Percent	Frequency	Percent
Vista House	37	100.0	0	0.0
Visitors' Gallery	28	90.3	3	9.7
Tailrace Recreation Area	8	89.0	1	11.0
Forebay Rec. Area Campground	104	86.7	16	13.3
On the water	82	94.3	5	5.7
Crescent Lake	12	100.0	0	0.0
Metaline Waterfront Park	58	98.3	1	1.7
Campbell Park	79	96.3	3	3.7
Sweet Creek Falls Rest Area	30	96.8	1	3.2
Boat-in site	11	100.0	0	0.0
Other	58	93.5	4	6.5
Total Respondents	**507**	**93.7**	**34**	**6.3**

Note:
Table entries are based on respondents per activity type.

The objectives for the survey question cross-tabulations addressed above in Section 5.1.5.2 were to determine whether there appeared to be differences among user groups, defined based on activity types and use of specific sites or facilities, in their satisfaction levels and perceptions of current recreation conditions. To the extent that any of these specific analyses suggest the existence of issues relating to the sufficiency of recreation resources in the study area and/or how those resources are currently functioning, those issues will be considered in the RNA.

5.1.6. Local Area Focus Groups

As part of the recreation surveys component of the RRS, SCL conducted two focus group meetings in the local area in May 2008. Following RSP guidance and more specific direction coordinated with relicensing participants, SCL developed an invitation list with approximately 30 names. Approximately 3 weeks in advance of the meetings, SCL mailed the invitees a packet including a letter of invitation, an agenda for the meeting, and a background sheet identifying the various components of the RRS and the role of the focus group meetings. SCL and consultant staff also contacted invitees by telephone to answer questions, explain the purpose of the meetings, and coordinate scheduling.

The dates, times and locations for the focus group meetings were as follows:

Tuesday, May 6, 2008
Ione Community Center
Ione, Washington
6:30–9:00 pm

Wednesday, May 7, 2008
Cutter Theater
Metaline Falls, Washington
6:30–9:00 pm

The two meetings were attended by a 17 participants, primarily members of the local community. There were 11 participants at the Ione meeting on May 6 and 6 at the Metaline Falls meeting on May 7. The attendees included local government elected officials; staff from local government departments, including park and recreation agencies; representatives from organizations involved in tourism and economic development; members of recreational and natural resource interest groups; and members of the local business community providing commercial camping, lodging, and recreational services to the public.

The meetings followed a semi-structured format in which a moderator posed a series of questions and solicited input from each participant on each question. In short form, the question topics were as follows:

- Overall recreation interests in and familiarity with the study area and the Project.
- Current use or non-use of the study area, and reasons why or why not.
- Impression of how well study area recreation resources are currently functioning.
- Desired future condition of the study area over the next license term, including any emerging uses.

The objectives of the focus group meetings were to validate information obtained from the recreation surveys and to provide helpful input for the future RNA. The third and fourth bullets on the list above relate almost exclusively to the follow-on RNA, whereas bullets 1 and 2 address the types of information collected through other aspects of the recreation surveys and primarily involve existing use patterns. Appendix 6 provides a record of the two focus group meetings, including discussion relating to perceived recreation needs. Some of the insight gained from the meeting attendees relative to recent and current use conditions is summarized as follows.

Observations on patterns of use or non-use of the study area:

- Some local residents use the entire reservoir for recreation and pursue a wide variety of activities; others focus on a limited number of activities and/or locations on the reservoir.
- Lodging operators often refer their guests to points of interest in the area; for at least two operators, a common suggestion is to visit the nearby State Park (caves), Boundary Dam Visitor Gallery, and the Vista House.

- Metaline Waterfront Park is commonly used for large-group activities, including weddings (one local minister has performed 17), church services, group picnics, and other functions.
- Residents often bring family/visitors to the Vista House on their first visit to the local area, but tend not to return during repeat visits.
- The City of Spokane runs an extensive outdoor recreation program that serves the Inland Northwest and is the largest municipal outdoor recreation program in the country. Their program included four weekend trips to Boundary Reservoir in the past year, accommodating about 50 participants (more trips may be provided in the future).
- A locally-based private recreation activity provider takes customers on canoe/kayak trips on Boundary Reservoir, and likes to visit the scenic highlights and explore caves and mine adits on these trips. A typical pattern is to start the river trips at Metaline and go towards Boundary Dam, taking about 6 hours for a trip of 12 river miles with stops for swimming, hiking, and fishing as desired and slow travel to enjoy wildlife observations; these trips have accommodated about 100 people in a good year.

Site- or resource-specific observations:

- Users encountered on the river are typically courteous and there usually are no problems. There have been issues in the narrow canyon area with wake boarders, and jet skiers can sometimes be an issue for slow moving kayakers/canoeists.
- People in the Metaline area know access and boat launching is limited when the pool level/river flow is down in the upper reach above Metaline Falls.
- Some non-motorized boaters like to run the Narrows (go through the Falls); the Falls is a problem for some boaters and requires portage around the Falls.
- Some local users do not like to operate boats on the reservoir south of Metaline Falls due to sand bars and shallow water in some areas.
- Some local anglers go south from the boat launch at Metaline Waterfront Park and think the upper part of the reservoir is better for bass fishing.
- The BLM Boundary Recreation Site is considered a good site, but conditions tend to deteriorate by late summer due to the amount of use it receives by teenagers and lack of facilities and maintenance.
- The Civilian Conservation Corps had at one time cleared a trail along the river previously known as the Blue Bonnet Trail, but it is now grown over and its route is now lost.

Trends and potential changes:

- A perception of local residents is that boating use on the reservoir is growing, especially in the last 3 years.
- Pend Oreille County PUD has seen an increase in recreation at Campbell Park, and indicated an interest in potentially cooperating with SCL on future actions at Campbell Park.

- Development in the area is limited by having a large majority of public land within 30 miles of the U.S.-Canada border, and a lack of developable land for new private resorts, etc.
- Recreation trends will likely be affected by the Baby Boomer "Echo" generation; human-powered recreation is likely to grow, such as interest in kayaking, canoeing, snowshoeing, etc.; increase in day use trips involving multiple experiences (such as organized group canoeing with a lunch stop and wildlife observation, mining and geology interpretation).

Key events and promotional activities:

- The annual smallmouth bass tournament (Bassin' Assassin) on the reservoir the first weekend in May is a large tourism draw for the local community, with 160 entrants in 2008.
- Community-based organizations supporting the North Pend Oreille Scenic Byway and the International Selkirk Loop are active in promoting tourism and making improvements along the route through grant funding.
- Pend Oreille County has promoted increased off-highway vehicle (OHV) use in the county with an ordinance that supports OHV use of area roads and trails.
- The Pacific Northwest Trail (PNT), the trail route crosses the river along the road atop Boundary Dam, has been proposed for National Scenic Trail designation, which could increase the number of trail users in the future (discussion also included details concerning the trail route in northern Pend Oreille County).

The discussion of interests and activities in response to the first question on the agenda, particularly at the Ione focus group meeting, indicated strong support by participants for promoting increased tourism in the area and extending the length of stay of visitors. Although participants were specifically asked to identify what they considered emerging recreational uses, no emerging uses were identified. There was discussion about potential future roles for SCL; there was an interest in increased coordination with other entities and increased visitor communication regarding available recreation opportunities in the area.

The focus group discussions provided a variety of useful information. Some of the observations from the meeting participants have been applied in other components of the RRS, such as descriptive information about the PNT and use of Metaline Waterfront Park for a variety of community functions and special occasions. Input from the attendees provided additional perspective on topics that were explored through the visitor and area resident surveys, such as conditions at the local boat launches and the ways in which water conditions in the reservoir might influence recreational activity. The focus group participants also addressed a number of desired or potential actions that they considered to be needs related to recreation and tourism in the local area. Specific informational items and suggestions documented in the meeting records will be considered where appropriate in the RNA and subsequent elements of the relicensing process.

5.1.7. Local Area Recreation Providers

An additional component of the Recreation Surveys defined in the RSP was to contact owners/operators of private recreation businesses (RV resorts and campgrounds) near the SR 31 corridor and the concessionaire operators of the USFS campgrounds at Mill Pond and Sullivan Lake Recreation Areas for basic information about their facilities and recreational visitors. Tetra Tech staff initiated this activity in fall 2007. Operators of five businesses providing camping facilities in Ione, Metaline, and Metaline Falls were contacted, resulting in four completed interviews. Tetra Tech also contacted the private firm operating the local USFS campgrounds in both 2007 and 2008, but was not able to interview an area manager because of seasonal work schedules and personnel rotations and changes. Information about these facilities is available from a variety of other sources, however, and is included in the report.

Interviews with the local recreation providers followed a standard format based on the information topics identified in the RSP, with a series of questions about current facilities, plans to expand facilities or services, facility use levels and capacity, the operating season, fees charged, visitor characteristics, and anecdotal information about trends for the area. Interviews were typically conducted at the owner's place of business and lasted from 30 minutes to over an hour, depending on the level of detail provided by the owner. Results from these interviews, supplemented with other data for the USFS campgrounds, are summarized below by topic.

5.1.7.1. Facility Inventory

All four of the local private campgrounds reported providing RV campsites with hookups, while two also provide tent campsites (although some of the tent sites are in an open, undefined area without a fire pit or picnic table). Among these providers, the numbers of individual units ranged from a low of 6 to a maximum of 40 for RV sites and from 10 to 50 tent campsites. The private campgrounds in the local area have a combined capacity of approximately 140 campsites. One business has a cabin on site available for rent, and another has a single picnic site available for public use.

The private campgrounds provide a variety of visitor amenities including restrooms, showers, pay phones, laundromats, and RV dump stations. Some have specific facilities for outdoor games, such as horseshoe pits and volleyball courts. One business rents a large heated garage for group activities, and another has two modular, self-contained kitchenette units, plus a hot tub for each unit. Two of the campground businesses also have stores on the property.

The USFS provides three standard campgrounds and two group campgrounds at Sullivan Lake, and another standard campground at Mill Pond (USFS 2008). These facilities range in size from 10 to 38 tent/trailer units, and have a combined capacity of 77 campsites. The Sullivan Lake campgrounds and the two group camps are on the national reservation system. Ancillary facilities include vault toilets, potable water, picnic areas and shelters, boat launches, and swimming areas (at the Sullivan Lake sites).

5.1.7.2. Facility Use and Users

Four private campgrounds addressed in these interviews are operated on a year-round basis. The operators indicated that spring and summer are the periods of highest use. Some of the businesses cater to hunters in the fall, and some indicated year-round use by miners and contractors. Overall, estimated visitor use relative to capacity ranged from 30 to 50 percent. Rates of use are typically higher than those averages in the summer and lower in winter.

Private campground operators indicated that the majority of their visitors were non-locals. The length of stay was typically from 1 to 4 nights, although stays of up to 1 year were reported. The average party size was approximately 2. One operator indicated that 40 percent of his business came from organized groups. Two providers reported that bicycle groups touring in the area represented an identifiable portion of their clientele. Employees and contractors doing business with Teck Cominco, USFS, SCL, and the U.S. Border Patrol also account for some facility use that is not recreational or tourist-related activity.

During the interviews, the local providers were asked how visitors found out about their facility. All four indicated that "word of mouth" seemed to be the most effective means for generating business. One business maintained its own website, and the others were included in facility advertising provided on the North Pend Oreille Scenic Byway website. Visitors also learned of these facilities through advertising in local newspapers, by stopping to use the RV dump station available at one facility, and simply by noticing a campground while driving through the area.

USFS campgrounds at Mill Pond and Sullivan Lake Recreation Areas are operated on a managed season that typically extends from about a week before Memorial Day to mid-September (Berger 2008). Portions of one or more campgrounds are generally left open, with minimal or no services, through the end of October to accommodate fishing and hunting use after the primary recreation season. Visitors to these sites were primarily from northeastern Washington counties. (See Section 5.1.1.1 for additional discussion of user characteristics.) The general pattern of use for these facilities was to operate at or above capacity during the Memorial Day weekend and from July through Labor Day, with moderate use in June and lower levels of activity at the beginning and end of the managed season.

Visitors to both the private and USFS campgrounds in the local area have a variety of on-site activities available, as indicated in the facility descriptions above. When asked to describe visitors' off-site activities, the local business owners identified touring the dams, going to Gardner Caves (Crawford State Park), riding the Lions Club excursion train, riding ATVs, and hiking on trails as popular visitor activities.

5.1.7.3. User Fees

The private campground operators interviewed charge campsite fees based on the type of site and the amenities provided. These providers reported rates of $10 per night and higher for tent campsites, and from $15 to $22 per night for sites with RV hookups. For customers renting on a weekly basis, typical rates were from $90 to $105 per week. Where applicable, other charges included small fees for using an RV dump station and coin-operated laundry facilities. The two

operations with on-site stores received some additional revenues from camper purchases in those facilities.

Current campsite fees for the USFS campgrounds were $12 per night for a standard campsite and $50 per night for a group site (USFS 2008). These rates were consistent with fees for other CNF campgrounds, and are based on the level of facilities and services provided at each location.

5.1.7.4. Trends and Future Plans

All private campground operators interviewed felt that visitor use in the local area had increased in recent years. Increased visitor numbers identified for their respective facilities ranged from 30 to 70 percent (these figures were not referenced to a specific base year). One respondent indicated that the Tiger Store (a former commercial facility now operated as a Scenic Byway visitor information site) had seen an overall visitor increase of 41 percent over the previous year. At least one business owner stated that the International Selkirk Loop designation and advertising have brought increasing numbers of visitors to the region, and that the Loop has been listed in national RV magazines as one of the "Top Five Must See" places.

The local recreation business owners discussed varying plans for future changes to their facilities. In multiple cases future plans included general landscape improvements to the grounds, such as tree planting or adding a fence. Other potential facility additions included a laundromat, shower house, playground for children, and small store with fishing and hunting supplies. One business owner hoped for larger-scale changes, including tripling the capacity of the facility and installing yurts, and another owner considered building a combined restaurant/lodge facility.

Future direction related to any changes in facility composition for the local USFS campgrounds would be determined through the update of the Colville National Forest Land and Resource Management Plan (Forest Plan) that is currently being updated by the USFS.

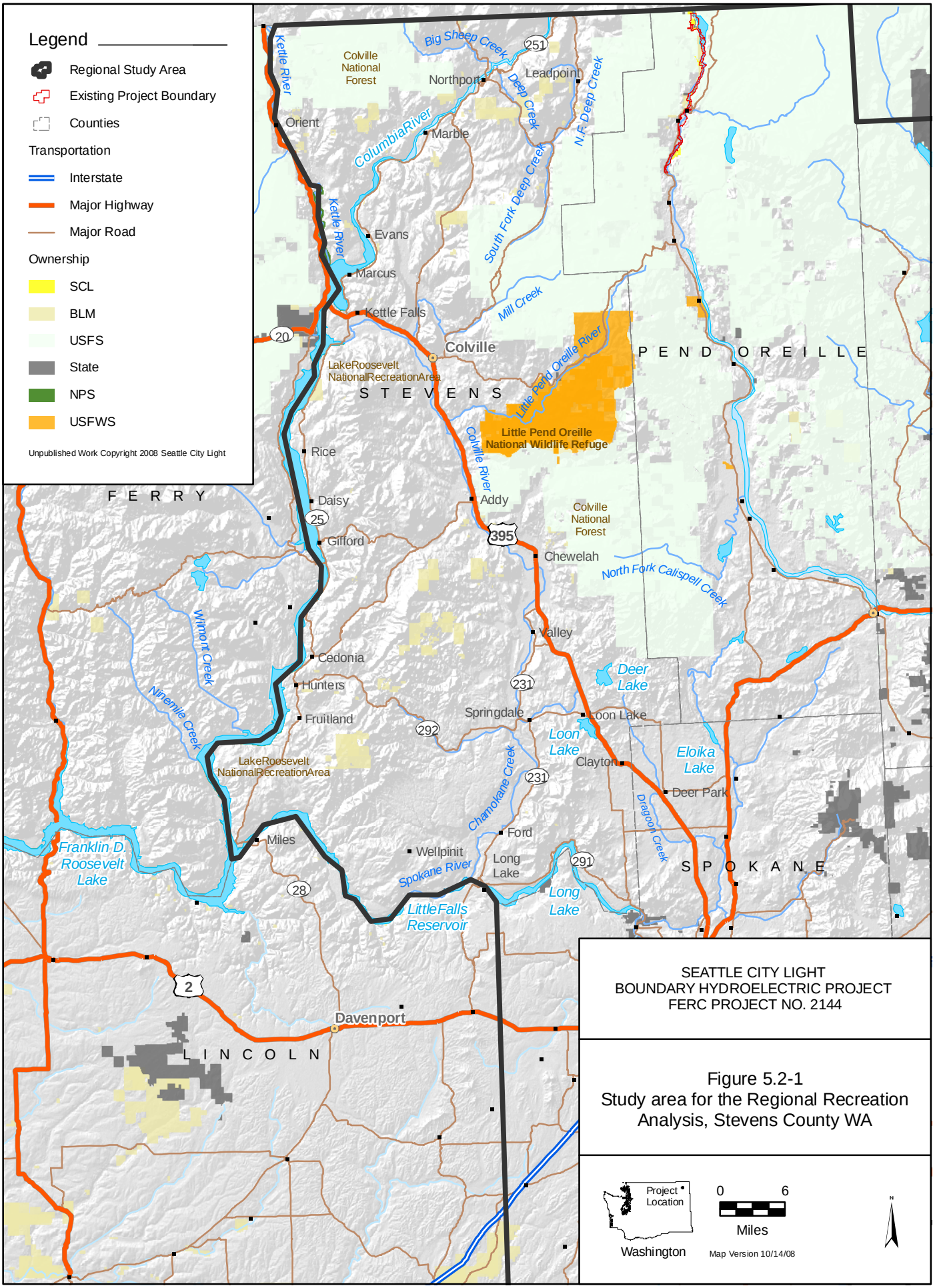
5.2. Regional Recreation Analysis

This section presents the results of the Regional Recreation Analysis. Section 5.2.1 is a summary of existing recreational resources within the five-county region that are comparable to the types of resources found at the Project area. Section 5.2.2 is a review of regional patterns for the types of recreational activities occurring at the Project area. Section 5.2.3 discusses the role and function of the North Pend Oreille Scenic Byway and the International Selkirk Loop. The final component of the regional analysis results is a summary discussion of the regional context of the recreational resources found at the Project area, in Section 5.2.4.

5.2.1 Regional Recreation Resources

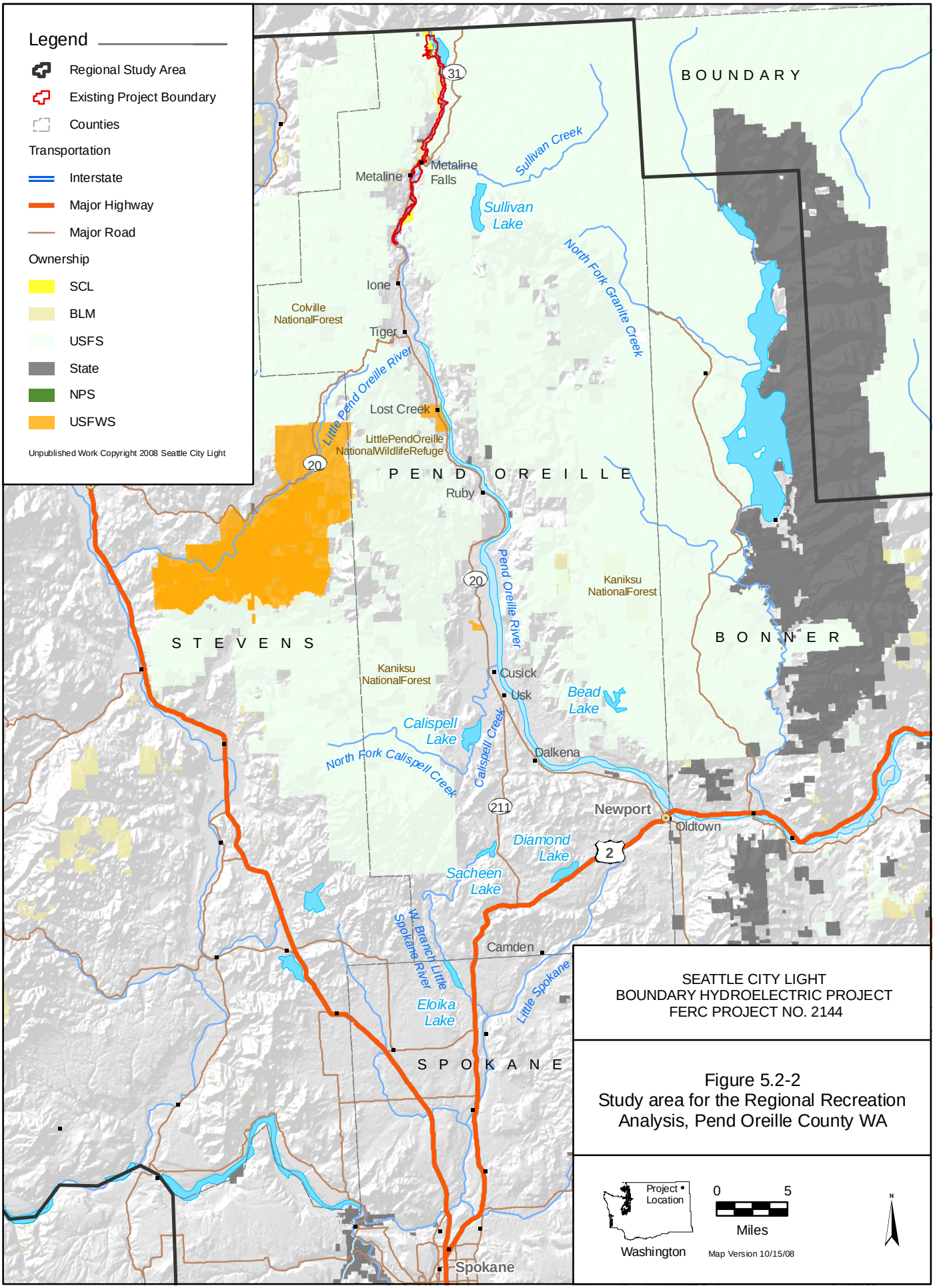
The following information represents an inventory of recreation resource supply for the five-county study area. Because the intent is to indicate the regional context for the recreation resources found at the Project, this section is a capsule summary of recreation providers and the types and amounts of opportunities they provide, rather than a detailed catalog of all providers and facilities within the region. For organizational convenience, recreation resources within the

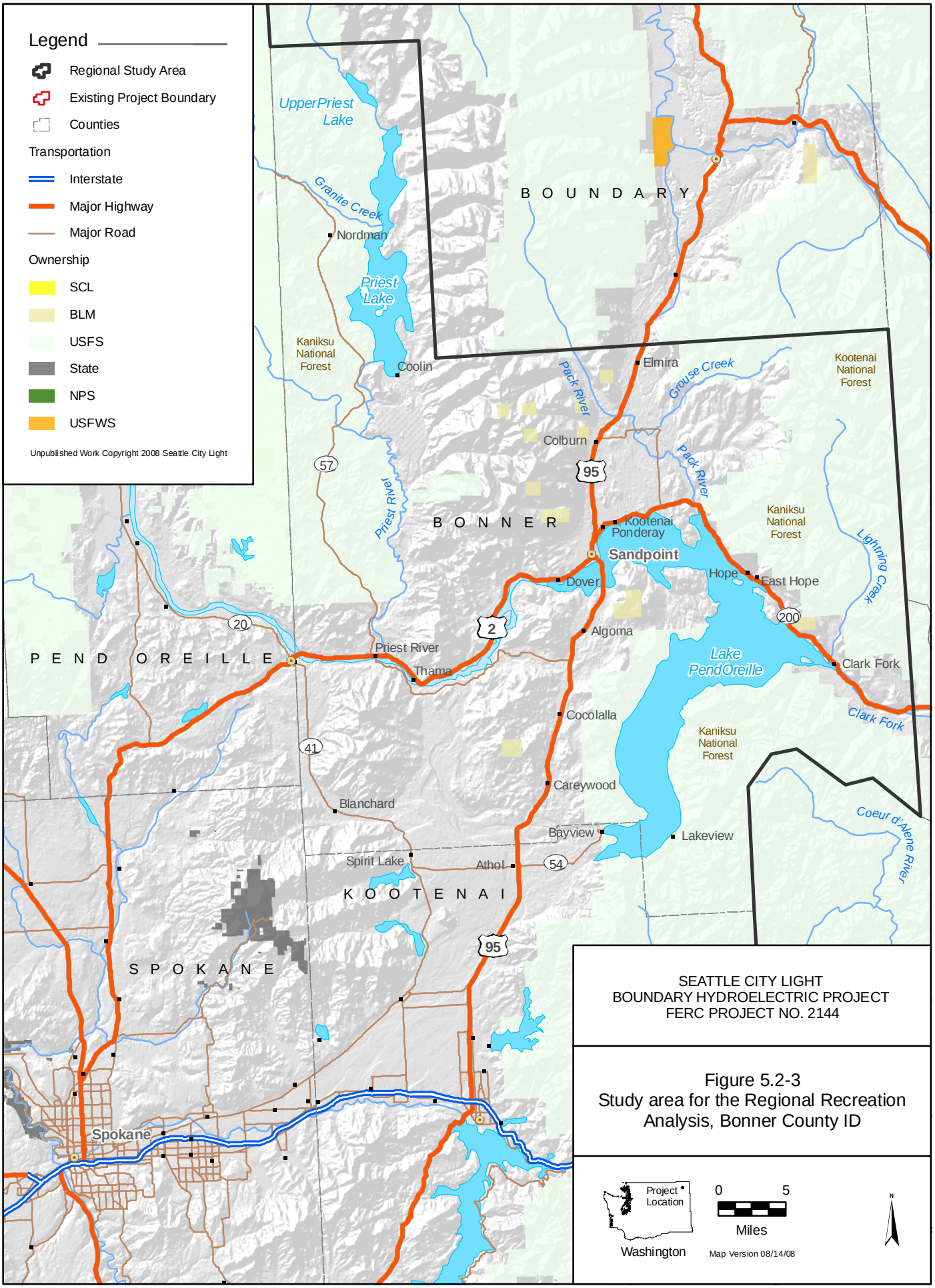
region are presented by major provider/land ownership category (i.e., federal, state, and local governments; tribes; and the private sector), with subdivision by specific source as appropriate. This review of regional recreation supply does not address many categories of recreation opportunities that do not occur at the Project and have no Project nexus, such as golf or swimming in pools. A tabular, quantitative summary of pertinent recreational facilities within the region is provided at the end of Section 5.2.1. Figures 5.2-1 through 5.2-5 are maps for the respective counties that show the locations of major public land units, rivers and lakes, communities, and other key geographic features within the regional study area. Because of the scale limitation of these maps, they do not identify the locations of the individual recreation facilities referenced in the discussion.



SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144

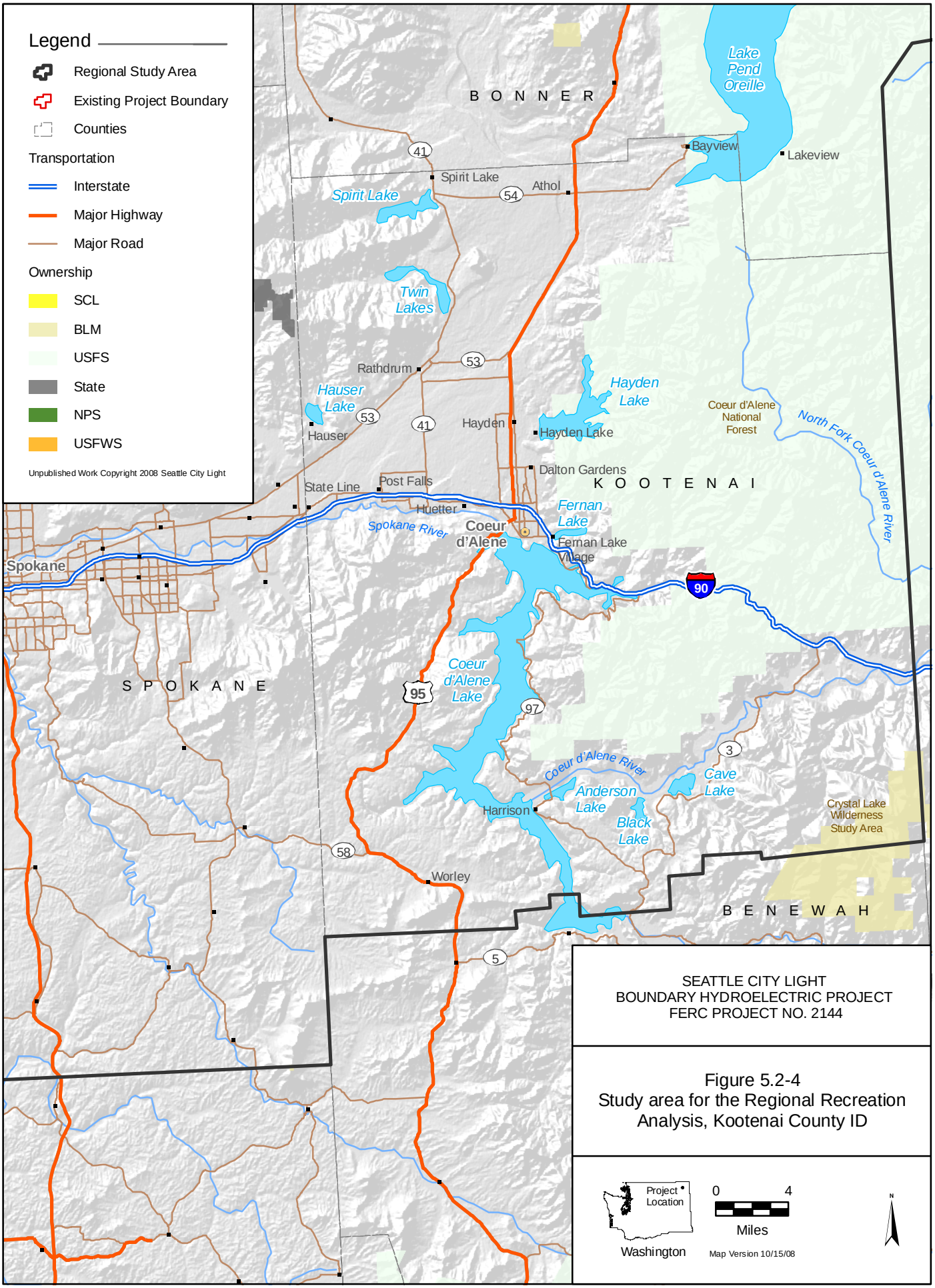
Figure 5.2-1
Study area for the Regional Recreation Analysis, Stevens County WA


Legend
Regional Study Area
Existing Project Boundary
Counties
Transportation
Interstate
Major Highway
Major Road
Ownership
SCL
BLM
USFS
State
NPS
USFWS
Unpublished Work Copyright 2008 Seattle City Light
BOUNDARY
PEND OREILLE
STEVENS
BONNER
SPOKANE
Metaline
Metaline Falls
Ione
Tiger
Lost Creek
Ruby
Cusick
Usk
Dalkena
Newport
Oldtown
Camden
Spokane
Colville NationalForest
LittlePendOreille NationalWildlifeRefuge
Kaniksu NationalForest
Sullivan Creek
Sullivan Lake
North Fork Granite Creek
Little Pend Oreille River
Pend Oreille River
Bead Lake
Calispell Lake
Calispell Creek
North Fork Calispell Creek
Diamond Lake
Sacheen Lake
W. Branch Little Spokane River
Eloika Lake
Little Spokane
31
20
211
2
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.2-2
Study area for the Regional Recreation Analysis, Pend Oreille County WA
Project Location
Washington
0
5
Miles
Map Version 10/15/08
N



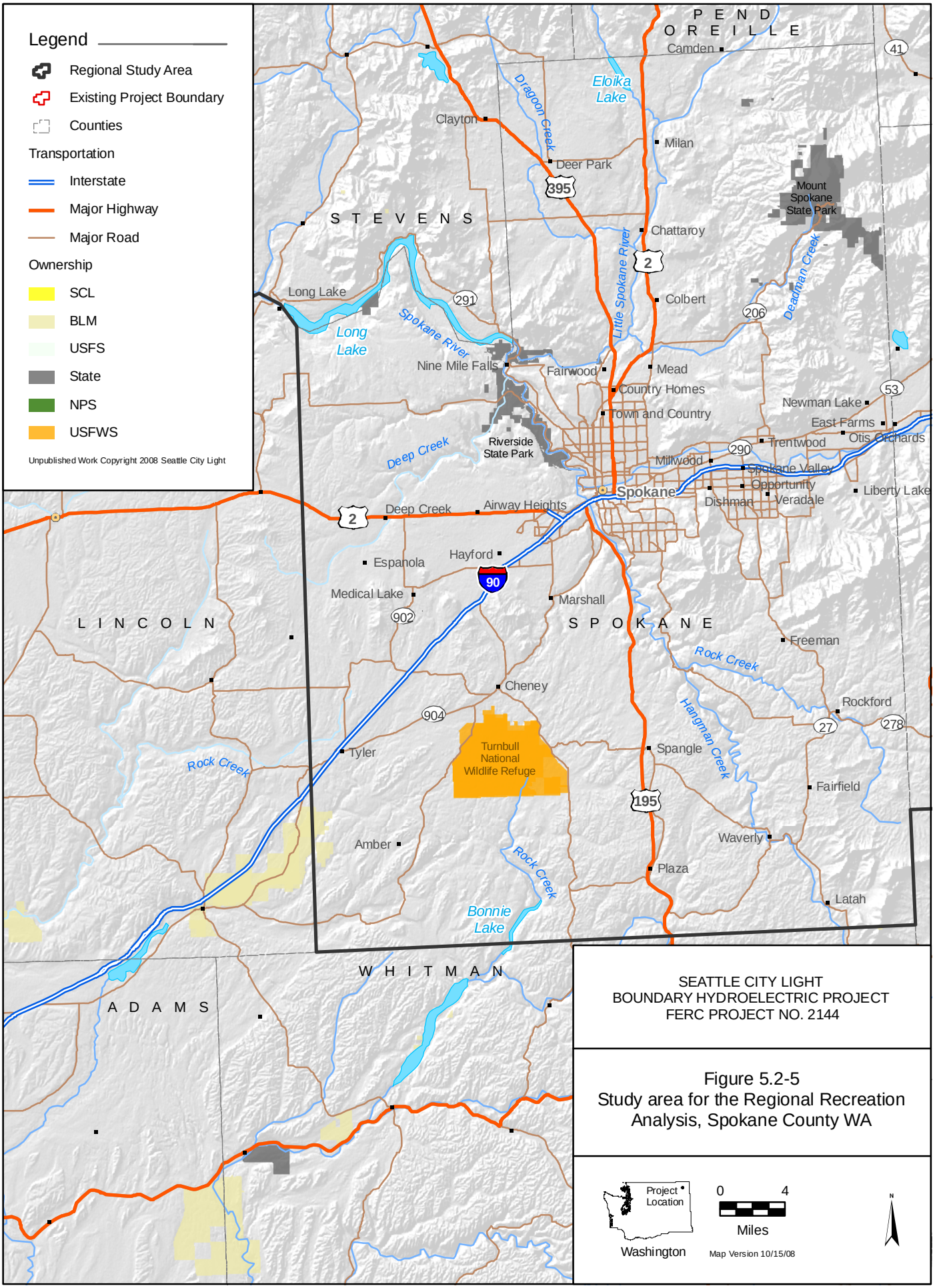
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144

Figure 5.2-3
Study area for the Regional Recreation Analysis, Bonner County ID



SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144

Figure 5.2-4
Study area for the Regional Recreation Analysis, Kootenai County ID



SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144

Figure 5.2-5
Study area for the Regional Recreation Analysis, Spokane County WA

5.2.1.1. Federal Government

Multiple federal agencies manage land and provide recreational opportunities in the five-county regional study area. These include the USFS in the U.S. Department of Agriculture; the BLM, the National Park Service (NPS), and the U.S. Fish and Wildlife Service (USFWS) in the U.S. Department of the Interior; and the U.S. Army Corps of Engineers (USACE) in the U.S. Department of Defense.

Some other federal agencies, such as the Bureau of Reclamation and Bureau of Indian Affairs, have facilities and/or manage some lands within the regional study area but do not provide recreation to the public at these sites.

5.2.1.1.1. U.S. Forest Service

Parts of two national forests administered by the USFS are located within the five-county regional study area. The CNF includes large acreages within Stevens and Pend Oreille counties in Washington. The Idaho Panhandle National Forests (IPNF), an administrative unit formed by combining the former Coeur d'Alene and Kanisku national forests, include extensive acreage in Bonner and Kootenai counties in Idaho. The IPNF boundary also includes some acreage in Washington that is managed by the CNF.

The CNF includes a total of 1.1 million acres located within three counties in northeastern Washington. Approximately 60 to 65 percent of the CNF acreage is within Pend Oreille and Stevens counties (mostly in the former), with the remainder in Ferry County (outside the regional study area). The CNF includes portions of the Okanogan, Kettle River, and Selkirk mountain ranges, and the upper reaches of the Columbia River within the United States (USFS 2008). Residents and visitors to the CNF enjoy a diverse array of recreational opportunities including developed and dispersed camping; trails for hiking, OHV use, mountain biking, and horseback riding; and many lakes, rivers, and streams that support a variety of water-based activities. Other recreational activities include auto touring, boating, climbing, fishing, visiting historic and cultural sites, hunting, participating in interpretive programs, picnicking, operating recreational vehicles, water sports, wildlife viewing, and winter sports.

There are multiple camping and day-use opportunities, trails, and hunting/fishing resources found in the CNF, as follows:

- The full inventory of CNF recreation resources includes approximately 50 developed recreation sites (excluding recreation residences used under permits) distributed about the Forest (USFS 1988). Many of those facilities are located within Pend Oreille and Stevens counties, including 6 campgrounds near Colville (mostly in the Little Pend Oreille Lakes area), 4 USFS campgrounds on the Newport Ranger District, and 7 campgrounds on the Sullivan Lake Ranger District. The combined total of these CNF facilities within Pend Oreille and Stevens counties is 17 developed campgrounds, with more than 270 individual campsites.

- Other CNF resources include 13 trails around Colville, 11 trails around Newport, and 21 trails around Sullivan Lake, for a total of 45 trails within Pend Oreille and Stevens

counties. These are primarily multiple-use trails for hiking and horseback riding. About half of these trails also include mountain biking, and seven trails can also be used for cross-country skiing. There is one managed OHV use area, the Batey-Bould OHV Area northwest of Cusick in Pend Oreille County.

- The northeastern Washington region has a large and varied distribution of lakes and rivers, which provide diverse opportunities for fishing and other water-based recreation. The USFS considers Sullivan Creek, the Pend Oreille River, and North Fork Chewelah Creek to be featured rivers and streams on the CNF. There are also several featured lakes in Pend Oreille and Stevens counties, which include Sullivan Lake, Gillette Lake, Big Meadow Lake, Lake Leo, Crescent Lake, South Skookum Lake, and Brown's Lake. Developed recreation facilities on these lakes provide for camping, picnicking, hiking, motorized and/or non-motorized boating, swimming, birding, water skiing, and related activities.

The IPNF comprises about 2.5 million acres of federal lands primarily within the panhandle of northern Idaho, with some areas extending into northeastern Washington and western Montana. The USFS administers approximately 716,000 acres of land in Bonner and Kootenai counties in Idaho (IDPR 2006). With respect to physiography, the IPNF is in the east-central part of the Columbia Plateau, between the Cascade Mountains to the west and the Bitterroot Mountains to the east. Recreational activities in the IPNF include camping, hiking, picnicking, rafting and kayaking, hunting, fishing, downhill skiing and snowboarding, cross-country skiing, snowshoeing, boating, snowmobiling, OHV use, motorcycling, wildlife watching, huckleberry picking, scenic driving, mushroom picking, and horseback riding (IPNF 2008).

There are multiple camping and day-use opportunities, trails, and hunting/fishing resources found on the IPNF within the study region, as follows:

- The IPNF operates 5 campgrounds around Upper Priest Lake, 28 campgrounds around Priest Lake, 5 campgrounds around Sandpoint, and 9 campgrounds in the Coeur d'Alene Valley (Coeur d'Alene and Wallace areas) for a total of 47 developed campgrounds, which offer more than 420 individual campsites within Bonner and Kootenai counties.
- Other IPNF resources include 6 trails around Coeur d'Alene, 21 trails along the North Fork Coeur d'Alene River, 17 trails around Priest Lake, 10 trails around Sandpoint, and 4 trails that are used solely for OHV, for a total of 58 trails within Bonner and Kootenai counties. These are primarily hiking trails (with the exception of the four OHV trails), and often the hiking trails provide multiple use opportunities such as horseback riding and mountain biking. A few of these trails also support motorized use (besides the four primary OHV trails).
- Similar to northeastern Washington, there are multiple opportunities for hunting and fishing in the IPNF. The region has multiple lakes and rivers, including three featured large lakes (Priest, Pend Oreille, and Coeur d'Alene lakes), three featured small lakes (Hayden, Spirit, and Cococalla lakes), and many other small lakes (Bonner, Round, Chase, Fernan, Kelso, Antelope, and Twin lakes) in Bonner and Kootenai counties. Most of these lakes include boat launches and provide other opportunities for recreation as well.

5.2.1.1.2. Bureau of Land Management

The BLM manages a relatively small amount of land in Washington and Idaho. Administration of BLM lands in the five-county regional study area occurs through two district/field offices in the region. The Spokane District Office manages all BLM land in the state of Washington, and the Coeur d'Alene Field Office in Idaho manages the BLM land within Bonner and Kootenai counties (BLM 2008a, 2008b).

The BLM administers approximately 370,000 acres of land in the state of Washington (Natural Resources Council of Maine 2008). For administrative purposes these lands are organized into 13 management areas; 12 of the management areas are localized units that generally include from 10,000 to 30,000 acres each, and one management area includes a large number of scattered tracts totaling 124,000 acres (BLM 1987). Only about 1, 800 acres of BLM-administered lands are within Pend Oreille County, of which approximately 1,590 acres are adjacent to Boundary Reservoir. There are about 30,500 acres of BLM lands in Stevens County, and none in Spokane County. The majority of BLM-administered lands in Washington are located east of the Cascade crest in the central Columbia Basin and in the highlands of northeastern Washington along the Canadian border. In general, they consist of relatively small, scattered tracts distributed widely throughout this portion of the state. Some of the BLM lands in Washington are popular for various types of recreation, including several river-oriented recreation sites in the Yakima River Canyon, the Juniper Dunes Wilderness and nearby OHV use area outside of the Tri-Cities, and the Channeled Scablands riparian areas just west of Spokane.

The BLM-managed lands within the study region are within the Scattered Tracts Management Area and are managed under the Spokane District Resource Management Plan (BLM 1985). The current version of this plan was prepared in 1985 and amended in 1992. A schedule for an intended update has not been determined. In general, the proposed management alternative for the Spokane District that BLM adopted in 1987 emphasizes the management, production and use of renewable resources on the majority of the BLM lands in the Spokane District, and the program emphasis for the Scattered Tracts is identified as "Lands, Grazing, Recreation and Forest" (BLM 1987). The study-area BLM lands are generally managed for dispersed recreation (SCL 2006).

BLM provides few developed recreation facilities within the region. Available information indicates the BLM Boundary Recreation Area (see description in Section 5.3.1, and in Section 4.8.2.2.1 of the PAD [SCL 2006]) is the only BLM-developed recreation site within the Washington part of the study region. Other opportunities for camping and day-use activities are found at primitive, non-developed dispersed sites throughout the region.

The BLM lands managed by the Coeur d'Alene Field Office offer a diversity of recreational sites, facilities, and activities for visitors to northern Idaho. The Coeur d'Alene Field Office manages a total of 21,511 acres (BLM 2008b), including 11,162 acres in Bonner County and 10,349 acres in Kootenai County (IDPR 2006). Recreation resources in the region include 18 developed recreation sites and several primitive backcountry areas with varied levels of development. The developed fee sites are primarily located on or near Lake Pend Oreille and Coeur d'Alene Lake; they include the Blackwell Island Recreational Site, Huckleberry

Campground, Killarney Lake Boat Launch, Mica Bay Boater Park, and Windy Bay Boater Park. Most recreational activity on BLM lands in Bonner and Kootenai counties is concentrated in the Coeur d'Alene Lake area. The six developed BLM campgrounds in the Coeur d'Alene Lake area provide boat ramps, restrooms, drinking water, waste stations, picnic areas, and access to recreation opportunities that include boating, fishing, swimming, hiking, and wildlife viewing. The BLM manages five other developed campgrounds that are not located around Coeur d'Alene Lake, with similar amenities to those listed above. In addition, there are three trails managed by the BLM in the two Idaho counties. These multiple-use trails offer hiking and mountain biking opportunities and are short in length (ranging from 0.25 mile to 2 miles).

5.2.1.1.3. National Park Service

The only NPS-managed lands within the region are part of the Lake Roosevelt National Recreation Area (NRA) in Stevens County. Grand Coulee Dam on the Columbia River forms Lake Roosevelt, extending upstream 151 miles to Canada. The reservoir has a 600-mile shoreline and a surface area of 82,000 acres. The U.S. Congress designated the reservoir and adjacent shoreline area (excluding the areas within the Colville and Spokane Indian reservations) as an NRA in 1948. The upper reach of the NRA is located entirely within Stevens County. Below the Kettle River, which enters north of Kettle Falls, the NRA includes portions of Stevens, Ferry, Lincoln, and Okanogan counties along the Columbia River (NPS 2008a).

NRA visitors enjoy the river's recreational offerings of fishing, camping, picnicking, swimming, hunting, and boating. Lake Roosevelt NRA has 46 developed recreation sites including 27 public campgrounds, some of which are boat-in-only campgrounds. Other developed facilities include 22 boat launch sites (most of which are located at campgrounds), 10 swimming beaches, 4 marinas (operated by concessionaires), and the Fort Spokane Visitor Center. Approximately one-third of the developed sites in the NRA are located in Stevens County and within the regional study area.

5.2.1.1.4. U.S. Army Corps of Engineers

The USACE operates many of the federal dams and reservoirs across the country, and often provides public recreational facilities at those reservoirs. The only USACE-managed project within the five-county regional study area is the Albeni Falls Project in Bonner County, Idaho. Albeni Falls Dam is located along the Pend Oreille River 2 miles east of Newport, Washington and 4 miles west of Priest River, Idaho. The dam controls the water elevation of Lake Pend Oreille, which is one of the largest and deepest natural lakes in the western United States.

The USACE maintains six developed recreation areas at the Albeni Falls Project, including four campgrounds with day-use facilities and two sites with only day-use facilities. Two of these sites are on Lake Pend Oreille and four are on the Pend Oreille River downstream of the lake. The Idaho Department of Fish and Game (IDFG) also manages two sites at this project that provide primitive camping and boat launch facilities. Recreation opportunities provided by these USACE resources include camping, boating, picnicking, sightseeing/viewing scenery, playground use, swimming, and trail use (USACE 2008).

5.2.1.1.5. U.S. Fish and Wildlife Service

The USFWS manages lands within the National Wildlife Refuge (NWR) system. The USFWS provides recreational opportunities at refuges when and where those are consistent with the mission of a specific refuge. There are two NWRs managed by USFWS in the five-county regional study area: the Little Pend Oreille NWR in Stevens County and the Turnbull NWR in Spokane County (USFWS 2008a, 2008b).

The Little Pend Oreille NWR includes over 40,000 acres on the west slope of the Selkirk Mountain Range, southeast of Colville and accessed from SR 20. The USFWS reports that more than 50,000 recreational visitors go to the refuge each year. Hunting, fishing, wildlife viewing, hiking, camping, and horseback riding are the most popular recreational activities. The USFWS operates six designated campgrounds in the NWR that are open seasonally (April 14–December 31) and have minimal services.

Turnbull NWR is located near Cheney in southwestern Spokane County, on the eastern edge of the Columbia River Basin in an area known as the Channeled Scablands. The NWR has a 2,300-acre public use area (of 15,628 total refuge acres) where there are many opportunities to view wildlife. Facilities available to visitors include: a public restroom, vault toilets, an environmental education classroom, a bookstore, and a 5-mile auto tour route that accesses three sites with short trails (including two Americans with Disabilities Act [ADA]-accessible trails) and interpretive information. Approximately 40,000 people visit the NWR each year. Wildlife observation is the major recreational use in the NWR. Hiking, biking, cross-country skiing, and photography are also permitted at the NWR. Hunting (based on specific NWR management prescriptions) is allowed, however, fishing is not allowed in the NWR.

The Columbia Plateau Trail, a designated route managed in eastern Washington by the Washington State Parks and Recreation Commission (WSPRC), traverses part of the Turnbull NWR and is open to use by the public. Visitors are permitted to hike and ride bicycles or horses on this trail.

5.2.1.1.6. Other Resources

The PNT is a trail route that runs for approximately 1,200 miles from the Continental Divide in Montana to the Pacific Ocean in Washington. Legislation was introduced to Congress in May 2008 that would, if enacted, designate the PNT as a National Scenic Trail, similar to the Pacific Crest National Scenic Trail or the Appalachian Trail. The route is currently recognized and promoted by trail user organizations and is used by individual hikers and riders. It follows existing trails and other travel routes (including local roads and highways) through multiple jurisdictions. The PNT route is largely, but not entirely, located on federally managed lands, crossing three national parks and seven national forests. The PNT passes through the Rocky Mountains, Selkirk Mountains, Pasayten Wilderness, North Cascades, Olympic Mountains, and the wilderness coastal strip in Washington (Pacific Northwest Trail Association 2008). The route crosses the northern portion of Pend Oreille and Stevens counties within the regional study area. Near the Project area, local sources indicate the PNT route proceeds westerly down the Slate Creek valley, north along SR 31 to Crescent Lake, west on FR 3165 to Boundary Dam, across the road atop the dam (trail users crossing the dam must call SCL for a security escort

across the dam), and south along Pend Oreille County Road (POC) 2975 to the Flume Creek area where it again turns west (see Section 5.1.6 and Appendix 5).

5.2.1.2. State Governments

Multiple state agencies in both Washington and Idaho provide recreational opportunities that include resources in the five-county regional study area. The WSPRC and the IDPR are key agencies at the state government level, as they operate and maintain state park facilities that often are heavily used for resource-based recreation. Similarly, the Washington Department of Fish and Wildlife (WDFW) and the IDFG both manage lands that support some types of recreation and provide numerous public access sites at water bodies in the region. The Washington Department of Natural Resources (DNR) and the Idaho Department of Lands (IDL) also manage some lands within the regional study area; recreation is typically not a primary purpose for these lands, but they provide dispersed recreation opportunities to the public in some locations.

5.2.1.2.1. Washington

The state of Washington government includes multiple agencies that manage recreation facilities and/or administer state-owned lands that support recreation in the five-county regional study area. Two agencies that have the dominant state role in providing recreation opportunities are the WSPRC and the WDFW. As noted previously, the DNR administers a substantial acreage of state-owned lands within the region. These lands are typically distributed among a number of relatively small parcels, and recreation is generally not a primary focus of DNR land management in this region. Other state agencies provide or support certain types of recreation in various ways, but they are not discussed in detail in this section. For example, highways maintained by the Washington State Department of Transportation (WSDOT) provide access for visitors to recreation resources and directly provide opportunities for sightseeing. WSDOT also maintains highway rest areas that are used for activities such as sightseeing and picnicking, provides visitor information that addresses recreational opportunities, and participates in the scenic byways program.

<u>Washington State Parks and Recreation Commission</u>

There are five Washington state parks (one of which incorporates a separate recreation area designation) in the five-county regional study area (WSPRC 2008). They are:

- Crawford State Park, located less than 2 miles northwest of Boundary Dam in Pend Oreille County
- Mount Spokane State Park, located on the mountain of the same name in northeastern Spokane County
- Riverside State Park (including the Nine Mile Recreation Area), located on the Spokane River along the west side of Spokane
- The Centennial Trail, extending from Nine Mile Falls to the Idaho state line in Spokane County
- The Columbia Plateau Trail State Park, extending to the west from Cheney in southwestern Spokane County

The recreational facilities and opportunities available at these state parks are summarized below.

- **Crawford State Park** is a 49-acre, forested day-use park featuring Gardner Cave, the third-longest limestone cavern in Washington. Park facilities include a day-use area with kitchen and picnic shelters, unsheltered picnic tables, and a restroom. Tours provided by volunteer guides are available on a variable basis.

- **Mount Spokane State Park** is a 13,919-acre park located 25 miles northeast of Spokane in the Selkirk Mountains. The forested park features stands of old-growth timber and granite rock outcroppings. In the winter, the park receives 300 inches of snow. The park has one kitchen shelter without electricity, which requires reservations. Recreational activities at the park focus on an extensive trail system that includes about 100 miles of hiking trails, 90 miles of biking trails, and 100 miles of horse trails. Other activities include camping, bird watching, interpretive activities, wildlife viewing, and several forms of winter recreation. The park has an extensive alpine ski area and groomed trails for Nordic skiing and snowmobiling. The park has 12 standard campsites with water and a restroom, and a group camp that accommodates up to 100 people. The Vista House atop Mount Spokane is a heritage site that affords a panoramic view of three states and Canada.

- **Riverside State Park** is a 10,000-acre park along the Spokane and Little Spokane rivers to the west and northwest of Spokane. The park also includes the Nine Mile Recreation Area, which has facilities available for camping, picnicking, swimming, fishing, and boating. Day-use facilities include a total of five kitchen shelters, plus 10 sheltered and 122 unsheltered picnic tables. The main park campground has 16 standard campsites, 16 utility hookup sites, one dump station, and two restrooms with showers. The recreation area has three tent sites and 21 RV sites. Trail-based activities in the park are supported by 1 mile of ADA hiking trails, 55 miles of hiking trails, 55 miles of biking trails, and 25 miles of horse trails. Other recreation activities include motorized and non-motorized boating, (with two boat ramps and a dock), fishing, water skiing, and white-water kayaking. Bird watching, interpretive activities, a museum, rock climbing, wildlife viewing, and winter recreation are also popular recreation activities. Additionally, the park provides a 600-acre off-road vehicle area for dirt bikes and snowmobiles and more than 37 miles for bike riding on the Centennial Trail, as well as other bike trails.

- **Centennial Trail State Park** is a 372-acre, linear day-use park encompassing the Centennial Trail. The park consists of the former right-of-way of an abandoned railroad, while the trail is a paved facility meandering along the Spokane River and extending for 37 miles from Nine Mile Falls to the Idaho state line. The park includes a small picnic area and passes by additional picnic tables within municipal parks located adjacent to the trail. Activities include 37 miles of hiking and biking trails. The trail is open to hikers, mountain bikers, joggers, in-line skaters and, in some areas, equestrians. Winter recreation includes cross-country skiing, snowshoeing, and snow play. The trail also provides access for fishing, swimming, bird watching, interpretive activities, and wildlife viewing.

- **Columbia Plateau Trail State Park** is a 4,109-acre park spanning a 130-mile-long rail-bed trail that traces the 1908 original path of the Spokane, Portland, and Seattle Railroad. Currently 23 miles of the trail between Lincoln County and Cheney are developed and open for public use, and the route is most accessible at Cheney. The remainder of the former rail corridor extends to the Tri-Cities area (Pasco, Richland, and Kennewick). Activities in the park include hiking, bicycling, horseback riding, in-line skating, nature viewing, bird watching, cross-country skiing, and snowshoeing. The park is open for day use only, and offers picnic facilities at the Cheney and Fish Lake trailheads.

Washington Department of Fish and Wildlife

Statewide, the WDFW administers numerous wildlife areas to provide habitat for fish and wildlife species. Management of the wildlife areas often allows for some types of recreational use, and the WDFW provides developed recreation facilities at some sites. The agency also operates many water access sites intended primarily to provide access for anglers. These facilities typically include a boat launch (sometimes limited to hand-carried craft) and vault toilet(s).

The LeClerc Creek Wildlife Area, located in Pend Oreille County along the east side of the Pend Oreille River about 25 miles northwest of Newport, is the only WDFW wildlife area in the study region (WDFW 2002). This area includes a public access site at Ruby Ferry, which provides for public fishing.

The WDFW provides a total of 25 water access sites (including the site at Ruby Ferry discussed above) in the three Washington counties in the study area. These sites are located at lakes (primarily) of varying sizes that are accessible by road, and in areas, dominated by private land ownership. These access sites are distributed as follows:

- Pend Oreille County (7 sites): Caldwell, Davis Diamond, Fan, Horseshoe, Marshall, and Sacheen lakes, and Ruby Ferry (Pend Oreille River)
- Spokane County (10 sites): Eloika, Liberty, Newman, Clear, Silver, West Medical, Amber, Badger, and Williams lakes, and Hog Canyon
- Stevens County (8 sites): Black, Cedar, Deep, Deer #1, Hatch, Jump Off Joe, Loon, and Waitts lakes

In addition to the water access sites, WDFW operates the Flume Creek Mountain Goat Viewing Site adjacent to Pend Oreille County Road 2975 approximately half-way between Metaline and Boundary Dam. The site includes a gravel parking area and an interpretive sign, and is oriented toward a known area of mountain goat use on the slopes to the west of the county road.

Washington Department of Natural Resources

Statewide, the DNR manages land including Natural Resource Conservation Areas (NRCAs) and trails, particularly along the Cascade Mountains. However, there are some areas east of the Cascades, including two areas (trail systems and an NRCA) in the regional study area. These

areas include a trail system and campgrounds north of the Little Pend Oreille NWR, as well as multiple trails within the Dishman Hills NRCA (DNR 2008).

The Dishman Hills NRCA is located south of Interstate 90 in the Spokane metropolitan area and is managed for off-road vehicle use. There are nine trails at this NRCA, which range from 0.4 to 0.9 mile in length. One trail, the Pinecliff Discovery Trail, traverses the area and provides educational information on the area.

The DNR also manages the Little Pend Oreille block, which is adjacent (just north) to the Little Pend Oreille NWR. This area includes a trail system and two campgrounds.

5.2.1.2.2. Idaho

Similar to Washington, the State of Idaho government includes multiple agencies that manage recreation facilities and/or administer state-owned lands that support recreation in the five-county regional study area. The two agencies that have the dominant state role in providing recreation opportunities are the IDPR and the IDFG. In addition, the IDL administers a substantial acreage of state-owned lands within the region. These lands are typically distributed among a number of relatively small parcels, and recreation is generally not a primary focus of IDL land management in this region. Other state agencies provide or support certain types of recreation in various ways, but they are not discussed in detail in this section. For example, highways maintained by the Idaho Transportation Department (ITD) provide access for visitors to recreation resources and directly provide opportunities for sightseeing. ITD also maintains highway rest areas that are used for activities such as sightseeing and picnicking, provides visitor information that addresses recreational opportunities, and participates in the scenic byways program.

Idaho Department of Parks and Recreation

There are six Idaho state parks in the five-county regional study area (IDPR 2008). These parks include:

- Priest Lake State Park, located north of Coolin on the east side of Priest Lake in Bonner County
- Round Lake State Park, located 10 miles southwest of Sandpoint in Bonner County
- The Trail of the Coeur d'Alenes, a linear park extending from Mullan (in Shoshone County) to Plummer (in Benewah County), with substantial mileage in Kootenai County
- Farragut State Park, located at the south end of Lake Pend Oreille in Kootenai County
- Coeur d'Alene Parkway State Park, a linear park and trail following the north shore of Lake Coeur D'Alene
- Old Mission State Park, which is home to the oldest standing building in Idaho, is located 1 mile east of Cataldo in Kootenai County

The recreational facilities and opportunities available at these parks are summarized below:

- **Priest Lake State Park** lies 30 miles south of the Canada border and 33 miles north of Priest River, below the crest of the Selkirk Mountains. The park encompasses 755 acres along the eastern shores of Priest Lake, a 19-mile-long lake over 300 feet deep. Visitors to the park enjoy camping, fishing, swimming, wildlife viewing, hiking, mountain biking, and boating. The campground has 50 sites with showers, flush toilets, a dump station, a group shelter, and rental cabins. Day-use facilities include boat ramps and docks, picnic sites, a volleyball court, and horseshoe pits. There are multiple hiking trails in the park. Winter recreation activities are also available.

- **Round Lake State Park** is situated on 142 acres of forest surrounding a 58-acre lake at an elevation of 2,122 feet. Visitors to the park enjoy camping, wildlife viewing, hiking, mountain biking, boating, fishing, and swimming. Winter activities are also popular at this state park. Camping facilities include showers, flush toilets, a group day-use shelter, and a dump station. There are three hiking trails in the state park, as well as a ramp for boating.

- **Trail of the Coeur d'Alenes** is a 73-mile-long paved trail spanning the Idaho panhandle between Mullan and Plummer. It was created through a unique partnership among the Coeur d'Alene Tribe, Union Pacific Railroad, the federal government, and the state of Idaho. The trail begins in the historic Silver Valley and continues along the Coeur d'Alene River, past Lake Coeur d'Alene, and through farmland to Plummer. The eastern and western ends of the trail are outside of the study region, while the middle portion is within Kootenai County. Twenty developed trailheads provide entry points and there are 17 scenic waysides along the route for picnicking.

- **Farragut State Park** is a 4,000-acre park located on the site of a former naval training station. The park offers the traditional activities of picnicking, swimming, boating, hiking, and camping. Visitors can also take advantage of less common opportunities such as playing disc golf, visiting the Farragut Naval Training Center Museum, and using the orienteering course, model airplane flying field, a children's playground, horseshoe pits, and sand volleyball courts. Camping facilities include individual and group sites with showers, flush toilets, and group shelters. There are numerous hiking, biking, and equestrian trails, as well as a paved trail throughout the state park. This park provides access for boat camping, and winter recreation activities are also available.

- **Coeur d'Alene Parkway State Park** is a 34-acre linear park that incorporates the Centennial Trail east from Coeur d'Alene to Higgens Point. Walkers, hikers, and bikers enjoy the trail that follows the north shore of Lake Coeur d'Alene, and over 1,000 feet of public shoreline parallels the path. At Higgens Point there is a boat-launch facility, a picnic area overlooking the lake, and docks. Also available are an

exercise court, roadside picnic tables, toilet facilities, and benches for those who wish to stop and enjoy the lake view.

- **Old Mission State Park** is an 18-acre park located 1 mile east of Cataldo near the Trail of the Coeur d'Alenes. The park offers recreational activities such as picnicking; fishing, hiking on a paved path; educational facilities such as guided walks, programs, an educational center, and an audio tour, as well as a boat ramp. The trailhead of the 72-mile long Trail of the Coeur d'Alenes is near the park, in the town of Cataldo, creating easy access for bicyclists, runners, walkers, and recreationists.

Idaho Department of Fish and Game

The IDFG administers four Wildlife Management Areas (WMAs) and fishing access sites in the Idaho portion of the five-county study area (IDFG 2008a, 2008b). Recreational resources at these wildlife management areas are summarized as follows:

- **McArthur Lake WMA** is adjacent to U.S. Highway 95, approximately 18 miles north of Sandpoint and 13 miles south of Bonners Ferry. The majority of the WMA is in Boundary County (outside of the regional study area) and the remainder is in Bonner County. The WMA provides opportunities for waterfowl and big game hunting, fishing, and wildlife viewing. Facilities for fishing and wildlife viewing have been developed.

- **Pend Oreille WMA** is located in Bonner County. The WMA consists of 3 separate parcels of land adjacent to Lake Pend Oreille and 10 parcels along the Pend Oreille River, distributed over a distance of 40 miles. Fishing, hunting, sightseeing, wildlife viewing and photography, and recreational boating are some of the outdoor activities available to Pend Oreille WMA visitors. Fishing and hunting are the two most popular activities among the estimated 42,000 visits each year.

- **Farragut WMA** is located in Kootenai County adjacent to the town of Bayview. Portions of the WMA are surrounded by Farragut State Park and border Lake Pend Oreille. IDFG acquired the WMA from the federal government to protect white-tailed deer winter range and to provide public boating and fishing access to Lake Pend Oreille. This WMA is unique in Idaho because it is co-managed by the IDFG and the IDPR. Large numbers of visitors to the Farragut WMA are drawn to the area by the adjacent Farragut State Park. A trail network on the WMA gets considerable use by hikers, birdwatchers, horseback riders, mountain bikers, mushroom gatherers, and snow-mobilers. The southern WMA parcels adjacent to Lake Pend Oreille have well-developed recreational facilities, including a boat launch, parking areas, restrooms, docks, and trails.

- The **Coeur d'Alene River WMA** consists of multiple land parcels located along the Coeur d'Alene River upstream (east of) the lake. The WMA was created to protect and enhance waterfowl habitat and increase waterfowl production. It provides public access for waterfowl and big game hunting, fishing, and wildlife viewing.

Camping, recreational boating, sightseeing, bird watching, and hiking are also available at the WMA. Anglers and recreational boaters can find boat access sites at Rose Lake, Bull Run Lake, Medimont, Thompson Lake, Round Lake, Killarney Lake, and Rainey Hill. Access sites within nearby Heyburn State Park provide for public use of the Lower St. Joe River and adjacent lakes.

The IDFG also provides 19 fishing access sites in the study region, including 12 sites in Bonner County and 7 sites in Kootenai County. These access areas are similar to those described previously for the WDFW facilities in Washington and generally provide a boat launch, vault toilet(s), and occasionally picnic tables.

Idaho Department of Lands

The IDL manages 184,858 acres of state-owned land within the Priest Lake Supervisory Area, much of which is designated as the Priest Lake State Forest and is in Bonner County. Ninety-eight percent of this acreage is public school endowment land, and the land is managed primarily for timber production to provide income for school purposes. The IDL also manages large acreages of state lands in Kootenai County through the Mica and Cataldo Supervisory Areas. Certain forms of dispersed recreation that are consistent with this purpose are allowed on these IDL lands, although access to most of these areas is via low-standard road (IDL 2008).

5.2.1.3. Local Governments

The five county governments in the regional study area provide varying levels of recreational facilities and services. Spokane and Kootenai counties are by far the largest recreation providers among these governments. This may be primarily because the largest population centers (Spokane and Coeur d'Alene) are within these counties.

The smaller, less populated counties (Pend Oreille, Stevens, and Bonner) tend to have extensive areas of public lands managed by federal or state agencies, and there are abundant recreation opportunities on those lands. These counties typically do not have park and recreation departments, nor do they have areas or facilities for recreation activities. The more populated counties (Spokane and Kootenai) have park and recreation departments that offer additional parks and open space areas besides the multiple parks and recreation areas already offered by the other federal and state agencies.

The municipal governments (e.g., cities and towns) in the study area typically provide facilities and/or programs that serve close-to-home recreation uses. Some of the larger cities offer multiple parks with playgrounds and standard local-park facilities. These parks tend to be oriented toward recreation activities that typically do not take place in the Project area (e.g., playground use, swimming in pools). Therefore, recreation resources provided by city and town governments are not discussed in detail in this section. Most of the towns and cities along the Pend Oreille River provide some form of access to the river to accommodate boating, fishing, and swimming.

5.2.1.3.1. Pend Oreille County, Washington

Pend Oreille County adopted a Comprehensive Parks and Recreation Plan in April 2000. The county currently provides one recreation resource, which is Pend Oreille County Park, west of U.S. Highway 2 near the southern end of the county. This park includes 440 acres and is largely undeveloped, although it has a campground and is maintained by a private contractor (Pend Oreille County 2005). The site includes a system of trails available for non-motorized winter recreation use. Pend Oreille County owns 12 additional parcels of forested land currently managed for timber production, and an unidentified number of other parcels that include undeveloped river and lakefront properties. The Sweet Creek Falls Rest Area facilities on SR 31 south of Metaline have been developed on county-owned land, and are maintained by the Pend Oreille County Public Works Department.

5.2.1.3.2. Spokane County, Washington

Spokane County government includes the Department of Parks, Recreation, and Golf that oversees management of county-owned parks and other recreational facilities. These resources include 17 parks and 15 conservation areas. Recreation facilities at these sites include picnic shelters (at 9 parks), hiking trails (at 10 parks and 12 conservation areas), camping (1 park), and swimming (5 parks). These Spokane County resources have a small degree of overlap with the types of recreation opportunities that can be found at the Project (Spokane County 2005).

5.2.1.3.3. Stevens County, Washington

Stevens County (2005) does not own or operate any parks or recreational facilities except for the Stevens County Fairgrounds in Colville. The county has also determined that it is not feasible to establish recreational districts at this time, but it will continue to coordinate with municipal governments regarding provision of park and recreational opportunities.

5.2.1.3.4. Bonner County, Idaho

Bonner County adopted a Recreation Component to the County Comprehensive Plan in 2002 (Bonner County Planning Department 2008). The Recreation Component includes an extensive inventory of existing parks, public lands, campgrounds, parkways and scenic drives, trails, marinas and boat access sites, beaches, and fishing in Bonner County (Bonner County Planning Department 2002). The document indicates that Bonner County provides two recreational facilities. Bonner Park West is a day-use park of 2 to 3 acres located on the Pend Oreille River just west of the confluence with the Priest River; facilities at this site include a boat launch, swimming area, restrooms and potable water. The Garfield Bay site is a day-use and camping facility on Lake Pend Oreille with picnic tables, restrooms, running water, boat launch, swimming beach, and 26 campsites.

5.2.1.3.5. Kootenai County, Idaho

The Kootenai County Department of Parks, Recreation, and Waterways provides multiple recreational opportunities for visitors at 38 county-operated developed sites (Kootenai County 2008). More than half of those sites are located on Lake Coeur d'Alene. The remaining facilities are primarily located along or near the Coeur d'Alene River above the lake, the Spokane River, Lake Pend Oreille, and other lakes around the county. Kootenai County also

participates in management of three other facilities, including a campground and a boating access site on Lake Coeur d'Alene and the Centennial Trail, through cooperative agreements that involve (depending on the specific facility) the USFS, IDPR, IDFG, and the cities of Coeur d'Alene and Post Falls.

County-operated sites with recreational facilities include:

- Lake Pend Oreille—Bayview Boat Launch and Community Park
- Coeur d' Alene River—Black Lake
- Lake Coeur d'Alene—Chain Lakes; Black Rock, Boothe's Park, Carlin Bay Boat Launch, Fuller's Landing, Gould's Landing, Harlow Point, Harrison Launch and docks, Kidd Island Bay, Loff's Bay Ramp, Mica Bay Boat Launch, Mowry Park, Neachen Bay, Spokane Point, Sunup Bay, Third Street Breakwater, Turner Bay, and Turner Point
- Fernan Lake—Bronze Bay and Maiden Rock at Spirit Lake; Chilco Park; Fairground RV; Pumpout; Farragut Trail; Fernan East and Fernan Park
- Spokane River—Greensferry Bay Boat Launch and Park, McGuire Park, and Rodkey Drive
- Town of Coeur d'Alene—Hauser Lake Park, Loch Haven Park, and Spring View Park;
- Stateline Park along the Centennial Trail
- Upper and Lower Twin Lakes

5.2.1.3.6. Municipalities

Most of the incorporated communities (cities and towns) within the five-county study area provide recreational facilities and/or programs of some type to their residents. For the most part, these recreation opportunities take place at city parks, playfields, indoor facilities (such as gymnasiums), or specialized outdoor facilities (such as golf courses). These municipal resources predominantly involve day-use activities that are facility-based, such as swimming in a pool, using playground equipment, or playing sports on fields or courts. While selected municipal recreation facilities attract users on a city-wide or even regional basis (Riverfront Park in Spokane, for example), municipal resources are typically classified as neighborhood- or community-based facilities for which users do not travel far. By contrast, the recreation resources found at the Project and in similar rural settings provide resource-based opportunities that often involve overnight use and for which users may be willing to travel considerable distances. Because of this limited overlap in types of recreation resources and activities, the recreation opportunities provided by the city and town governments in the study area are not addressed in detail in the regional recreation analysis.

There are 47 incorporated communities within the regional study area, distributed by county as shown in Table 5.2-1.

Table 5.2-1. Incorporated communities within the regional study area.

County and State	Municipalities
Pend Oreille, Washington	5
Spokane, Washington	13
Stevens, Washington	6
Bonner, Idaho	9
Kootenai, Idaho	14

As indicated above, most of these communities provide some type of recreation resource(s) for their residents. The number and types of resources for each community varies widely, and is generally proportionate to the size of the community. For example, recreational opportunities in the town of Cusick, Washington (with a current population estimated at 205) consist of ballfields at the school and a beach and public boat launch on the Pend Oreille River (Pend Oreille County 2008). The city of Sandpoint, Idaho (population 6,835) provides eight municipal recreation facilities, most of which are used for sports activities and special events (Bonner County 2002). The city of Spokane, Washington, has the largest incorporated population in the region (204,400) and operates, by far, the largest park and recreation program among the municipalities, with more than 110 individual park, recreation or conservation land properties totaling over 4,100 acres (City of Spokane Parks and Recreation Department 2006, 2008).

Many of the municipalities within the region are located along rivers or lakes and provide recreation facilities that include shoreline access for water-oriented activities. The city of Spokane, Washington, for example, has a variety of recreation resources along the Spokane River and other water bodies in the local area. Sandpoint and Coeur d'Alene in Idaho provide park facilities on Lake Pend Oreille and Coeur d'Alene Lake, respectively. Among the cities and towns in Pend Oreille County, Cusick, Ione, and Metaline have municipal facilities that provide access to the Pend Oreille River.

5.2.1.3.7. Other Local Government Units

In addition to county and municipal governments, residents in some areas of the region have elected to create special-purpose districts that are chartered under the state government and represent another type of local government unit. The Pend Oreille County PUD is the key example of such a special-purpose district within the region, because it provides resource-based recreation opportunities at multiple sites at the Box Canyon Project in Pend Oreille County. Box Canyon Reservoir extends upstream from the dam 55 miles to Newport and provides a substantial resource for flatwater recreation and related activities. Pend Oreille County PUD-maintained facilities at the project include a viewpoint and Campbell Park, which offers a campground, swimming area and beach, picnic area, visitor center, and a boat launch (which extends to Boundary Reservoir below the Box Canyon Dam tailrace). Multiple other entities also provide boat launches, campgrounds, day-use facilities, and other resources at various locations on Box Canyon Reservoir.

5.2.1.4. Tribes

All or parts of three Indian reservations are located within the five-county study region. The Kalispel Indian Reservation occupies a relatively small area along the Pend Oreille River near Cusick in the southern part of the county. The Spokane Indian Reservation occupies the southwestern portion of Stevens County, with extensive shoreline area along both the Columbia and Spokane Rivers. The Coeur D'Alene Indian Reservation is mostly outside of the study region, but includes some acreage within Kootenai County. Some recreation resources available for public use are located on each reservation.

5.2.1.4.1. Kalispel Tribe of Indians

The Kalispel Indian Reservation is located primarily on the eastern shoreline of the Pend Oreille River, adjacent to Box Canyon Reservoir. Tribal recreation facilities, which are open to the public with restrictions, include Manresa Grotto and the Kalispel Boat Launch. Manresa Grotto consists of caves on the eastern shoreline of the Pend Oreille River that have been used by the Tribe, as well as settlers, for religious ceremonies. The rustic site includes several picnic tables, a sandy beach and swimming area, and a swimming dock. The Kalispel Boat Launch is located near the Tribal Pow Wow Grounds along the eastern shoreline of the Pend Oreille River. The site consists of a concrete boat launch and a gravel parking area. The Kalispel Tribe plans to improve its recreation facilities and opportunities in the near future for tribal members, as well as the general public where appropriate. Improvements are planned for the boat launch, Pow Wow Grounds, and Manresa Grotto. New recreation facilities are also planned, including a bass fishing tournament facility, a bike trail, and an interpretive facility (SCL 2006).

5.2.1.4.2. Spokane Indian Tribe

The Spokane Indian Reservation is located adjacent to the southern portion of the Roosevelt Lake NRA along the Columbia and Spokane rivers. Tribal recreation facilities adjacent to the rivers are numerous; facilities that are open to the public include one marina, one boat launch, 125 campsites located throughout the reservation along the rivers, and multiple picnic areas. Undeveloped lands on the reservation provide multiple opportunities for hunting and fishing (Lake Roosevelt Forum 2008).

5.2.1.4.3. Coeur d'Alene Indian Tribe

The Coeur d'Alene Indian Reservation is located in parts of Benewah and Kootenai counties. The Tribe operates a Recreation Management Program, which was formed to promote and manage outdoor recreation and tourism within the reservation. The program's mission is to introduce visitors to the tribe's rich history and connection to the natural environment through the integration of cultural outreach and educational opportunities into the many quality public outdoor recreation experiences the reservation has to offer (Coeur d'Alene Tribe 2006). Recreational resources on the reservation are summarized as follows:

- **Trail of the Coeur d'Alenes** opened in March, 2004. The Coeur d'Alene Tribe manages 15 miles of the trail located between Plummer and Harrison, Idaho. The Tribe's 2005 goal was to add additional signage, repair small water erosion areas,

plant shrubs and grasses, convert the composting toilets to holding tanks, and work with private retail outlets in promoting the trail.

- **Camp Roger Larson** was recently purchased from Washington State University by the Coeur d'Alene Tribe. This recreation facility is located 6 miles northeast of Worley, Idaho, on the shoreline of Lake Coeur d'Alene. The Tribal Council is still evaluating the various management options that exist for this site.

5.2.1.5. Private Sector

Similar to municipalities, many private-sector entities provide a wide range of recreational opportunities within the study area, and many of these opportunities are unrelated to the types of resources found at the Project. Some of the opportunities supplied by the private sector may overlap to some degree with Project-area resources, however, and are appropriate for inclusion in consideration of the regional supply and demand context. The private-sector resources of greatest interest are those providing camping, general day-use recreation, and water access opportunities that are available to the general public. In addition, some commercial outfitters and guides make use of publicly-accessible resources in the study region to provide recreational experiences to their customers.

Marinas and boat launch access are provided by multiple private landowners in the regional study area. For example, in Bonner County, as of 2002 there were 12 locations along Priest Lake, the Pend Oreille River, Lake Pend Oreille, and other lakes in the area at which commercial operators provide boat launches and/or marinas that are available for public use for a fee (Bonner County Planning Department 2002).

There are also many commercially operated campgrounds within the study region. Five private campgrounds were identified in Kootenai County, 7 in Stevens County, and 10 private campgrounds each in Pend Oreille, Spokane, and Bonner counties (DeLorme 2006, 2007). Some of the private sector campgrounds are large facilities oriented to through travelers, such as two campgrounds near Interstate 90 in the Spokane area that have 158 campsites each. However, many of the private campgrounds are located on lakes and rivers in the region. Altogether, the private sector camping resource within the region appears to total at least 44 facilities with an aggregate supply of well over 1,500 individual campsites.

5.2.1.6. Regional Supply Summary

Table 5.2-2 provides a quantitative summary of the aggregate supply of selected recreational resources within the five-county study area for the regional recreation analysis. The table entries are highly aggregated, to provide approximate overall regional totals by major provider category. The figures are approximate, as the type and quality of facility supply data are highly variable among the many providers and the inventory was not able to attain 100 percent identification of all existing resources. The primary objective for this analysis is to be able to provide a satisfactory regional context for the recreation resources present at the Project, however, and this supply summary is suitable for this purpose.

Table 5.2-2. Recreation supply summary for the five-county study area.

Facility	Federal Governments	State Governments	Local Governments	Tribes	Private Sector	Total
Camping						
No. Campgrounds	116	5	3+	1	44	168+
No. Campsites	1,404	94+	27	125	1,583	3,108
General Day Use						
No. Facilities	141	160	70	2	--	371
Boating/Water Access						
No. Access Sites	70	56	42	4	15	183
Dispersed Recreation						
Acreage	1,600,000	200,000+	--	--	--	1,800,000+

Notes:
Numbers of campgrounds and individual campsites are approximate and are subject to the precision and detail of the source data; the agency and organization sources that were reviewed did not always provide consistent numbers of facilities and individual sites.
General day use category includes sites such as picnic areas, lake/river swimming areas, and developed trailheads.
Boating/water access sites include marinas, docks, boat launches, and bank fishing access sites not associated with facilities in the campgrounds or general day use categories.

The aggregate supply of camping opportunities within the region consists of at least 168 campgrounds that provide a combined total of over 3,100 individual developed campsites. Based on the approximate numbers shown in Table 5.2-2, it can be reasonably concluded that federal governmental agencies (primarily the USFS and NPS) offer the largest supply of public-sector camping opportunities (campgrounds and campsites) in the regional study area. This is largely the result of the land ownership pattern in the region. Because the federal government manages extensive tracts of land, much of which surrounds large water bodies, providing for public recreation opportunities is typically a key component of the management of these lands.

The regional analysis indicates that there are at least 370 general day use sites available within the regional study area. State governmental agencies, primarily the WSPRC and the IDPR, provide the largest number of day use sites. This is consistent with the typical orientation of state park systems, which often include resource-based opportunities that are located reasonably close to larger population centers. Federal land management agencies also operate a large number of facilities for day-use recreation, as do the county and municipal governments with active recreation programs.

The number of recreation access sites in the region developed for boating, fishing, hunting, and related activities is almost 200. State resource agencies, particularly WDFW and IDFG, are key suppliers of these types of facilities. Facilities operated by these agencies tend to be distributed mostly in rural areas and are oriented for use by anglers and hunters. The boating/water access sites operated by local governments and the private sector are more concentrated in populated and high-use areas, and tend to be used more for pleasure boating and related activities.

The quantitative summary of recreation resources indicates that private entities account for a relatively small component of the regional supply for most types of recreation resources. However, some types of facilities or services, such as marinas, are provided almost entirely by the private sector. Some segments of the camping public are also drawn to use of privately-operated campgrounds because of the amenities provided and/or the location, as these types of facilities are often found in or adjacent to developed communities and along major travel routes.

5.2.2. Regional Recreation Activity Patterns

This section characterizes the set of recreation opportunities available to regional study area residents and visitors who participate in the primary recreation activities common to the Project area. Selection of the primary activities covered in this section is based on the responses to Question 8 (primary activity) in the recreation visitor survey. For each activity, the discussion addresses where the activity tends to occur within the region by type of facility and provider classification (as opposed to by specific locations). In each case, the set of recreation opportunities at the Project for the specific activity is discussed in the context of the regional supply for that activity.

5.2.2.1. Developed Camping

Developed camping opportunities are distributed widely throughout the region and are concentrated on federal and tribal lands, with a lesser share of facilities on state and private lands. As measured by the numbers of campgrounds and individual campsites, the largest suppliers are the USFS, the Spokane Indian Tribe, the state parks agencies in Washington and Idaho, and the private sector. Because some of the developed facilities at the Lake Roosevelt NRA are located within the study region, the NPS also provides a substantial portion of the regional supply.

With respect to physical setting, a large portion of the campsites in the region are situated on lakes, reservoirs, and rivers. Because many water bodies are located in the region and there is a common preference among the recreating public to be on or near water, it is understandable that most developed recreation facilities are located near these water bodies. The location of these developed camping areas near these water bodies offers visitors a wide range of land- and water-based recreation opportunities to enjoy in conjunction with a camping trip. For example, visitors can often choose to participate in boating, fishing, swimming, nature study, interpretation, or hiking using resources located at or near campgrounds.

The types of camping facilities available in the region also span a range of development levels. Most of the CNF campgrounds within the region are relatively small facilities with 20 or fewer sites and relatively few amenities. Other facilities, such as some of the campgrounds operated by the NPS or state park agencies, may have 80 to 100 or more sites and a higher level of visitor services and amenities.

Developed camping opportunities at the Project are limited to the sites that SCL provides at the Forebay Recreation Area. The Pend Oreille County PUD Campbell Park campground at Box Canyon Dam is adjacent to the Project and is within sight of Boundary Reservoir, but is not within the Project boundary. (The Campbell Park facilities are generally excluded from this

analysis, as future use and needs for this facility and the Box Canyon Project in general have already been addressed through the Box Canyon Project relicensing process.) The SCL campground at Boundary Reservoir is most similar in setting to some of the campgrounds provided by the USFS, particularly the smaller campgrounds with fewer services and site amenities. A distinguishing feature of the SCL campground and the Campbell Park campground is that there is no fee for use of the facilities. The regional inventory did not identify any other developed camping facilities that are available free of charge (although it is possible that limited other cases exist). Consequently, campers in the study region who want to camp for free can either select the developed campgrounds at Boundary Reservoir or Box Canyon, or camp in a dispersed site with no facilities or services.

Within the local area around the Boundary Project, developed camping opportunities other than the SCL Forebay Recreation Area campground and the Pend Oreille County PUD Campbell Park campground consist of the USFS campgrounds at Sullivan Lake, Mill Pond and Edgewater (on Box Canyon Reservoir approximately 2 miles north of Ione), and five privately-operated campgrounds located along SR 31 in Ione, Metaline, and Metaline Falls. The five USFS campgrounds in this group are all located on water and have a combined supply of 97 developed campsites. Most of the private campgrounds are not located on water and primarily serve RV campers and people who are working in the area; they have a combined capacity of more than 140 campsites.

5.2.2.2. Dispersed/Primitive Camping

Opportunities for dispersed/primitive camping within the region are predominantly found on federal lands administered by the USFS. These lands are generally located in the more remote areas of the region and at higher elevations. BLM-managed land and other state resource land (managed by DNR and IDL) may be available for undeveloped dispersed camping, but the acreage is considerably smaller than the regional National Forest System (NFS) land base. Dispersed use of these areas is also likely to be less common, because recreation is not as prominent in the mission of the respective agency and/or the opportunities are generally less publicized.

Within northern Pend Oreille County, virtually all opportunities for dispersed camping are on NFS lands. The USFS has inventoried more than 400 dispersed sites on the Newport and Sullivan Lake ranger districts (Berger 2008); a sizable portion of these sites are located in northern Pend Oreille County.

Boat camping (camping in undeveloped sites accessed by boat) is a particular form of primitive camping of interest in the study region. Camping by boat can be done on several of the larger water bodies in the region, including Priest Lake, Lake Pend Oreille, Coeur D'Alene Lake and Lake Roosevelt. As discussed in Section 5.1.2, a minor amount of boat camping also occurs on Boundary Reservoir.

5.2.2.3. Picnicking

Similar to campgrounds, developed facilities for picnicking and other general day-use activities are widely distributed throughout the study region and are offered by virtually all types of

providers. Some picnic use occurs as a primary activity, such as a family going out for a picnic on a weekend day; this type of use is likely to occur relatively close to home. Other picnic use occurs as a secondary activity in conjunction with a trip for sightseeing or some other primary purpose. Examples would be someone making a trip to Sullivan Lake for boating or fishing and having a picnic while there, or someone traveling the Scenic Byway and deciding to stop for a picnic along the way.

Within the immediate vicinity of the Project, developed picnic facilities occur at the Forebay Recreation Area and at Metaline Waterfront Park. Picnic areas are also located nearby at the Sweet Creek Falls Rest Area along SR 31 and at Campbell Park at Box Canyon Dam, just outside of the Project area. The USFS recreation facilities in northern Pend Oreille County include picnic areas at Edgewater and two sites on Sullivan Lake. These facilities serve a varying mix of people passing through the area, visiting day-use sites while on an overnight stay in the area, or using a picnic area in conjunction with another activity, such as boating.

5.2.2.4. Fishing

Recreational opportunities for fishing typically require two types of resources, those being a water body (lake, reservoir, or stream) to support fish and a means for boat or bank angling access. The previous discussion in Section 5.2 demonstrates that the region has a large supply of both water bodies and water access sites. Boundary Reservoir is one of many larger lakes found within the study region. Three developed sites with water access on the reservoir support these opportunities.

The local area in the vicinity of Boundary Reservoir includes fishing opportunities on Box Canyon Reservoir, at Sullivan Lake and Mill Pond, and at a number of smaller lakes such as Crescent, Ledbetter, and the Lead King lakes. USFS and local government recreation sites provide developed access at most of these lake resources. In addition, numerous streams in the vicinity support fish and have varying degrees of access for bank fishing. Fish species and recreation settings vary somewhat among these waters; fishing opportunities on Box Canyon Reservoir are in general likely to be most similar to those at Boundary Reservoir, although the Canyon Reach, from Metaline Falls to the downstream end of Z Canyon (Project river mile [PRM] 26.8 to 18.0) of Boundary Reservoir provides an undeveloped setting that is considerably different from other locations.

5.2.2.5. Motorized Boating

Motorized boating represents a very similar situation to fishing, as the activity requires both a water body and access for watercraft. Residents of the five-county region who are formulating a trip for boating have a large and diverse array of choices from which to make a selection. Again, motorized boating options in northern Pend Oreille County primarily consist of Boundary Reservoir, Box Canyon Reservoir, and Sullivan Lake. The Upper Reservoir Reach (Box Canyon Dam downstream to Metaline Falls PRM 34.5 to 26.8) of Boundary Reservoir provides a setting similar to that on Box Canyon Reservoir, with development evident along much of the shoreline with steeper slopes nearby. Sullivan Lake and the northern part of Boundary Reservoir both provide a relatively undeveloped setting, although the Canyon Reach of Boundary Reservoir is unique within the local area and the region.

5.2.2.6. Non-Motorized Boating

Non-motorized boating likewise needs water and access. Many non-motorized boats can be launched from shore and do not need a ramp, however. In addition, some non-motorized boaters prefer a quieter setting and a resource with relatively little traffic. At a general level, the water bodies in the region that are available for motorized boating also comprise the set of opportunities available for non-motorized boating, although the suitability of these lakes and rivers for non-motorized boating may well differ.

Boundary Reservoir currently provides opportunities for non-motorized boating. Input received at the focus group meetings and other anecdotal information collected during the RRS indicated that the Canyon Reach of the reservoir is particularly attractive to paddlers. Box Canyon Reservoir and Sullivan Lake are the primary options for this activity in the local area, based on size of the water body and the availability of suitable access. Smaller lakes, such as Mill Pond and Crescent Lake, may also receive some non-motorized boating use, some of which is likely in conjunction with fishing.

5.2.2.7. Swimming

In some respects swimming is an activity similar to fishing and boating, in that it requires both usable water and access for users. A distinguishing characteristic about swimming is that there are considerable differences in site preferences among swimmers. Some swimmers have a strong preference for recreating in a natural water body, while other users in this group demand warmer water and the setting of a pool. The latter type of swimming opportunity is limited near the Project and in northern Pend Oreille County in general, although locations for swimming in natural water bodies in the local area are relatively abundant. These opportunities include Crescent Lake, Box Canyon Reservoir, Mill Pond, and Sullivan Lake. Campbell Park at Box Canyon Dam also has a swimming area and beach at a small lagoon.

5.2.2.8. Sightseeing/Viewing Scenery

This activity does not necessarily require developed recreation facilities, such as picnic areas or access sites, but it is considerably dependent on travel routes for viewing and scenery to view. Travel routes used for viewing scenery include waterways and trails, although on a user-volume basis vehicle travel on roads typically accounts for the largest share of sightseeing activity. Although some visitors will venture into remote areas and use low-standard roads for sightseeing access, many tend to stay on or close to main travel routes such as highways. For example, focus group participants associated with travel and tourism organizations pointed out that many travelers will keep their activity to areas for which information on the viewing and point-of-interest attractions is readily available.

The most notable resources for sightseeing/viewing scenery in northern Pend Oreille County include SR 31; major local roads such as POC 2975 to Boundary Dam and Crawford State Park, and POC 9345 linking Metaline Falls, Sullivan Lake and Ione; the water bodies used for motorized and non-motorized boating; and several trails, most of which are located on NFS land. SR 31 has been designated as a national scenic byway in recognition of the scenic resources

accessed along the highway, and is likewise a component of the International Selkirk Loop extending northward into Canada (see subsequent discussion in Section 5.2.3). Recreation facilities developed specifically as viewpoints exist at Boundary Dam (the Vista House) and Box Canyon Dam, Metaline Falls viewpoint, Sweet Creek Falls viewpoint, and the Sullivan Mountain Lookout and the mountain goat viewing site on POC 2975 provide similar types of viewing opportunities. The Canyon Reach of Boundary Reservoir provides boaters with a local scenic viewing opportunity that is highly regarded and unique within the region.

5.2.2.9. Hiking/Walking

Much hiking/walking use occurs on designated, maintained trails, especially for traditional day hiking and backpacking activity. As indicated in the IAC/RCO documents, however, a large portion of this use occurs close to home and on resources that are not trails, such as sidewalks and along roadways.

The distribution of designated, maintained trails within the region is highly concentrated on federal land, primarily NFS land. Notable trails include the PNT (discussed previously), which crosses the northern part of the region on its route from Montana to the Pacific Ocean, and the Crowell Ridge and Shedroof Divide trails in the Salmo-Priest Wilderness Area in the northeastern corner of Pend Oreille County. Some state and county parks are larger properties and also have substantial trail networks, such as Mount Spokane and Riverside State Parks in Washington and Farragut State Park in Idaho. The region also includes several highly developed, more-urban trails, such as the Centennial Trail near Spokane and the Trail of the Coeur d'Alenes in Idaho, that serve large numbers of users and a variety of wheeled and pedestrian use types.

Formal trail opportunities at the Project itself are limited but include the PNT route across Boundary Dam, a short trail at the Sweet Creek Falls Rest Area along SR 31, and a short viewpoint trail at the Vista House.

Informal trail and walking opportunities in and near the Project area include a road from POC 2975 to Washington Rock, a route along the bluff above the shoreline at Metaline Falls, local streets near the shoreline in the town of Metaline, and informal trails within Metaline Waterfront Park. In addition, there is an informal shoreline trail at Crescent Lake, and various short, informal trails are used on occasion to access the shoreline along Boundary Reservoir.

Trail users who are searching for a resource or experience within the region are likely to investigate and select among specific opportunities based on a variety of factors such as the type of trail setting and experience desired, the duration and degree of difficulty of the hike, proximity, and the season. A hiker desiring a wilderness experience, for example, might likely choose a trail in the Salmo Wilderness. In comparison, someone wanting a relatively short walk for simple exercise would be more inclined to use a trail in a nearby local park, or to just walk along a roadway or sidewalk.

5.2.3. North Pend Oreille Scenic Byway/International Selkirk Loop

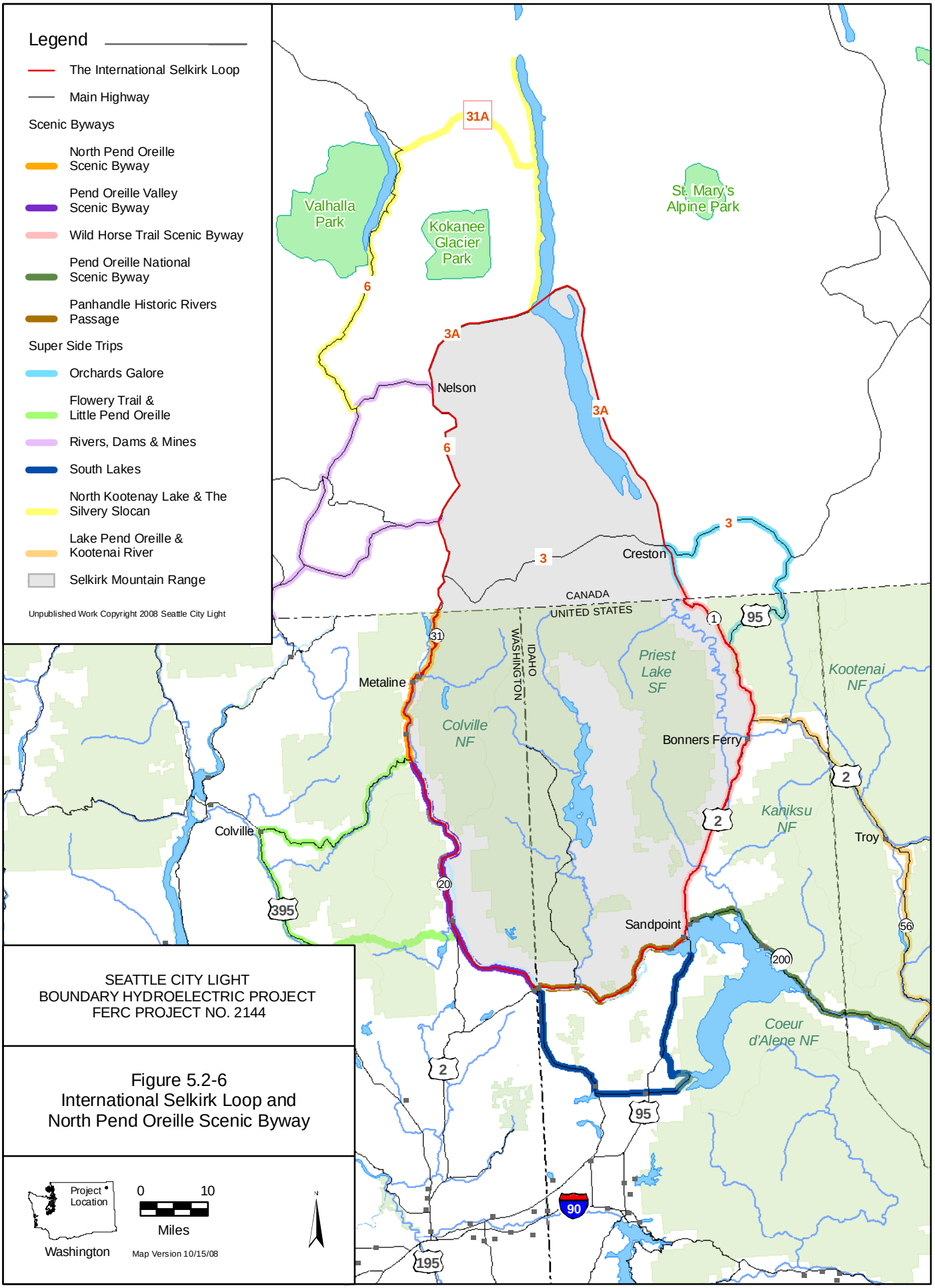
The North Pend Oreille Scenic Byway consists of 27 miles of SR 31 from its intersection with SR 20 to the U.S.-Canada border (see Figure 5.2-6). This route was originally designated as a state scenic byway by the state of Washington in 1993. Local communities, stakeholders, and land management agencies have cooperated on the development and ongoing implementation of a management plan (WSDOT 2003) for the byway corridor, which is implemented under the direction of a citizen advisory board. The corridor management plan outlines a set of goals and objectives that cover transportation and land use, economic development and tourism, heritage resources, and plan involvement and coordination. The corridor management plan is not a regulatory document; it is intended to be a reference document that the participating entities can use to guide stewardship activities along the byway corridor.

The promotional information for the North Pend Oreille Scenic Byway advises visitors of the recreational opportunities available along this route. (There is also information about dining, accommodations, attractions other than outdoor recreation, festivals and events, shopping, and information sources.) Specific sites that are typically advertised include Crawford State Park, USFS facilities at Sullivan Lake/Mill Pond, the Sweet Creek Falls Rest Area, the Eagles Nest View Point on SR 31, the Box Canyon Dam viewpoint and visitor center, Boundary Dam Visitors' Gallery, the Vista House, the Cutter Theater and Museum, the Mill Pond Flume Historic Site, the Abercrombie-Hooknose Viewpoint, and the Tiger Historical Museum. The multiple campgrounds in the area, primarily USFS campgrounds as well as several private-sector RV camping facilities, are identified as options for overnight stays.

SR 31 is also part of the International Selkirk Loop, a 280-mile route through northeastern Washington, northern Idaho, and southern British Columbia (see Figure 5.2-1). The U.S. portion of the Loop was designated in 2005 as an All-American Road under the National Scenic Byways Program, administered under the Federal Highway Administration (America's Byways 2008). The U.S. designation includes the following four segments:

- Washington's North Pend Oreille State Scenic Byway, as described above
- Washington's Pend Oreille Valley Scenic Byway, a 50-mile segment of SR 20 from its intersection with SR 31 at Tiger to its intersection with U.S. Highway 2 in Newport
- Idaho's Panhandle Historic Rivers Passage State Scenic Byway, along U.S. Highway 2 from Oldtown, Idaho (adjacent to Newport) to Sandpoint
- Idaho's Wild Horse Trail State Scenic Byway, from Sandpoint north to the international border crossing at Porthill, Idaho, via U.S. Highways 2 and 95 and Idaho Highway 1

Similar to the North Pend Oreille Scenic Byway, a corridor management plan (International Selkirk Loop, Inc. 2005) provides strategic direction for actions to promote the International Selkirk Loop and enhance the experience of travelers using this route. The plan references proposed development actions at multiple locations near the Project area, including Crescent Lake, the Vista House, the Abercrombie-Hooknose Viewpoint, the Sweet Creek Falls Rest Area, and the Eagle's Nest View Point on SR 31; the latter two sites were not developed at the time the plan was issued.


Legend
The International Selkirk Loop
Main Highway
Scenic Byways
North Pend Oreille Scenic Byway
Pend Oreille Valley Scenic Byway
Wild Horse Trail Scenic Byway
Pend Oreille National Scenic Byway
Panhandle Historic Rivers Passage
Super Side Trips
Orchards Galore
Flowery Trail & Little Pend Oreille
Rivers, Dams & Mines
South Lakes
North Kootenay Lake & The Silvery Slocan
Lake Pend Oreille & Kootenai River
Selkirk Mountain Range
Unpublished Work Copyright 2008 Seattle City Light
31A
Valhalla Park
Kokanee Glacier Park
St. Mary's Alpine Park
6
3A
Nelson
3
Creston
CANADA
UNITED STATES
IDAHO
WASHINGTON
Priest Lake SF
Kootenai NF
Metaline
Colville NF
Bonners Ferry
Kaniksu NF
Colville
Troy
Sandpoint
Coeur d'Alene NF
31
1
95
2
20
395
200
56
90
195
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.2-6
International Selkirk Loop and
North Pend Oreille Scenic Byway
Project Location
Washington
0
10
Miles
Map Version 10/15/08
N

The International Selkirk Loop route in Canada extends from Porthill, Idaho, through Creston, Crawford Bay, Nelson, and Salmo before connecting at the border with SR 31 north of Metaline Falls. Promotional information distributed by the International Selkirk Loop Organization also defines multiple side trips off the main loop route that visitors can explore.

The Pend Oreille Valley Scenic Byway is 50 miles long and takes approximately 1 hour to drive. The roadway follows the Pend Oreille River as it flows north to Canada. Advertised recreational opportunities along this route include the Pend Oreille River, CNF, Little Pend Oreille National Wildlife Refuge, Upper and Lower Wolf Trails, Batey-Bould OHV Area, Kings Lake Sno-Park, Nok-OSH Kol interpretive trail at Pioneer Park, David Thompson Interpretive Site, and the Newport and Tiger Museums. Multiple USFS and private campgrounds in the area are identified.

The entire International Selkirk Loop encircles the Selkirk Mountains in northeast Washington, northern Idaho, and southeast British Columbia, Canada (Figure 5.2-1). The nearest metropolitan area is Spokane, Washington, about 1 hour southwest of the Selkirk Loop. Within the Loop, the Selkirk Mountains are accessible from the Salmo Basin, Sullivan Lake, Priest Lake, Pack River, Roman Nose, Kootenay Pass, and Kokanee Glacier recreation areas. Nearly the entire Loop route follows drainages through the mountains with views of rivers and lakeshores. The waterways historically were used for transportation, but today they are a source of year-round recreation, from fly fishing to ice fishing, boating, water skiing, windsurfing, swimming, canoeing, kayaking, diving, and rafting.

Much of the land in the International Selkirk Loop corridor is NFS, NWR, WMA, or Provincial Park (in British Columbia), so there are widespread opportunities for outdoor recreation. Hundreds of miles of trails are available for all levels of hiking, biking, horseback riding, skiing, and snowmobile touring. Rock climbing and geo-caching are also popular recreation activities along the trails. This is also a popular area for wildlife viewing and photography as the lands surrounding the Loop are home to the largest diversity of wildlife in the lower 48 states. Moreover, Lake Pend Oreille and Kootenay Lake are two of the largest lakes in the west.

The Project area represents a subset of the resources and opportunities that are available to travelers visiting the North Pend Oreille Scenic Byway and/or the Loop. Public information about the Scenic Byway and the International Selkirk Loop highlight the scenic attractions that can be seen on or near the route, including Boundary Dam and Reservoir and Z Canyon. Similarly, the recreational resources present at the Project are identified among the range of camping, fishing, boating and other opportunities available for Byway/Loop travelers.

5.2.4. Future Regional Recreation Demand

The RSP identifies characterizing the demand for various regional activities and how this demand may change in the future as a separate objective for the regional recreation analysis. Specific topics of interest include trends in utilization for regional recreation facilities, potential changes in use levels in the Project area, national and regional demand forecasts, and projected changes in regional population and demographic characteristics. These same topics are all elements of the future recreation analysis component of the RRS. To avoid duplication, all study

results related to projected population conditions and future recreation demand are presented in Section 5.4 of this report.

5.2.5. Regional Context of the Boundary Project Area Resources

The five-county region that includes the Project has a large and diverse supply of recreational opportunities that are comparable to those found at the Project. Because the recreational facilities at the Project are smaller in scale, in quantitative terms they represent a small proportion of the regional supply inventory. For example, the 11 campsites provided at the Forebay Recreation Area represent approximately 0.4 percent of the total supply of campsites available in the study region, based on the inventory conducted for the regional recreation analysis. Similarly, the water access sites that are the dominant source of entry for users at the Project are three among several hundred such sites distributed around the region.

These figures are not presented to downplay the significance of the recreation resources available at the Project, but to illustrate the regional demand and supply context that applies to those resources. A resident of or visitor to the region who wants to select a location to camp, boat and/or fish has a very large set of initial opportunities from which to choose. Factors such as quality, experience, distance, setting, available time, gas prices, weather conditions, fishing success, sporting seasons, and others all likely enter into the decision, and will lead different users to different decisions. Users have their own respective preferences, and each recreation resource or location has specific characteristics that will appeal to some users but not others. Although the specific attributes of the Project area, such as the unique Boundary Reservoir canyon area, are likely quite important to many users, overall the wide distribution of similar settings and resources within the region indicates that comparable resources are relatively large in number.

Considering the entire five-county region, there are a number of similarities between Boundary Reservoir and other water resources within the region. These can be summarized as follows:

- Boundary Reservoir is one of at least eight water bodies in the region that could be considered large lakes or reservoirs. This group includes Lake Roosevelt on the Columbia River; Long Lake and Ninemile Reservoir on the Spokane River; Box Canyon Reservoir on the Pend Oreille River; and Priest, Pend Oreille, and Coeur d'Alene lakes in Idaho.
- All of these large lakes/reservoirs have multiple developed recreation sites that include water access facilities and provide for overnight and day use. They generally support the same range of activity types, including camping, picnicking, sightseeing, hiking/walking, motorized and non-motorized boating, and fishing. Most also provide extensive opportunities for a variety of dispersed recreation activities.
- Boundary Reservoir shares similarities in physical conditions and recreation settings with Lake Roosevelt, Box Canyon Reservoir, and Priest, Pend Oreille and Coeur d'Alene lakes, in that all provide extensive water area in a largely undeveloped, forested environment surrounded by mountains or hills.
- Boundary Reservoir, Box Canyon Reservoir, and Lake Pend Oreille are all located along the International Selkirk Loop, and Priest Lake is also highlighted in the Scenic Byway promotional information.

Boundary Reservoir and its recreation resources also have some specific characteristics that distinguish them from other resources in the region, in particular, the scenery and setting in the canyon reach. While Boundary Reservoir is relatively long (at 17 miles), like other large lakes/reservoirs in the region, most of Boundary Reservoir is rather narrow. Consequently, Boundary Reservoir has a predominantly riverine character, unlike most of the other large lakes/reservoirs in the region.

At the local level, i.e., within the context of northern Pend Oreille County, the most notable water features for recreational users are Boundary Reservoir, Box Canyon Reservoir, and Sullivan Lake. As noted above, Boundary Reservoir shares a number of similarities with Box Canyon Reservoir in terms of providing similar types of recreation opportunities and facilities on a large reservoir. Box Canyon Reservoir is considerably larger, however, with a total length of more than 50 miles. Evidence of rural and urban development is also much more extensive along Box Canyon Reservoir, and the number and capacity of developed recreation sites is considerably higher.

Boundary Reservoir, at 1,636 acres, is similar to Sullivan Lake (approximately 1,300 acres) in overall surface area. The two water bodies have quite different shapes, however, as Boundary Reservoir is 17 miles long while Sullivan Lake is approximately 3.5 miles long. Consequently, Boundary Reservoir has a more variegated shoreline, particularly within the canyon reach. Sullivan Lake also has a predominantly undeveloped setting, similar to much of Boundary Reservoir, although the recreation facilities at Sullivan Lake are more numerous and have a larger total capacity, particularly for camping.

5.3. Dispersed Recreation Use, Access, and Condition Analysis

This section presents a narrative and supporting tables summarizing the results of the inventory and analysis of dispersed recreation sites and access conditions. Specific contents include the number and distribution of dispersed sites inventoried, including a map of their locations; characterization of dispersed site conditions, based on tabulation and analysis of entries on the site forms for the inventoried sites; characterization of existing land (vehicle and pedestrian) and water access conditions throughout the study area; and information about the use of the inventoried dispersed sites during the 2007 sampling season.

5.3.1. Dispersed Recreation Site Inventory and Conditions

5.3.1.1. Site Inventory Summary

A total of 25 sites within the study area (as outlined on Figure 3.0-1) were recorded as dispersed recreation sites. Dispersed recreation sites were found in four of the six sectors (Sectors 3 through 6) of the study area that were defined for the visitor count and survey field sampling (refer to the discussion in Section 4.1.2). These four sectors include:

- Sector 3, SR 31 South Reservoir (SR 31): While this sector primarily includes developed recreation sites along SR 31 parallel to the southern portion of the reservoir, one dispersed recreation site was found near the developed day-use area at Sweet Creek Falls.

- Sector 4, Roaded Dispersed (RD): All dispersed recreation sites are adjacent to or near secondary roads of interest within the study area, as determined in consultation with the relicensing participants and described in the implementation plan. These are primarily NFS roads administered by the USFS located between POC 2975 and the west side of Boundary Reservoir, and between SR 31 and the east side of Boundary Reservoir.
- Sector 5, North Reservoir (NR): All dispersed sites accessed primarily by water within the reservoir area north of Metaline Falls (the Forebay and Canyon reaches of the reservoir).
- Sector 6, South Reservoir (SR): All dispersed sites accessed primarily by water within the reservoir area south of Metaline Falls.

The inventory procedures specified assignment of a unique location/site code for each inventoried site. The location codes assigned to dispersed recreation sites all begin with the sector identifier (e.g., 4RD for sites in Sector 4). Codes for sites in Sector 4 include a reference to the road number (e.g., 172 for sites on Road 3100-172), followed by numbers in sequence for individual sites (-1, -2, and so on). Codes for sites in Sectors 3, 5 and 6 include a reference to common local terminology or nearby physical or map features (e.g., SC for Sweet Creek, EI for Everett Island) followed by numbers in sequence for individual sites. Location numbering within each sector generally started at the north and proceeded from north to south. Some location/site codes do not follow in sequence because of adjustments to the inventory subsequent to the initial field work.

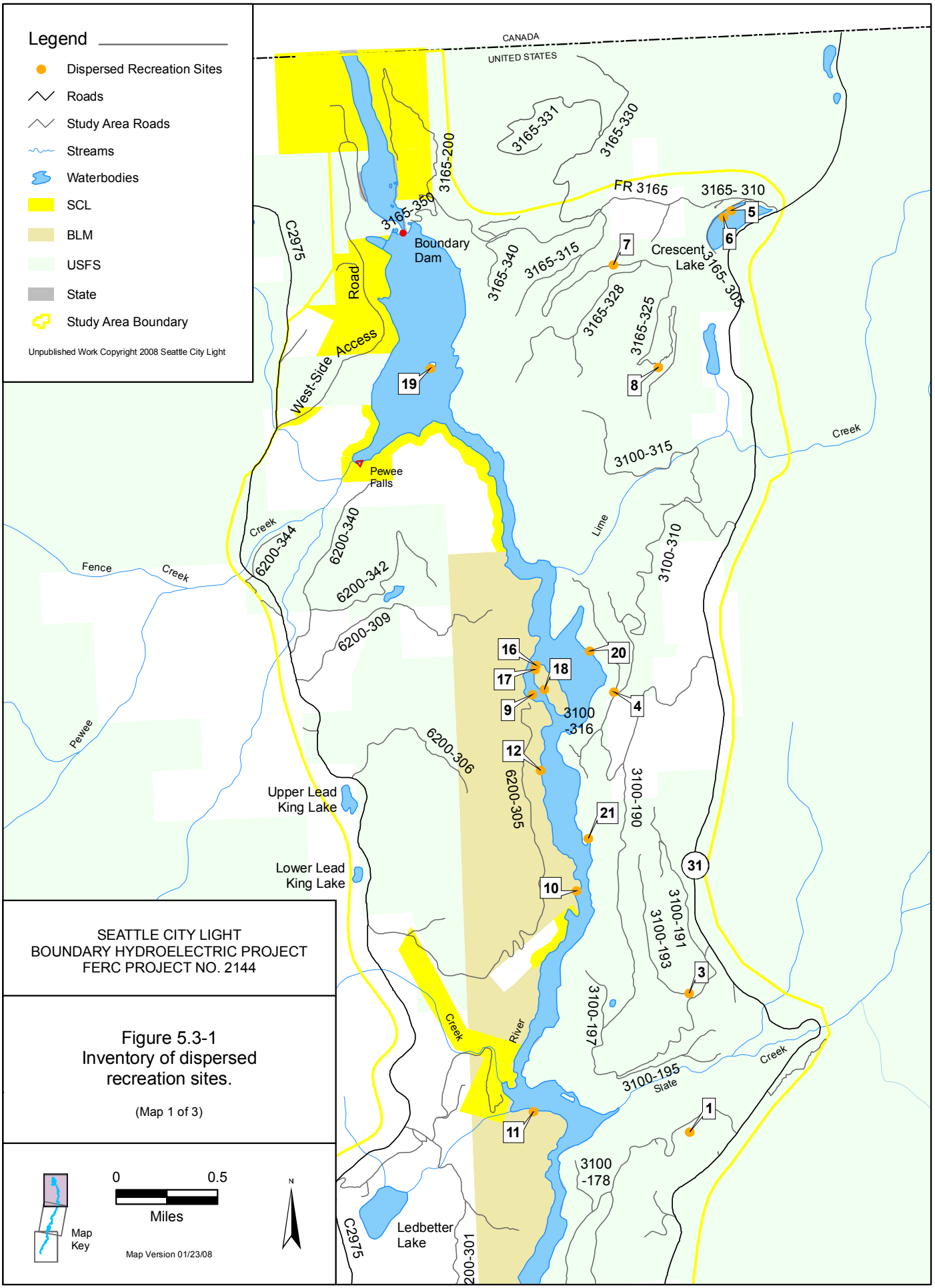
Table 5.3-1 lists the 25 inventoried dispersed recreation sites and summarizes key information about those sites. The unique location/site code for each inventoried site is indicated in the second column of the table. For ease of location on a map, the sites have also been assigned a number from 1 through 25. Figure 5.3-1 shows the geographic distribution of the dispersed sites within the study area, with the sites identified by the simple number code. Just over half of the inventoried sites (13 out of 25 total sites) are located in the North Reservoir portion of the study area (Sector 5). Eight of the sites (32 percent) are road-accessible sites in Sector 4, 3 are located along the South Reservoir (Sector 6), and 1 site is a road-accessible site in Sector 3.

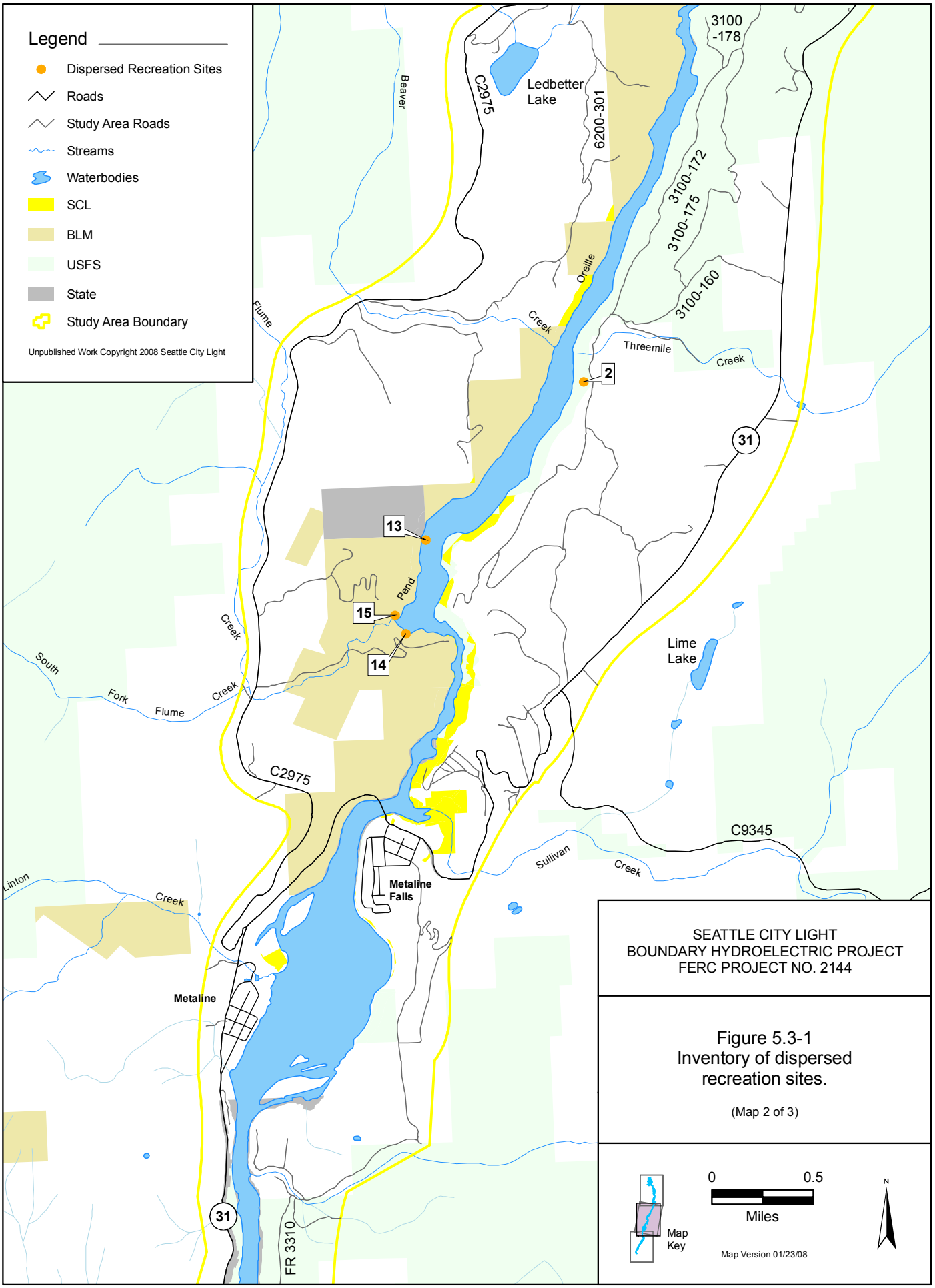
Table 5.3-1. Inventoried dispersed recreation sites.

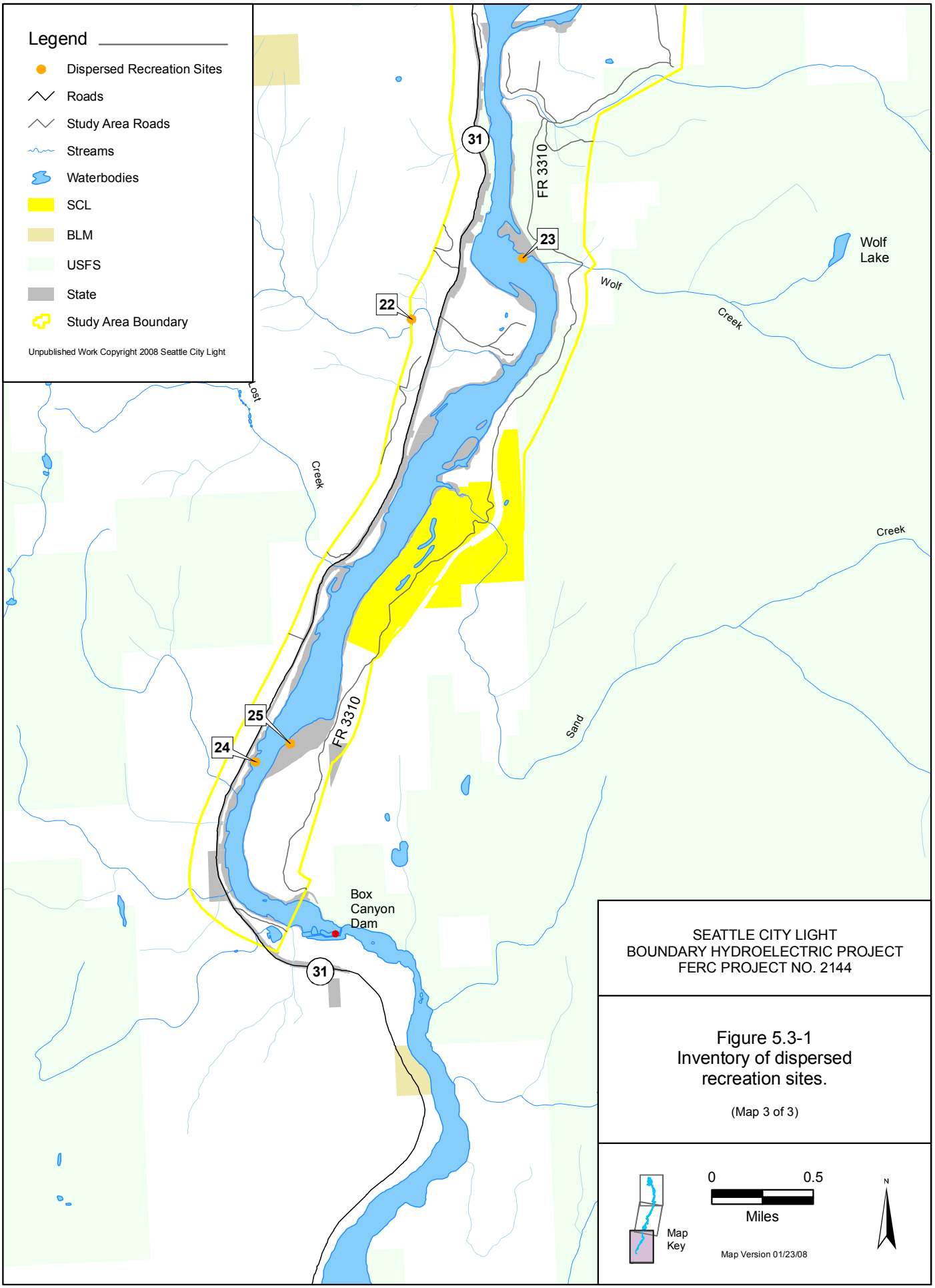
Map Number	Sector/Location/ Site Code	Location Name	Land Ownership	Key Site, Access Attributes	Likely Type of Use
	Sector 4 (RD)				
1	4RD 172-1	Road 3100-172	USFS	Upland; easy road access, near SR 31; large site	Overnight (fire pit)
2	4RD 172-2	Road 3100-172	USFS	Upland; difficult road access, beyond locked USFS gate; also water access	Overnight (fire pit)
3	4RD 190-1	Road 3100-190	USFS	Upland; easy road access, near SR 31	Overnight (fire pit)
4	4RD 310-1	Road 3100-310	USFS	Upland; long road access	Overnight (fire pit)
5	4RD 305-1	Road 3165-305	USFS	Shoreline (lake); access spur from FR 3165; large site	Day/Overnight (fire pits)
6	4RD 305-2	Road 3165-305	USFS	Shoreline (lake); access spur from FR 3165; large site	Day/Overnight (fire pits)
7	4RD 325-1	Road 3165-325	USFS	Upland; easy road access from FR 3165; small site	Day/parking (fire pit)
8	4RD 325-2	Road 3165-325	USFS	Upland; easy road access from FR 3165	Overnight (fire pit)
	Sector 5 (NR)				
9	5NR BLM-1	BLM	BLM	Shoreline; BLM Recreation Area; rough access road; water access; large site	Overnight (fire pit)
10	5NR BLM-2	BLM	BLM	Shoreline; water access only; 2-unit site	Overnight (fire pit)
11	5NR BLM-3	BLM	BLM	Shoreline; water access only; larger site	Overnight (fire pit)
12	5NR BLM-4	BLM	BLM	Shoreline; water access only; 1-unit site	Overnight (fire pit)
13	5NR DE-1	Deadman's Eddy	BLM	Shoreline; water access only; 1-unit site	Overnight (fire pit)
14	5NR DE-2	Deadman's Eddy	BLM	Shoreline; water access; ATV access via gated road; large site	Overnight (fire pits)
15	5NR DE-3	Deadman's Eddy	BLM	Shoreline; water access only; 1-unit site	Overnight (fire pit)
16	5NR EI-1	Everett Island	BLM	Shoreline; water access only; larger site	Overnight (fire pits)
17	5NR EI-2	Everett Island	BLM	Shoreline; water access only; 1-unit site	Overnight (fire pits)
18	5NR EI-3	Everett Island	BLM	Shoreline; water access only; 1-unit site	Overnight (fire pit)

Table 5.3-1, continued…

Map Number	Sector/Location/ Site Code	Location Name	Land Ownership	Key Site, Access Attributes	Likely Type of Use
19	5NR FI-1	Rat Island (Forebay)	USFS	Shoreline; water access only; 2-unit site	Day/Overnight (fire pit)
20	5NR LC-1	Lime Creek	USFS	Shoreline; water access only; large, elaborate site (8 units)	Overnight (fire pits)
21	5NR MB-1	Monument Bar	USFS	Shoreline; water/foot and ATV access; large site	Overnight (fire pit)
	Sector 3 (SR 31)				
22	3SR31 SC-1	Sweet Creek	POC	Upland; easy foot access (1/4 mile) via Sweet Creek trail	Overnight (fire pit)
	Sector 6 (SR)				
23	6SR WC-1	Wolf Creek	WA	Sand/gravel bar area; primarily water access, also road/walk-in, ATV	Day; beach/shore/fish access (no fire pit)
24	6SR SG-1	Gaging Station	WA	Shoreline; road and water access, near SR 31	Day/fish access (fire pits)
25	6SR SG-2	Gaging Station	WA	Shoreline; water access only; 1-unit site	Day/fish access (fire pit)


Legend
Dispersed Recreation Sites
Roads
Study Area Roads
Streams
Waterbodies
SCL
BLM
USFS
State
Study Area Boundary
Unpublished Work Copyright 2008 Seattle City Light
CANADA
UNITED STATES
3165-331
3165-330
3165-200
FR 3165
3165- 310
3165-350
Boundary Dam
C2975
Road
West-Side Access
3165-340
3165-315
Crescent Lake
3165- 305
3165-328
3165-325
Creek
3100-315
Pewee Falls
Lime
3100-310
Creek
6200-344
6200-340
Fence
Creek
6200-342
6200-309
Pewee
3100 -316
6200-306
6200-305
3100-190
Upper Lead King Lake
Lower Lead King Lake
3100-191
3100-193
3100-197
Creek
River
3100-195
Slate
Creek
3100 -178
Ledbetter Lake
C2975
200-301
1
3
4
5
6
7
8
9
10
11
12
16
17
18
19
20
21
31
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.3-1
Inventory of dispersed recreation sites.
(Map 1 of 3)
Map Key
0
0.5
Miles
Map Version 01/23/08
N


Legend
Dispersed Recreation Sites
Roads
Study Area Roads
Streams
Waterbodies
SCL
BLM
USFS
State
Study Area Boundary
Unpublished Work Copyright 2008 Seattle City Light
Beaver
C2975
Ledbetter Lake
6200-301
3100 -178
3100-172
3100-175
3100-160
Oreille
Creek
Threemile
Creek
Flume
2
31
13
Pend
15
14
Creek
South
Fork
Flume
Creek
Lime Lake
C2975
C9345
Sullivan
Creek
Linton
Creek
Metaline Falls
Metaline
31
FR 3310
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.3-1
Inventory of dispersed recreation sites.
(Map 2 of 3)
Map Key
0
0.5
Miles
Map Version 01/23/08
N


Legend
Dispersed Recreation Sites
Roads
Study Area Roads
Streams
Waterbodies
SCL
BLM
USFS
State
Study Area Boundary
Unpublished Work Copyright 2008 Seattle City Light
31
FR 3310
23
22
Wolf Lake
Wolf
Creek
Lost
Creek
Creek
Sand
25
24
FR 3310
Box Canyon Dam
31
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.3-1
Inventory of dispersed recreation sites.
(Map 3 of 3)
Map Key
0
0.5
Miles
Map Version 01/23/08
N

A summary description of each dispersed recreation site is provided below, organized by sector and location.

5.3.1.1.1. Sector 4, Roaded Dispersed

Eight dispersed recreation sites were recorded on or near secondary NFS roads in this part of the study area. Sector 4 includes Crescent Lake, a small lake near the intersection of SR 31 and FR 3165 and POC 3990). The dispersed sites within Sector 4 are summarized below, by general location.

FR 3100-172

The FR 3100-172 system is located to the east of the reservoir and west of SR 31, and extends south from just below Slate Creek almost to Metaline Falls. Spur roads are identified as FR 3100-160, -175 and -178. Dispersed sites were identified at two locations on the FR 3100-172 road system. Both sites are on NFS land.

Site 4RD 172-1 (location 1 on Figure 5.3-1, Map 1) is an upland site located along a short dead-end spur road to the left of Road 172 and approximately 0.5 mile west of SR 31. It is approximately 0.5 mile in aerial distance from Boundary Reservoir and is not on a road system that provides vehicle access to the reservoir. The site is an open, grassy area surrounded by a mix of mature and younger trees and has partially screened views of the surrounding mountains. This site can be easily accessed with a standard two-wheel drive vehicle. It has a user-made fire ring and sufficient space for several tents, although it appears to receive low use as an overnight camping area. The presence of a user-made skinning pole and the accessible location suggest that this site may be used primarily by hunters on a seasonal basis.

Site 4RD 172-2 (location 2 on Figure 5.3-1, Map 2) is an upland site located toward the southern end of Road 172, approximately 3.5 miles from SR 31. It is situated behind a USFS gate and road closure sign located a short distance south of the junction of Roads 172 and 160. To access site 4RD 172-2 by land now, users would have to travel by foot past the gate for several hundred yards. An alternative approach to the site from the reservoir is possible, although this would require travel on foot and uphill approximately 100 yards from the reservoir shoreline. It appears that this site may have received moderate use before the road was gated, but there was no evidence of recent use. As noted for site 4RD 172-1above, the presence of a buck pole at this site suggests likely use by hunters in past years.

FR 3100-190/310

Two dispersed sites were recorded on the FR 3100-190/310 road system, which is located west of SR 31, east of Boundary Reservoir, and north of Slate Creek. Both sites are on NFS land.

Site 4RD190-1 (location 3 on Figure 5.3-1, Map 1) is an upland site similar in location to Site 4RD 172-1. It is just to the right of Road 190 at the intersection with Spur 193, approximately one-quarter mile west of SR 31. It is approximately 0.75 mile in aerial distance from Boundary Reservoir and is not on a road that provides vehicle access to the reservoir. This site is surrounded by mature trees and appears to be used for camping, with sufficient space for several tents. The condition of the road from SR 31 to the site is suitable for use by standard passenger

vehicles. The site is large enough to accommodate a camper trailer or a small recreational vehicle. There is a user-made fire ring and a user-made toilet at this site. The field crew observed fresh tire tracks at this site during the October 2007 site visit. Conditions observed suggest this site may receive more use than many of the dispersed sites.

Site 4RD 310-1 (location 4 on Figure 5.3-1, Map 1) is located adjacent to Road 310 just north of its junction with FR 3100-316, and approximately 2 miles in from SR 31. The area to the north of this site was harvested relatively recently, perhaps about 10 years ago. The site has a user-made fire ring. Conditions observed at the site, such as the extent of trampling and trash, indicate it may get low to moderate use. Because this site is some distance from a main road, does not have access to a water feature, and is in the same general area as Sites 4RD190-1, 4RD172-1, and 4RD172-2, it is likely the site is used primarily by hunters.

Crescent Lake

Recreational use at Crescent Lake appears to be concentrated in two locations. The site inventory identified two dispersed sites along an abandoned road adjacent to the Crescent Lake shoreline, identified as FR 3165-305. These sites are on federal land administered by the USFS. In addition, there are three picnic sites constructed by the USFS on a short spur road (FR 3165-310) just above Crescent Lake; use of these formal sites was monitored through the Sector 4 visitor counts, but these sites were not recorded as dispersed sites.

Sites 4RD 305-1 and 4RD 305-2 (locations 5 and 6 on Figure 5.3-1, Map 1) are both located adjacent to the old road that travels along the north and west shoreline of Crescent Lake, on the opposite side of the lake from SR 31. They are more than 1 mile in aerial distance from Boundary Reservoir. Although FR 3165 connects with the Vista House and the East-Side Access Road to Boundary Dam, the latter road is gated and FR 3165 does not provide vehicle access to the reservoir itself.

The existence and condition of the two dispersed sites at Crescent Lake are documented in the PAD (SCL 2006). Both sites appear to receive substantial use by anglers, as well as by campers. Visitor count observations over the course of the 2007 season indicate that the two dispersed sites along the lake are somewhat more likely to be in use than the developed sites located above the lake. There are two fire rings located at Site 4RD 305-1. Site 4RD 305-2 is adjacent to 4RD 305-1 and has three user-made fire rings. There is a social trail from this site leading to the developed USFS sites above the lake on FR 3165-310.

FR 3165-325

FR 3165-325 is a spur road system that extends to the south from the East-Side Access Road (FR 3165/POC 3990) at a point approximately half-way between SR 31 and the Vista House. Road 325 has a total length of approximately 4 miles, ending at a point southwest of Lake Lucerne. Additional spur roads from Road 325 are identified as FR 3165-315 and -328. Dispersed sites were identified at two locations on FR 3165-325, both on NFS land.

Site 4RD 325-1 (location 7 on Figure 5.3-1, Map 1) is an upland site located adjacent to Road 3165-325 approximately 1 mile in from Road 3165. It is nearly 1 mile in aerial distance from Boundary Reservoir and is on a road that does not provide vehicle access to the reservoir. This

area is accessible by two-wheel drive vehicle and is essentially just a small pull-out on the side of the road. The area surrounding the site consists of both older trees and an area that was harvested about 10 years ago. There is a fire pit at the site, but no area that has obviously been used as a tent site. Because the site is so small and just off of the road, it may be used more as a site for day-use activity, such as a parking location for hunter access.

Site 4RD 325-2 (location 8 on Figure 5.3-1, Map 1) is an upland site located in a small clearing on the south side of Road 325 approximately 1.5 miles in from Road 3165. It is approximately 1 mile in aerial distance from Boundary Reservoir and is on a road that does not provide vehicle access to the reservoir. A user-made fire ring at the site is easily visible from Road 325. This is a relatively large site with a good view of the surrounding area. It is immediately adjacent to a cleared area that was probably harvested about 10 years ago. Field crews observed little evidence of use at this site during the initial inventory or the follow-up visit in October 2007.

5.3.1.1.2. Sector 5, North Reservoir

The field inventory identified 13 individual dispersed recreation sites within this sector, including multiple sites in a few locations. These sites occur on both sides of the reservoir, although most are located along the western shoreline, and on an island in the reservoir forebay. All of these sites are shoreline sites with water access. Most do not have access by road. Based on conditions observed during the inventory, the dispersed sites in Sector 5 seem to be favored by users for overnight camping.

BLM Boundary Recreation Area (Semi-Developed Site)

Site 5NR BLM-1 (location 9 on Figure 5.3-1, Map 1) is a shoreline site located on the western shore of the reservoir, between Pewee Creek and Everett Creek and across from Everett Island. This site is managed by BLM and is described in the PAD (SCL 2006). BLM has provided users with two picnic tables and two fire rings at this location. (BLM staff indicated that only one picnic table was observed on a visit to this site in July 2008, suggesting that users had relocated one of the picnic tables to a nearby dispersed site [Smith 2008].) This site was inspected early in the field inventory process, because it was a known camping location and was being sampled for visitor counts and questionnaires as part of Sector 5. Because the site has both user-made and agency-installed facilities and was monitored along with dispersed sites, it is discussed in Section 5.3 of the report.

In addition to the constructed facilities installed by the BLM, Site 5NR BLM-1 includes one user-made fire ring and one user-made toilet. Observed physical conditions at this site suggest it receives heavier recreation use than other sites in Sector 5. The survey estimated the site had space to accommodate six tents. Users can access this site by water travel on the reservoir or by vehicle on Road 6200-305. Road 305 is relatively steep and rough, and the distance from POC 2975 to the site is approximately 3 to 4 miles. Nevertheless, survey crews observed vehicles at this site on occasion during the season.

Other Sites on BLM-Managed Land

The inventory identified three other dispersed sites on BLM-managed land on the west side of Boundary Reservoir. Site 5NR BLM-2 (location 10 on Figure 5.3-1, Map 1) is located on the

western shore of the reservoir approximately 1.5 mile south of 5NR BLM-1. It is situated on a steep bank above the reservoir and is enclosed by mature trees. Access to this site is only by water, and is a little more difficult than other boat-access sites because of the rocky shoreline. A tree at this site has been carved into a totem pole, apparently by a user during the 2006 season (given the date noted in the carving). Conditions observed in 2007 suggest this site has received moderate use in the past.

Site 5NR BLM-3 (location 11 on Figure 5.3-1, Map 1) is located on the western shore of the reservoir approximately 1 mile south of BLM-2, near a sharp bend in the canyon between the mouths of Everett Creek and Slate Creek. The site has one fire ring and can accommodate multiple tents. The tent pads are fairly well hidden from boaters on the reservoir, although the fire pit and a picnic table could be clearly seen from the reservoir at the time of the inventory. (One of the respondents to the area resident questionnaire reported that he/she had moved the picnic table to this site and maintains the site. If that report is accurate, this picnic table was not installed at the site by the BLM. During a later site visit in July 2008, SCL staff noted the presence of two picnic tables at this site. It appears likely that the second table was relocated from the BLM Boundary Recreation Area by users.) There are multiple social trails leading through the site and several distinct tent sites, indicating the site has been used consistently in the past. There is also one user-made toilet. Because no means of access to this site by road is apparent, it is anticipated that users are reaching the site by boat.

Site 5NR BLM-4 (location 12 on Figure 5.3-1, Map 1) is located on the west side of the reservoir approximately 0.5 mile south of Everett Island. The site is not obvious from the water and was not identified as a dispersed site until September 2007, when a survey crew observed someone camping at the site. The user reported he had camped at the site in the past, although the site had become somewhat overgrown. The site has one user-made fire ring and an area apparently used for tent camping. Access to this site is only by water.

Deadman's Eddy

Deadman's Eddy is the relatively open area of the reservoir at the south end of the canyon reach, where Flume Creek enters the reservoir and the channel bends to the west below Metaline Falls. The field inventory identified three dispersed sites on the western shoreline in this general area of the reservoir. All three sites are on BLM-managed land. Site 5NR DE-1 (location 13 on Figure 5.3-1, Map 2) is the most northerly of these sites, and is over one quarter mile north of the other two sites. This site is out in the open and provides clear views of the surrounding reservoir and canyon walls. It has a user-made fire ring, but no obvious area used as a tent pad. Based on conditions observed during the initial and fall inventory visits, it appears that this site had little or no use during the 2007 season.

Sites 5NR DE-2 and 5NR DE-3 (locations 14 and 15 on Figure 5.3-1, Map 2) are located relatively close together near the mouth of Flume Creek. There is road access to this general area, and these sites can be accessed by boat or ATV, which can bypass the locked USFS gate near POC 2975; the location is approximately 1 mile from POC 2975. Site 5NR DE-2 is set back in the trees somewhat and is considerably larger than the other sites in this location, with capacity for several tents. The inventory crew observed fresh tire tracks in the soil at this site during the October 2007 site visit. Site 5NR DE-3 is also set back in the trees, although it

provides views of the reservoir, and does not appear to be used much. This site has enough area to accommodate one tent, although it slopes downward toward the reservoir and has not been cleared of brush in the recent past.

Everett Island

Everett Island is a small upland area in the northern part of the canyon reach that is situated just to the east across a narrow channel from the BLM Boundary Recreation Area. Three dispersed sites were recorded on Everett Island. Access to all three sites is usually possible only by water; however, when the reservoir pool level is low, visitors can access the island by foot.

Site 5NR EI-1 (location 16 on Figure 5.3-1, Map 1) is located on the northeastern corner of the island. There are two fire rings at this site; one above and one that appears to be below the normal waterline of the reservoir. This site appears to have been used in the past, but to a lesser degree than the other sites on the island. Site 5NR EI-2 (location 17 on Figure 5.3-1, Map 1) is located just south of 5NR EI-1. There are two fire rings at this location, and enough room to fit at least one tent site. The site is located in the open, with some mature trees behind the site, and has a view toward the BLM-1 site. This site has been used as a campsite in the past, but did not show evidence of recent use during visits in 2007.

Site 5NR EI-3 (location 18 on Figure 5.3-1, Map 1) is located on the western side of Everett Island, to the southeast from the first and second sites. This site is larger than the other two sites on the island and in a preferable location that offers more shelter from the elements. This site includes one fire ring and one apparent tent site. Conditions observed on the two inventory visits, primarily the apparent presence of additional trash, indicated that the site was used at least one time during the 2007 season.

Rat Island

One dispersed site (5NR FI-1, location 19 on Figure 5.3-1, Map 1) was recorded on Rat Island, a small island located toward the south end of the Boundary Reservoir forebay, approximately 0.75 mile south of Boundary Dam. This part of the Project is NFS land. It has excellent views in all directions that include the dam, the forebay campground and day-use area south of the dam, and Pewee Falls to the southwest. The island, particularly the western portion, has been used heavily by Canada geese. The inventory crew observed evidence of past overnight use and a geocache site, and several social trails on slopes near the geocache site.

Lime Creek

Lime Creek enters the reservoir on the eastern side, near the northern end of the canyon reach. One dispersed site was recorded on the shoreline approximately 0.5 mile south of Lime Creek, on NFS land. Site 5NR LC-1 (location 20 on Figure 5.3-1, Map 1) is almost directly across the reservoir from Everett Island and has clear views of the surrounding area. Access to the site appears to be primarily by boat, but there is an informal, user-created trail leading uphill behind the site. This route connects to a spur from Road 3100-310 that is located less than 100 yards above the site, although the trail shows more use near the campsite than up toward the road. Travel by road to the vicinity of this site may be possible, although the condition of the road would likely limit travel to four-wheel-drive vehicles. Site 5NR LC-1 appears to be the most

elaborate dispersed site in the study area, based on the amount of user-made improvements evident. The inventory noted a number of flat areas that have clearly been used as tent pads, several items of user-made camping furniture, multiple fire rings, and an informal toilet. Based on the level of user improvements observed, this site appears to be relatively popular compared to many other sites. Site 5NR LC-1 is also the largest site recorded in the inventory, with an estimated capacity for approximately eight tents.

Monument Bar

Monument Bar is the name applied to a shoreline area on the east side of the reservoir roughly halfway between Lime Creek and Slate Creek, and approximately 1 mile south of Everett Island. There is a small cove on the shore that provides a landing spot for access to Site 5NR MB-1 (location 21 on Figure 5.3-1, Map 1) from the water. The site is located back in the trees a relatively short distance from the reservoir, on NFS land. This site can also be accessed by foot or by ATV on a user-made trail to the site from Road 3100-316. This site is surrounded by mature trees. It has one user-made (and relatively deep) fire pit, a user-made toilet, and four areas that have apparently been used as tent sites. Physical conditions observed at the site indicated past use at low or possibly moderate levels; there was no evidence of recent ATV tracks on the trail during the 2007 inventory visits.

5.3.1.1.3. Sector 3, SR 31

Only one dispersed site was recorded in Sector 3. The site is an upland site located near the Sweet Creek Falls Rest Area on the west side of SR 31, and was coded as site 3SR31 SC-1 (location 22 on Figure 5.3-1, Map 3). The rest area and the dispersed site are on land owned by Pend Oreille County. The specific location for this site is just off of the main trail from the parking area to the falls, and above the falls. To reach this site, users would follow the paved path from the parking lot until it turns into a dirt trail that follows Sweet Creek. From the dirt trail, a user-made spur trail veers to the right and climbs a small hill. An informal camping area with a user-made fire ring is situated at the top of the hill immediately adjacent to the spur trail, and a short distance from Sweet Creek and the constructed trail. Based on the physical conditions observed here, and the lack of noticeable change between the spring and fall site visits, the site appears to receive low use. Orange flagging was observed along the constructed trail, but the source or purpose of the markers was not evident.

5.3.1.1.4. Sector 6, South Reservoir

Sector 6 includes the reservoir surface and shoreline from Metaline Falls south to the head of the reservoir at Box Canyon Dam. The appearance, setting, and character of the southern part of the reservoir are considerably different from the northern reservoir area, and these differences are reflected in the inventory of dispersed sites. In particular, a much higher proportion of the land adjacent to the reservoir is in private ownership, which likely reduces the availability of on-shore sites for public use. The field inventory identified only three sites in Sector 6 that appeared to be used for dispersed recreation. The Sector 6 dispersed sites do not show evidence of overnight use; they appear to be locations for day-use activities, primarily fishing.

Site 6SR WC-1 (location 23 on Figure 5.3-1, Map 3) is located on the eastern shoreline just north of the mouth of Wolf Creek. The site appears to be used primarily or exclusively as a dispersed

day-use site, as no fire rings or tent pads were identified in the inventory. The site consists of four gravel bars situated in shallow water, within state of Washington river bedland ownership. When the water level is low, it apparently is possible for vehicles to travel off-road from FR 3310 and drive or walk to this site. This site has a rocky substrate and a limited surface area, even when the water level is low. USFS staff identified this site as an area where boaters beach or anchor their craft, and where anglers fish from shore.

The other two inventoried dispersed sites in Sector 6 are located at either end of the stream gaging station that spans the river approximately 1 mile north of Box Canyon Dam, also within state of Washington ownership. This area was investigated primarily because Tetra Tech staff received anecdotal reports from local sources that the gaging station was a known fishing site. In addition, this location was identified as a catch location in several reports received through the tagged fish reward program operated as part of Study 13, Recreational Fishery Study, during the 2007 season. Site 6SR SG-1 (location 24 on Figure 5.3-1, Map 3) is just off SR 31 on the west side of the reservoir, and the highway is visible and audible from the site. Users can access this site via boat or car. There is a pullout on SR 31 directly above this site, and high-clearance vehicles can drive directly to the site via a short spur road. Although there is a fire pit at this site, this appears to be primarily a day–use site that is most commonly used by anglers.

Site 6SR SG-2 (location 25 on Figure 5.3-1, Map 1) is located across from SG-1 on the eastern side of the reservoir. This site is located out in the open with views across the reservoir to development along SR 31. This site is covered by tall weeds and grass that shows slight evidence of trampling. There is a faint trail to a fire ring that has not been used in some time. Physical conditions observed here indicate there appears to be a low level of use at this site.

5.3.1.2. Tabulated Site Conditions

This section summarizes the entries on the site inventory forms for the 25 dispersed sites recorded in the study area. The following sections each address a corresponding section of the inventory form. For each section, the report includes a tabular summary for the full set of inventoried sites and a brief narrative. The tabular and text summaries were derived from an overall table of site inventory characteristics that is provided in Appendix 5b. These entries should be understood as recorded observations of conditions at particular times during 2007 that vary by site and can vary over time.

5.3.1.2.1. Site Delineation and Capacity

Section 1 of the site inventory form (see Appendix 5a) addresses basic reference information on the physical location and dimensions of the dispersed sites. Specific items include a GPS reading for the site; reference points to identify locally-specific landmarks that help to locate and define the site; the size and shape of the site, including a sketch map; and the estimated site capacity, which included an approximate number of tents and vehicles that the site appeared to be able to accommodate.

Items 1.1 and 1.2 on the form are specific to the individual site and are not suitable for display in summary fashion. Entries for Item 1.3 (size and shape of the site) indicate that the smallest site identified had dimensions of 15 feet by 15 feet, while the largest entry was 500 feet by 100 feet.

Entries for Item 1.4 (estimated site capacity) may be the most significant of the site delineation characteristics. Table 5.3-2 summarizes the aggregate results for tent and vehicle capacity estimates for the 25 dispersed sites. All but one of the sites had an apparent capacity for at least one or two tents. The site inventory procedures did not prescribe a specific size of tent to use as the basis for Item 1.4 entries, primarily because small tents would be expected at boat-in and hike-in sites while larger tents would be more common at roadside sites. In general, a reasonably flat, cleared area roughly 10 feet by 10 feet in size would be needed to accommodate a small tent. At 10 of the sites there had been sufficient camping use over time that the survey crew was able to distinguish specific locations that had obviously been used as tent sites.

Table 5.3-2. Estimated dispersed site capacity.

Number of Tents	**Number of Sites**	**Percent of Sites**
0	1	4
1	11	44
2	4	16
3	2	8
4	3	12
5	2	8
6	1	4
7-8	1	4
Number of Vehicles		
0	15	60
1	1	4
2	4	16
3	3	12
4	1	4
5	1	4

The total of the tent capacity estimates for the 25 inventoried sites is 57 tents. By sector, the total includes 1 tent site in Sector 3 (SR 31 South), 18 tent sites in Sector 4 (Roaded Dispersed), 36 tent sites in Sector 5 (North Reservoir), and 2 tent sites in Sector 6 (South Reservoir). Tents can vary considerably in size, resulting in a considerable range for the potential aggregate people-at-one-time capacity of the sites. If an average rate of 4 people per tent is assumed, the 25 inventoried dispersed sites (with 57 total tent sites) could accommodate 228 people at any given time. Given that access to more than half of the dispersed sites is exclusively or primarily by water, where two-person tents would likely be most common, an overall average rate of three people per tent might be more appropriate. On that basis, the practical capacity of the 25 sites would be approximately 170 people at one time. With a range of typical tent capacities from 2 to 6 people, the aggregate capacity of the 25 inventoried sites could be considered as low as 114 people at one time or as high as approximately 300 people at one time.

The inventory indicated that no vehicles could be accommodated at 15 sites, or 60 percent of the total; vehicle capacity at these sites was recorded as 0. Nearly all of the sites in Sectors 5 and 6 (north and south reservoir zones) are not accessible by road, and by definition have no ability to accommodate vehicles. At most of the road-accessible locations the area available for parking vehicles is immediately adjacent to the sites. In rare cases (e.g., 3SR 31SC-1 and 4RD 172-2), users would have to carry their gear a short distance from the parking location to the site.

5.3.1.2.2. Site Access

Section 2 of the site inventory form focuses on the means and difficulty of access to the site. Specific entries include means of access to the site; distance to the site from the road, reservoir, and trail; and the access conditions.

Table 5.3-3 summarizes the distribution of sites by the available means of access, based on the conditions that could be observed in the field. In some instances, sites were accessible by more than one access means, such as directly by boat and by road. Twelve of the sites (48 percent) are accessible directly by boat and have no apparent means of land access, which is the most common access situation. Another seven sites (32 percent), all located within Sector 4, have direct or nearly direct access from a road and no water access. Three sites along the reservoir were recorded as having both boat-in and direct road access. Only two sites were identified as road/walk-in sites, which are accessible by road but require a (usually) short walk from the parking location to the site. Both of these sites can also be reached by boat, although one of these sites is some distance away from the reservoir shoreline. One site (3SR31SC-1) was classified as a trail/hike-in site because it is near a short maintained trail, although the access situation for this site is essentially the same as the sites classified as road/walk-in sites.

Table 5.3-3. Dispersed site access means.

Type of Access	Number of Sites	Percent of Sites
Direct by road	7	28
Direct by road and boat	3	12
Road/walk-in and boat	2	8
Trail/hike-in	1	4
Direct by boat	12	48
Total	**25**	**100**

Almost all of the sites are within approximately 50 feet of the primary access means or source, whether that is a road or the reservoir shoreline. Most of the sites with primary access by road were considered to be accessible by two-wheel drive vehicle. Because roads that can be used to access eight of the dispersed sites were in relatively rough condition, the four-wheel drive or ATV category was marked on the inventory form. None of the sites that required access on foot (such as the road/walk-in sites) were considered to be difficult to reach by foot. More specific information for these entries is included in Appendix 5b.

5.3.1.2.3. Physical Setting

Section 3 of the site inventory form includes five separate entries for various types of physical information about the site. These entries address vegetation characteristics at the site, including the predominant cover type within the site itself and the amount of shade cover. Other entries include the location of the site relative to the shoreline, where applicable, and the distance to the nearest water body, including the name of the water body.

Multiple cover types were recorded for many of the sites. Most the sites include or are surrounded by older trees or a mix of older and younger trees. The grass/shrub cover type is also common. Two sites (8 percent) were characterized as riparian sites and one as a river/lakebed cover type. Table 5.3-4 indicates the amount of shade cover observed at the inventoried sites. As is often typical for dispersed sites, most (68 percent) of the sites were judged to have 0 to 25 percent shade cover within the site itself. No sites had shade cover over 75 percent or more of the site.

Table 5.3-4. Percent shade cover at dispersed sites.

Shade Cover Class (Percent)	Number of Sites	Percent of Sites
0–25	17	68
26–50	3	12
51–75	5	20
76–100	0	0

Nearly three quarters of the inventoried sites are located close to the shoreline of a water body. Most (17 sites, or 68 percent of the total) are situated upland relative to the shoreline (i.e., on a terrace above a low or high bank to the water), whereas only one site (Site 6SRWC-1, the sand/gravel bar area at Wolf Creek) was recorded as located below the full-pool line of the reservoir. Three sites (12 percent) are set back in the trees slightly away from the shoreline, and six dispersed roaded sites not located near a water body and have no applicable shoreline condition.

Eighteen (72 percent) of the sites are located within about 50 feet of a water body; the water body is typically Boundary Reservoir, although two sites are near Crescent Lake and one is near Sweet Creek. Most of the dispersed sites in Sector 4 (five sites, or 20 percent of the total) are located more than 500 feet from a water body.

5.3.1.2.4. Human Use Condition

Section 4 of the site inventory form addresses site characteristics that are indicative of the level and effects of human use, particularly with respect to possible resource damage and unsanitary conditions. Specific information includes the number of user-made fire rings, the apparent level of use of the site, the presence of trash and human or animal waste, vegetation trampling/loss, the existence of social trails, and tree damage.

All but 1 of the sites inventoried had at least one user-made fire ring; 17 sites (68 percent) had one fire ring and 7 sites (28 percent) had two or more fire rings. The inventory crew recorded their judgment of whether each site appeared to have received high, moderate, or low use, or did not have evidence of recent use but was clearly a usable dispersed site. As indicated in Table 5.3-5, only 1 site (4 percent) appeared to have no recent use; the rest were characterized as showing low (32 percent), moderate (40 percent), and high (24 percent) evidence of recent use. These entries about evidence of recent use are composite judgments based on the combined entries concerning the amount of trash, human/animal waste, vegetation trampling, and social trails present. As indicated in Section 5.1.2, visitor counts recorded at these sites during the 2007 season indicated low, minimal or no use for almost all of the inventoried sites.

Table 5.3-5. Human use condition at dispersed sites.

Humen Use Condition	Number of Sites	Percent of Sites
Overall Use Level and Conditions		
High	6	24
Moderate	10	40
Low	8	32
None	1	4
Trash		
High	4	16
Moderate	9	36
Low	9	36
None	3	12
Human/Animal Waste		
High	5	20
Moderate	1	4
Low	7	28
None	12	48
Vegetation Trampling/Loss		
High	2	8
Moderate	5	20
Low	16	64
None	2	8
Social Trails		
High	0	0
Moderate	5	20
Low	11	44
None	9	36
Tree Damage		
High	1	4
Moderate	2	8
Low	4	16
None	18	72

Table 5.3-5 also summarizes results for other items in Section 4 of the site inventory form. Trash found in fire rings and/or scattered about the site was considered low to moderate at 18 sites (72 percent of the total), whereas a high level of trash was recorded at 4 sites (16 percent). Sanitation is a key concern often associated with dispersed recreation sites because, as undeveloped sites, they lack toilet facilities. Toilets observed at the dispersed sites in the Boundary study area were makeshift or temporary structures that users installed or constructed. At the time of the site inventory, evidence of human or animal waste was considered to be high at 5 of the sites (20 percent, all of which included user-made toilets), moderate at 1 site (4 percent), and low at 7 sites (28 percent). No evidence of human waste was reported at 12 sites (48 percent). These results reflect the timing of the fall follow-up inventory in October 2007, after most recreation activity had concluded for the season, except for some hunting.

Trampling and loss of vegetation was found at some of the dispersed sites, as shown in Table 5.3-5. The inventory crew observed that some degree of vegetation trampling/loss had occurred at all but 2 of the 25 sites. Vegetation trampling/loss was considered to be high at 2 sites, moderate at another 5 sites, and low at the remaining 16 sites (64 percent of the total). Some of the vegetation loss resulted from the development of user-made social trails, which were considered moderate to low at 16 of the sites. There was no evidence of social trails at nine of the sites. Only seven sites (28 percent) were reported to have evidence of tree damage. Tree damage was rated high at one site, where a user had created a totem pole from a tree. (During a July 2008 site visit for Study 1, SCL and consultant staff noted evidence of recent tree clearing at Site 5NR BLM-3 [location 11 on Figure 5.3-1, map 1]. This observation occurred subsequent to the site inventory for the RRS and is not documented on the dispersed site inventory records.)

The inventory procedures instructed staff to note under item 4.8 or elsewhere on the form any obvious erosion or impacts to sensitive resources, such as wetlands and riparian vegetation, evident at the site for subsequent review by specialists from the appropriate disciplines. The dispersed site inventory forms do not include any recorded observations of erosion or sensitive resource impacts noted at the sites. (During a July 2008 site visit for Study 1, SCL and consultant staff noted the presence of two populations of a rare plant species that were bisected by a social trail at the BLM Boundary Recreation Area [Site 5NR BLM-1, location 9 on Figure 5.3-1, map 1]. This observation is documented in Study 16, Inventory of Riparian Trees and Shrubs Final Report [SCL 2009b].)

5.3.1.2.5. Site Facilities

Section 5 of the site inventory form was used to record facilities present at dispersed recreation sites. Table 5.3-6 provides a summary of the site facility results. With the exception of the three picnic tables and two fire rings, which were provided by the BLM at one or possibly two sites (it has not been confirmed whether the BLM provided a picnic table at Site 5NR BLM-3), all other site facilities were user-made. Users have installed makeshift toilet structures of various types at five of the sites; all but one of these sites is located along the reservoir. Thirty-four user-made fire rings were found (some with new use, and some that do not appear to have been used in a while). Identifiable tent sites had been cleared or created through repeated use at 10 of the 25 sites.

Table 5.3-6. Facilities observed at dispersed sites.

Type of Facility	Number of Sites	Percent of Sites
Toilets	5	20
Trash cans	0	0
Picnic tables	3	12
Signs	0	0
Fire rings	24	96
Tent sites	10	40
Other (e.g., buck pole)	2	8

5.3.1.2.6. Visual Setting

Section 6 of the site inventory form addresses the visual setting at the dispersed sites. Specific entries include the type of predominant view from the site, evidence of development or other recreation sites in the view from the site, and the amount of screening between the site and its primary access approach or other sites. Most of the sites (17 sites, or 68 percent) have a view of the reservoir, and at the same number of sites the view is enclosed by nearby trees and/or terrain. Evidence of development is present in the view at 15 of the sites (60 percent); roads can be seen at 13 sites and powerlines, the dam, and mining operations can be seen from two sites each. No recent timber harvests were in evidence at any of the sites. Other recreation areas (developed or dispersed) can be seen from 11 of the sites (44 percent). Vegetative screening around the dispersed sites tends to be somewhat limited, as no screening was recorded at 28 percent of all sites and low screening was recorded at another 24 percent.

5.3.1.2.7. Shoreline Conditions

The last section of the site inventory form includes six separate items relating to shoreline conditions at the site, if applicable. Specific types of information include the type or composition of the shoreline terrain, proportion of the shoreline area accessible by vehicle or foot, whether boat launching is possible at the shoreline, the existence of boating hazards and/or boat landing difficulty, and the composition of the lakebed substrate adjacent to the site.

Item 7.1 is a “yes/no” entry for whether surface water shoreline is present within or adjacent to the site. Consistent with previous inventory items, reservoir or river/stream shoreline is present at 19 (76 percent) of the sites. Nearly half of the sites (48 percent) had a low bank at the shoreline, while another eight sites (32 percent) had a high bank. The shoreline was vegetated at nine sites (36 percent), while at other sites the shoreline consisted of rock outcroppings, sand/silt, or gravel. As noted above, the dispersed site inventory forms do not include any recorded observations of erosion or sensitive resource impacts noted at the sites.

Foot access to the water is possible at nearly all of the sites that include a shoreline area, while vehicle access to the water was recorded for six sites (24 percent of the total). The inventory crew concluded that it would be possible to launch watercraft from 18 of the sites (72 percent). In all cases, however, only hand-launched watercraft (e.g., canoes, kayaks, rafts, and small

rowboats) could be launched. None of the dispersed sites have or are near developed watercraft launching access (i.e., a constructed boat ramp), and launching a trailered-boat does not appear to be possible at any of the sites that are accessible by road. Of the 18 sites where a hand-carried watercraft could be used, launching was considered to be easy at 16 sites. One site was recorded with difficult watercraft launching conditions because of the number of boulders along the reservoir at that location.

The inventory crew judged whether rocks, stumps, and/or shallow areas in the water near the dispersed sites presented hazards to watercraft use, and the degree of difficulty represented by such hazards. These entries reflect evidence of hazards at the time each site was inventoried, which was largely dependent on the reservoir elevation at that specific time. Additionally, these subjective entries about watercraft use conditions were made by field staff of various backgrounds who were not necessarily expert or trained in boat navigation. Therefore, this entry should not be interpreted as locations where specific boating hazards were identified, but rather as a potential starting point for any follow-up site investigation relating to potential boating hazards.

With those limitations acknowledged, the inventory indicated some degree of subsurface hazard (low to high) was likely present, during at least some reservoir conditions, at most of the shoreline dispersed sites. Stumps, rocks, and/or shallow water were observed at virtually all of these locations. The inventory crew considered the subsurface hazards they observed to represent a low degree of difficulty at 16 sites (64 percent), as shown in Table 5.3-7, and a high degree of difficulty for landing a boat at none of the sites.

Table 5.3-7. Watercraft use hazard level assumed at dispersed sites.

Hazard Level	Number of Sites	Percent of Sites
High	0	0
Moderate	3	12
Low	16	64
None	0	0
Not Applicable (no shoreline)	6	24

The final item on the inventory form addresses the substrate composition of the shoreline within or adjacent to the site. The most common condition at the shoreline sites is a sand/silt substrate (at 8 sites, or 32 percent), followed closely by gravel and cobble conditions. Boulders were found at four sites (16 percent).

5.3.2. Public Access Analysis

As discussed in Section 4.3.2, the RRS includes an assessment of existing and potential future access opportunities for dispersed recreation within the study area. The first part of the following discussion addresses existing opportunities and conditions for the three key access means available – travel by roads, trails, and/or water. This assessment is based on the

information collected during both the dispersed recreation site inventory and the Recreation Surveys field sampling activity conducted during the 2007 recreation season.

The review of existing access conditions is followed by an assessment of potential future public access opportunities for dispersed recreation. The intent for this assessment was to define general areas of opportunity as they relate to public access means in the study area, with particular emphasis on opportunities for access to and along the reservoir shoreline. This objective was addressed primarily through a GIS-based analysis of key factors representing constraints on access opportunities, with supplemental information derived through other steps outlined in the RSP, as indicated in Section 4.3.2.

5.3.2.1. Existing Public Access Conditions

Existing access conditions within the study area are characterized below with respect to roads, trails, and water access. The information is based on extensive review of maps and aerial photographs; review of applicable printed information, such as USFS road inventory data and documents addressing historic and current conditions in the area; and observations made during field activity in the study area, including sampling for the recreation surveys and dispersed recreation components of the RRS during the 2007 season.

5.3.2.1.1. Road Access

Virtually all of the lands within the study area have some degree of access by road that can be used by visitors for dispersed recreation (see Figure 5.3.-1). However, the level of road access varies considerably throughout the study area. The variation in road access conditions primarily reflects the locations and conditions of the existing roads, and the ownership and management characteristics of the lands within the study area. To facilitate review of existing road access conditions, this discussion is organized by quadrant of the study area, as follows:

- Northwest – north of Metaline Falls and from Boundary Reservoir west
- Northeast – north of Metaline Falls and from Boundary Reservoir east
- Southeast – south of Metaline Falls and from Boundary Reservoir east
- Southwest – south of Metaline Falls and from Boundary Reservoir west

<u>Northwest Quadrant</u>

POC 2975 is the primary means of road access to the study area north of Metaline Falls and west of Boundary Reservoir. POC 2975 is intersected by a number of public and private secondary roads that extend generally eastward for varying distances.

POC 2975 intersects SR 31 at the northern edge of Metaline and extends generally northward in the direction of Boundary Dam and the international border. The distance from SR 31 to the Boundary Dam Road junction is 12.4 miles. The road dead-ends at Crawford State Park, approximately 1.5 mile north of the Boundary Dam Road junction. Pend Oreille County operates and maintains the road, which is plowed in the winter. The roadway has two lanes and a bituminous (chip seal) paved surface, with a center stripe and standard signage. The road also carries a Forest Highway Designation, WA FH 148, as it is a primary access route to NFS land along the northwestern edge of Pend Oreille County. The management objective for POC 2975

is Level 4, which is assigned to roads that are for use by standard passenger vehicles and provide a moderate degree of user comfort at moderate travel speeds.

The West-Side Access Road connects Boundary Dam with POC 2975. This is a two-lane, bituminous-surfaced road approximately 2.1 miles long and provides SCL with access to Boundary Dam, the powerhouse, and Project maintenance area. The West-Side Access Road also serves recreational visitors to Boundary Dam and the SCL Forebay Recreation Area. The lands adjacent to the West-Side Access Road are not available for dispersed recreation.

There are approximately 12 secondary roads that intersect POC 2975 between SR 31 and the Boundary Dam junction and extend eastward from POC 2975. These roads serve a variety of purposes, providing access to privately-owned lands, former and/or current mining operations, public lands administered by the USFS and BLM, and transmission lines operated by the Bonneville Power Administration (BPA). Lands within the study area and located south of Beaver Creek (approximately 5 miles north of SR 31) are predominantly in private ownership, and the roads serving these lands are typically private roads that are not open for dispersed recreation. Secondary roads and access conditions north of Beaver Creek are summarized as follows:

- FR 6200-301 intersects POC 2975 just north of Beaver Creek, approximately 3 miles from SR 31. Road 301 forms a loop to the east of POC 2975, rejoining POC 2975 just north of Ledbetter Lake. Virtually all of the land adjacent to Road 301 is in private ownership, although it does cross one small parcel of BLM-managed land and two short spurs extend into other BLM parcels. Another spur off this road passes through private lands onto SCL property in the Whiskey Gulch area, near the dispersed site coded as 5NR BLM-3. Road 301 does not access Boundary Reservoir, and is approximately one-quarter mile from the reservoir at its closest point.

- FR 6200-305 begins at POC 2975 north of Everett Creek, approximately 6 miles from SR 31. It passes through private forest lands and BLM-managed land to a terminus at the BLM Boundary Recreation Area on Boundary Reservoir. The total length of this road is estimated at approximately 2.3 miles. A timber harvest operation was using the first 0.1 mile of the road as a landing area in April 2007. The road has a native surface, is functionally classified as a local road, and has a USFS management objective of Level 2, indicating it is to be maintained as a primitive road suitable for use by high-clearance vehicles.

- FR 6200-306 begins at POC 2975 near Upper Lead King Lake, approximately 7 miles from SR 31. This road crosses primarily NFS land before terminating in about 1 mile on BLM-managed land, at a point approximately 0.5 mile from Boundary Reservoir. The road has a native surface that is in poor condition. BLM real estate records also show “no authorization” for this road. The current USFS management objective is Level 2, Primitive, although USFS records indicate the long-term management objective for this road is closure.

- FR 6200-309 begins at POC 2975 south of a tributary of Pewee Creek, approximately 8 miles from SR 31. Road 309 crosses private and CNF lands before it terminates at about 1 mile on BLM-managed land. Road 309 does not access Boundary Reservoir, and is approximately one-quarter mile from the reservoir at its terminus. The road has a native surface. BLM real estate records also show "no authorization" for this road. The current USFS management objective is Level 2, Primitive, although USFS records indicate the long-term management objective for this road is closure (Level 1).

- FR 6200-340 begins at POC 2975 just south of a tributary of Pewee Creek, approximately 8 miles from SR 31. It extends northeast for approximately 0.8 mile across CNF and private lands before terminating at SCL property approximately 0.2 mile above the Pewee Creek lobe of the reservoir. FR 6200-342 branches off from -340 approximately 0.25 mile from POC 2975 and extends to the east for 1.2 mile, where it dead-ends at BLM-managed land. Road 342 does not access Boundary Reservoir, and is approximately 0.5 mile from the reservoir at its terminus. In 2007, the surface of 6200-340 beyond the junction with 6200-342 was littered with deadfall and appeared to be impassable to vehicle traffic. The current USFS management objective for FR 6200-340 is Level 2, Primitive, although USFS records indicate the long-term management objective for this road is closure to public access (Level 1).

- FR 6200-344 begins at POC 2975 just south of Fence Creek, approximately 9 miles from SR 31. It extends for 0.3 mile across NFS land and provides access to BPA transmission towers. The road is native-surfaced and has a current USFS management objective of Level 2, Primitive, although USFS records indicate the long-term management objective for this road is closure to public access (Level 1).

In summary, accessibility by road within the northwest quadrant of the study area is good in the area immediately adjacent to POC 2975. SCL land ownership maps indicate that between SR 31 and the Boundary Dam junction, POC 2975 crosses approximately 10 miles of private land and 2 miles of public (predominantly NFS) lands. Consequently, road access for dispersed recreation in this area depends primarily on use of secondary roads intersecting POC 2975. Roads in this area that are open to the public are generally primitive roads with native surfaces that are suitable for use by high-clearance vehicles. Accessibility for the general public is therefore limited. FR 6200-305 is the only public road in this area that extends to the shoreline of Boundary Reservoir.

Northeast Quadrant

SR 31 and POC Road 3990/FR 3165, the Boundary Dam/Crescent Lake Road, are the primary means of road access to the study area north of Metaline Falls and east of Boundary Reservoir. Both main roads are intersected by a number of public and private secondary roads that extend into various parts of the study area.

SR 31 extends for 26 miles from SR 20 at Tiger to the international border. This 2-lane paved highway has an asphalt surface, is classified as a rural arterial, and is managed to state highway standards by WSDOT. USFS has also designated this route as a Forest Highway, WA FH 22.

FR 3165 extends to the west for 2 miles from SR 31 to the Vista House near Boundary Dam. The road is maintained by Pend Oreille County. The roadway has two lanes and a 20-foot wide bituminous surface, and is signed and center striped. There is a gate at Milepost 1.7 to control public access to the Vista House and Boundary Dam.

There are a number of secondary roads that intersect SR 31 or FR 3165 and extend into various parts of the study area. These roads serve a variety of purposes, providing access to privately-owned lands, former and/or current mining operations, and public lands administered by the USFS. Lands within the study area located from Metaline Falls north to Threemile Creek (approximately 4 miles north of Metaline Falls) are predominantly in private ownership, and most of the roads serving these lands are private roads that are not open for dispersed recreation. Secondary roads and access conditions north of Threemile Creek are summarized as follows:

- FR 3100-172 – NFS road system located to the east of the reservoir and west of SR 31. The entrance to this road system is on the west side of SR 31 approximately 0.5 mile south of Slate Creek. There is a gate at 0.1 mile from SR 31 that appears to always be open. FR 3100-172 is parallel to Boundary Reservoir and within about 0.25 mile for much of the 2.5-mile distance of the road, although the reservoir is considerably below the elevation of the road. Road 172 is blocked to vehicle travel by a USFS gate and road closure sign located a short distance south of the junction with Road 3100-160. Spur roads from FR 3100-172 are identified as FR 3100-160, -175 and -178. Road 172 and its spur roads are generally local, native-surfaced roads with USFS management objectives of Level 2, Primitive. A short segment of FR 3100-160 immediately west of SR 31 has an aggregate surface, but this road is effectively closed at the junction with FR 3100-175 because of erosion, rock fall and steep grades. (This location provides a good vista point overlooking the reservoir.) FR 175 is posted "Closed ½ Mile Ahead" at both ends, where it connects with FR160 and FR172.

- FR 3100-190/310 – NFS road system located to the east of the reservoir and west of SR 31, and extends southward from near Lime Creek almost to Slate Creek. Road 190 forms a loop of approximately 4 miles in length in the southern portion of this area. Road 310 extends to the west from SR 31 near Lime Creek, intersecting Road 190 after approximately 2.3 miles. Several spur roads branch off from these two roads, including FR 3100-316 and -315 from Road 310 and FR 3100-191, -193, -195 and -197 from Road 190. None of the roads in the FR 3100-190/310 system provide direct access to Boundary Reservoir. The FR 3100-316 spur approaches to within approximately 100 yards of the reservoir, and a nearby unnumbered spur from Road 310 is located parallel to and above the shoreline at a similar distance. All of these road segments have native surfaces and have Level 2, Primitive, USFS management objectives. The initial segments of FR 190 and 310 west from SR 31 have road surfaces that are in reasonably good condition and usable by passenger vehicles. As these roads get into steeper terrain with increasing distance from SR 31, however, the surface condition worsens, brush has encroached on the roadway in places and there are several drainage dips that are difficult to cross. The FR 3100-197 spur is

currently blocked by a berm. USFS records indicate that closure to public access (Level 1) is also the long-term management objective for FR 3100-316.

- Abandoned road - extends to the south from FR 3165 and travels adjacent to the Crescent Lake shoreline for approximately 0.5 mile. This road served the former Crescent Lake campground and is identified on some maps as FR 3165-305. Shortly beyond this location, FR 3165-310 is a short spur loop that provides access to three picnic sites at the USFS Crescent Lake Recreation Area.

- FR 3165-325 – NFS spur road system extending to the south from FR 3165/POC 3990 at a point approximately half-way between SR 31 and the SCL Vista House. Road 325 has a total length of approximately 4 miles, ending at a point southwest of Lake Lucerne. Additional spur roads from Road 325 are identified as FR 3165-315 and -328. These are native-surfaced roads with Level 2, Primitive, USFS management objectives. The roads in the FR 3165-325 system do not provide access to Boundary Reservoir and are approximately 0.5 mile from the reservoir at the closest point.

- FR 3165-330 – NFS road extending to the north from Road 3165 opposite the FR 3165-325 junction. This road and spur FR 3165-331 both dead-end on NFS land before reaching the international border. They do not provide access to Boundary Reservoir.

- FR 3165-340 – NFS road traveling west from FR 3165 and paralleling it to the south, becoming a track in the grass for much of its length before it terminates at the Project boundary. This road is shown on USFS inventories as closed with a locked gate, although no gate was noted during a 2007 field reconnaissance. This road approaches the shoreline of Boundary Reservoir. FR 3165-340 is not intended to be accessible to the general public; travel on this road would be difficult in any event because of the overgrown condition of the road surface and encroaching vegetation along the sides of the road.

- FR 3165-350 – NFS road that is a single-lane, native-surfaced road that serves the east side of Boundary Dam and is maintained by SCL. There is a locked security fence at the dam and a road gate at the junction with FR 3165, and the road is closed to public entry.

- FR 3165-200 – NFS road extending north from FR 3165 just east of the SCL Vista House. It parallels the Pend Oreille River on the east side from FR 3165 to the U.S.-Canadian Border, and is a very low-standard road with 15 percent grades. A narrow, low-standard spur road extends from FR 3165-200 to the south, back toward Boundary Dam. The road is gated and is not available for use by the general public.

In summary, accessibility by road within the northeast quadrant of the study area is good in the area immediately adjacent to SR 31 and POC 3990/FR 3165. SCL land ownership maps indicate

that between Metaline Falls and Crescent Lake, SR 31 crosses approximately 8 miles of private land and 5 to 6 miles of public land (predominantly USFS-managed land). POC 3990/FR 3165 crosses approximately 0.5 mile of private lands and 1.5 mile of USFS-managed land. While there are some current opportunities for dispersed recreation adjacent to the main roads, road access for dispersed recreation in this area depends primarily on use of secondary roads. Most of the secondary roads in this area are open to the public, although they are generally primitive roads with native surfaces that are more suitable for use by high-clearance vehicles. Accessibility for the general public is therefore limited, and can be difficult. None of the public roads in this area extend to the shoreline of Boundary Reservoir, although in limited locations the roads provide elevated vantage points with views toward the reservoir.

Southeast Quadrant

The southeastern portion of the study area extends eastward from the reservoir shoreline to the public roads that provide north-south access in this area. POC 3669 (also designated as FR 3310) extends south from Metaline Falls for a total distance of 4.5 miles. An initial segment 1.4 miles long is a two-lane collector road 24 feet wide with a bituminous surface. This segment has a sustained 10 percent grade leaving Metaline Falls, is posted with a 25-mph speed limit, and has a Level 3 (improved and graded) USFS management objective. Proceeding southward, the second segment of this road is 18 feet wide with an aggregate surface and a 10 percent sustained grade, and is signed as a "Primitive Road." A third segment 2.2 miles long extends parallel to the reservoir to a former crossing at Sand Creek. This segment is narrow (approximately 10 feet wide), has been minimally maintained, and crosses the railroad line twice. The bridge at Sand Creek was removed by the USFS in 1988, following damage caused by an upland debris flow.

South of Sand Creek this road continues as FR 3310 for 1.5 mile. USFS records indicate this road segment has a native surface and a Level 2 (Primitive) management objective. South of the Box Canyon Dam area the road again continues as POC 3669, with a gravel surface initially and a paved surface for approximately the last 2.5 miles to POC 9345 at the Ione Bridge.

Because there is no longer a bridge across Sand Creek, access by vehicle along the east side of the reservoir is not continuous. Users seeking dispersed recreation opportunities can travel southward from Metaline Falls or northward from Ione for a few miles, in areas where the roads access primarily private land. In most of the southeast quadrant, the roads that do exist are not located close to the reservoir shoreline; road access near the shoreline is limited to the area around Pocahontas and Wolf creeks, which are served by a primitive road. Consequently, road access for dispersed recreation is quite limited in this portion of the study area.

Southwest Quadrant

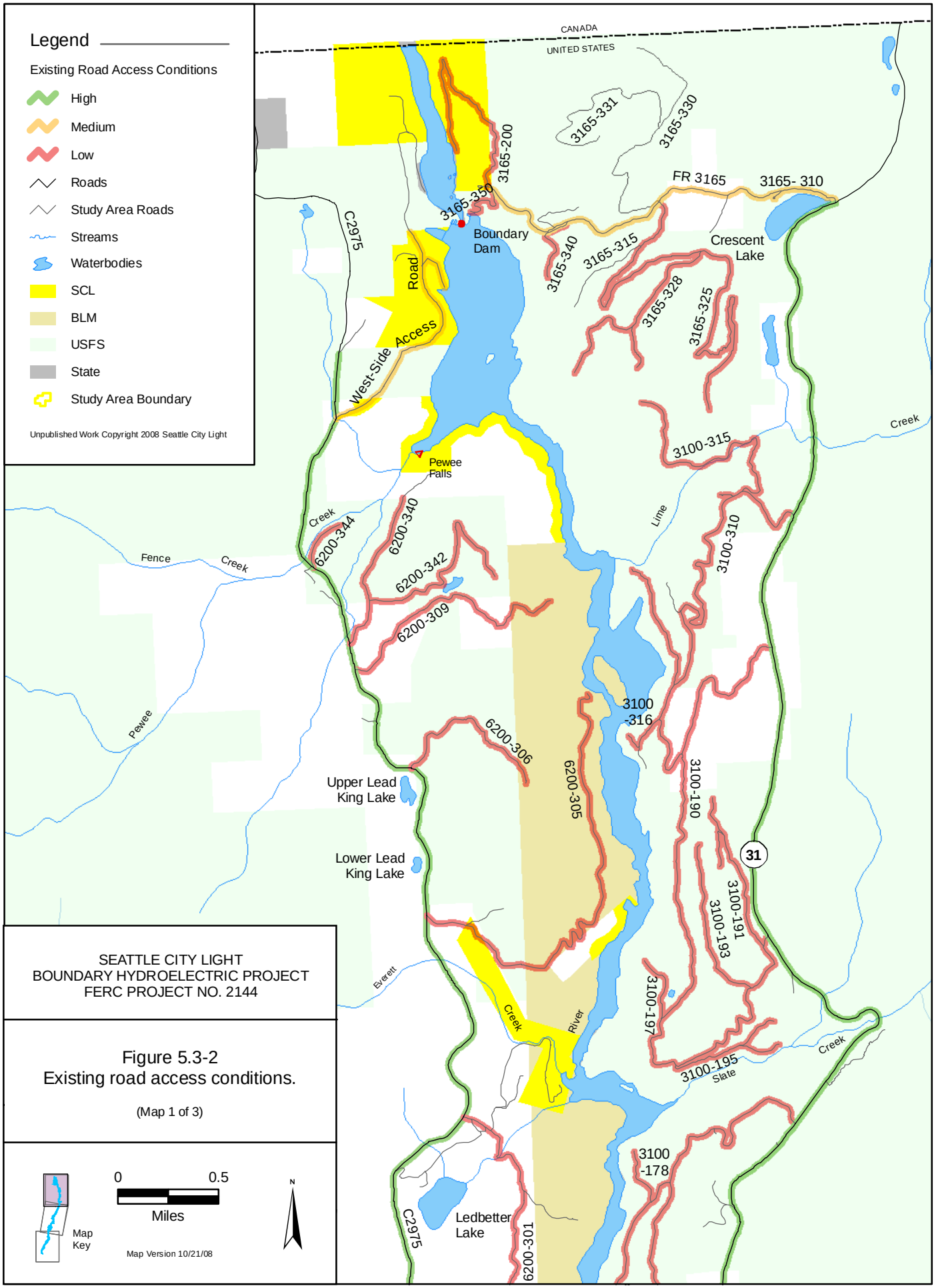
SR 31, which generally defines the edge of the study area, closely parallels the west side of the reservoir throughout most of the southwestern quadrant. Because there is little land between the highway and the reservoir, secondary roads in this area are limited; they include the street system in Metaline, a small network of local roads serving the Lunch Creek area and Selkirk High School, and a few private roads or driveways. Based on universal proximity to SR 31, road accessibility throughout the southwest quadrant is high. Because of steep slopes in some locations and little public land (other than the state-owned SR 31 right-of-way and the riverbed), however, opportunities for public access for dispersed recreation are limited in this area.

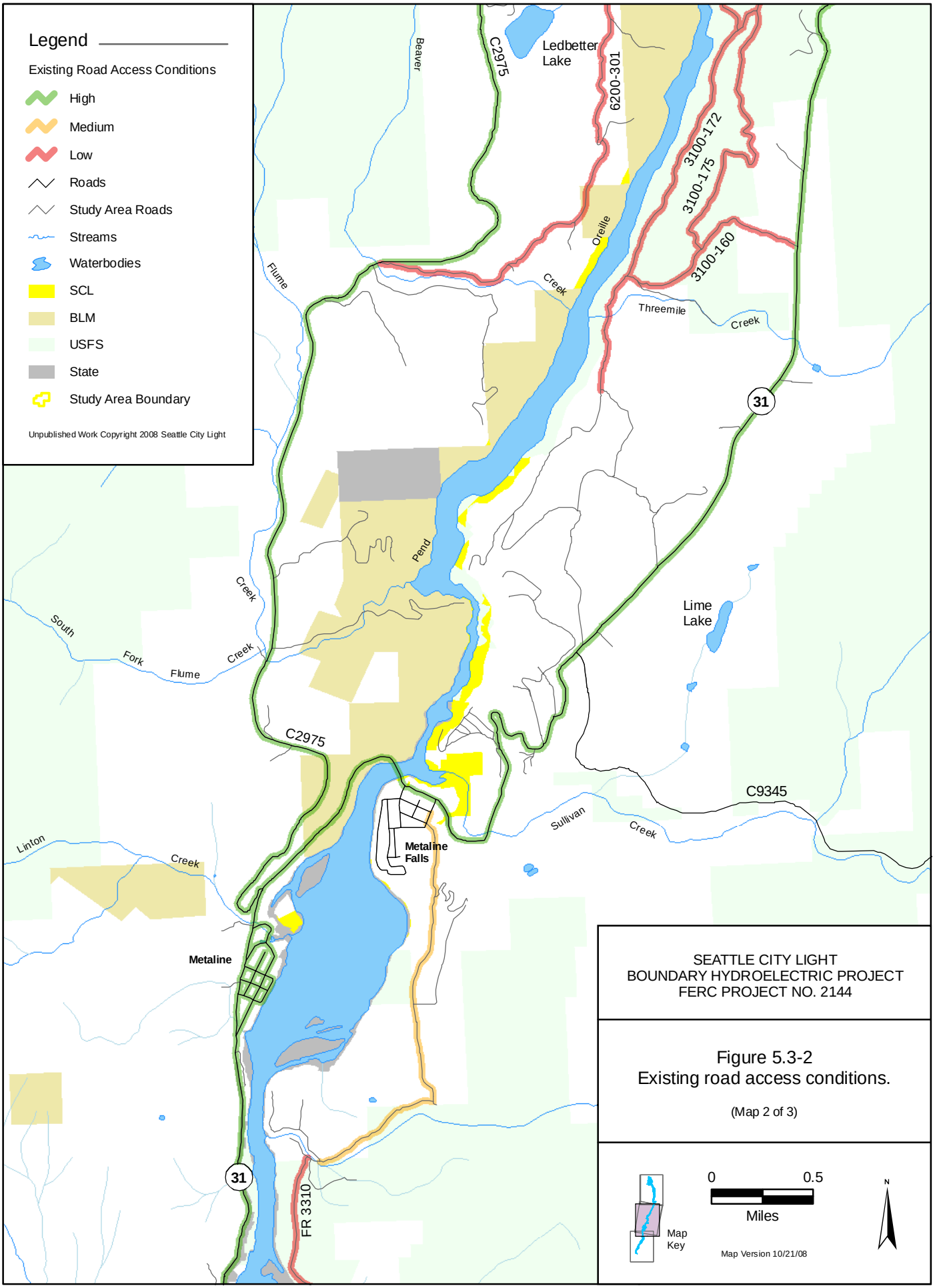
Road Access Condition Summary

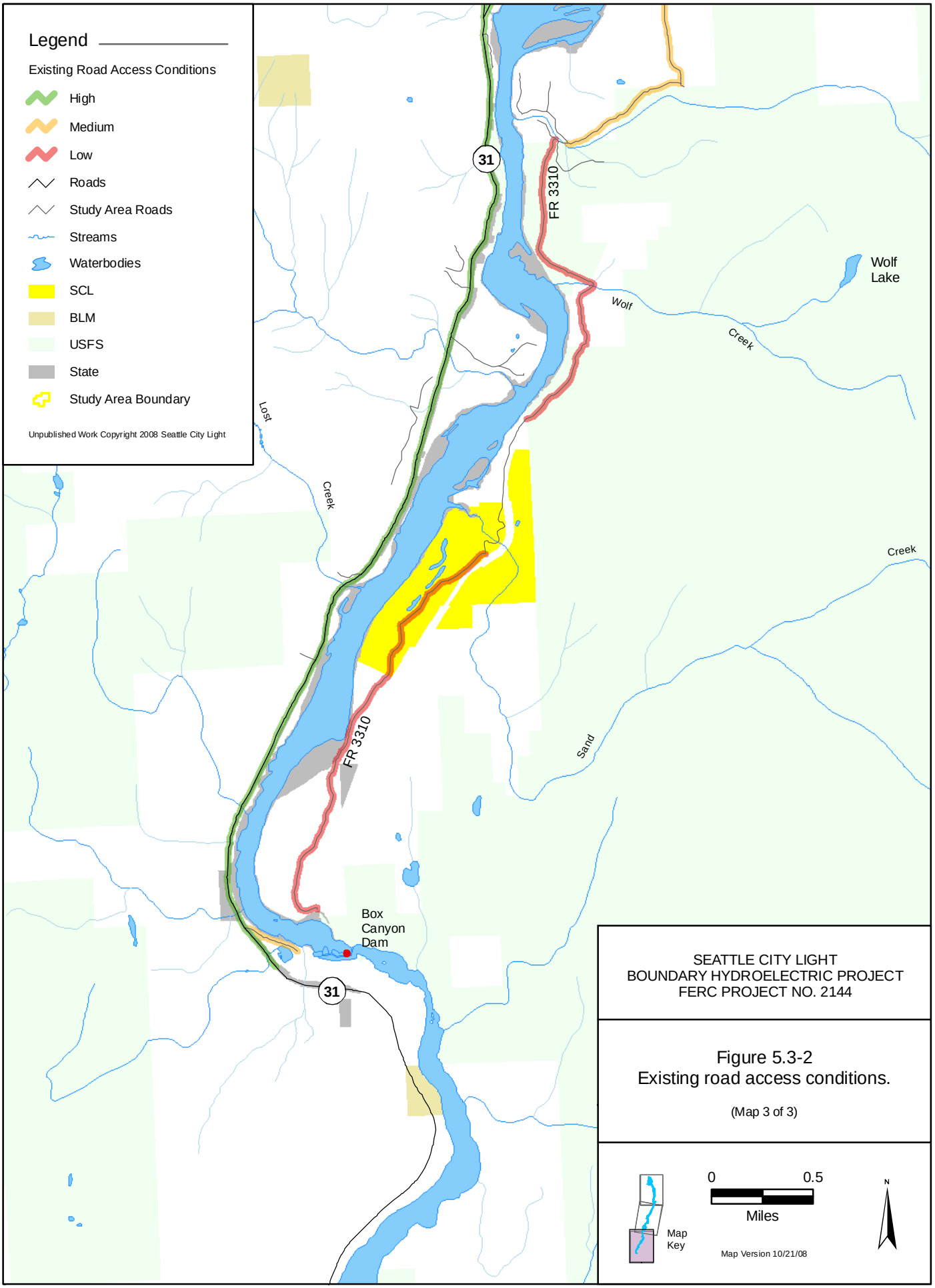
Figure 5.3-2 summarizes existing conditions for public access by road on a high/medium/low scale. These accessibility categories were assigned to the existing public roads within the study area as follows:

- High accessibility: existing paved roads
- Medium accessibility: existing secondary roads with maintenance levels equivalent to USFS Level 3 and 4
- Low accessibility: existing secondary roads and spur roads with maintenance levels equivalent to USFS Level 1 and 2

The RSP defines one of the objectives for the public access analysis as identifying areas where the public has reasonable and safe public road and trail access to the reservoir shoreline now. With respect to access by road, "reasonable and safe" access could be considered to be limited to the high and medium accessibility categories defined above. As indicated on the map, existing road access directly to the reservoir shoreline within the high and medium accessibility categories is limited to the developed areas near Box Canyon Dam and Boundary Dam and in Metaline and Metaline Falls. The terminus of FR 6200-305 at the BLM Boundary Recreation Area is the sole location at which a low-accessibility road extends to the reservoir shoreline. For a large majority of the public, travel on this road would likely be considered difficult.


Legend
Existing Road Access Conditions
High
Medium
Low
Roads
Study Area Roads
Streams
Waterbodies
SCL
BLM
USFS
State
Study Area Boundary
Unpublished Work Copyright 2008 Seattle City Light
CANADA
UNITED STATES
3165-331
3165-330
3165-200
FR 3165
3165- 310
3165-350
Boundary Dam
C2975
Road
West-Side Access
3165-340
3165-315
Crescent Lake
3165-328
3165-325
Creek
3100-315
Pewee Falls
Creek
6200-344
6200-340
Fence
Creek
6200-342
6200-309
Lime
3100-310
Pewee
3100 -316
6200-306
6200-305
Upper Lead King Lake
Lower Lead King Lake
3100-190
31
3100-191
3100-193
Everett
Creek
River
3100-197
3100-195
Slate
Creek
3100 -178
C2975
Ledbetter Lake
6200-301
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.3-2
Existing road access conditions.
(Map 1 of 3)
0
0.5
Miles
Map Key
Map Version 10/21/08
N


Legend
Existing Road Access Conditions
High
Medium
Low
Roads
Study Area Roads
Streams
Waterbodies
SCL
BLM
USFS
State
Study Area Boundary
Unpublished Work Copyright 2008 Seattle City Light
Beaver
C2975
Ledbetter Lake
6200-301
3100-172
3100-175
3100-160
Oreille
Creek
Threemile
Creek
Flume
31
Pend
Lime Lake
Creek
South
Fork
Flume
Creek
C2975
C9345
Sullivan
Creek
Metaline Falls
Linton
Creek
Metaline
31
FR 3310
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.3-2
Existing road access conditions.
(Map 2 of 3)
Map Key
0
0.5
Miles
Map Version 10/21/08
N


Legend
Existing Road Access Conditions
High
Medium
Low
Roads
Study Area Roads
Streams
Waterbodies
SCL
BLM
USFS
State
Study Area Boundary
Unpublished Work Copyright 2008 Seattle City Light
31
FR 3310
Wolf Lake
Wolf
Creek
Lost
Creek
Creek
Sand
FR 3310
Box Canyon Dam
31
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.3-2
Existing road access conditions.
(Map 3 of 3)
Map Key
0
0.5
Miles
Map Version 10/21/08
N

5.3.2.1.2. Trail Access

Managed, developed recreational trail opportunities within the study area are quite limited. The short (approximately 0.5 mile) trail at Sweet Creek Falls is one such existing opportunity. This trail can be accessed at the rest area facilities on SR 31. From the parking area, there is a trail (paved at the beginning, then with a native surface) leading towards Sweet Creek Falls. This trail provides access for day-use activities, and does not connect with other routes that represent an entry point for extended dispersed recreation activities. SCL also maintains a short, gravel trail of approximately 500 feet that leads from the SCL Vista House to an overlook deck providing excellent views of Boundary Dam. This trail likewise does not connect with other routes and does not represent a logical entry point for extended dispersed recreation activities.

A portion of the PNT is located within the study area. As discussed in Section 5.2.1.1.6, the PNT is not a constructed trail per se, but rather an identified route that follows existing trails and roads from the Continental Divide in Montana to the Pacific Ocean in Washington. Within the study area, the PNT route crosses Boundary Dam via the road atop the dam. Under current security procedures, trail users must receive permission to cross the dam from SCL. Once permission is received, trail users are escorted across the dam by SCL staff.

Other constructed or maintained trails in the study area appear to have existed in the past, but are no longer identifiable recreational trails. There is limited information concerning two former trails, one located west of Boundary Reservoir and one located east of the reservoir, which provided access to vantage points for Pewee Falls. Figure 5.3-3 shows the approximate locations of these former trails. Current information about these routes is based on consultation with USFS and other agency staff, conversations with current and former SCL employees based at Boundary Dam, and attempts to locate and follow these routes in the field during the relicensing studies.

Anecdotal reports indicate that at one time it was possible to approach Pewee Falls by following a trail identified on Figure 5.3-3 as the West Pewee Falls Trail. As discussed previously in Section 5.3.2.1.1, FR 6200-340 is a low-standard road accessed from CR 2975 at a point south of the intersection of CR 2975 and the West-Side Access Road to Boundary Dam. The route of FR 6200-340 proceeds generally to the northeast from CR 2975 and ends at a point approximately 1,000 feet (in straight-line distance) to the southeast of Pewee Falls. The construction and maintenance history for FR 6200-340 are unclear, and the road no longer appears to be maintained by any party. As shown on Figure 5.3-3, unconfirmed reports indicate that a view of Pewee Falls was at one time possible from the end of the road, and that a short trail departing from the road approximately 500 feet to the west of the road end extended to a point overlooking the Falls. FR 6200-340 currently is impassable to vehicles from its intersection with FR 6200-342, not far from CR 2975, as a result of fallen trees, encroaching vegetation, and steep slopes. At one time, the USFS (1965) had recommended finding a sponsor to provide parking facilities and improve a trail that accessed a viewpoint of Pewee Falls and Z Canyon, but this plan was never implemented.

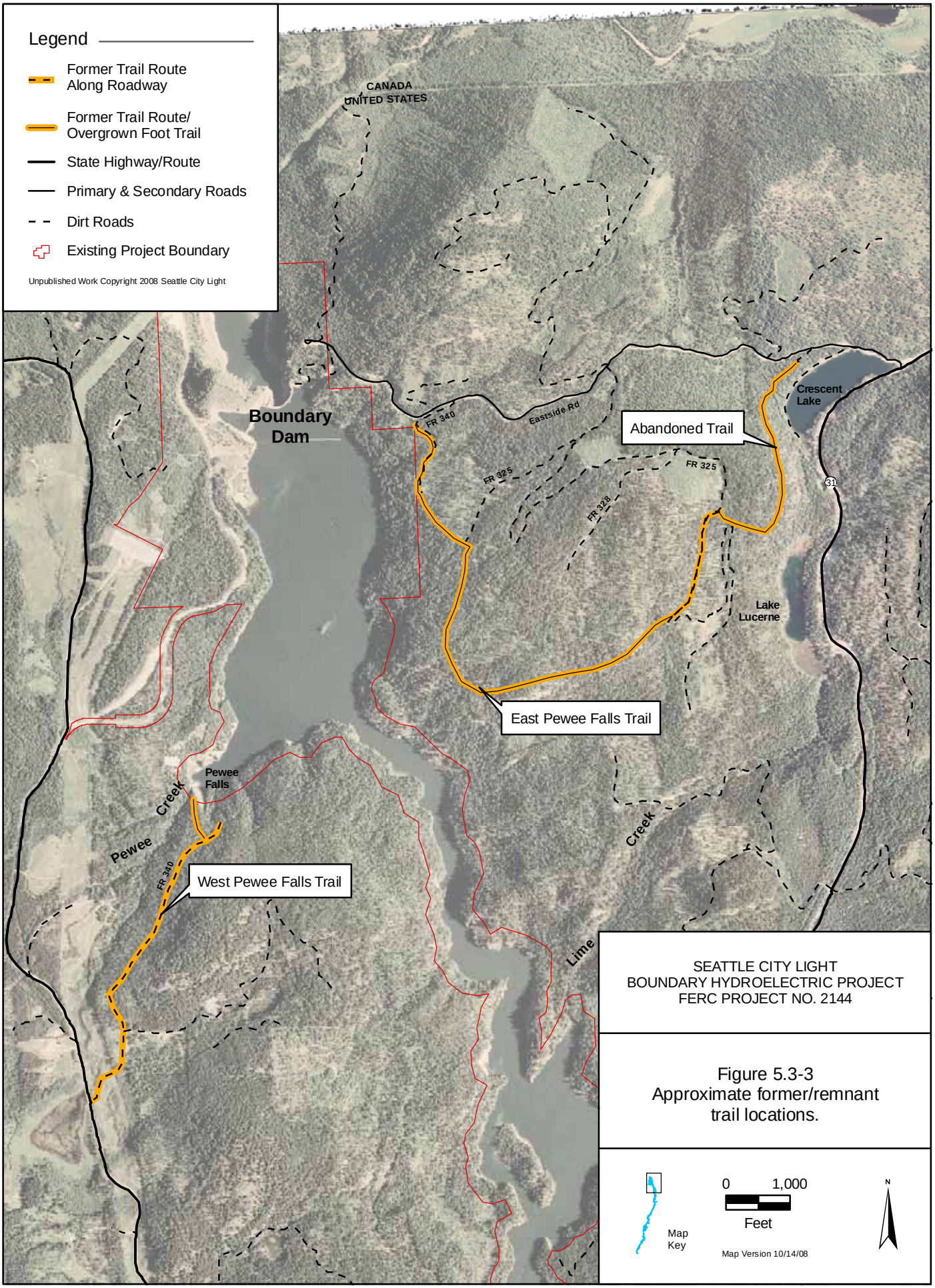
The route shown as the East Pewee Falls Trail is a former trail that was constructed on the east side of the reservoir and south of FR 3165, and later abandoned. An SCL employee reportedly

worked on the crew that constructed this trail, or most of it, in 1971. The trail route led from an old homestead near what became the USFS Crescent Lake Recreation Area (the original camping area, not the current day-use facility) to the southwest before looping back to the north to a terminus near the Vista House. The route was located entirely on NFS land and provided good views over Crescent Lake and Lake Lucerne, and accessed a point with good views across Boundary Reservoir to Pewee Falls. Shortly before construction was completed, the trail was apparently abandoned because it passed too close to an active bald eagle nest, and it was never formally opened. Portions of the trail from near the Vista House to the Pewee Falls viewpoint were physically obliterated, while other segments were left in place. USFS staff flagged the trail route and recorded its location via GPS readings in 2005. Their investigation indicates the viewpoint can still be accessed by cross-country travel from nearby NFS roads, although there is no indication that recreational visitors are currently using the viewpoint.

There are a number of user-created paths down to the reservoir shoreline within the study area that are or may be functioning as informal trails. These paths have limited use. Recent SCL aerial photography and shoreline inventory observations indicate the existence of several such paths, many of which appear to be associated with private residences near the reservoir. There are also some user-created paths associated with dispersed recreation sites along the reservoir shoreline. For example, there is a path leading from a dispersed recreation site near Lime Creek to an existing spur road several hundred yards from the site, as discussed in Section 5.3.1. These paths are generally social trails created by repeated use by visitors for activities such as collecting wood or accessing the shoreline for fishing. Travel along these paths is typically limited to short distances by cliffs, steep slopes, dense vegetation, the reservoir, or other terrain features. Locations of user-made trails at the dispersed recreation sites are noted on the sketch maps prepared in the field during the site inventory.

Some existing roads and walkways in the study area may also be functioning as informal trails. Anecdotal reports indicate that people sometimes use a rough road leading from the substation adjacent to POC 2975 to Washington Rock (the cliff face opposite Metaline Falls on the west side of the reservoir) as a hiking/walking route. Similar walking use occurs along high-bank shoreline area in Metaline Falls south of the SR 31 bridge, and along local streets in Metaline that are next to the shoreline. There is also an informal trail within Metaline Waterfront Park that leads from the northern area of the park to the levees around the adjacent ponds.

Based on the number, distribution, and extent of the existing trail opportunities, public trail access within the study area is limited. This condition is likely a reflection of the physical site constraints in the study area, such as extensive areas of steep slopes, rock faces, and dense vegetation that make overland travel difficult in many locations.


Legend
Former Trail Route Along Roadway
Former Trail Route/ Overgrown Foot Trail
State Highway/Route
Primary & Secondary Roads
Dirt Roads
Existing Project Boundary
Unpublished Work Copyright 2008 Seattle City Light
CANADA
UNITED STATES
Boundary Dam
FR 340
Eastside Rd
Abandoned Trail
Crescent Lake
FR 325
FR 325
FR 328
31
Lake Lucerne
East Pewee Falls Trail
Pewee Falls
Pewee Creek
FR 340
West Pewee Falls Trail
Lime Creek
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.3-3
Approximate former/remnant trail locations.
Map Key
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Map Version 10/14/08
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5.3.2.1.3. Water Access

Accessibility to dispersed recreation opportunities by water travel is primarily a function of three conditions – the availability of existing public water access points and facilities, navigational considerations on the water, and the ability to access the shoreline from the water.

Three public water access points currently serve Project visitors and provide vehicle access to the shoreline for dispersed, water-based recreation. They include the boat launches at the SCL Forebay Recreation Area near the northern end of the reservoir, Metaline Waterfront Park near the middle of the Project, and Campbell Park at Box Canyon Dam at the southern end of the reservoir. The SCL Forebay Recreation Area has a paved boat ramp and boarding float, and is the most commonly used boat ramp at the Project. The Metaline Waterfront Park also includes a paved boat ramp, with a boarding float that is available occasionally. This ramp is the most accessible of the sites for the local population adjacent to Boundary Reservoir, because it is the closest ramp for residents in and near Metaline and Metaline Falls. The boat launch at Campbell Park has a relatively long and steep concrete and gravel ramp that can be difficult to negotiate. Boaters in this area must also be aware of strong currents below the Box Canyon Dam tailrace. (As noted in Section 5.1.6, Pend Oreille County PUD had developed plans for improving this boat launch. The ramp was closed for reconstruction for approximately 2 weeks in September 2008. Work completed at that time included widening and extending the ramp, new or additional asphalt paving, and construction of a small jetty to reduce the current at the toe of the ramp [Robinson 2008]. Additional work planned for the future includes installation of a floating dock.)

There are several locations on Boundary Reservoir where private residents have constructed informal boat ramps for personal use, or where roads have been extended to the reservoir shoreline or have been abandoned. While these informal sites provide some degree of additional access for water travel, they are not available to the public and are not considered to be public reservoir access opportunities.

The Metaline Falls area of the reservoir, just north of the SR 31 bridge at the town of Metaline Falls, is an important navigational consideration for boaters on Boundary Reservoir. Over a portion of the normal operating range for the reservoir, the Metaline Falls reach takes on the appearance and physical characteristics of a river rapid. The fast current, eddies, turbulence, and the gradient between the upstream and downstream ends of the Falls makes watercraft travel through this reach potentially difficult, particularly in smaller motorized boats and non-motorized watercraft. Based on some respondent comments from both the Project-area visitor questionnaire and the area resident questionnaire and additional anecdotal reports from local residents during the 2007 sampling season, it appears that at least some users avoid travel through the Falls; they launch a boat at the SCL Forebay Recreation Area/Boat Ramp and stay in the northern portion of the reservoir, or they launch a boat at Metaline Waterfront Park and stay in the southern portion of the reservoir.

By contrast, one of the attendees at a local focus group meeting in May 2008 reported that some (not all, or even most) non-motorized boaters enjoy paddling through the Falls when flow conditions are such that this activity is considered safe (see Section 5.1.6). Some users also have

local knowledge of a portage route along the eastern shoreline of the reservoir that allows boaters to bypass the Falls along a short trail.

Reservoir pool levels can affect navigability and user behavior in other ways. When the pool level in the reservoir is relatively high, for example, it is generally easier to launch a boat than when the reservoir is lower. Similarly, at lower reservoir levels boaters must be more aware of submerged or partially exposed features such as sandbars, rock outcrops, stumps, and snags.

Dispersed water-based recreation often involves use of shoreline areas; various studies have indicated that many boaters traveling along a water body enjoy the ability to beach their craft to fish from shore, picnic, swim and sunbathe, or camp. The ability to participate in those activities is affected by the condition of the shoreline, and whether the physical characteristics of the shoreline areas are conducive to these types of uses. In general, the gradient and substrate conditions along much of the shoreline in the southern part of Boundary Reservoir are such that there are numerous locations where boaters could beach their watercraft for temporary shore-based activities, particularly at lower reservoir levels where more beach or gravel bar area is exposed. While the physical conditions in many locations are conducive to use along the shoreline, because most of the land along the southern part of the reservoir is in private ownership access from the water to the shoreline is not advertised or encouraged. By contrast, the shoreline in much of the northern part of the reservoir is bordered by steep, rocky canyon walls that provide little or no opportunity for shore-based activities. There are a number of locations where it is possible to access the shoreline, as indicated by the Sector 5 dispersed recreation sites discussed in Section 5.3.1 of the report. Compared to the southern part of the reservoir, however, those opportunities are considerably more limited north of Metaline Falls where physical shoreline conditions are a constraint.

Various sources of information provide some limited insight concerning patterns of travel on the reservoir. For example, both survey responses (see Section 5.1.3) and visitor count data (Section 5.1.2) provide a general breakdown of use between motorized and non-motorized boaters. Motorized boaters are able to access a large area of the reservoir within a relatively short period of time; depending on constraints created by hydraulic conditions or other factors, many motorized boaters have the physical capability for a complete transit of the reservoir in a matter of 1 or 2 hours. Non-motorized boaters require much more time to cover a comparable distance, and are also more sensitive to the ability to make temporary stops along the way. As discussed in Section 5.1.2.1.3, survey crews observed a fair level of canoe and kayak access activity at the Forebay Recreation Area. Comparatively little canoe and kayak use was noted at Metaline Waterfront Park and the boat ramp at Box Canyon Dam, although in the latter case, non-motorized users accounted for the dominant portion of total boat access operations at the ramp. The visitor observation data indicate that non-motorized boating use is likely concentrated in the northern part of the reservoir, and is primarily based on access through the Forebay Recreation Area boat launch. On-site observations and anecdotal reports from various local sources also suggest that non-motorized boaters (and many motorized boaters) are attracted to features of interest such as waterfalls, creeks, cliffs and caves that are commonly found in the canyon reach of the reservoir.

5.3.2.2. Potential Future Access Opportunities

As discussed in Section 4.3.2 and the RSP, a portion of the public access analysis involved identifying potential future opportunities for providing public access to locations within the study area where access does not now exist. The intent for this assessment was to define general areas of opportunity as they relate to public access means in the study area, with particular emphasis on opportunities for access to and along the reservoir shoreline. Input information for this task was generally the same as for the review of existing access conditions, including review of maps and aerial photographs; review of applicable printed information, such as USFS road inventory data and planning documents addressing historic and current conditions in the area; discussions over several years with USFS and BLM staff, and others who know the study area well; and observations made during field activity in the study area. This objective was addressed primarily through a GIS-based analysis of key factors representing constraints on access opportunities, with supplemental information derived through other steps outlined in the RSP, as indicated in Section 4.3.2. The results of this effort are discussed below with respect to potential land (road and trail) access and water access.

5.3.2.2.1. Land Access

Increasing the current land-based (road and trail) public access opportunities would require improving or extending existing roads and/or trails, building new roads and/or trails, or relocating and improving former trails that were abandoned. Accomplishing any of these actions would require permission to use the land that the road or trail would cross (through ownership or an easement), identification of a road or trail route that was feasible for construction, and sufficient funding to undertake the road or trail project. The physical and land ownership conditions present in the study area, as discussed at several other locations in Section 5.3, would have a strong influence on the ability to use the land, feasibility, and cost for any proposal for increased road or trail access.

Tetra Tech undertook a GIS analysis to investigate the ability to expand public road access opportunities by geographic location within the study area. The variables applied in this analysis were the locations of existing roads, public vs. private land ownership, and slope classes. Mapped data for these variables were used to define areas of high, medium, and low opportunity for new access via road based on the following criteria:

- High potential future accessibility
    a. all areas within 1 mile of an existing public road classified as Level 3 or higher *and*
    b. in public ownership *and*
    c. with slopes less than 10 percent

- Medium potential future accessibility
    a. all areas within 1 mile of an existing public road classified as Level 3 or higher and
    b. in public ownership and
    c. with slopes greater than 10 percent and less than 30 percent

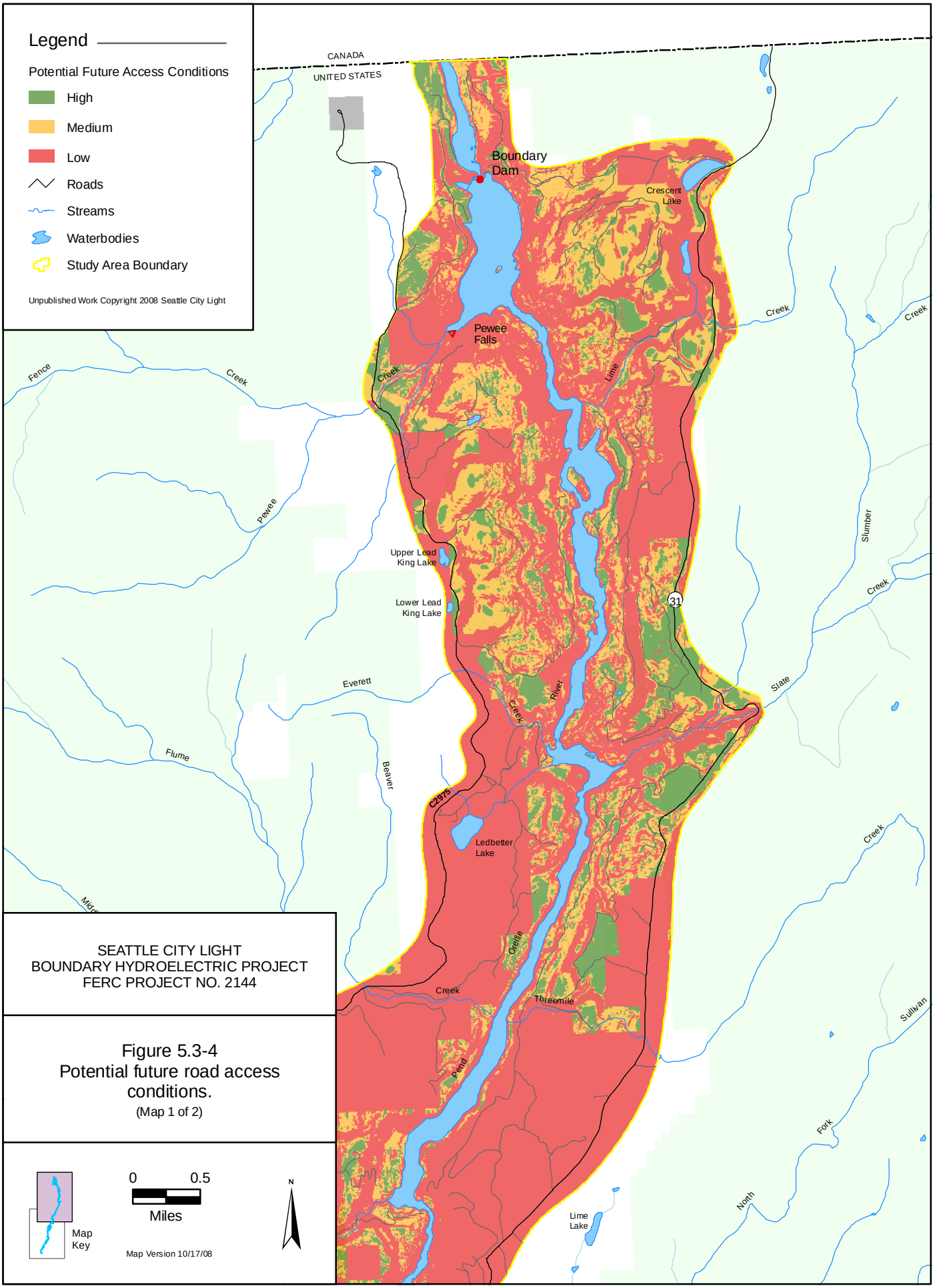
- Low potential future accessibility

a. all areas beyond 1 mile of an existing public road classified as Level 1 or higher and/or
b. in private ownership and/or
c. with slopes above 30 percent

Figure 5.3-4 displays the result of this process. A dominant conclusion from the patterns on the GIS maps is that, based on the specific criteria applied, a large majority of the study area is classified as having low opportunities for future development of public road access. It should be noted that the approach used in the GIS analysis may oversimplify or overstate the degree of constraint, specifically with respect to land ownership. In particular, some of the privately-owned lands in the North Reservoir area are larger, timber or mining parcels in corporate ownership. Prospects for obtaining access across these lands via easement or similar means may be higher compared to areas of small private parcels. This consideration can be investigated more closely in future evaluation of potential access opportunities (such as in the RNA).

Secondly, there are a number of relatively sizable areas that are displayed as high opportunity, although most of these areas are located adjacent to major roads and there are few that are adjacent to the reservoir. Exceptions in the North Reservoir area include some locations in the vicinity of an area known as Monument Bar (south of Lime Creek and north of Slate Creek, on the eastern side of the reservoir); an area on the western shoreline south of Everett Creek and west of the mouth of Slate Creek; and the Forebay Recreation Area south of Boundary Dam, where there is existing shoreline access. (Figure 5.3-4 also shows an area of high potential access opportunity in the northeastern part of Metaline Falls, where Sullivan Creek enters the reservoir. This may overstate the degree of opportunity based on application of the public land ownership criterion, as a portion of this area is public land at the location of the Metaline Falls wastewater treatment plant, where public access may not be desirable.)

Figure 5.3-4 also shows several areas of high potential access opportunity along the southern part of Boundary Reservoir. By area, most of these lands are within Metaline or the SCL Boundary Wildlife Preserve. In addition, there are several smaller areas adjacent to the reservoir in which slopes are less than 10 percent and the ownership is mapped as public. These are primarily locations of State of Washington ownership of river/reservoir bedlands or the SR 31 right-of-way. Upland areas adjacent to these locations are generally in private ownership.


Legend
Potential Future Access Conditions
High
Medium
Low
Roads
Streams
Waterbodies
Study Area Boundary
Unpublished Work Copyright 2008 Seattle City Light
CANADA
UNITED STATES
Boundary Dam
Crescent Lake
Pewee Falls
Upper Lead King Lake
Lower Lead King Lake
Ledbetter Lake
Lime Lake
Fence
Creek
Pewee
Lime
Slumber
Slate
Everett
Flume
Beaver
River
Creek
Threemile
Pend
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31
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SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.3-4
Potential future road access conditions.
(Map 1 of 2)
Map Key
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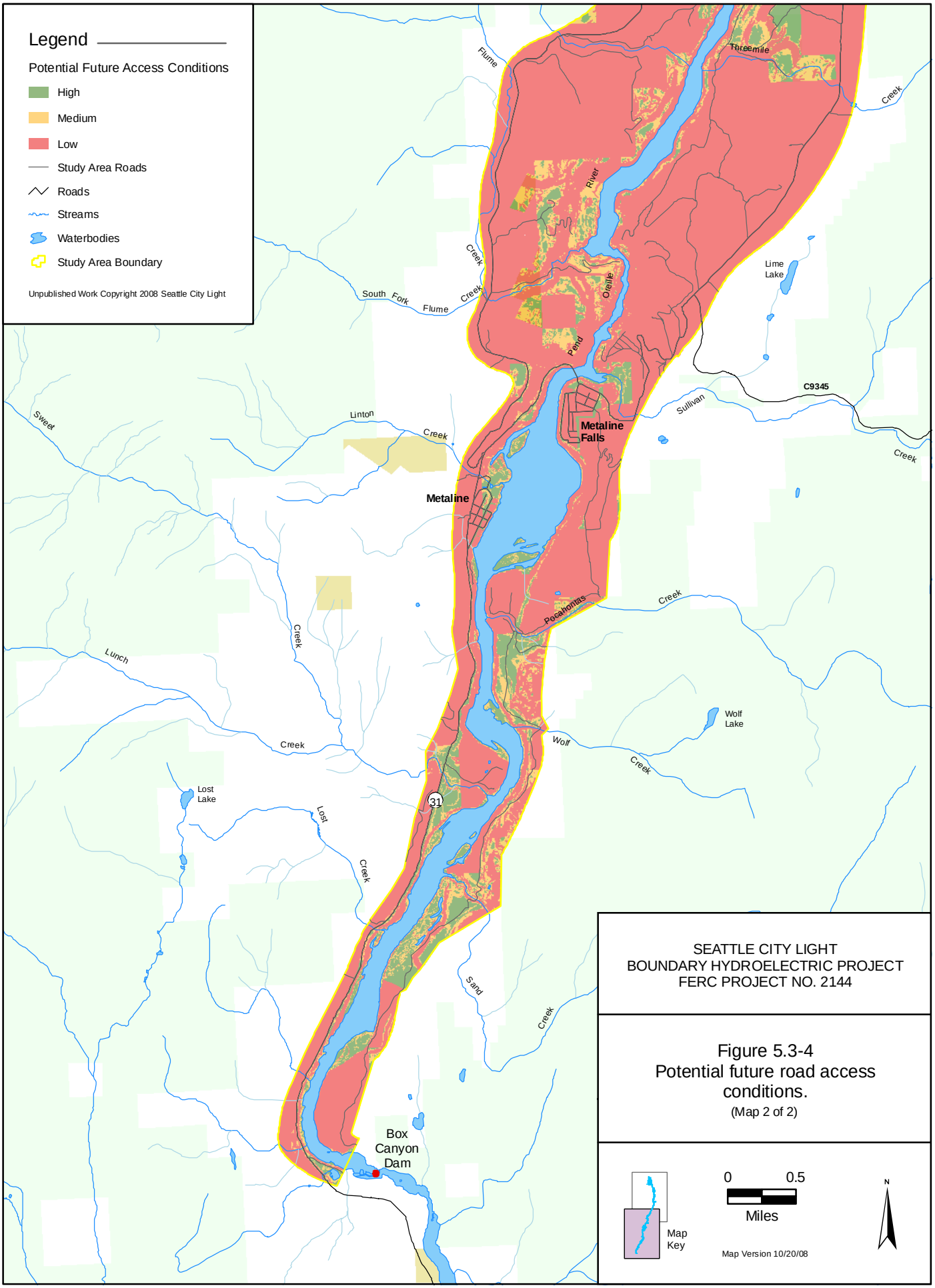


Figure 5.3-4
Potential future road access conditions.
(Map 2 of 2)

Future development of expanded trail access opportunities in the study area would be influenced by the same constraints identified for road access. In this instance, however, steep slopes would be a less stringent impediment because trail construction involves much less ground disturbance per linear unit, gradients can be higher and it is easier to locate a route so as to avoid steeper slopes. In addition, existing informal trials and former or abandoned trails can represent opportunities for establishing formal trail access with less cost and disturbance than would occur with development of a new trail. Similarly, in some cases it may be more feasible or desirable to provide expanded trail opportunities by extending an existing trail. Consequently, identification of potential future opportunities for trail access was done based primarily on review of site-specific conditions within the study area and existing documentation that addresses historic trail features or proposals for trail consideration. In addition, two potential future trail opportunities were identified by USFS staff based on preliminary internal agency review of road and trail access conditions in the local area (Bodie and Wilkins 2008).

Table 5.3-8 summarizes the review of potential future trail opportunities identified within the study area. The table entries are organized by general location within the study area. Some locations within the study area are not specifically addressed in the table, due to a lack of apparent opportunities. In particular, no potential trail opportunities were identified for the area along the west side of the upper reservoir south of Metaline.

Table 5.3-8. Potential future trail access opportunities.

Location	High/Medium/Low Classification	Opportunities	Constraints
Boundary Dam/SCL Tailrace Rec. Area	Very Low	Existing access and recreation facilities.	Security restrictions in effect.
Boundary Dam/SCL Vista House	Low	Existing recreation site with road access and parking. Existing Pacific Northwest Trail (PNT) route crosses dam.	Security restrictions in effect. Lack of logical destinations in immediate area.
Forebay Reach, West Side	Medium or Low	Existing recreation site with road access and parking. Suggested trail to view Pewee Falls.	Security restrictions. Steep slopes. Private ownership around falls.
Forebay Reach, West Side, Pewee Creek	Medium	Potential to re-activate former trail access to view the falls from the west.	Trail has grown over. Route crosses private and USFS land. New trailhead would be needed.
Forebay Reach, East Side	Medium	Potential to re-activate former trail access to view Pewee Falls from the east. Could be a loop trail or an out/back trail.	Trail has grown over. Route crosses private and USFS land. New trailhead(s) needed. Trail crosses a clear cut. Possible osprey nest issue.
Forebay Reach, East Side	Medium	Potential to (a) use bed of closed FR 3165-315 as trail to access viewpoint of Pewee Falls or (b) re-open road and develop parking area and short ADA-accessible trail to viewpoint.	Road has been placed in storage and is partially grown over. Clearing would be needed at viewpoint. Option b would involve substantial development work. Use of viewpoint has the potential to disturb osprey that are nesting in an adjacent tree.
Canyon Reach, West Side, BLM Rec. Area	Medium	Existing shoreline recreation site with limited facilities. Potential to convert road to trail, or develop new trails near shoreline from site. Could connect to another existing dispersed site.	Current road crosses private, USFS, SCL, and BLM land.
Canyon Reach, East Side, Monument Bar	Medium	Existing dispersed site with good small boat-in capability. Trail was cut into the site recently (not authorized). Potential to convert road to trail, or develop new trail. Site was to be expanded in the USFS (1965) plan as a campground, boat launch, and day use area.	Wetlands and cultural resources nearby, would need protection. Poor existing road access; would need access road improvement, new trailhead.
Canyon Reach, East Side, Slate Creek	Medium	Existing low-standard roads north and south of creek. Close to SR 31. Potential for road/trail conversion and/or trail to reservoir. Possible PNT segment, if could be linked to others.	Road status depends on USFS Access Travel Management process. Would need new trailhead near SR 31.

Table 5.3-8, continued…

Location	High/Medium/Low Classification	Opportunities	Constraints
Canyon Reach, East Side, Threemile Creek to Lime Creek area	Low	Potential to use segments of existing low-standard roads (FR 3100-172, -190, -310 and -311) and new trail segments to create 8-9 mile trail route parallel to reservoir through CNF lands. Possible tie-in with water access point on south end.	Status of existing road segments unclear, CNF road management update not yet completed. Difficult new trail section across Slate Creek drainage. Relatively long new trail section needed from Lime Creek north to potential Pewee Falls viewpoint.
Canyon Reach, Metaline Falls	Medium	Potential for a short hand-carried portage trail around Falls. Some informal portage use at site now. Existing access road nearby. Old powerhouse is an interpretive opportunity.	Some steeper slopes, T-line facilities, and ROW access road. SCL and some private land, easements likely needed. Need to provide put-in/take-out at each end, and parking (possible nearby).
Town of Metaline Falls, north shoreline	Medium/ Low	Potential shoreline access for Metaline Falls residents. Possible use of existing informal trail north of SR 31 bridge.	Steep slope. Private and SCL land, likely easement need.
Town of Metaline Falls, south shoreline	Medium/ Low	Potential shoreline access for Metaline Falls residents. Possible use of existing informal trail from southern edge of town.	Steep slope. Private land, likely easement need.
Town of Metaline Shoreline	Medium	Potential to enhance existing informal trails in and to the park. Would use existing roadways/ ROWs. Possible shoreline access trail in one location.	Private land and town roadway ROW. Limited park acreage.
Upper Reservoir, Wolf Creek	Medium	FR 3310 access to the shoreline on USFS land. Potential trail access to the shoreline.	Moderate slope. Small site at the shoreline. Possible need for road improvement.
Upper Reservoir, Sand Creek/Boundary Wildlife Preserve	Low	Potential for foot access to wildlife interpretation and/or viewing, via existing roads. SCL ownership, low slopes.	Potential wildlife disturbance, conflict with dedicated BWP purpose. Difficult road access, would need improvement.

Notes:
BLM – Bureau of Land Management
BWP – Boundary Wildlife Preserve
FR – Forest Road
ROW – right of way
SCL – Seattle City Light
SR – State Route
USFS – U.S. Forest Service

None of the potential future trail opportunities identified were considered to be in the high potential accessibility classification. In several cases, the potential trail route crosses private land and obtaining landowner consent may be difficult. The viability of some potential trail

options would appear to depend on whether trail development would be consistent with land management direction adopted by the respective land management agency (USFS, BLM, etc.). As indicated by the conclusions, however, there are a number of trail access options that were rated as medium opportunities and would be logical candidates for further evaluation in the follow-on RNA.

5.3.2.2.2. Water Access

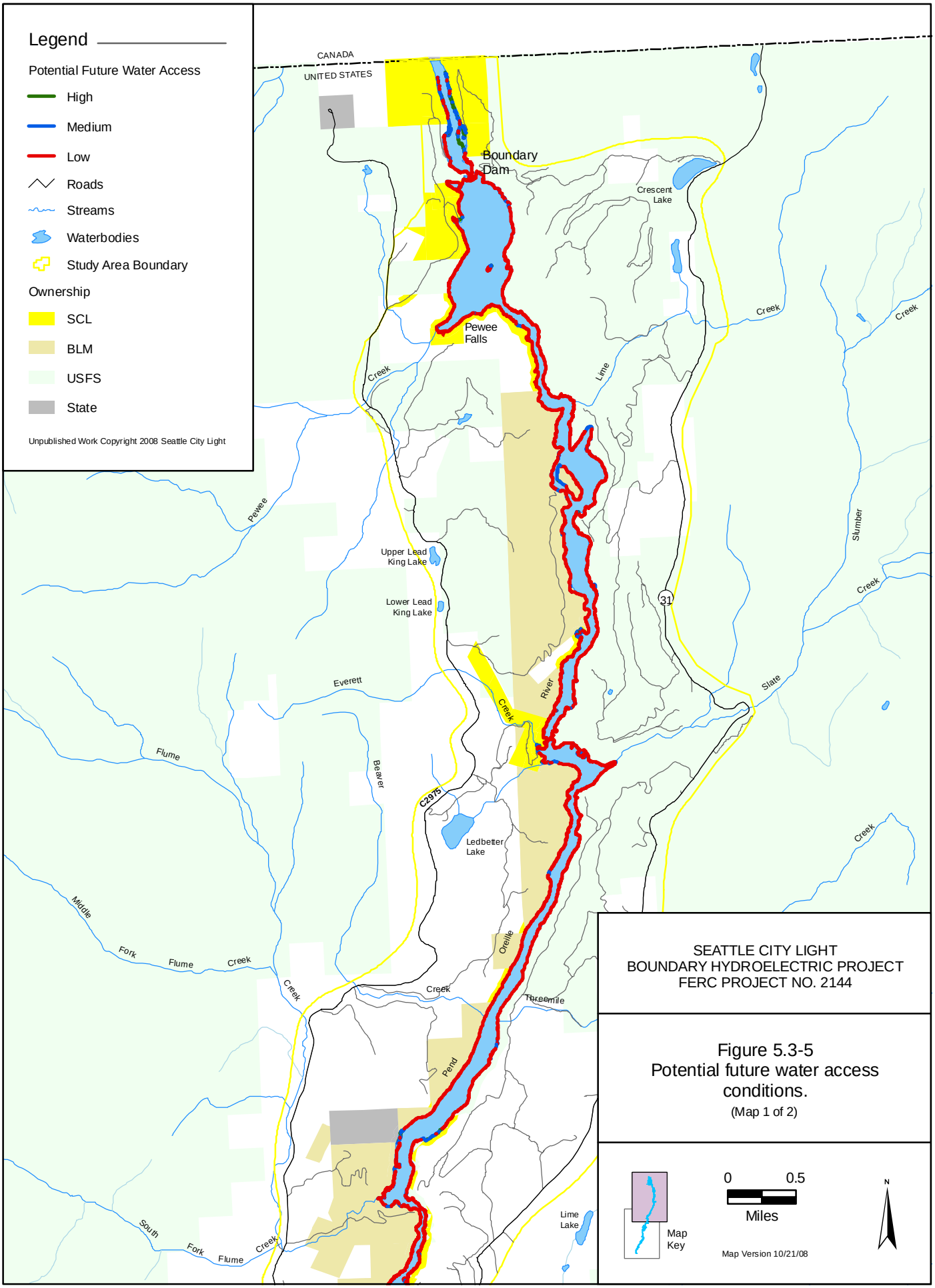
Potential future opportunities for public access to the reservoir shoreline from the water were evaluated through a process similar to that described above for potential future road access. Tetra Tech conducted a limited GIS analysis to investigate the ability for water travelers to access the reservoir shoreline within the study area. The variables applied in this analysis were public vs. private land ownership and slope classes. Mapped data for these variables were used to define areas of high, medium, and low opportunity for access to the shoreline via water based on the following criteria:

- High potential future accessibility – all areas in public ownership with slopes less than 10 percent
- Medium potential future accessibility – all areas in public ownership and with slopes of 10-30 percent
- Low potential future accessibility – all areas in private ownership and/or with slopes above 30 percent

Figure 5.3-5 shows the results of the mapping analysis. As discussed above, the shoreline along the northern part of the reservoir is dominated by steep slopes. Consequently, although most of the adjacent land is in public ownership, virtually all of the shoreline in this area is shown as having low opportunity for shoreline access. (That does not preclude the possibility that there might be small areas of lesser slope that do not show on this map, which is based on a 10-foot slope interval.)

For the southern part of the reservoir, Figure 5.3-5 shows a dominance of low-opportunity areas along the shoreline, although there are numerous shoreline segments rated as medium or high. Most of the shoreline area in these classifications represents locations of State of Washington ownership of river/reservoir bedlands or the SR 31 right-of-way. As noted previously, upland areas adjacent to these locations are generally in private ownership. Therefore, the GIS mapping likely overstates the extent of shoreline area on which public use might be accepted.

Consideration of the potential for future water trail opportunities is one of the objectives for the public access analysis identified in the RSP. Assessment of water trail potential can occur within two different contexts. In one context, the question to be addressed is whether a water body can function effectively for as route for travel by boat, often as part of a multi-day trip and/or for travel in a single direction. The second context applies to the concept of formal designation of a water body as a water trail.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Potential Future Water Access
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USFS
State
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CANADA
UNITED STATES
Boundary Dam
Crescent Lake
Pewee Falls
Creek
Lime
Pewee
Upper Lead King Lake
Lower Lead King Lake
Slumber
Creek
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Fork
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Creek
Creek
Creek
Threemile
Pend
Lime Lake
South
Fork
Flume
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SEATTLE CITY LIGHT
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Figure 5.3-5
Potential future water access conditions.
(Map 1 of 2)
Map Key
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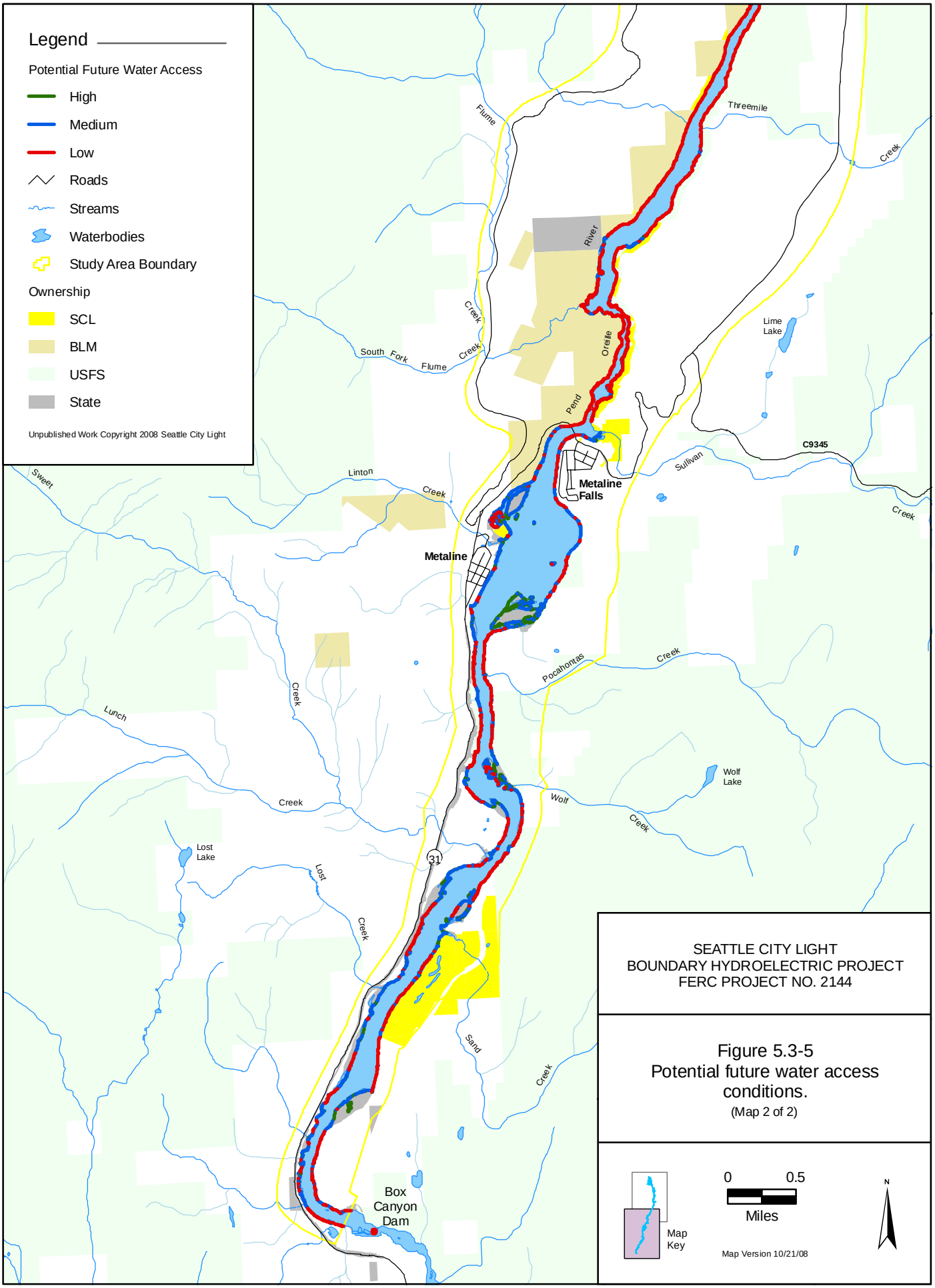
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Threemile
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Orelle
Pend
Lime Lake
C9345
Sullivan
Creek
Metaline Falls
Metaline
Linton
Creek
Sweet
Pocahontas
Creek
Creek
Lunch
Creek
Wolf Lake
Wolf
Creek
Lost Lake
Lost
Creek
31
Sand
Creek
Box Canyon Dam
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 5.3-5
Potential future water access conditions.
(Map 2 of 2)
Map Key
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In the first context, Boundary Reservoir can be considered both an existing and a potential future water trail opportunity. As discussed in Section 5.3.2.1.3, for some users Boundary Reservoir is now functioning as an informal water trail. Survey and observation data indicate that a relatively small number of users, primarily non-motorized boaters, access the reservoir at Box Canyon Dam or Metaline and travel downstream, with Metaline and the Forebay Recreation Area serving as the primary exit points. People traveling on the reservoir for trips of this type can and do use the existing developed access sites and dispersed recreation sites as stopping points along the way. Anecdotal information indicates that some one-way travelers set up their put-in and take-out points to avoid going through the Falls below the SR 31 bridge, while others portage around the Falls or enjoy the challenge of boating through the Falls. The Forebay Recreation Area is also used as a put-in by non-motorized boaters who paddle upstream through the Canyon Reach and then return back to the put-in to exit the reservoir.

Knowledge about the ability to portage around the Falls does not appear to be widespread, and descriptions provided by local sources suggest the existing unofficial portage is not particularly easy. Consequently, establishing a formal, authorized portage at the Falls appears to be the primary action that is needed to allow the reservoir to function more effectively as a formalized water trail route along its entire length and in either direction. Developing a portage would likely involve defining and/or constructing a trail along the eastern shoreline around the Falls (see Table 5.3-8). Water trail put-ins and take-outs with reservoir access and parking already exist at three locations: Box Canyon Dam/Campbell Park boat launch, Metaline Waterfront Park boat launch, and Forebay Recreation Area boat launch.

The Project reach of the Pend Oreille River also has the potential for inclusion in a formal water trail designation. As defined by the NPS (2008b), a water trail is "a stretch of river, a shoreline or an ocean that has been mapped out with the intent to create an educational, scenic and challenging experience for recreational canoers and kayakers. The trails are organized by local volunteers with the help of public officials and private landowners, all of whom promote its proper use and maintenance." For a potential water trail to become a reality, the primary requirement is for one or more entities with sufficient authority, jurisdiction, resources, and local support to adopt a resolution establishing a water trail designation. There currently are five water trails in Washington, located in Puget Sound; the Seattle area; Willapa Bay; the lower Columbia River; and the Clearwater, Snake, and Columbia rivers (Washington Water Trails Association 2008). The latter route (the Northwest Discovery Water Trail) was formally created through a memorandum of understanding signed by five federal agencies, four state agencies in three states, and three nongovernmental organizations.

Once a water trail is formally established, a primary need for implementation is development and distribution of maps, brochures and other information to publicize the existence of the water trail and inform users of the resources and opportunities available along the trail. Depending on the network of support facilities available at the time of designation, it may be necessary to allocate resources to developing boating access sites, rest, camp and picnic sites, interpretive displays/ signage, portages and other facilities to support trail users. A key factor in water trail planning is to ensure that stopping points are spaced at appropriate intervals along the route.

Future action by multiple parties would likely be needed for the potential Pend Oreille River water trail opportunity to be realized. To provide sufficient attraction for users, such a water trail would need to include more than the Boundary Reservoir reach of the river. Therefore, establishment of a water trail would likely involve coordination by federal, state, and local government agencies and nongovernmental organizations throughout Pend Oreille County at a minimum, and conceivably would involve entities in Idaho as well. With respect to shoreline facilities, the key resource need for the Boundary Reservoir reach of a trail would again be development of a safe portage around Metaline Falls. Travel along a longer Pend Oreille River water trail would also require a means for boaters to bypass Box Canyon Dam and its tailrace, putting in again at the Campbell Park boat launch below the dam at Boundary Reservoir.

5.3.3. Dispersed Recreation Use

The inventory of dispersed recreation sites (see Section 5.3.1 for a detailed discussion) identified a total of 25 individual dispersed sites within the study area.

Table 5.3-9 summarizes the sampling results with respect to observed occupancy of the sites. For all inventoried sites, there were 58 occasions on which an inventoried site was recorded as occupied. Most of these instances were observed camping activity, although in several cases day users were occupying a site that may more typically receive overnight use. While dispersed use in the Project area was relatively low overall, the three USFS sites at Crescent Lake were consistently the most active sites, and the primary BLM site (5NRBLM-1) had a level of use only slightly lower. (These sites are essentially hybrid sites that are managed by federal agencies and are provided with some developed facilities, and are different in character from the dispersed sites monitored through the sampling program.) Two informal sites along the road on the Lake Crescent shoreline were also occupied relatively frequently.

Aside from these locations where a comparatively higher level of dispersed use was observed, the dispersed sites documented in the inventory received little observed recreational use. Two informal campsites located within 0.5 mile of SR 31 (sites 4RD172-1 and 4RD190-1) were in use 3 times and 5 times, respectively, during the 2007 season. All of these observed uses occurred in September and October, and all appeared to be associated with hunting. The three dispersed sites in the South reservoir sector all received a low level of use, which consisted of fishing and other day-use activities. Boat-in camping use at the dispersed sites was rarely observed, and only occurred at sites 5NRBLM-2 and 5NRBLM-3 and, on one occasion, at 5NRBLM-4. Site 5NRLC-1, which shows the greatest level of user-made facilities among the sites, was occupied only 1 time during the season and that was a temporary picnic stop by two visitors.

Table 5.3-9. Occupancy summary for dispersed recreation sites.

	Weekdays			Weekends/Holidays			Season Total		
Site / Code	**No. of Observations**	**No. Times Occupied**	**Occupancy Rate (%)**	**No. of Observations**	**No. Times Occupied**	**Occupancy Rate (%)**	**No. of Observations**	**No Times Occupied**	**Occupancy Rate (%)**
4RD172-1	11	1	9.1	21	2	9.5	32	3	9.4
4RD172-2	11	0	0	21	0	0	32	0	0
4RD190-1	11	1	9.1	21	4	19	32	5	15.6
4RD310-1	11	0	0	21	0	0	32	0	0
4RD305-1	11	3	27.3	21	6	28.6	32	9	28.1
4RD305-2	11	2	18.2	21	2	9.5	32	4	12.5
Crescent 1	11	2	18.2	21	5	23.8	32	7	21.9
Crescent 2	11	1	9.1	21	3	14.3	32	4	12.5
Crescent 3	11	2	18.2	21	5	23.8	32	7	21.9
4RD325-1	11	0	0	21	0	0	32	0	0
4RD325-2	11	0	0	21	1	4.8	32	1	3.1
5NRBLM-1	29	3	10.3	16	4	25	45	7	15.6
5NRBLM-2	29	0	0	16	2	12.5	45	2	4.4
5NRBLM-3	29	1	3.4	16	2	12.5	45	2	4.4
5NRBLM-4[1]									
5NRDE-1	29	0	0	16	0	0	45	0	0
5NRDE-2	29	0	0	16	0	0	45	0	0
5NRDE-3	29	0	0	16	0	0	45	0	0
5NREI-1	29	0	0	16	0	0	45	0	0
5NREI-2	29	0	0	16	0	0	45	0	0
5NREI-3	29	0	0	16	0	0	45	0	0
5NRFI-1	29	0	0	16	0	0	45	0	0
5NRLC-1	29	0	0	16	1	6.3	45	1	2.2
5NRMB-1	29	0	0	16	0	0	45	0	0
3SR31SC-1	28	0	0	20	0	0	48	0	0
6SRWC-1	11	1	9.1	21	2	9.5	32	3	9.4
6SRSG-1	29	0	0	19	1	5.3	48	1	2.1
6SRSG-2	29	1	3.4	19	1	5.3	48	2	4.2
Total		18			41			58	

Note:
1 Site added to inventory in September 2007 after report from a visitor; no use observed in remainder of season.

5.4. Future Recreation Use Analysis

This section provides a narrative and supporting tables summarizing the results of the future recreation analysis. Specific contents include a review of current and expected future population conditions within the five-county study region defined for the regional recreation analysis, a review of recreation use trends and projections for the region, and an estimate of expected future recreation use specific to the Project resources addressed in the recreation surveys and the recreation carrying capacity analysis components of the RRS.

5.4.1. Current and Projected Future Population

This section summarizes population trends for the five-county regional study area from 1990 through 2007, and projected future population from 2010 through 2030.

5.4.1.1. Summary of Population Trends

This section addresses current population and recent historical population trends in the five-county regional study area. Population data for the states of Washington and Idaho are included for reference and comparison to the five counties in the study area.

The five counties of the regional study area had a combined total population of 615,257 in 2000. Population figures for the individual counties ranged from 11,732 in Pend Oreille County to 417,939 in Spokane County (Table 5.4-1). The total population in the regional study area increased by nearly 24 percent between 1990 and 2000, and all five counties experienced population growth during the period. Relative increases ranged from 16 percent in Spokane County to 56 percent in Kootenai County, with the largest absolute increase (56,606) occurring in Spokane County.

The State of Washington prepares annual population estimates for counties and incorporated communities in the state and has published estimated 2008 population data. The State of Idaho relies on the U.S. Census Bureau for inter-censal population estimates, from which the most recent data are for 2007. Therefore, the following discussion of current population includes 2008 data for Washington and 2007 data for Idaho.

The current (2007/2008) population estimate for the five-county regional study area is 690,992, an increase of approximately 12 percent from the population data reported in the 2000 census. Population estimates for 2007/2008 indicate that the population again increased in all five counties, but not at lower rates than during the 1990–2000 period. Increases ranged from 9 percent in Pend Oreille and Stevens counties to 24 percent in Kootenai County, with the largest absolute increase (41,061) again occurring in Spokane County.

Table 5.4-1. Study area population by state and county for 1990, 2000, and 2007/2008.

State/County	Population			Absolute Change		Percent Change	
	Census 1990	**Census 2000**	**Current Estimated Population[1]**	**1990-2000**	**2000-2007/2008[1]**	**1990-2000 (%)**	**2000-2007[1]/2008[1] (%)**
Washington	*4,866,663*	*5,894,143*	*6,587,600*	*1,027,480*	*693,457*	*21.11*	*11.77*
Pend Oreille	8,915	11,732	12,800	2,817	1,068	31.60	9.10
Spokane	361,333	417,939	459,000	56,606	41,061	15.67	9.82
Stevens	30,948	40,066	43,700	9,118	3,634	29.46	9.07
Idaho	*1,006,734*	*1,293,953*	*1,499,402*	*287,219*	*205,449*	*28.53*	*15.88*
Bonner	26,622	36,835	41,050	10,213	4,215	38.36	11.44
Kootenai	69,795	108,685	134,442	38,890	25,757	55.72	23.70
Total	**497,613**	**615,257**	**690,992**	**117,644**	**75,735**	**23.64**	**12.31**

Notes:
1 The current estimated population figures are based on the most recent available estimates, which are for 2008 for the state of Washington and its counties, and 2007 for the state of Idaho and its counties.
Sources: WOFM (2008a); WOFM (2007b); Idaho Department of Labor (2008)

Recent population growth rates in the five-county regional study area are comparable to those for the rest of Washington and Idaho. As stated above, the population in the five-county regional study area increased by 24 percent between 1990 and 2000. In comparison, the corresponding statewide increases over the same period were 21 percent in Washington and 29 percent in Idaho. In Washington, Pend Oreille and Stevens counties had growth rates above the statewide level (32 percent and 29 percent, respectively), while Spokane County population grew at a lower rate (16 percent, compared to 21 percent). From 2000 to 2007/2008, the Washington population increased by 12 percent, while the three study-area counties in Washington each experienced population growth of 9 to 10 percent.

In general, the state of Idaho and the two Idaho counties in the study area have grown at a faster rate than the state of Washington and the three Washington counties since 1990. Idaho's population increased by 29 percent from 1990 to 2000, a figure that is higher than increases during the same period of 21 percent for Washington and 24 percent for the regional study area. Both counties in Idaho increased in population at a much faster rate than the state in that decade, with growth rates of 38 percent in Bonner County and 56 percent in Kootenai County. The Idaho population increased by 16 percent from 2000 to 2007. During this period, Bonner County had a lower increase in population (11 percent), while Kootenai County again had a higher rate of increase (24 percent) than the state.

Net in-migration has accounted for a substantial portion of this population growth in the two states and the study area. WOFM data indicate that net in-migration accounted for nearly 63 percent of the total population increase for the state from 1990 to 2000 (WOFM 2008b), and 57 percent of the total increase from 2000 to 2008 (WOFM 2008a). For the 2000–2008 period, the net in-migration share of total population growth was approximately 62 percent for Spokane

County, 84 percent for Stevens County, and 100 percent for Pend Oreille County (WOFM 2008c). (WOFM cautions that these data sets show migration trends that may not be reliable for smaller counties and counties with unusual population characteristics.) Data on the components of population change for the state of Idaho and its counties during this period were not found.

The influence of substantial in-migration in the study area is generally consistent with and representative of the broader movement of people from urban areas to rural areas in recent decades. This type of population movement has been evident at the national level, and appears to have been present at the state level in both Washington and Idaho since at least 1990; the individual counties within the study area have exhibited the same general pattern. This broader migration trend reflects a reversal of the rural-to-urban pattern found in much of the U.S. prior to the 1970s.

5.4.1.2. Population Projections

This section addresses the expected future population in the five-county regional study area. Similar to the approach in Section 5.4.1.1, population projections are presented for the states of Washington and Idaho and the five counties in the study area.

Population projections for 2010 (Table 5.4-2) indicate that the population would increase over the 2007/2008 level in all but one of the five counties in the regional study area. Increases from 2007/2008 to 2010 would range from 2 percent in Spokane County to 7 percent in Pend Oreille County, compared to a 3 percent increase statewide in Washington and a 1 percent increase for Idaho. (The data in Table 5.4-2 suggest a population decrease of about 5 percent [an absolute decrease of 7,064 people] for Kootenai County. In view of county population increases of 56 percent from 1990 to 2000 and 24 percent from 2000 to 2007, and projected increases of over 15 percent per decade past 2010, the indicated condition for 2010 must be an anomaly based on outdated projections that are not consistent with current population levels.) The 2 percent increase for Spokane County is based on an absolute increase of 15,524 people, the largest absolute change occurring in the study area. (The percentage changes for the 2007/2008 to 2010 period are much smaller numbers than the figures for the subsequent two decades because they apply to only a 2- or 3-year period.)

Table 5.4-2. Study area population projections by state and county for 2010, 2020, and 2030.

County/State	Population				Absolute Change			Percent Change		
	Estimated 2007[1]/2008[2]	**Projected 2010[3]**	**Projected 2020**	**Projected 2030**	**2007[1]/2008[2]-2010**	**2010-2020**	**2020-2030**	**2007[1]/2008[2]-2010**	**2010-2020**	**2020-2030**
Washington	*6,587,600*	*6,792,318*	*7,698,939*	*8,509,161*	*204,718*	*906,621*	*810,222*	*3.11*	*13.35*	*10.52*
Pend Oreille	12,800	13,683	15,691	17,509	883	2,008	1,818	6.90	14.68	11.59
Spokane	459,000	466,724	529,451	589,623	7,724	62,727	60,172	1.68	13.44	11.36
Stevens	43,700	46,616	58,098	69,527	2,916	11,482	11,429	6.67	24.63	19.67
Idaho	*1,499,402*	*1,517,291*	*1,741,333*	*1,969,624*	*17,889*	*224,042*	*228,291*	*1.19*	*14.77*	*13.11*
Bonner	41,050	43,170	50,685	58,589	2,120	7,515	7,904	5.16	17.41	15.59
Kootenai	134,442	127,378	149,550	172,871	-7,064	22,172	23,321	-5.25	17.41	15.59
Total	**690,992**	**697,571**	**803,475**	**908,119**	**6,579**	**105,904**	**104,644**	**0.95**	**15.18**	**13.02**

Notes:
1 2007 data are most recent for the state of Idaho.
2 2008 data are most recent for the state of Washington.
3 The 2007/2008 data are nearly comparable to the 2010 data, given the short number of years between the two. This similarity is why the absolute change and percent change numbers are much smaller than the other numbers.
Sources: U.S. Census Bureau (2005); WOFM (2007c); Valley County Economic Development (2008)

The population projections for 2020 and 2030 indicate expected population increases in all five counties in the study area during the projection period. Increases from 2010 to 2020 would range from 13 percent in Spokane County to more than 25 percent in Stevens County, compared to a 13 percent increase statewide in Washington and a 15 percent increase statewide in Idaho. Increases from 2020 to 2030 would range from 11 percent in Spokane County to 20 percent in Stevens County, compared to an 11 percent increase statewide in Washington and a 13 percent increase statewide in Idaho. Again, the largest absolute increases (62,727 in the first decade and 60,172 in the second decade) would occur in Spokane County, given the much larger size of the base population.

Expected population growth rates for the five counties in the study area are similar to the statewide rates for Washington and Idaho. Between 2010 and 2020, the state of Washington's population is anticipated to increase by 13 percent, while the combined study area population is expected to increase by 15 percent. All three counties in Washington are anticipated to increase at or slightly higher than the state average, including figures of 13 percent for Spokane County, 15 percent for Pend Oreille County, and 25 percent for Stevens County. From 2020 to 2030, the Washington population is anticipated to increase by another 11 percent, while the regional study area population is expected to increase by 13 percent. The corresponding rates for the three counties in Washington during this period are 11 percent in Spokane County, 12 percent in Pend Oreille County, and 20 percent in Stevens County.

In general, the populations of Idaho and both Idaho counties in the study area are expected to grow slightly faster than the state of Washington and the three Washington counties in the study area. Between 2010 and 2020, Idaho's population is anticipated to increase by 15 percent, the same rate as the combined projection for the regional study area during this time period. The corresponding rates for the Idaho counties are 17 percent for both Bonner and Kootenai counties. From 2020 to 2030, the projections for the state of Idaho and the regional study area represent an increase of 13 percent during this same time period. Both counties in Idaho are anticipated to increase at a slightly higher rate than the state average (16 percent in both Bonner and Kootenai counties).

The forecasting models used to develop the Washington population projections reflect the expectation that net in-migration will continue to account for most of the future increase in population. From 2010 to 2030, the net migration estimates represent 56 percent of the total population increase for the 20-year period (WOFM 2007c). The county-level population projections are not disaggregated between natural increase and net migration. Given that the projected percentage increases in population for the study-area counties are generally somewhat higher than the corresponding rates for Washington and Idaho, net migration rates for the study-area counties are also likely to be somewhat above the statewide rates.

5.4.2. Recreation Use Trends and Projections

This section presents results from a review of recreation use trend and projection data that are applicable to the five-county study area and that may be of use in estimating expected future use in the Project area. Section 5.4.2.1 addresses available information about recent trends in recreational use, and recreation use projections that may be indicative of growth patterns for the study area in the future. Based on this review, Section 5.4.2.2 identifies expected recreation

growth rates (percentage increases) that are considered applicable to the activities and recreation resources found in the Project study area.

5.4.2.1. Review of Recreation Use Trends

Recreational opportunities in the five-county study area are quite diverse and are managed by a wide range of governmental and private-sector providers (see Section 5.2). Many of the providers do not maintain data on actual use levels at their respective opportunities. Among those who do maintain some type of record of recreational use, the use measures and recording systems are approximately as varied as the range of providers. Consequently, any review of overall recreational use patterns in the study area would be encumbered by data gaps and inconsistencies that would render an attempt to aggregate total recreational use for the region over a recent historical period of questionable value. Nevertheless, there are some data sources that can provide insight into recreational trends at the national, state, and to some degree the regional level that can be considered in projecting future use for the Project area. These data are presented below.

5.4.2.1.1. National Trends

National trends were primarily derived from the 1995 National Survey on Recreation and the Environment (NSRE) and are documented in *Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends* (Cordell et al. 1999). There has also been another NSRE published since the 1994–1995 survey Cordell et al. (1999) documented, which includes some data, summaries, and research reports from the 1999–2003 NSRE. Cordell et al. (1999) addressed some long-term trends in participation from 1960 through 1994–1995 based on data collected through the four NSREs conducted through the latter date. Regarding trends, the report examined national participation in land-, water-, and snow- and ice-based recreation activities. Long-term trends were also covered, tracking some activities back to the original survey completed in 1960.

<u>Long-term Land-based Recreation Activity Trends</u>

Long-term trends for four select land-based recreation activities have been tracked in the report (Cordell et al. 1999) since the original NSRE was conducted in 1960. Camping was one of two activities (the other was bicycling) that has had long-term growth in national numbers of participants, while hunting was one of two activities (the other was horseback riding) that has had a long-term decrease in number of participants over the years.

The Cordell et al. (1999) study noted that camping has changed noticeably in character over the last 35 years covered by the national surveys. In the 1960s, most camping was in developed campgrounds set up to accommodate families with tents. At that time, there were some, but relatively few, pop-up tent trailers and pick-up trucks with camper inserts. In addition to camping in developed campgrounds, it was found that many participants were choosing to camp in more primitive settings, where few, if any, facilities and amenities are provided. With advances in equipment, camping is more convenient and comfortable now than it was back in the 1960s.

Hunting has shown a steady decline in participation among the national population since the 1960s. The estimated number of hunters in 1994–1995 was less than the estimated number of hunters in the 1960s, with participation rates of 16 percent in 1960 and only 10 percent in the 1990s. Some factors that could have contributed to this include less accessibility to water areas and a decrease in undeveloped land available for hunting. Additional factors identified by Cordell et al. (1999) were rising social pressures against hunting and increasing urbanization, with relatively more people growing up in an urban environment where they were never introduced to hunting.

Long-Term Water-based Trends

Long-term trends for four select water-based activities have been tracked in the report since the original NSRE was conducted in 1960. Swimming was one of two activities (the other was canoeing/kayaking) that has had a long-term growth in numbers of participants, while fishing was one of two activities (the other was sailing) that has had a long-term decrease in number of participants over the years.

Almost half of the population participated in swimming in 1960, and the popularity has continued to grow. Over the past 35 years, there has been a near-doubling of participants in swimming across the nation, from 61 million in 1960 to 118 million in 1994–1995. In 1994–1995, 96 million people went pool swimming, while 85 million people went swimming in a lake, pond, stream, or ocean.

In contrast, participation in fishing has declined over the past 35 years. The number of fishing participants nationwide decreased between 1982 and 1994. The percentage of the population that fished was between 33 and 34 percent in 1960, 1965, and 1982–1983, but dropped to 32 percent in 1994–1995. The percentage decrease in fishing was largest among those 12 years and older (Cordell et al. 1999).

Recent Trends in Recreation Activities

Cordell et al. (1999) compared trends for 13 land-based recreation activities (the only activities available for direct comparison between surveys) from 1982–1983 and 1994–1995, of which 7 activities occur within the Project area. They also compared participation data 6 water-based activities. Seven of the land-based activities and 3 of the water-based activities reviewed in this analysis occur within the Project area.

The survey results show hunting and fishing decreasing (-12.3 and -3.8 percent change, respectively) between the 1982–1983 survey and the 1994–1995 survey. Bird watching, by casual as well as avid participants, had the highest percentage growth rate of any activity listed in the report (an increase of over 155 percent). Bird watching also had one of the highest rises in number of participants (32 million), second only to walking (40 million). The number of hiking participants 16 years or older nearly doubled in the 13 years between the surveys, reaching nearly 50 million who participated one or more times per year by 1995. Primitive-area camping grew nearly as much as developed camping in number of new participants 16 years or older. The report stated that this could be because improvements in camping equipment made camping outside of developed areas more convenient and comfortable.

While bird watching, hiking, and primitive camping grew at faster rates, some of the more slowly growing land-based activities expanded more in absolute numbers of participants because the base number of participants in 1982-1983 was much larger than other activities. For example, walking participation increased by 43 percent, but this use represented more than 40 million added participants. Sightseeing participation grew by nearly 40 percent, but this growth added 32 million participants. Picnicking grew by nearly 14 million participants during this same time period. The report noted that these activities are low in cost and require little skill, and therefore may appeal to a broader spectrum of the population.

Among the six water-based activities compared between the two surveys, motor boating grew by the largest percentage between surveys, followed by swimming. Swimming in rivers, lakes, or oceans grew by 22 million participants, while fishing decreased in the number of participants from 1982-1983 to 1994-1995.

The most recent NSRE report identified the five most popular individual activities and the percentage of the U.S. population participating in each as follows (Cordell et al. 1999):

- Walking (84.3 percent)
- Family Gathering (73.2 percent)
- Viewing Natural Scenery (60.9 percent)
- Visiting a Nature Center, Nature Trail or Zoo (57.5 percent)
- Picnicking (54.9 percent)

5.4.2.1.2. State and Regional Trends

Information resources available to address trends in recreation activity at the statewide level often include survey-based participation data, similar to the NSRE data discussed above. Some types of data on broad-based recreation use measures over a period of record are also available. Applicable participation and use data for Washington and Idaho are summarized below.

Historical Participation Data

As discussed in Section 4.4.1, the RCO is now the agency responsible for periodic Washington SCORP updates. RCO is also the primary source of data on recreation participation and activity trends in Washington. A 2008 update of the Washington SCORP document is currently available as a draft, but has not been formally adopted by the NPS or issued in final form by RCO as of this report. In the interim, consideration of historical participation data must be based on previous SCORP documents.

The 2003 SCORP document, prepared by the former IAC (2003), included discussion of some general trends over the past few decades. The document addressed apparent trends based on surveys conducted in 1979, 1989, and 1999. The analysis highlighted the uncertainty evident in the results because of some methodology differences among the respective surveys. For example, the recreation participation results for the 1979 and 1999 surveys were reported in terms of individuals, while the 1989 results were based on households. There were also differences in survey administration procedures, such as use of telephone interviews in one case and year-long participant diaries in another.

Notwithstanding the limitations inherent in the data, the 2003 SCORP made some general observations regarding recreation participation trends in Washington over three decades. For example, total numbers of participants in fishing and camping appeared to be in decline overall (although participation in sub-sets of the larger activity category, such as RV camping, may be growing). Similar to the national trend, walking and hiking combined appear to be growing in the state during the period reviewed.

The IAC (2003) noted that overall recreation participation as a percentage of the total population might be in decline. The state population had increased by 20 percent, an addition of just over 1 million people, since the 1990 data were published. The growth in population appeared to explain reports of increased crowding at recreation sites, as an apparent result of increased user numbers. At the same time, other data indicated an apparent increase in the proportion of the population that was inactive. Specifically, the Washington Department of Health had found that 18 percent of adults in Washington reported no physical activity at all during leisure time, while 50 percent fell below the current recommendation to engage in moderate physical activity during leisure time. The implication of the latter finding was that the decreasing activity level of the population would at least partially offset the effect of increasing population on recreation use levels.

Another key point in the 2003 SCORP was that completely new recreational activities often arrive on the scene, and their emergence and activity levels are nearly impossible to predict. For example, the emergence of personal watercraft (PWC) in the 1980s and 1990s was not foreseen or accounted for under traditional projection methods (IAC 2003). Standard projections of future recreational activity, as are often found in SCORP documents, are typically based on data reflecting the recent past and are unlikely to capture emerging uses.

Earlier SCORP documents prepared by the IAC tracked recreational activity levels and participation data for multi-county regions within Washington, but that has not been the case recently. Because that type of information is not available, a comprehensive and consistent set of data indicating recreation participation trends at the regional level, or for the Washington or Idaho counties within the regional study area, could not be identified. The results of the 2006 recreation survey conducted to support the 2008 Washington SCORP document include participation data cross-tabulated for regions within the state. These results allow comparisons within the 2006 data set, but there is not a corresponding prior set of regional participation rates to review for recent historical changes.

IDPR is the state agency responsible for SCORP documentation in Idaho. A review of documents and datasets available from IDPR did not yield survey-based data on statewide recreation participation similar to the Washington data developed by the IAC.

Recreation Use Trends

Within the limitations of data availability, information maintained by some recreation providers can be used to assess broad-based changes in recreational use over a period of years. Data available from the WSPRC and the NPS have been used as representative indicators of recent historical changes in recreational use for two major sets of recreational resources.

Table 5.4-3 summarizes total annual visitation levels reported for all Washington state parks and all National Park System units in Washington from 1998 through 2006. The former data record total attendance at the approximately 190 units in the state park system. The entries for 1998 through 2002 include figures for a number of large parks that were subsequently transferred to other jurisdictions; aggregate annual attendance for this group of parks was over 2 million visitors each year. Even accounting for that change, the system-wide attendance figures at the end of the period are substantially lower than those in the beginning years, and suggest a large decline in park use. The source table from which these statewide numbers were extracted includes some unusual occurrences that suggest there may have been some significant changes in visitor counting procedures and/or administration at some parks. (For example, visitation at Deception Pass State Park on Whidbey Island was reported at over 5.9 million people for 1998, but was 2.9 million or less in all other years.) Comparing only the data for the last 4 years of the series, however, indicates that total system attendance was generally flat from 2003 through 2006.

The NPS data in Table 5.4-3 apply to 11 park units in the state, ranging from approximately 20,000 to nearly 3 million in visitation per unit. The year-to-year changes for this set of parks show a general increase from 1998 to 2002, followed by a slight decrease from 2002 through 2006. The 2006 total of 9.6 million visitors is 1.2 percent larger than the 1998 figure, but is 9.8 percent below the peak visitation level of over 10.6 million people in 2002. The annual figures for Olympic National Park, Mt. Rainier National Park, and Lake Roosevelt National Recreation Area, by far the three largest units for visitation, are consistently and noticeably lower for 2003-2006 compared to the first 4 years of the series.

Table 5.4-3. State Park and National Park System unit attendance in Washington, 1998–2006.

Year	Total Attendance, Washington State Park System (000s)	Total Attendance, National Park System Units in Washington (000s)
1998	50,411	8,698
1999	46,957	10,185
2000	47,425	10,118
2001	47,771	10,091
2002	49,291	10,627
2003	41,323	10,170
2004	40,430	10,054
2005	39,233	10,137
2006	40,988	9,584

Source: WOFM (2007d)

Visitation data for Washington state parks and NPS units within the study region were also reviewed for comparison to the statewide data. Table 5.4-4 provides total annual visitation data for the five park units administered by WSPRC in the study region. Taken as a whole, no general trend is evident from these data. The annual figures for most of the parks show wide variations from year to year and over the 8-year period. The 2001 visitation totals for Centennial Trail, Columbia Plateau Trail and Riverside are much larger than the corresponding entries for

2000, suggesting there may have been a major expansion of park resources for each unit at that time. For both Crawford and Mount Spokane, reported visitation for approximately 2003 through 2007 is substantially lower than during the 2000-2002 period.

Riverside State Park is the only one of these five units with significant overnight camping capacity. The camping data for this park (which are included in the WSPRC source data but not Table 5.4-4) indicate a steady increase in overnight use, from approximately 10,000 visits in 2001 to nearly 15,700 in 2004, then a steady decrease to 10,500 in 2007.

Table 5.4-4. Total annual visitation, Washington state parks in the study region, 2000–2007.

Year	Total Attendance by Park				
	Centennial Trail	Columbia Plateau Trail	Crawford	Mount Spokane	Riverside
2000	916,888	75,844	7,475	717,530	409,736
2001	1,567,298	162,313	6,019	626,249	1,344,769
2002	1,428,615	161,929	9,289	717,371	1,278,226
2003	1,856,142	154,203	4,992	476,844	1,499,201
2004	1,732,530	131,206	3,976	415,502	1,386,212
2005	1,627,543	216,629	4,308	410,165	1,445,902
2006	1,546,715	123,322	4,473	524,102	1,163,931
2007	1,800,181	100,991	4,560	490,206	1,833,918

Table 5.4-5 summarizes total use and camping use at Lake Roosevelt National Recreation Area (LRNRA) from 1990 through 2007. Within that period, total recreation visits hit a peak of over 1,770,000 in 1991 and a minimum of approximately 1,045,000 in 1996. Year-to-year changes were often quite significant, such as a 37-percent decrease from 1991 to 1992 and a 37-percent increase from 1996 to 1997. The annual figures for total recreation visits were relatively stable from approximately 1997 through 2007, and the 2007 total is approximately 13 percent above the level reported for 2004-2006. By contrast, the pattern for camping visits appears to be a general and consistent decline. The highest annual total for camping was 165,678 in 1995, and the lowest was 101,936 in 2001. Aside from a modest increase from 2003 to 2004, the annual entries for the last 7 years in the series are all below 115,000 visits per year, whereas the camping totals for all years through 1998 were above 130,000. The NPS sources contacted to obtain these visitation data were not able to provide an assessment of current use of LRNRA facilities relative to their capacity. Comparing the most recent total and camping use figures to those for earlier years, however, suggests that these facilities are currently operating below their capacity.

Table 5.4-5. Total recreation and camping visits, Lake Roosevelt National Recreation Area, 1990–2007.

Year	Total Recreation Visits	Total Camping
1990	1,542,515	155,703
1991	1,771,420	149,476
1992	1,121,973	134,191
1993	1,198,605	149,582
1994	1,515,674	160,950
1995	1,341,016	165,678
1996	1,045,455	134,815
1997	1,431,960	138,308
1998	1,545,150	134,862
1999	1,403,793	120,495
2000	1,415,627	122,165
2001	1,252,160	101,936
2002	1,444,751	113,972
2003	1,356,331	114,494
2004	1,279,051	124,198
2005	1,272,119	103,173
2006	1,281,586	109,536
2007	1,450,438	111,803

Notes:
Three additional pneumatic tube traffic counters were added in 1993 that may account for some differences in the data (between 1990–1992 and 1993–present).
Source: NPS (2008c)

Other agencies that are key providers of recreation resources in the region were contacted for similar data, without success to date. However, a USFS recreation specialist reported that the agency's campgrounds at Sullivan Lake and Mill Pond were probably operating above capacity on the Memorial Day weekend and during July and August, with campgrounds often full on weekdays during the prime summer months (Berger 2008).

Licenses and Registrations

Other data sets that can be used as indicators of recreational trends include sales of hunting and fishing licenses and registrations of vehicles commonly used for recreation. Table 5.4-6 provides data on hunting and fishing license sales statewide and within the three Washington counties in the region from 2001 to 2005. (Data currently available only extend through part of 2006, making 2005 the last year with complete data.) Statewide, the number of hunting licenses sold decreased slightly in both 2002 and 2003 before increasing slightly in 2004 and 2005. The figure of 376,908 licenses in 2005 is almost equal to the number of licenses sold in 2001. Within the study region, the pattern for Spokane County over the 4-year period is very similar to the statewide pattern, with a slight decrease initially followed by an increase to a license number similar to the original 2001 level. In both Stevens and Pend Oreille counties, particularly the

latter, there was a noticeable increase in hunting license sales during the period. An explanation for that type and magnitude of change is not evident in the data, and a variety of factors could be responsible.

The sales data for fishing licenses show a similar pattern. For the state as a whole, the number of fishing licenses increased somewhat from 2001 to 2002, then decreased by a total of 8 percent from 2002 to 2005. As was the case for hunting licenses, a large increase in fishing license sales occurred in Pend Oreille County during this period. Although there was a slight decrease from 2001 to 2002, the number of fishing licenses sold in 2005 was 91 percent higher than the 2002 figure. The overall pattern for Stevens and Spokane counties was a small increase over the 4-year period.

Table 5.4-6. Hunting and fishing license transactions, statewide and region, 2001–2005.

State/County and Year	Big/Small Game Transactions	Fishing Transactions
Washington Statewide		
2001	377,078	990,553
2002	372,479	1,003,621
2003	368,062	996,017
2004	373,284	953,411
2005	376,908	923,267
Pend Oreille County		
2001	439	709
2002	430	660
2003	568	1,236
2004	587	1,204
2005	659	1,263
Spokane County		
2001	39,638	54,821
2002	38,538	59,123
2003	37,586	55,428
2004	38,592	55,423
2005	40,167	55,709
Stevens County		
2001	9,348	10,174
2002	9,368	11,001
2003	9,133	10,552
2004	9,815	11,111
2005	10,126	10,836

Source: WDFW (2008)

Because boating is a prominent activity in the Project area, vessel registration data were also reviewed for the three Washington counties and the state. Table 5.4-7 provides these data for the

period 2004-2008. Statewide, boat registrations increased by 1.7 percent during the past 4 years. Total registrations for the three Washington counties in the region increased by 11.7 percent over the same time. Spokane County had the largest increase in registrations, with nearly 20 percent more vessels registered in 2008 than in 2004.

Table 5.4-7. Washington vessel registrations by county of moorage, 2004–2008.

Area	Registrations by Year				
	2004	2005	2006	2007	2008
Pend Oreille County	1,131	1,159	1,211	1,254	1,286
Spokane County	15,675	15,879	16,283	16,664	17,238
Stevens County	3,072	3,144	3,341	3,433	3,682
Three-County Total	19,878	20,182	20,835	21,351	22,206
State of Washington	268,809	268,297	270,674	273,125	273,420

Source: Abern (2008)

5.4.2.2. Recreation Use Projections

In general, the state agencies that have been responsible for preparing periodic SCORP updates have been the sources of projections of future recreation use for the state. At least in Washington, the IAC (now the RCO) has historically issued recreation use projections for the state and for counties or multiple-county regions of the state. The Washington and Idaho statewide recreation planning agencies have not prepared county and/or regional recreation use projections in recent years, however. The current Idaho SCORP update effort did not result in the publication of recreation use projections, even at the state level. The Washington IAC produced state-level estimates of percentage increases in recreation participation by activity in 2003; these figures are the most recent projections of future use specific to Washington. In addition, analysis of data from periodic national recreation surveys has resulted in published estimates of future recreation use for specific activities that has some degree of applicability to the study region.

5.4.2.2.1. Nationally-based Projections

Cordell et al. (1999) provides a comprehensive analysis of trends and expected future patterns in outdoor recreation participation for the U.S., as well as four specific regions of the U.S. This document provides one of the only national assessments of current participation, trends, and future supply and demand for recreation activities and facilities in the U.S. and is commonly referenced in recreation research. Activity participation rates and projections presented in this document are based on results from the NSRE conducted in 1994 and 1995. This survey followed three comparable national survey efforts conducted previously in 1960, 1965, and 1982–83.

Using statistical models, Cordell et al. (1999) used projected changes in demographics (including age, race and ethnicity, gender, income, education, and previous experience) and recreation

participation data to assess likely future national and regional trends for various outdoor recreation activities through 2050. Washington was included within the Pacific Coast Region in the Cordell assessment, along with California, Oregon, Alaska, and Hawaii. Idaho is within the Rocky Mountains/Great Plains region, which also includes Montana, Nevada, Arizona, Utah, Wyoming, Colorado, New Mexico, Kansas, Nebraska, South Dakota, and North Dakota. Because of this regional structure, results for both the Pacific Coast and Rocky Mountains/Great Plains regions were briefly reviewed for relevance to the regional study area for the Project.

The Cordell et al. (1999) publication included projected rates of percentage increases in participation for specific activities from 1995 through 2050. A table summarizing the expected increases for the Pacific Region is included in the RSP (Table 2.4-5) and is not reproduced here. The cumulative increases for the 1995–2030 period ranged from a low of -27 percent (a net decrease) for hunting to a high of 58 percent for sightseeing. These projections indicate that some activities (e.g., fishing and primitive camping) are expected to experience modest growth, whereas others (e.g., motor boating, canoeing, sightseeing, and hiking) may experience more robust growth. Hunting was the only activity expected to decrease in numbers of participants in the Pacific Coast region for the projection period. In the Rocky Mountains/Great Plains region, hunting activity was expected to increase slightly through 2030, and then begin to experience a decline in participants.

5.4.2.2.2. Washington Projections

The IAC (2003) provides estimated future participation rates for popular outdoor recreation activities on a statewide basis in Washington, including some activities that are known to occur in the Project area and regional study area. In developing these projections for Washington, the IAC reviewed the NSRE-based projections from Cordell et al. (1999), and made adjustments where warranted based on conditions specific to Washington. These adjustments are discussed in the IAC document.

Table 5.4-8 reports the 10- and 20-year estimates, as a percent change in the number of people participating in each activity, developed by the IAC (2003) for selected activities that are applicable to the Project area. In general, the statewide estimates reflect expected increases in future participation rates for most outdoor recreation activities, ranging as high as a 20-year increase of 37 percent in nature activities. Both fishing and hunting are expected to decline in statewide participation over the next 20 years.

Table 5.4-8 also shows (in the second column) baseline use levels for the state in 2006 for each activity. These figures come from the published results of the recent Washington Outdoor Recreation Survey (Clearwater Research 2007) that was designed to accurately measure the outdoor recreational activity among Washington residents. These data will be used in the 2008 Washington SCORP document update when adopted by the NPS (expected in 2008). These table entries show the percentage of Washington residents participating in the respective recreation activities in 2006 by average month of participation. The two most popular activity categories in Washington were walking (walking/hiking) and observing or photographing wildlife or nature (nature activities). Additionally, the most frequently mentioned activities that Washington citizens wanted to do more of in the 12 months following the survey interview

included sightseeing, picnicking, hiking, tent camping with a car or motorcycle, and swimming or wading at the beach.

Table 5.4-8. Anticipated 20-year changes in outdoor recreation activity participation in Washington.

Activity	Base Use Level—2006[1] (% of State Population)	Estimated Change—10 Years (Approximately 2012-2013) (% Change)	Estimated Change—20 Years (Approximately 2022-2023) (% Change)
Walking	73.8	23	34
Hiking	Combined with walking above	10	20
Nature Activities (e.g., wildlife observation and photography)	53.9	23	37
Sightseeing	35.4	10	20
Picnicking	46.8	20	31
Motor boating (power boating)	11.4 (water activity = 36)	10	No estimate
Non-pool swimming	18.6 (water activity = 36)	19	29
Canoeing/ Kayaking (non-power boating)	7 (water activity = 36)	21	30
Fishing (boat and bank fishing)	15.2	-5	-10
Camping; primitive dispersed (tent camping)	17.1	5	No estimate
Camping; developed (RV camping)	Combined with tent camping above	10	20
Hunting-shooting	7.3	-15	-21
Interpretive and educational sites[2]	N/A	N/A	N/A
Personal watercraft use[1]	2.6 (water activity = 36)	N/A	N/A

Notes:
1 Ranking of major activity areas by average month of participation.
2 Interpretive and educational sites and personal watercraft use were not included in the IAC future recreation estimates report as major categories, therefore, were not added to this table.
N/A – not available
Source: IAC (2003); Clearwater Research (2007)

The RCO encountered significant challenges in reconciling the results from the 2006 survey (Clearwater Research 2007) with similar data developed from the previous survey conducted in 1999–2000 (IAC 2002). The sampling designs were significantly different, as the 1999–2000 survey used a longitudinal sample in which data were collected from a single set of individuals at

3-month intervals over the course of the 12-month field period. The 2006 study used a repeated cross-sectional design, in which 12 independent samples were produced, one for each month during the year-long field period. The 2006 design was chosen to eliminate the problem of participant attrition and to shorten the period of time the respondent was asked to report on, thereby easing the recall process and improving the quality of the collected data. However, the repeated cross-sectional design made it difficult to produce estimates of annual participation directly comparable to those reported in 2002.

The mode of data collection also changed, from a self-administered form in 1999–2000 to a telephone survey interview in 2006. This was done in an effort to improve data quality, increase response rates and provide a more standardized data collection process. It is possible, however, that the switch of modes introduced systematic differences between the 1999–2000 survey and the 2006 survey in the way that recreation activities were recalled and reported. This could lead to apparent differences in the levels of reported activity that are not due to actual changes of activity in the Washington population.

With these issues in mind, the RCO examined the weighted data from both surveys. In general, the estimates from the 2002 IAC report were lower than those coming from the 2006 survey, both in percentage of the Washington population engaging in a given activity and in the absolute numbers of individuals. The differences were across the board and greater than could be explained by changes in the characteristics of the Washington population during the intervening years. The RCO determined that systematic differences had been introduced by the 2006 methodology, making a direct comparison of the survey results from the two surveys unreliable. The 2007 RCO report concluded that activity prevalence rankings would provide a more valid basis for comparing the results of the two surveys than would population percentage or count estimates.

The Clearwater Research (2007) report includes a table that provides the rankings of the main activity categories from the 2006 survey with those reported in 2002 from the 1999–2000 survey. The activities that moved up the greatest number of places in the rankings from the 2002 to the 2006 results include aerobics or fitness activities at a facility, inner tubing or floating, badminton (all moving up 20 places), football (19 places), baseball (18 places), and snow play (16 places). None of these activities are included in the activity-specific estimates or use projections for the Project area (although some level of floating activity occurs and is incorporated within Project-specific data for non-motorized boating). Activities that moved down the greatest number of places in the rankings include equestrian activity (down 21 places), activity with firearms (which includes hunting, down 19 places), archery (17 places), and skateboarding (15 places). An apparent drop in the rankings for snowmobiling was most likely due to the activity having been grouped with ATV riding on the previous survey, while snowmobiling was measured separately in 2006.

5.4.2.2.3. Idaho Projections

The most recent Idaho State Comprehensive Outdoor Recreation and Tourism Plan (SCORTP) (IDPR 2006) for the 2006–2010 planning period does not discuss expected future use trends or provide projections of future activity levels. The previous Idaho SCORTP for 2003–2007 (IDPR 2003) briefly discussed future recreation for boating only, and not for other activities.

Consequently, there is no reasonably current set of authoritative, Idaho recreation use projections that can be applied to the Idaho portion of the regional study area.

Some of the SCORTP-related information available through IDPR addresses selected aspects of potential future recreation use in the state, primarily as it applies to motorized boating. A grant-funded analysis of recreational boating patterns since 1995 included corresponding projections for 2013 for the following items (IDPR 2003):

- The Idaho statewide population was just over 800,000 in 1995, and is projected to increase to 1,232,000 in 2013.
- The number of registered boats was just over 60,000 in 1995, and is expected to increase to 116,000 in 2013.
- The number of motor boating participants was estimated at about 170,000 in 1995, and is estimated to increase to 248,000 in 2013.
- The baseline and projected numbers of boater trips for motor boaters were about 1,400,000 in 1995 and 1,889,000 trips for 2013.
- The number of boater days motor boating was projected to grow from 1,600,000 in 1995 to 2,412,000 days in 2013.

The projections developed for this report indicated that Idaho was expected to mirror the national trends for increased population, participation in recreational motor boating, and numbers of registered boats.

5.4.2.3. Expected Recreation Growth Rates

The objective for the review of recreation use trends and projections presented in Section 5.4.2.1 is to derive activity-based growth rates that can be used to develop estimates of projected future recreation use specific to the Project study area. The growth rates used for this purpose need to adequately reflect the characteristics of the population in the five-county regional study area, and they need to be applicable to the specific types of recreation resources and activities that occur within the Project study area. The following discussion addresses the factors and information sources that were considered in developing the specific growth rates to be used in estimating future recreation use for the Project area.

5.4.2.3.1. Selection of Primary Projection Source

For purposes of this analysis, the growth rates and supporting data from the Washington RCO activity projections (as documented in the IAC [2003] report, and presented in Table 5.4-8) were selected as the appropriate starting point for developing activity growth rates applicable to the Project area. The reasoning behind this selection is summarized as follows:

- The review indicated that there are no published projections of future recreation demand that are specifically applicable to the counties of the regional study area, or to sub-state regions of Washington or Idaho that include the study-area counties.
- The RCO/IAC growth rates are applicable to the state of Washington as a whole, and represent the most recent forecast of future recreation demand for the state.
- The RCO/IAC growth rates for Washington are more representative of the study area than are the NSRE-based projections reported in Cordell et al. (1999), which apply to

a region including Washington and four other Pacific states (but not Idaho), and the RCO/IAC growth rates are based on demographic and participation rate data that are more recent than that used for the NSRE-based projections.

- Recreation activity projections or growth rates for Idaho that could be used to represent the Idaho counties in the study area are not available from IDPR. Because the three Washington counties account for 74 percent of the total regional study area population, it is considered sufficient to use the Washington growth rates for the entire five-county study area, rather than calculate composite growth rates that incorporate NSRE-based projection data for the Rocky Mountains/Great Plains region.

5.4.2.3.2. Potential Adjustments to Projected Growth Rates

Although the RCO/IAC growth rates for Washington are considered the most applicable set of projection data for estimating future use in the Project area, the need for locally-specific adjustments to the statewide rates was investigated. Potential conditions that might warrant such adjustments would include projected population growth in the region that is above or below the expected growth rate for Washington; specific data indicating that participation rates within the study region for a specific activity differ measurably from the statewide rate; or notable local demand or supply factors that could reasonably be expected to result in a departure from the statewide growth pattern. The review of such factors that might require adjustments to the RCO/IAC growth rates is summarized below.

Rate of Population Growth

The aggregate population projections for the study area counties reflect an overall future population growth rate that is close to that for the state of Washington. As discussed in Section 5.4.1.2, the aggregate result of the population projections for the five counties in the study region is a growth rate of 15.2 percent from 2010 to 2020, and 13.0 percent from 2020 to 2030. The corresponding projected growth rates for the state of Washington are just slightly lower, at 13.4 percent and 10.5 percent. Therefore, the projections for the state should adequately represent the region, and it is not necessary to adjust the recreation growth rates based on differential population growth conditions.

Participation Rate Variances

At times during the relicensing process, various participants have suggested that statewide recreation projections might not adequately represent the study region because the statewide data reflected flat or decreasing participation in hunting and fishing, while residents of northeastern Washington and northern Idaho were more likely to participate in those activities. It was also suggested that review of hunting and fishing license data might support the existence of such a difference.

The hunting and fishing license sales data provided in Tale 5.4-6 do indicate that sales for both types of licenses were generally increasing in Pend Oreille, Stevens, and Spokane counties from 2001 to 2005, while license sales for the state as a whole were declining slightly. Some of the increases were so large for the short period of time involved that they suggest factors other than simple activity growth might have been influencing the reported results. To check the short-term

trend data, license sales were reviewed on a per-capita basis. Table 5.4-9 reviews these data for Washington and the region. These calculations show that the region has more people with hunting licenses, as a percentage of the population, than the state as a whole. With respect to fishing, the total number of licenses in the three counties is equal to 13.1 percent of the combined population, a figure that is somewhat less than the 15 percent rate for the state. This difference is not considered to be sufficient to warrant an adjustment of the projected growth rates to be applied in estimating future recreation use.

Table 5.4-9. Hunting and fishing licenses as a percentage of the population, Washington and region.

Area	2008 Population	Hunting Licenses, 2005	Percent of Population	Fishing Licenses, 2005	Percent of Population
Pend Oreille County	12,800	659	5.1	1,263	9.9
Spokane County	459,800	40,167	8.7	55,709	12.1
Stevens County	43,700	10,126	23.2	10,836	24.8
Three-County Total	516,300	50,952	9.9	67,808	13.1
State of Washington	6,587,600	376,908	5.7	923,267	15.0

Local Demand and Supply Factors

The North Pend Oreille Scenic Byway and International Selkirk Loop have been identified as a potential demand factor that might cause future recreation use to be higher than it would be in the absence of the byway designation, and higher than might be reflected in the standard recreation growth rate projections. As indicated in the RSP, a specific objective of the RRS is to assess the potential impact of the byway designation on recreational use in the local area over the long-term future.

A literature search for information to address this topic provided little specific data that would be useful in forecasting future recreation use. Despite the extensive use of scenic byway and similar designations to promote tourism, there seems to have been little research on the economic effects of such designations. The search uncovered two publications oriented to this topic, both of which are somewhat dated. An early study performed by the Urban Institute determined traffic volumes on highways before and after scenic byway designation, and compared the results to volumes on similar undesignated highways. Some of the results suggested a volume difference of 2 to 3 percent may have been associated with byway designation; it was not possible to isolate potential confounding factors and establish a causal relationship (Mansfield and Pizam 1999).

The other study found in the literature search was an analysis of the economic impact of the designation of a system of scenic byways by the state of Colorado. This analysis involved a survey of business owners along two Colorado byways to obtain their perceptions of the byways program. The survey results indicated broad support for the program, and included a finding that a majority of the business owners estimated that byway designation had increased their sales by 10 percent (Sem et al. 1997). The same report also discussed an earlier attempt to estimate

changes in highway traffic volumes as a result of byway designation, which was apparently unsuccessful.

In addition to the literature search, available data on historic traffic volumes at points along the scenic byway route were reviewed for potential trend indications. Table 5.4-10 summarizes traffic data for recent years, dating back to 1990 as available, at five reference locations. A general pattern evident among the traffic count data for the four locations in Washington is that volumes reported for SR 31 and SR 20 have been relatively steady over this period of coverage. The 2007 estimate for SR 31 at Boundary Road (in Metaline), for example, is the same as the estimates for 1992 and 1997 (with the latter figure based on an actual count). The actual counts for all four Washington locations indicate a decrease in volume over a period of several years at some point between approximately 1997 and 2005 (varying by location), followed by an increase back to the previous level or somewhat above it by 2007. Because these decreases and increases occurred at different times for each location, the factors behind those changes are likely to be specific to each location.

In contrast to the data for the Washington locations, the data for the ITD counter on U.S. Highway 2/95 in Bonners Ferry show a general increasing pattern from 1990 through 2007. Although some year-to-year decreases in the annual average daily volumes were reported, annual increases were relatively consistent and the average volume for 2007 was 39 percent higher than the figure for 1990. Population growth in Boundary County (which surrounds Bonners Ferry) over the same period was 30 percent (Idaho Department of Labor 2008), and likely accounted for much of the increase in traffic volume.

Table 5.4-10. Average annual daily traffic volumes for selected locations on the International Selkirk Loop, 1990–2007.

Year	WA SR 31 at International Boundary	WA SR 31, After Junction with Boundary Road	WA SR 20 After Junction with Ruby Creek Road	WA SR 20 After Junction with SR 211	US 2/95 in Bonners Ferry, ID
1990	--	--	740	--	5,695
1991	--	--	780	--	5,944
1992	--	1,500	960+	--	6,483
1993	--	1,600	990	--	6,606
1994	--	1,500+	1,000	--	6,747
1995	--	1,500	790+	--	6,964
1996	--	1,500	--	--	7,169
1997	--	1,500*	--	--	7,384
1998	--	1,500	--	--	7,834[1]
1999	--	1,500	--	--	--
2000	220*	1,300*	820	1,500*	7,633[2]
2001	220*	1,300	950*	1,500	7,243
2002	230	1,300	960	1,500	7,634
2003	190*	1,400*	940	1,300*	7,677
2004	190	1,400	980*	1,600	7,930

Table 5.4-10, continued…

Year	WA SR 31 at International Boundary	WA SR 31, After Junction with Boundary Road	WA SR 20 After Junction with Ruby Creek Road	WA SR 20 After Junction with SR 211	US 2/95 in Bonners Ferry, ID
2005	230*	1,500*	830*	1,600*	7,783
2006	230	1,500	990	1,700	7,840
2007	230	1,500	1,000*	1,700	7,932

Notes:
Asterisk indicates value was based on actual count.
1 Monthly traffic data included from January to September; October to December unavailable.
2 Monthly traffic data included from July to December; January to June unavailable.
Sources: WSDOT 2008; Idaho Transportation Department 2008

It is possible that promotional efforts associated with the North Pend Oreille Scenic Byway and International Selkirk Loop will result in increased tourist traffic along SR 31 and at nearby attractions in Pend Oreille County. At this time, however, a means to specifically account for any such effect in estimating future recreation use in the Project area has not been identified. To the extent that increased tourist volumes through northern Pend Oreille County might occur as a result of the byway program, it is also not clear to what effect that would translate into the types of recreation activity occurring at the Project.

5.4.2.3.3. Growth Rates Applied in the Analysis

Based on the preceding discussion, the projected activity-specific growth rates developed by the RCO/IAC were not adjusted to account for any regionally-specific factors. The rates used in the future use estimation process are presented in Table 5.4-11. In Section 5.4.3, these rates are applied to baseline use estimates for the Project area to derive future recreation use estimates for the Project area.

Table 5.4-11. Expected 20-year rates of change in recreation activity for the Project area.

Activity	Estimated Change—10 Years (Approximately 2003-2013) (Percent)	Estimated Change—20 Years (Approximately 2013-2023) (Percent)
Walking	23	34
Hiking	10	20
Nature Activities (e.g., wildlife observation and photography)	23	37
Sightseeing	10	20
Picnicking	20	31
Motor boating (power boating)	10	No estimate
Non-pool swimming	19	29
Canoeing/Kayaking (non-power boating)	21	30
Fishing (boat and bank fishing)	-5	-10
Camping; primitive dispersed (tent camping)	5	No estimate
Camping; developed (RV camping)	10	20
Hunting-shooting	-15	-21
Interpretive and educational sites[1]	N/A	N/A
Personal watercraft use[1]	N/A	N/A

Notes:
1 Forecast growth rates for use of interpretive/educational sites and personal watercraft were not included in the RCO/IAC future use estimates for Washington.
N/A – not available

The RCO/IAC growth rates were estimated in 2003 for two subsequent 10-year forecast periods. As indicated in Table 5.4-11, direct application of these rates to 2003 recreation activity levels would result in future use estimates for 2013 and 2023, with a forecast end date that is 15 years in the future. Attempting to forecast population or recreation activity levels beyond 20 years in the future is subject to increasing risk that unanticipated future events would result in deviations from such a long-term forecast. Nevertheless, there is an interest in addressing possible future recreation conditions over the term of the new license, which would be for at least 30 and up to 50 years. As a compromise, SCL and the relicensing participants agreed that future recreation use at the Project would be estimated for a 30-year period, with the understanding that current use conditions relative to capacity and to previous forecasts would be reevaluated on a regular basis during the license term.

5.4.3. Estimated Future Recreation Use for the Project Area

Estimates of future recreation use levels in the Project area have been developed primarily by applying the expected 20-year rates of change represented by the RCO/IAC projections to the baseline use levels estimated for the Project area recreation resources, with necessary adjustment for the dates of the Project-area projection period. For simplicity, a single RCO/IAC activity growth rate was selected to represent each Project resource, based on the dominant or most

common activity for that resource. The RCO/IAC activity growth rates were applied to the study area recreation resources as follows:

- Vista House and Tailrace Recreation Area - sightseeing growth rate
- Forebay Recreation Area campground – developed camping growth rate
- Forebay Recreation Area day-use area - motor boating growth rate
- BLM Boundary recreation Area – primitive camping growth rate
- Metaline Waterfront Park – picnicking growth rate
- Box Canyon Dam/Campbell park boat launch - motor boating growth rate
- Reservoir dispersed sites - primitive camping growth rate
- Private shoreline use areas - motor boating growth rate

Because the baseline use figures are for the current period (2008), the RCO/IAC projected growth rates are for a 20-year forecast period beginning in 2003, and the desired study-area use projection is to cover a 30-year period beginning in 2011 (the assumed date of a new FERC license), some proportional adjustments were necessary. The RCO/IAC growth rates for the 2003-2013 period were adjusted proportionally to escalate the estimates of 2008 recreation use at the Project to a 2011 base year, by applying a factor of 0.3 (3 years out of the 10-year period) to the respective RCO/IAC growth rate. The RCO/IAC statewide growth rates for the 2013–2023 period were applied as the Project-specific increases for 2011–2021. Because the RCO/IAC projection set does not include a rate for motor boating in the second 10-year period, motor boating was assumed to increase by 7.5 percent from 2011 to 2021. The RCO/IAC projections from 2003 also do not go beyond 2023, while the study-area use projection must extend to 2041. Consequently, growth rates used for the second and third decades of the study-area projection were derived by applying a factor of 0.9 to the respective growth rates for the 2011–2021 period (i.e., the growth rate for 2021–2031 is 90 percent of the rate for 2011-2021, and the growth rate for 2031–2041 is 90 percent of the rate for 2021-2031). Long-term forecasts such as this typically apply somewhat smaller growth rates for the later intervals of a projection period, such as the pattern indicated by the population projections given in Table 5.4-2.

The results are summarized in Table 5.4-12. The projected total use level for 2021 represents a cumulative increase of approximately 12 percent over the current (2008) estimated use level for the study area. Projected total use by 2041 represents an increase of 30 percent over the current use level. The cumulative use increase by 2041 for Metaline Waterfront Park amounts to 37 percent (due to the higher rate of increase for picnicking in the 2008-2011 period), which is slightly higher than the 33 percent cumulative increase shown for the sightseeing and developed camping facilities. Because of the relatively lower growth rate for primitive camping, the cumulative increase by 2041 for the BLM Boundary Recreation Area and the reservoir dispersed sites amounts to approximately 16 percent.

Table 5.4-12. Estimated future recreation use by facility/resource.

Facility/Resource	2008 Annual Use	Percent Change, 2008-2011	Baseline Annual Use 2011	Percent Change, 2011-2021	Estimated Use, 2021	Percent Change, 2021-2031	Estimated Use, 2031	Percent Change, 2031-2041	Estimated Use, 2041	Percent Change, 2008-2041
Vista House	2,200	3.0	2,266	10.0	2,493	9.0	2,717	8.0	2,934	33.4
Tailrace Recreation Area	2,400	3.0	2,472	10.0	2,719	9.0	2,964	8.0	3,201	33.4
Forebay Recreation Area – Campground	1,900	3.0	1,957	10.0	2,153	9.0	2,346	8.0	2,534	33.4
Forebay Recreation Area – Day Use Area	4,600	3.0	4,738	7.5	5,093	6.8	5,440	6.0	5,766	25.3
BLM Boundary Recreation Area	100	1.5	102	5.0	107	4.5	111	4.0	116	16.0
Metaline Waterfront Park (Reservoir-based use)	1,800	6.0	1,908	10.0	2,099	9.0	2,288	8.0	2,471	37.3
Box Canyon Dam/Campbell Park Boat Launch	600	3.0	618	7.5	664	6.8	710	6.0	752	25.3
Reservoir dispersed sites	400	1.5	406	5.0	426	4.5	445	4.0	463	15.8
Private shoreline use areas	1,000	3.0	1,030	7.5	1,107	6.8	1,183	6.0	1,253	25.3
Total	**15,000**		**15,497**		**16,861**		**18,204**		**19,491**	**29.9**

5.5. Recreation Carrying Capacity Analysis

The recreation carrying capacity analysis involved a three-step process of 1) compiling and reviewing carrying capacity data applicable to recreation resources present in the study area; 2) processing and summarizing those data to develop indicator measures that characterize existing conditions relative to applicable capacity considerations; and 3) interpreting the existing carrying capacity indicators to determine whether resources in the study area were being used to the point of approaching limiting factors based on carrying capacity considerations. The conceptual approach to addressing recreation carrying capacity is discussed in detail in the RSP (SCL 2007a). In summary, the approach involves developing measures that can be used as indicators of the condition of elements of the biophysical (or natural resource), social and management environments that are important in determining the quality of the visitor experience. The following material (Section 5.5.1) provides descriptive and quantitative information for recreation resources in the study area relative to those three carrying capacity factors. That baseline information is followed by a review of the factors potentially limiting carrying capacity for each specific recreation resource (Section 5.5.2) and discussion of potential future responses to the limiting factors identified (Section 5.5.3).

5.5.1. Boundary Project Carrying Capacity Indicators

Other elements of the RRS provide a variety of specific data on conditions in the study area that are relevant to application of the carrying capacity concept. This section summarizes results from other components of the RRS, primarily the recreation surveys and the dispersed recreation analysis, that address the biophysical, social, and management carrying capacity considerations for resources in the study area. In general, the material provided here is based on information that was previously presented in Sections 5.1 and 5.3 of this report, or in prior SCL documents such as the PAD (SCL 2006). For each type of capacity indicator, the order of presentation includes the developed recreation sites, dispersed use areas, and the Boundary Reservoir surface.

5.5.1.1. Biophysical Capacity

5.5.1.1.1. Developed Recreation Sites

With respect to biophysical capacity indicators, the review for the developed recreation facilities in the study area includes information on both the physical condition of the facilities themselves and the ecological conditions of the site. Location, facilities and operational information for the developed recreation sites in the study area is provided in the PAD (SCL 2006) and in Section 5.1.2 of this document. Discussion of facility conditions at the site is based on the prior documentation and observations from a field visit conducted during July 2008.

<u>Vista House</u>

The Vista House interior includes interpretive displays on hydropower, local plants, and the history of the Border Patrol, and ceiling banners depicting local wildlife, geology, and history. A touch-screen kiosk provides a video about the Boundary Project and the recreation opportunities in the area. The facility interior and all displays were considered to be in very good condition in

July 2008. Likewise, the bathrooms appear to be adequately furnished for the level of use at the site and the fixtures are in good condition.

Exterior amenities at the Vista House consist of one picnic table and two benches, all observed to be in good condition. A gravel trail approximately 1/4-mile long leads from the Vista House to the outdoor viewing platform. The wooden platform shows some damage from vandalism (graffiti carved into the boards), but was otherwise in good condition. The gravel parking area provides space for approximately 20 vehicles and has a consistent surface in good condition.

Very little trash was observed at the Vista House on the July 2008 site visit, although some small litter items were scattered throughout the site. There has been substantial vegetation trampling and loss in a location near the trail leading from Vista House to the viewpoint, apparently resulting from users following a short, off-trail diversion (despite the placement of a chain link fence intended to keep visitors on the constructed trail). This trail also shows signs of localized erosion. No other signs of damage to natural resources at the site were observed during the visit.

Tailrace Recreation Area

Recreation facilities at the Tailrace Recreation Area include a large asphalt parking area with approximately 35 to 40 single vehicle spaces; 3 picnic tables housed under shelters, with a pedestal barbecue at each picnic site; a small bridge leading from the parking lot to the picnic area; and the Visitors' Gallery and its interpretive displays describing the construction of the dam, the powerhouse, and how electricity is generated. All facilities at this location were observed to be in good to excellent physical condition.

A gravel-surfaced boat launch provides access to the Pend Oreille River below the dam. The boat launch is somewhat primitive but is not intended for public use.

The Tailrace Recreation Area is part of the SCL facility complex that is dominated by constructed, hard-scape surfaces. Under the current security policy that all visitors to the Tailrace Recreation Area must participate in a guided tour, use by recreational visitors is confined to the parking lot, picnic area, and Visitors' Gallery. Although some visitors in past years may have taken the opportunity to travel or recreate along the river bank or in vegetated areas, this area does not show evidence of damage to natural resources. The site visit resulted in no observations of trash, human/animal waste, vegetation loss, user-made trails, or tree damage.

Forebay Recreation Area

Facilities at this site include a two-lane concrete boat ramp with an L-shaped boarding dock that facilitates boat launch and retrieval operations. The ramp itself is in good condition and functional, although it becomes unusable at lower reservoir levels. The carpeting material installed on the dock surface is torn in several places, and several of the bumpers along the side of the dock are worn or missing and need to be replaced. Benches located near the boat launch have worn paint, but are otherwise in good condition.

The restroom facilities at the site were clean and in good condition at the time of the July 2008 site visit. The nearby historic miner's cabin with an interpretive sign and wooden fence around

the cabin are in good condition. A large grassy area adjacent to the cabin includes three tent campsites, each with a new steel-grate fire pit and picnic table. These sites were in good condition, although trampling has caused slight vegetation loss. The tent campsite nearest the historic cabin has the most vegetation loss.

SCL has performed recent improvements to most of the eight remaining developed campsites, such as construction of new graveled parking spurs, picnic tables, and fire pits. All of the campsites at this facility are in good condition, although the two older campsites near the restrooms show considerable vegetation loss. The gravel drives at the campsites along the fence are somewhat uneven, which could hamper use of the sites by RVs.

The designated day use area located near the swimming beach has two picnic sites with tables and steel-grate fire pits, all in good condition. The horseshoe pit located in the large grassy area in the middle of the facility did not appear to be serviceable. Portions of the lawn areas of the site have thin grass cover or bare soil exposed and weeds are present (as also noted in a number of visitor survey comments). Irrigation lines for watering the lawn areas have been installed, but were not yet in operation in July 2008. The access drive that loops through the recreation area is in good condition overall, but the surface includes some holes.

During the summer 2008 site visit a few pieces of trash were observed scattered about the facility. Dog droppings were found in several locations, generally close to trees. One user-made path leading to the western shoreline of the site is evident. No noticeable damage to trees was observed at this site.

BLM Boundary Recreation Area

Conditions at this site were discussed previously in Section 5.3 (identified as Site 5NR BLM-1, and shown as location 9 on Figure 5.3-1, Map 1), because the BLM Boundary Recreation Area was included in the dispersed recreation site inventory and in the recreation survey field sampling of dispersed use areas. The site is located on the western shore of the reservoir across from Everett Island. BLM originally installed two picnic tables and two steel-grate fire rings at this location, and these items were present on a May 2008 site visit. BLM staff recently indicated that only one picnic table was observed on a visit to this site in July 2008, suggesting that users had relocated one of the picnic tables to a nearby dispersed site (Smith 2008). In addition to the constructed facilities installed by the BLM, there is a user-made fire ring adjacent to the southerly camp site and a poorly-constructed user-made toilet.

Physical conditions observed at this site suggest it receives heavier recreation use than other recreation sites within Sector 5 (the North Reservoir sector of the study area); this site was occupied 16 percent of the time during sampling in 2007. The picnic tables and steel-grate fire rings at this location were observed to be in good condition. Trash was scattered throughout the site, and human waste and toilet paper were abundant near the site on the fall 2007 follow-up visit for the dispersed site inventory (and were observed again in May 2008). Grass cover within the site boundaries was thin and patches of bare soil were evident. During a July 2008 site visit for Study 1, SCL and consultant staff noted evidence of erosion at this site, and the presence of two populations of a rare plant species that were bisected by a social trail at the BLM Boundary Recreation Area. This observation is documented in the Study 16 final report (SCL 2009b).

Metaline Waterfront Park

Physical conditions observed at the boat launch at this site in July 2008 were generally poor. The concrete base for the single-lane ramp has cracks and holes in the surface. The vehicle approach to the launch is at an unusual angle, making it difficult to back a boat trailer down the ramp. Erosion has created small run-off channels in the reservoir bed adjacent to the ramp, resulting in an uneven surface and difficult maneuvering if vehicle or trailer tires leave the concrete ramp. No auxiliary dock was in place at the time of the site visit (as was the case for most of the 2008 season), although three tubular pylons were in place for anchoring a dock. When the reservoir elevation is sufficiently high these pylons can be submerged, creating a hazard to boaters unfamiliar with the site. Dock placement at this site is difficult because river flows are periodically high enough to dislodge a dock from its moorings.

Facilities elsewhere in Metaline Waterfront Park include 18 standard picnic tables and 7 serving or banquet tables. All of the tables appeared to have worn paint or stain, and in some cases boards for the table surface or the bench seating area were missing. The concrete bases for at least two tables showed evidence of cracking.

This facility has nine picnic shelters, including two large shelters with multiple tables and seven small shelters with one picnic table each. The two large shelters were in good condition. The small shelters were observed to be in various states of repair, and several had deteriorated roofs and/or support structures. Several stone fireplaces serving the picnic facilities appeared to be in poor condition.

The bathrooms near the playground area were observed to be clean and adequate, although lacking paper towel and soap dispensers. (Park maintenance staff had provided a stack of paper towels, hand soap in a small plastic dispenser, and hand sanitizer.) A portable toilet near the boat launch needed servicing, and the ground surface under the toilet was not level.

The equipment in the children's play area was in suitable condition, but the equipment was placed on the ground surface (i.e., there is no sand or softer material for children to land on if they fall). The bridge over the small creek has suffered damage, possibly from high flows during spring 2008; the paint is worn and several boards are missing from the floor. The horseshoe pits and basketball court appeared to be in generally good condition, but brush had been left on the court and weeds were present.

The park has two main parking areas. One area is located near the bathroom and playground equipment and provides space for approximately 6 vehicles, depending on vehicle size. The other parking area is adjacent to the boat launch and is capable of holding approximately 12 vehicles, depending on size. Additional parking is permitted along the roadways, bringing the total parking capacity for the site to approximately 35 vehicles. The parking area was in good condition with the exception of the approach to the launch, as described above.

During the July 2008 site visit, trash was observed scattered throughout the site and was concentrated in or around the fire pits and stone fireplaces and near the shelters. An additional steel fire pit contained broken bottles, cans, and other trash. Some animal (dog) waste was

present. Vegetation loss was not evident in most areas of the park overall, but was noticeable around the culvert that people use to access the playground and the bathrooms from the boat launch area. This condition may have resulted from heavy activity during the Fourth of July picnic and incomplete recovery by the time of the site visit. An informal trail leads to the river near the north end of the park, adjacent to the ball field.

Box Canyon Dam/Campbell Park Boat Launch

The boat launch at Box Canyon Dam is located adjacent to the Visitor Center, which has an undefined parking area with space for approximately five vehicles. As documented in 2007 and in a July 2008 site visit, the approach to the ramp is long, uneven and narrow, requiring users to execute an unusually long backing maneuver to reach the water. Strong currents at the surface make launching difficult. The concrete surface on the ramp appears adequate, but large rocks beyond the concrete make launching difficult at low water levels. (Pend Oreille County PUD staff indicated at a May 2008 focus group meeting that the utility had plans to upgrade this boat launch [see Section 5.1.6]. As discussed in Section 5.3.2.1.3, the ramp was closed for a period in September 2008 for modifications to the structure that improved the ramp itself and added a small jetty to improve launching conditions.).

Scattered items of trash were observed along the length of the boat launch during the site visit, with higher concentrations found along the riprapped shoreline and at the end of the ramp. No animal waste was found along the ramp. The area adjacent to the boat ramp has gravel, riprap, and soil surfaces, and vegetation loss is minimal.

USFS Crescent Lake Recreation Site

The developed recreation site at Crescent Lake is located directly south of FR 3165 and approximately 1/4 mile west of SR 31. The facility is located uphill from Crescent Lake and is surrounded by mature trees with approximately 70 percent canopy closure. The facility includes three individual developed units that are used for camping and picnicking. Each unit has a parking space, concrete and wood picnic table, steel-grate fire pit, and pad for the placement of a tent or small camper. One of the units meets ADA accessibility standards, and the other two units meet the standards to a degree (Berger 2008). The site is served by a CXT-style vault toilet, an animal-proof dumpster on a concrete pad, and a wooden, three-panel information board. Barrier rocks have been installed to confine vehicles to designated roadway and parking areas.

The site is patrolled and maintained on a regular basis by the USFS. The facilities, including the camp/picnic sites, vault toilet and information board, were observed to be well maintained and in good condition. Parking capacity is sufficient, as each unit appears to have parking space for at least two vehicles. The access loop serving the site is somewhat confined, and it may be difficult for larger vehicles (e.g., full-size trucks or RVs) to navigate the loop if all of the units are occupied. Just west of the site (approximately 20 meters) is what appears to be a small wooden root cellar with no door, perhaps an interpretive display although there were no signs present and field technicians could not ascertain the purpose of this structure.

The Crescent Lake Recreation Site was inspected during the inventory of dispersed recreation sites conducted in 2007. Observations at the time for this location did not identify the presence

of notable adverse biophysical indicators such as trash, vegetation damage, or erosion. The inventory noted the existence of two user-made trails leading from the developed site down the hill to Crescent Lake and two dispersed sites located on the shoreline. Recreation survey sampling in 2007 documented an occasion when a family group camped at this location engaged in paintball activity, and paint splatters were evident for at least 2 weeks subsequent to the activity.

Sweet Creek Falls Rest Area

The Sweet Creek Falls Rest Area is located directly off of SR 31 on the west side of the highway. The facility is served by a paved access drive that parallels the highway and has two connecting entrance/exit points. Paved and striped parking areas provide space for approximately 20 standard vehicles and 3 RVs. The site is served by a concrete vault toilet with a metal roof designed to shed snow. There are 9 individual picnic units distributed around the site, each with a new composite picnic table and a pedestal barbeque grill. Other amenities include 4 wooden benches, including 3 situated near the creek and one adjacent to the parking lot. A paved trail leads from the parking lot to the picnic sites. Beyond the last picnic site the trail has a native surface for the relatively short distance to the falls.

Road crews from the Pend Oreille County Public Works Department inspect and maintain the site on a regular basis (Curren 2008). The site is open on a year-round basis and the access drive is plowed in the winter. The Public Works Department does not maintain formal records of facility conditions at the site. The facilities are approximately 3 years old, and consequently appear in excellent condition. County staff have noted past incidence of vandalism to the toilet structure, but there have been no such reports for approximately the past year. Several comments on visitor surveys completed during 2007 sampling referred to maintenance needs for the toilet, primarily from visitors who found the bathroom to be out of toilet paper. The field review in 2008 did not identify adverse biophysical conditions at the rest area.

5.5.1.1.2. Dispersed Use Areas

Survey crews identified and inventoried dispersed recreation sites in the study area during the 2007 sampling season. An initial inventory occurred in the late spring and early summer to locate sites and record the conditions found at the sites, including site capacity factors, biophysical measures such as litter and vegetation loss, water- and land-based access to the sites, and the presence of user-made amenities. The sites were visited again in the fall to confirm the original inventory and check for changes in use conditions during the summer. Twenty-five sites were found within the study area that could be considered dispersed recreation sites. The results of the inventory work are summarized in Section 5.3, and additional information is provided in Appendix 5.

Recorded observations at the dispersed sites relative to biophysical conditions are summarized in Table 5.5-1.

Table 5.5-1. Recorded observations at dispersed recreation sites.

Map Number	Sector/Location/ Site Code	Location Name	Recorded Observations
	Sector 4 (RD)		
1	4RD 172-1	Road 3100-172	occupied approximately 9% of time during season no substantial vegetation or trampling loss trees were in good condition with no damage no evidence of human waste user-made fire pit contained substantial trash
2	4RD 172-2	Road 3100-172	Minimal evidence of use in several years recent human feces and toilet paper noted in spring no changes noted in fall visit
3	4RD 190-1	Road 3100-190	2007 occupancy rate 16%, primarily in hunting season freshly dug pit toilet had not been used, but other evidence of human waste noticeable vegetation loss light trash found scattered throughout surrounding trees fresh tire tracks noted in fall, pit toilet may have been used
4	4RD 310-1	Road 3100-310	burned trash in fire ring trampling/vegetation loss minimal no visitors at this site during 2007 sampling
5	4RD 305-1	Road 3165-305	2007 occupancy rate 28 percent trampling and vegetation loss considerable two social trails leading to the developed USFS sites above the lake trash apparent on both visits substantial human waste along trail leading to original campground
6	4RD 305-2	Road 3165-305	2007 occupancy rate 13 percent trampling and vegetation loss considerable two social trails trash was apparent on both visits substantial human waste along trail leading to original campground

Table 5.5-1, continued...

Map Number	Sector/Location/ Site Code	Location Name	Recorded Observations
7	4RD 325-1	Road 3165-325	remnants of trash in fire pit does not appear to have been used for some time vegetation loss minimal elk droppings found at site no visitors were observed during 2007
8	4RD 325-2	Road 3165-325	vegetation loss minimal no litter was found site occupied once during 2007
	Sector 5 (NR)		
9	5NR BLM-1	BLM	agency-installed picnic tables and fire rings poorly constructed user-made toilet human waste, toilet paper abundant on fall follow-up visit site conditions indicate heavier use than other sites site occupied 16% of the time in 2007 vegetation loss was considerable trash scattered throughout the site
10	5NR BLM-2	BLM	several trees cut to height of 4 feet but field crews were unable to ascertain their purpose. another tree carved into a totem pole occupancy rate of 4% in 2007 several burnt or broken bottles in fire pit, no other trash no human/animal waste found trampling/vegetation loss minimal
11	5NR BLM-3	BLM	tent pads cleared of trees and leveled abundant trash in fire pit on fall visit government-issue picnic table relocated to this site multiple social trails to the tent pads user-made toilet facility with bucket and shovel human waste and toilet paper apparent throughout site noticeable bank erosion near fire pit user-made amenities suggest moderate to heavy use, but occupancy rate 4% in 2007
12	5NR BLM-4	BLM	Initial inventory in September 2007 visitor reported clearing brush and pruning trees in 2007 no trash was found on site

Table 5.5-1, continued...

Map Number	Sector/Location/ Site Code	Location Name	Recorded Observations
13	5NR DE-1	Deadman's Eddy	broken glass and beer bottles in fire ring, no other trash constructed rock cairn placed near site as marker little vegetation loss human waste not evident no occupancy observed in 2007
14	5NR DE-2	Deadman's Eddy	fresh ATV tire tracks on October 2007 visit trash scattered throughout site toilet paper found along gated road vegetation loss concentrated near more recently used fire pits user-made ATV trail leads from site to shoreline no occupancy observed in 2007
15	5NR DE-3	Deadman's Eddy	no evidence of recent use vegetation loss minimal no trash was evident at site no occupancy observed in 2007
16	5NR EI-1	Everett Island	trash in one fire ring no vegetation loss no occupancy observed in 2007[1]
17	5NR EI-2	Everett Island	fire rings not recently used no trash or vegetation loss no occupancy observed in 2007
18	5NR EI-3	Everett Island	some trash present some vegetation loss visitors observed on one occasion in 2007
19	5NR FI-1	Rat Island (Forebay)	noticeable vegetation loss on highest portion of island, from use by geese site has not been used recently several social trails litter and human waste not evident no occupancy observed in 2007

Table 5.5-1, continued...

Map Number	Sector/Location/ Site Code	Location Name	Recorded Observations
20	5NR LC-1	Lime Creek	extensive user-made improvements social trail leading uphill behind site to road spur vegetation loss evident in cleared tent pad areas and on trail to user-made toilet no evidence of trash one occupancy observed in 2007 (day use)
21	5NR MB-1	Monument Bar	user-made trail from FR 3100-316 fire pit did not show recent used user-made toilet, four tent sites evident vegetation loss at site proper and on social trails trees were pruned of their lower branches to accommodate tents no trash found at site no occupancy observed in 2007
	Sector 3 (SR 31)		
22	3SR31 SC-1	Sweet Creek	never occupied during sampling no trash was apparent very little trampling/vegetation loss two apparent user-made trails left the site site in good condition overall
	Sector 6 (SR)		
23	6SR WC-1	Wolf Creek	no adverse biophysical indicators no occupancy observed in 2007
24	6SR SG-1	Gaging Station	fire pit with a little trash, some trash along shoreline vegetation loss confined to road no human waste was found site occupied 4% of time in 2007
25	6SR SG-2	Gaging Station	slight evidence of trampling fire ring not used recently no occupancy observed in 2007

Note:

1 Everett Island is a small island or peninsula depending on reservoir levels across from 5NRBLM-1. Three dispersed sites are located on Everett Island with possibly a fourth site in the past that showed no indications of recent use. Researchers recorded no visitor use at these sites during 2007 with one notable exception. Visitors were spotted at 5NREI-3 in the spring of 2007, when researchers were testing the observation instrument. These visitors were gone by the time field technicians came back.

5.5.1.1.3. Reservoir Surface

Natural resource conditions on the surface of Boundary Reservoir were not specifically addressed in the dispersed site inventory or in the visitor use sampling conducted during the 2007 recreation season. Survey crews traveled the North Reservoir (Boundary Dam to Metaline Falls) during 45 sampling periods in 2007, and sampled the South Reservoir (Metaline Falls to Box Canyon) on 48 occasions during 2007. Their recorded observations from those frequent sampling events do not include any notations suggesting recreational use was causing damage to the reservoir surface (i.e., the water resource). The biophysical carrying capacity of the reservoir can best be addressed through review of the studies oriented to water quality and aquatic resources.

5.5.1.2. Social Carrying Capacity

The concept of social carrying capacity is often measured in terms of visitor perceptions of crowding and conflict with other visitors. Social carrying capacity considerations for the Project are addressed primarily through review of selected results from the visitor and area resident surveys conducted during 2007. Both surveys included questions asking respondents about crowding, conflicts with others, and their reactions to perceived crowding and conflict.

Respondent perceptions of crowding were measured on a scale from 1 to 9, with 1 being "not at all crowded" and 9 being "very crowded." Table 5.5-2 summarizes the overall ratings of crowding at the primary destination for the visitor and area resident sample populations as a whole. Seventy-seven percent of visitors and 61 percent of residents reported ratings of 1 to 3, indicating they felt little or no crowding at their primary destination. Compared to the visitors, a greater proportion of area residents (32 percent) reported feeling moderately crowded at their primary destination. The area residents also had a higher overall mean for their ratings (3.37). Relative to the social carrying capacity of the study area, however, the results from both sample populations are clearly weighted toward the low (not crowded) end of the scale. These survey responses do not indicate that the level of recreational use is approaching the social carrying capacity of the Boundary Reservoir area.

Table 5.5-2. Visitor and area resident ratings for crowding at their primary destination.

Rater	Crowding Ratings					
	1–3		4–6		7–9	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Visitor[1]	448	77.4	107	18.5	24	4.1
Resident[2]	165	61.1	85	31.5	20	7.4

Notes:
1 Percentages are based on 579 respondents; Mean = 2.43, Median = 2.00, Mode = 1, Std. Dev. = 1.92
2 Percentages are based on 270 respondents; Mean = 3.37, Median = 3.00, Mode = 2, Std. Dev. = 2.05

Visitors and area residents were also asked a simple "yes" or "no" question whether they had experienced conflict with others at their primary destination. Aggregate responses are summarized in Table 5.5-3. Large majorities of both sample populations (over 80 percent in

each case) reported they had not experienced conflict. The proportion of area residents who reported experiencing conflict (16 percent) was higher than the corresponding figure among visitors (11 percent).

Table 5.5-3. Visitor and area resident responses for experiencing conflict at their primary destination.

Did you experience conflict?	Visitors		Residents	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Yes	62	10.7	43	15.6
No	515	89.3	232	84.4
Total	**577**	**100.0**	**275**	**100.0**

5.5.1.2.1. Developed Recreation Sites

The survey responses regarding crowding and conflict have been analyzed in greater detail to investigate user perceptions for developed recreation sites in the study area. Table 5.5-4 shows the distribution of the visitor survey ratings for crowding based on the specific sites that respondents identified as their primary destination. Overall, almost 78 percent of visitors reported ratings of 1, 2, or 3 on the crowding scale, and only 4 percent reported feeling high levels of crowding. When viewing the crowding responses by groups based on their primary destinations, visitors who identified the Vista House, Tailrace Recreation Area, Visitors' Gallery, Metaline Waterfront Park and Sweet Creek Falls Rest Area as their primary destinations had higher percentages reporting low crowding ratings (they felt less crowded) than did the sample population as a whole. The sites with the lowest percentage of respondents in the 1-3 range on the crowding scale were Crescent Lake (67 percent), Forebay Recreation Area (68 percent), and Campbell Park (70 percent). By extension, 25 to 33 percent of the visitors who identified these locations as their primary destination reported moderate levels of crowding.

Table 5.5-4. Visitors' ratings of crowding at their primary destination.

Primary Destination	Crowding					
	1–3		4–6		7–9	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Vista House	34	94.4	2	6.0	0	0.0
Visitors' Gallery	28	93.3	1	3.6	1	3.6
Tailrace Rec. Area	9	90.0	1	10.0	0	0.0
Forebay Rec. Area	86	68.3	31	24.6	9	7.1
Reservoir Surface	74	79.6	17	18.3	2	2.2
Crescent Lake	8	66.7	4	33.3	0	0.0
Metaline Waterfront Park	51	85.0	6	10.0	3	5.0
Campbell Park	57	69.5	22	26.8	3	3.7
Sweet Creek Falls Rest Area	33	89.2	4	10.8	0	0.0
Boat-in site	9	75.0	2	16.7	1	8.3
Other	48	75.0	12	8.8	4	6.3
Total	**437**	**77.7**	**102**	**18.2**	**23**	**4.1**

Notes:
Table percentage entries are based on number of respondents in each site-based group.
Crowding scale is 1 to 9, with 1 "not at all crowded" and 9 "very crowded."

Table 5.5-5 provides a similar breakdown for visitor and area resident respondents who reported experiencing conflict at their primary destination. Among the visitor survey sample population, 34 percent of those who reported experiencing conflict identified the Forebay Recreation Area as their primary destination, and 29 percent identified Campbell Park as their primary destination. The responses from area residents reporting conflict were most common for Campbell Park, followed by a relatively even distribution among the Forebay Recreation Area, Crescent Lake, Metaline Waterfront Park, and the reservoir surface. Among both visitors and area residents who identified the reservoir surface as their primary destination, 16 percent reported experiencing conflict.

Table 5.5-5. Visitor and area resident respondents who experienced conflict, by primary destination.

Primary Destination	Visitors Experiencing Conflict		Residents Experiencing Conflict	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Vista House	0	0.0	0	0.0
Visitors' Gallery	1	1.6	0	0.0
Tailrace Rec. Area	0	0.0	1	2.3
Boundary Rec. Area	21	33.9	7	16.3
Reservoir Surface	10	16.1	7	16.3
Crescent Lake	1	1.6	7	16.3
Metaline Waterfront Park	1	1.6	5	11.6
Campbell Park	18	29.1	11	25.5
Sweet Creek Falls Rest Area	0	0.0	2	4.7
Boat-in site	3	4.8	2	4.7
Other	7	11.3	1	2.3
Total	**62**	**100.0**	**43**	**100.0**

For recreation sites that are at least moderately popular, it may be unavoidable that some visitors will feel crowded and/or experience conflict at some time. The key question for social carrying capacity is whether the level of crowding or conflict causes a visitor to become displaced (by deciding not to return to the area). Table 5.5-6 presents the frequencies and percentages of visitors and area residents who stated that they were going to adjust their recreation plans based on experiences with crowding or conflict, again based on the site they identified as their primary destination. Overall, 94 percent of the visitor respondents stated they did not intend to change their plans, whereas only 6 percent stated they would change their plans. The response for all area residents was very similar, with 91 percent saying they were not going to change their plans. Based on the small overall percentages of both visitors and area residents who indicated they would change their plans, and similar results across the respective sites, social carrying capacity does not seem to be an issue at this time.

Table 5.5-6. Visitor and area resident intent to adjust recreation plans due to crowding or conflict at their primary destination.

Primary Destination	Visitors Adjusting Plans[1]				Residents Adjusting Plans[2]			
	No		Yes		No		Yes	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Vista House	37	100.0	0	0.0	4	100.0	0	0.0
Visitors' Gallery	28	90.0	3	9.7	7	87.5	1	12.5
Tailrace Rec. Area	8	88.8	1	11.1	14	93.3	1	6.7
Boundary Rec. Area	104	86.7	16	13.3	33	91.7	3	8.3
Reservoir Surface	82	94.2	5	6.1	45	91.8	4	8.2
Crescent Lake	12	100.0	0	0.0	21	87.5	3	12.5
Metaline Waterfront Park	58	98.3	1	1.7	52	94.5	3	5.5
Campbell Park	79	96.3	3	3.7	30	88.2	4	11.8
Sweet Creek Falls Rest Area	30	96.8	1	3.2	13	92.9	1	7.1
Boat-in site	11	100.0	0	0.0	4	80.0	1	20.0
Other	58	93.5	4	6.5	10	90.9	1	9.1
Total	**507**	**93.7**	**34**	**6.3**	**233**	**91.4**	**22**	**8.6**

Notes:
1 Table percentage entries are based on number of respondents per site-based group (541 total respondents)
2 255 respondents

During the carrying capacity analysis, managers of developed recreation sites were also asked for their impressions of crowding and conflict among visitors. SCL operations staff acknowledged that use of the Forebay Recreation Area campground has been over capacity on some summer weekend days in recent years, and they are aware of occasional incidents with unruly visitors and complaints about the behavior of some visitors (Baird 2008). Similar observations are reflected in some verbatim responses to the surveys. As a group, managers seemed to believe that these types of issues with visitors did not seem to be inordinately frequent, or beyond the capacity of the management resources available. For example, Olympic Security regularly patrols the recreation facilities near Boundary Dam and provides a visible security presence. USFS staff noted that the high profile and frequent presence of Border Patrol personnel in areas near the international border has likely reduced the "bad camper" element that might otherwise occur at times at Crescent Lake or similar sites (Berger 2008). A Town of Metaline representative indicated that the Town has not experienced problems resulting from conflicts among visitors at Metaline Waterfront Park (Reiber 2008).

5.5.1.2.2. Dispersed Use Areas

The sample population from the visitor survey included few respondents who reported use of a dispersed site in the study area. (That situation could be expected, even though survey crews sampled on the reservoir and at the access points, and is consistent with the low use observed for the dispersed sites). Looking at the previous tables, only 13 visitor respondents (2.3 percent of total visitors) and 6 area residents (2.2 percent of the total) identified a boat-in site or dispersed site as their primary destination. Among these respondents, three of the visitors (23 percent of

the group) and two residents (33 percent) reported experiencing conflict at the primary destination. Seventy five percent of the visitors (9 in number) rated crowding on the low end of the scale (1 to 3), but one visitor felt very crowded and two visitors reported moderate levels of crowding. Five of the resident respondents (83 percent of this group) felt that crowding was low in the dispersed sites, while one resident felt very crowded. The percentage distributions among these small samples are similar to the crowding and conflict results as a whole and for the sites more commonly identified as a primary destination. More importantly, the 2007 visitor count data and the low numbers of survey respondents identified as dispersed-site users indicate that the existing use level for the dispersed sites should be below the social carrying capacity.

5.5.1.2.3. Reservoir Surface

Forty-two percent of the visitor survey respondents reported operating a boat on their visit to the Boundary Reservoir Area, as did 47 percent of area resident respondents. Table 5.5-7 summarizes the responses to the crowding question for these subsets of the sample populations. Overall, 71 percent of visitors who participated in boating provided crowding responses in the lower third of the scale (from 1 to 3), as did 65 percent of residents who gave this rating. Among both groups, well over 20 percent felt moderate crowding, and at least 6 percent gave ratings in the 7 to 9 range. The percentages for the moderate and high crowding ratings among boaters are noticeably higher than for the sample population as a whole (see Table 5.5-2), as are the mean ratings for visitor and area resident boaters (2.82 and 3.26, respectively). Although boaters reported feeling more crowded than recreational users of the study area in general, the boater responses and the 2007 sampling counts of boat activity are not indicative of a high boat density on the reservoir.

Table 5.5-7. Crowding responses from visitor and area resident boat operators at Boundary Reservoir.

Respondent	Crowding of Boaters					
	1–3		4–6		7–9	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Visitor[1]	163	71.5	51	22.4	14	6.1
Resident[2]	78	65.0	32	26.7	10	8.3

Notes:
1 Percentages are based on 228 respondents; Mean = 2.82, Median = 2.00, Mode = 1, Std. Dev. = 2.17
2 Percentages are based on 120 respondents; Mean = 3.26, Median = 3.00, Mode = 2, Std. Dev. = 2.00

5.5.1.3. Management Carrying Capacity

As discussed in Section 5.5.1, consideration of the management carrying capacity includes capacity factors based on legal directives, agency mission statements, and other policy related guidelines that may suggest appropriate management objectives and related indicators and standards of quality. The availability of management resources, such as funding and personnel, may also influence or determine the types and levels of recreation use that are possible or feasible from the manager's perspective.

Identification of suitable management capacity measures applicable to the Project area is difficult, for a variety of reasons. Several of those factors relate to management jurisdiction over the recreation resources present, which is divided among multiple entities. Although SCL is the licensee for the Project, the State of Washington and Pend Oreille County have jurisdiction over several key aspects of the water resource, and SCL has limited authority to regulate activity occurring on the reservoir. SCL manages the largest share of the recreational resources in the study area, but has not developed specific direction for how the SCL resources are to be managed. The terms of the existing FERC license are quite general with respect to recreation and do not represent a basis for identifying capacity limits for the SCL recreation facilities based on management considerations. Operation and maintenance of the recreation facilities has been integrated with other ongoing Project functions, and the availability of administrative resources for the recreation facilities has not been an issue.

Similar conditions apply to the other entities providing recreation resources in the study area. Based on interviews with developed recreation site managers and information documented in the PAD (SCL 2006), the RSP (SCL 2007a), and elsewhere in this report, management capacity considerations for recreation providers other than SCL are summarized as follows:

- The BLM faces some practical management constraints with respect to the BLM Boundary Recreation Area, primarily relating to geographic and agency resource conditions. This site is the only developed recreation site operated by the BLM within the northeastern Washington counties, the site is a long distance from the Spokane District Office, and a single BLM staff member is responsible for agency recreation resources within a broad geographic area. Consequently, the agency has a quite limited management presence within the Project area.

- Based on document review and communication with town officials, there does not appear to be a documented plan or management direction for Metaline Waterfront Park. The Town of Metaline is a small community, however, and actions taken involving the park are subject to the practical limits of funding and personnel available to the Town.

- Pend Oreille County PUD operates the facilities at Campbell Park according to the terms of the FERC license for the Box Canyon Project. SCL is not aware of any capacity limits defined for those facilities through associated planning efforts, and Pend Oreille County PUD did not identify any such limits when contacted for information about the facilities.

- The USFS follows standardized guidelines for determining capacity levels and monitoring visitor use relative to capacity. The agency typically applies a planning factor of a maximum of eight (8) people at one time (PAOT) for a standard campsite such as those present at the Crescent Lake Recreation Site (Berger 2008). By that measure, this facility has a capacity of 24 PAOT established through management direction. Recent experience with the site has been that USFS staff has occasionally encountered large groups exceeding that number; on such occasions the users have been told they should consider reserving a USFS group site, but have not been

required to move. The USFS also has an inventory of known dispersed sites on the CNF and monitors conditions at those sites on an ongoing basis. Contacts with agency staff did not indicate management issues have been identified for dispersed sites on NFS land within the Project study area.

- The Pend Oreille County Public Works Department has not established formal management direction for the Sweet Creek Falls Rest Area (Curren 2008). County road crews monitor and maintain the facility as a part of their regular road maintenance duties, and have encountered no difficulties in meeting the management needs for the site.

In summary, to this point in the carrying capacity analysis SCL has not identified any specific management considerations that would logically serve as a basis for defining carrying capacity limits for individual recreation resources at the Project.

5.5.2. Limiting Factors

The review of biophysical conditions identified some minor issues at all of the developed sites in the study area. The limited instances of resource damage do not appear to be significant, and are not considered to be indicators that the overall biophysical carrying capacity of any of the developed sites has been exceeded. Field review of site conditions and contacts with people involved in management of the facilities did not result in indications of excessive litter, vegetation/trampling loss, human/animal waste, tree damage, or an abundance of user-made trails. In summary, evidence of resource damage at the developed sites does not suggest that biophysical carrying capacity has been exceeded, or that there is a potential need to consider limitations on use of developed sites to protect natural resources.

Similar results apply to the assessment of biophysical conditions at the dispersed recreation sites in the study area. Visitor use of these sites is demonstrated to be low, based on the visitor counts and survey components of the RRS conducted in 2007. Evidence of some degree of litter, vegetation trampling/loss, human/animal waste, tree damage, and development of user-made trails was recorded at many of the dispersed sites, although resource damage did not appear to be severe at any of the sites. The dispersed site at Monument Bar represents an unusual case, in that use of the site was not observed during sampling in 2007 but vegetation damage from users clearing an ATV trail and a camping area into the site is quite evident. Similar evidence of vegetation removal to clear space for camping is evident at one of the dispersed sites on BLM land (Site 11 in Table 5.5-1). In addition, as noted in Section 5.5.1, through Study 1, Erosion Study (SCL 2009c) evidence of shoreline erosion that is partially attributable to recreation use has been observed at the BLM Boundary Recreation Area and a dispersed site on BLM land. Based on the generally low level of use at the dispersed sites, the resource damage that has occurred appears to be attributable to specific user behavior (vegetation clearing) and does not appear to be an unavoidable consequence of the level of use.

Section 5.5.2 includes an extensive review of social carrying capacity indicators, based primarily on analysis of the visitor and area resident survey results. Although a minority of respondents reported feeling crowded or experienced conflict with others, the overall assessment is that the level of use is not exceeding the social carrying capacity. As discussed in Section 5.5.3,

investigation for the carrying capacity analysis did not identify specific management policies or constraints that represent established limits on carrying capacity for recreation resources in the study area. Consequently, to the extent that limiting factors may apply to current or future levels of recreation use in the study area, those limiting factors would be based on the physical capacity of developed sites and dispersed use areas to accommodate the respective user population. Those capacity and use conditions are summarized in the following discussion.

5.5.2.1. SCL Developed Recreation Facilities

Physical capacity factors for the SCL Vista House, Tailrace Recreation Area, and Forebay Recreation Area have not been defined in a formal sense (i.e., SCL has not adopted guidelines indicating the maximum number of visitors that can be accommodated at each site). However, physical attributes such as numbers of camp sites, picnic sites, and parking spaces represent practical limits on visitor loads for the facilities. Based on the facility inventory and the visitation data provided in Section 5.1.2, utilization versus capacity conditions for these sites are reviewed below.

5.5.2.1.1. Vista House

The primary or most appropriate measure of physical capacity for the Vista House is the capacity of the parking area, which has space for approximately 20 vehicles. Applying the average group size of 2.6 people (identified by the responses to the visitor survey), the site has a capacity to accommodate at least 52 people at one time. During the 2007 sampling for the visitor counts, the maximum number of visitors observed in a single sampling period was 25 people (see Section 5.1.2.1.1). Those visitors arrived in groups from 1 to 4 people at intervals over a period of nearly 4 hours, indicating that the maximum number of people present at any one time would have been considerably less than 25. The largest visitor group observed at any time at the Vista House in 2007 included 7 people. Given that visitor stops at the Vista House tend to be quite short in duration, it is evident that the site can accommodate a visitor volume much larger than the numbers observed in 2007.

5.5.2.1.2. Tailrace Recreation Area

The visitor capacity for the Tailrace Recreation Area is difficult to interpret because of the unusual management conditions for the facility, which are determined by security procedures that have changed considerably over time. During the 2007 season, most visitors to the Tailrace Recreation Area were participants in group tours, although visitors were allowed to access the site on their own after checking in at the gatehouse on the access road. Different security procedures were in effect in 2008, however, and visitors were allowed to access the Tailrace Recreation Area only as participants in group tours. Assuming these management conditions continue in the future, the limit on visitor capacity is probably determined by the number of visitors that can be accommodated on a single tour and the number of tour guides that SCL chooses to deploy. The availability of space in the Tailrace Recreation Area parking lot may also be a factor at specific times.

The total parking capacity available at this facility consists of spaces for 36 single vehicles, 2 buses, and 6 vans or vehicles with trailers. This capacity is shared by recreational visitors, SCL operations staff, and administrative or commercial visitors. Observations of activity in the

Tailrace Recreation Area during the 2007 season included a maximum count of 24 vehicles (from all sources), indicating that a minimum of 12 spaces were available even at a time of peak use. If 12 spaces are considered to be the parking capacity available to visitors, this amount of vehicle space would equate to a person capacity of approximately 30 visitors at one time (based on 2.5 people per group) if all were transported in standard passenger vehicles; the visitor capacity could be considerably larger than 30 if some visitors arrived in vans or buses. Because tours operate on an hourly basis during the tour season, that figure can be interpreted as a minimum hourly capacity limit.

Peak daily numbers for tour guests in 2007 were 93 people on September 20, 67 each on May 25 and June 4, and 66 on September 2. Data for 2008 reflect peak daily numbers of 92 people on August 31, 82 on June 28, and 72 on May 24. With up to 6 or 7 tour times available each day, individual tour groups would include at most 15 to 20 people each even on a peak-use day. The tour operation clearly has sufficient staff to accommodate over 90 guests in a single day. Based on the apparent availability of parking space, the physical capacity for visitors at the Tailrace Recreation Area is at least 30 people per hour, or 180 people per day. Based on the available capacity and visitor use measures, it is evident that current use of the Tailrace Recreation Area is well below capacity.

5.5.2.1.3. Forebay Recreation Area Campground

Based on the number of individual units that have been constructed and equipped for camping use, the current formal capacity of the campground at the Forebay Recreation Area is 11 sites. This figure should be interpreted as a "soft" capacity limit, however. There are open areas of the site that can and occasionally are used to accommodate overflow camping use. In addition, there are times when overnight campers occupy one or both of the sites designated for day use only. Consequently, as indicated in Section 5.1.2.1.3, the peak camping use observed during the 2007 sampling season was 16 occupied campsites, on Sunday, August 19. Survey crews also recorded 12 occupied campsites on two occasions, Saturday, August 18 and Saturday, May 26 (on the Memorial Day weekend). Therefore, observed camping use exceeded the formal capacity of the site on 3 weekend days (2 separate weekends), out of 21 weekend/holiday sampling periods during the season.

For all weekend samples in 2007, camping use at the Forebay Recreation Area averaged 7.8 occupied sites. Relative to the formal capacity, actual weekend/holiday use over the full season represented 71 percent of the capacity. The weekend/holiday utilization rate during the primary use season was somewhat higher because the sample results included 2 weekend samples after Labor Day with a total of 4 occupied campsites. Weekday occupancy averaged 3.9 sites per sample, or 36 percent of capacity.

5.5.2.1.4. Forebay Recreation Area Boat Ramp/Day-Use Area

Two physical capacity factors represent potential limits on the volume of use at the Forebay Recreation Area day use facilities. Those include the parking capacity available to the users of these facilities and the launching capacity of the boat ramp.

The parking area adjacent to the boat launch and picnic sites generally does not have distinct boundaries, and individual parking spaces are not defined. Capacity of the parking lot itself is

estimated at approximately 20 spaces. Space along the looped access drive is sometimes used for additional parking, although (as discussed above) undefined areas of the site are also used at times for overflow camping.

During recreation survey sampling in 2007, survey crews recorded the number of parking spaces occupied at the beginning and end of a sample period, and the numbers of vehicles entering and leaving during the sampling period. These data do not specifically define the maximum number of vehicles present at the peak time during a sampling period, but they provide a reasonable approximation of vehicle load during the period. The beginning counts of parking spaces occupied indicated a maximum of 17 and were greater than 10 on 7 occasions. Counts of parking spaces occupied at the end of sampling periods ranged as high as 16 and exceeded 10 on 7 occasions. Data for Saturday, August 18, one of the busiest days during the season, indicate that 17 parking spaces were occupied at the beginning of a p.m. sampling period. Sixteen vehicles entered the site during the sampling period, while 24 vehicles left. On Sunday, August 5, 16 spaces were occupied at the beginning of another p.m. sampling period (including 15 vehicles with trailers), and 11 vehicles entered and 20 vehicles exited. On these days it appears that the number of vehicles present for a portion of the day may have exceeded the estimated capacity of the parking area by the boat ramp (survey crews were generally tracking vehicle numbers, but were not performing repeated instantaneous vehicle counts at intervals during the sampling periods). The individual spaces within the parking area are not marked and parking patterns at the site can result in inefficient use of space. Consequently, the site can appear congested at times even if the number of vehicles present is less than the nominal capacity, and there were occasions during the 2007 season when vehicles were parked outside of the parking area.

The standard approach for defining the launching capacity of a boat ramp is based on the number of launch lanes provided at the facility. There is no universally defined standard or guideline, but a factor of 40 boats per lane per day is often used. Based on its physical dimensions, the boat ramp at the Forebay Recreation Area has two launch lanes. It is questionable whether the available space and vehicle circulation pattern around the ramp would permit simultaneous use by two vehicles with boat trailers during times of peak use, however. Therefore, the practical capacity of the ramp is considered to be somewhat uncertain; the practical capacity is at least that of a single launch lane, or 40 boats per day, but is not likely to be as much as 80 boats per day.

As noted in Section 5.1.2.1.3, the busiest day of boat launch use at the Forebay Recreation Area during sampling in 2007 was Saturday, August 18, when 41 launch operations (5 boats launched and 36 retrieved) were observed between approximately 1:30 p.m. and 7:30 p.m. Use of the ramp on that particular day may have been near capacity, if the practical capacity is interpreted to be 40 boats per day (as is the case for a single-lane ramp). The next highest level of observed use was 34 launch operations on Saturday, August 11. Boat ramp activity did not exceed 20 operations during any other sampling periods during the season. Based on these results, current boat launching activity at the Forebay Recreation Area is typically below the practical capacity of the ramp (excluding any consideration of the associated parking capacity) except on rare weekend days during the peak summer season. If the ramp were able to operate with both launch lanes in use, the current use level would be well below capacity even at peak times.

5.5.2.2. Non-SCL Developed Sites

Developed recreation facilities in the study area operated by entities other than SCL include the BLM Boundary Recreation Area, Metaline Waterfront Park, the Box Canyon Dam/Campbell Park Boat Launch, the USFS Crescent Lake Recreation Site, and the Sweet Creek Falls Rest Area. Similar to the previous discussion for the SCL facilities, physical attributes such as numbers of camp sites, picnic sites and parking spaces represent practical limits on visitor loads for these facilities. Based on the facility inventory and the visitation data provided in Section 5.1.2, utilization versus capacity conditions for these sites are reviewed below.

5.5.2.2.1. BLM Boundary Recreation Area

The realistic capacity of this site is somewhat uncertain. The facility as developed by the BLM has two defined campsites. In the dispersed site inventory conducted during 2007, field crews estimated that the site contained sufficient cleared space to accommodate 6 tents. The practical or comfortable capacity of the site at any given time will vary with the number of parties who might wish to use the site and the number of people in each group. Under some circumstances, 2 parties of 2 people each might fully occupy the site. If the USFS planning guidelines discussed previously (8 PAOT per unit) were applied, the capacity would be 16 people at one time for the two designated sites. Practically speaking, the site is unlikely to be used by more than one party at a time because the layout of the site does not provide for physical separation between parties.

Survey crews observed users present at the BLM Boundary Recreation Area on 7 of 45 sampling observations during 2007, for an overall seasonal occupancy rate of 16 percent. The observed occupancy rate on weekends was 25 percent (4 of 16 samples). Survey crews recorded the presence of 4 tents at the site on a single occasion, and from 0 to 2 tents at the other times the site was occupied. A season total of 11 people who appeared to be camping were noted in the counts, with a maximum of 4 in any sample. Based on these use numbers and the fact that no use was observed at the site on most weekends during the summer, current use of the BLM Boundary Recreation Area is considerably below capacity.

5.5.2.2.2. Metaline Waterfront Park

Because Metaline Waterfront Park includes several types of recreation facilities and accommodates a wide variety of activities, any number of physical capacity measures could be considered for this site. Aside from conditions during special events, such as the annual Fourth of July picnic, however, the use levels recorded during the 2007 sampling season indicate that a rigorous review of capacity factors and utilization is not necessary. For example, the picnic facilities at the park include 18 standard picnic tables and 7 banquet tables, which would provide seating space for at least 150 people at an assumed 6 people per table. Excluding special occasions and large-group functions, the highest number of picnickers observed at the site for a single sampling period was 10. Similarly, the two defined parking areas have space for at least 18 vehicles, and the largest number of vehicles observed at the site in 2007 (other than on July 4) was 11.

The boat ramp at this site has a single launch lane. Per the above discussion for the ramp at the SCL Forebay Recreation Area, the ramp at Metaline can be assumed to have a capacity for 40 boats per day. The highest observed use of the ramp during the 2007 sampling was 7 boat

launch/retrieval operations; this was a cumulative total for both a.m. and p.m. sampling periods totaling 6.25 hours on a Sunday in July. No more than 3 launch operations were recorded during any other sampling period. Under typical conditions, it is clear that use of the ramp is well below capacity. That generalization does not apply to special events, particularly the annual smallmouth bass tournament on the first weekend in May.

5.5.2.2.3. Box Canyon Dam/Campbell Park Boat Launch

Similar to Metaline Waterfront Park, the boat launch at Box Canyon Dam has a single launch lane and a nominal capacity for 40 boats per day. Because of the specific physical conditions at this launch (at least prior to recent changes undertaken by the Pend Oreille County PUD; see the previous discussion in Sections 5.3.2.1.3 and 5.5.1.1.1), the practical capacity might be less than the typical single-lane capacity factor. Nevertheless, with only 5 launch operations observed during the entire 2007 sampling season, it is evident that use of the ramp at Box canyon Dam is well below capacity.

5.5.2.2.4. USFS Crescent Lake Recreation Site

As noted previously, the USFS considers the capacity of each campsite at Crescent Lake to be 8 PAOT, or a combined 24 PAOT for the three units at the site. Survey crews recorded observations of 41 total people and 23 vehicles for this location over the 2007 sampling season. Occupancy rates for the individual sites ranged from 13 to 22 percent on a seasonal basis, and from 14 to 24 percent for weekend and holiday observations (see Table 5.3-8). USFS staff reported that use of the Crescent Lake facility has decreased noticeably since September 11, 2001, and consider the site to now be underutilized (Berger 2008). USFS monitoring indicated that all three sites were occupied on probably three or four weekends during the 2008 season, with typically only one site occupied on a given weekend.

5.5.2.2.5. Sweet Creek Falls Rest Area

The Pend Oreille County Public Works Department has not defined the user capacity for this site and has not developed information on the distribution of on-site activity between recreational use (picnicking and viewing the falls) and rest-stop activity. Similar to the conditions discussed previously for the Vista House, the practical capacity of the site is based on the available parking space and typical visit durations (which are quite short).

The parking area at the site provides space for approximately 20 standard vehicles and 3 RVs or buses, representing a capacity of at least 50 to 60 people at one time. The maximum number of visitors observed in a single sampling period in 2007 was 65 people during a 2.5-hour period on Saturday, September 1 (see Section 5.1.2.1.1 and Appendix 2b). Those visitors arrived in 23 groups from 1 to 6 people at intervals throughout the sampling period, indicating that the maximum number of people present at any one time would have been a fraction of the total count for the period. The maximum count for any other sampling period during the season was 38 people, and the largest visitor group observed at any time at Sweet Creek Falls in 2007 included 6 people. It is evident that this site can accommodate a visitor volume much larger than the numbers observed in 2007, and that current use is well below capacity.

5.5.2.3. Dispersed Recreation Sites

Capacity and current use for the dispersed recreation sites in the study area are discussed in detail in Sections 5.3.1 and 5.3.3, respectively. In summary, the combined capacity for the full set of 25 inventoried sites was estimated at 57 tents, with space for 228 people if an average rate of 4 people per site is assumed. Excluding the capacity of the BLM Boundary Recreation Area (which was included in the dispersed site sampling for logistical efficiency), the dispersed sites in the study area have a capacity for 51 tents. An aggregate occupancy rate for the dispersed sites has not been calculated, but it would clearly be low. One of the dispersed sites at Crescent Lake had an overall seasonal occupancy rate of 28 percent, and the other site in that location was occupied on 13 percent of the sampling occasions. Other than one road-accessible site that was occupied 16 percent of the time, none of the sites had seasonal occupancy rates above 10 percent. Weekend occupancy rates were generally higher, but not by a large amount. Many of the dispersed sites were not observed in use at any time during the season, including eight of the shoreline sites along the northern part of Boundary Reservoir. Based on the 2007 sampling data, use of the dispersed sites in the study area is currently well below capacity.

5.5.2.4. Reservoir Surface

The physical capacity of the Boundary Reservoir surface can be considered primarily in terms of the space available to accommodate boating. (The presence of sand bars, shoals, tree stumps and other types of navigational hazards could also be interpreted as factors that might limit the ability of boaters to use the reservoir surface. These are primarily safety- or quality-related factors, however, and do not substantially diminish the physical capacity of Boundary Reservoir under typical summer operating conditions.) Numerous planning analyses and research studies of physical carrying capacity for lakes and reservoirs have been conducted. They have typically focused on identifying boating density measures, in which the instantaneous boat capacity for a body of water is stated in terms of the surface area (in acres) needed or recommended per boat. These studies have resulted in a wide range of density factors that have been represented as acceptable or optimal. Although none of the density standards has been universally accepted, density factors published by the Urban Research and Development Corporation (1977) in a study for the former Bureau of Outdoor Recreation are often referenced; this source identified 9 acres per boat as a base density factor for power boats, and 18 acres as appropriate for a low-density condition.

On-water sampling for the recreation surveys in 2007 did not include observation of instantaneous boat use on Boundary reservoir at peak times. Instead, survey crews maintained cumulative counts of boats observed over a sampling period that typically occurred over several hours, especially for the northern portion of the reservoir. The maximum count of boats (of all types) observed during a North Reservoir sampling period was 35 boats on Saturday, July 21. Other dates with relatively high counts were 29 boats on Saturday, September 1 and 24 boats on Saturday, July 28. Comparable figures for the South Reservoir were a maximum of 16 boats on Sunday, July 22 and 13 boats on Saturday, August 11. If the maximum counts for each reservoir sector were added, the resulting total of 51 boats could be considered an extremely conservative estimate of the instantaneous peak boating use of Boundary Reservoir. With a total surface area of 1,636 acres, use of Boundary Reservoir by 51 boats at one time would represent an average density of 32 acres per boat. If an instantaneous capacity for the reservoir were based on the

Bureau of Outdoor Recreation low-density condition of 18 acres per boat, the peak capacity of the reservoir would be approximately 90 boats at one time. Therefore, the conclusion is that current boating use of the reservoir is well below the physical capacity, based on the space available to accommodate boats.

5.5.3. Carrying Capacity Recommendations and Standards/Guidelines

Although the final step of the recreational carrying capacity analysis is identified as recommending potential carrying capacity indicators and standards/guidelines, the RSP (SCL 2007a) indicates that the primary purpose for applying the carrying capacity concept in this study element is as a research tool, as opposed to a monitoring/management tool. The RSP notes that detailed indicators and standards/guidelines of the type used for monitoring/ management will not be fully developed at this time, although they may be developed later as part of a monitoring program, if needed.

Section 5.5.2 provided a review of current use relative to potential limiting factors for the recreation sites and use areas within the study area. Table 5.5-8 is a summary of those observations, with a focus on whether current use levels are below, approaching, at or exceeding reasonable capacity measures for the respective recreation resources.

Table 5.5-8. Summary of current use relative to capacity for study-area resources.

Facility/Resource	Potential Limiting Factor	Current Use Level Relative to Capacity
Vista House	Parking capacity	Below
Tailrace Recreation Area	Parking capacity, tour guide resources	Below
Forebay Recreation Area – Campground	Number of defined campsites	Approaching (summer weekends overall) Exceeding (peak weekends, overflow area used)
Forebay Recreation Area – Day-Use Area	Parking capacity, boat launching capacity	Below (summer weekends overall) Approaching (peak weekends, possibly)
BLM Boundary Recreation Area	Number of defined campsites	Below
Metaline Waterfront Park	Parking capacity, boat launching capacity	Below
Box Canyon Dam Campbell Park Boat Launch	Boat launching capacity	Below
USFS Crescent Lake Recreation Site	Number of defined campsites	Below
Sweet Creek Falls Rest Area	Parking capacity	Below
Reservoir Dispersed Campsites	Number of user-made campsites	Below
Reservoir Surface	Surface acreage	Below

Based on the review of existing conditions and potential limiting factors in the study area presented in Section 5.5.2, there is no indication that use levels are exceeding or even

approaching capacity in the general case. The findings indicate that it would be appropriate to investigate utilization relative to capacity in more detail at the Forebay Recreation Area, where peak camping use has on occasion been in excess of the formal capacity for the site. Capacity conditions at this site are complicated by the fact that undefined areas of the site appear to be able to accommodate the excess demand that occurs. Nevertheless, it is possible that the quality of the experience at the site is diminished when the number of campers present is substantially more than the site is designed to accommodate. Above-capacity camping use at this location may also create crowding conditions for day-use visitors. This issue will be further explored in the upcoming RNA.

Notwithstanding the questions concerning the capacity situation at the Forebay Recreation Area, the study results indicate there is not a need to develop specific carrying capacity standards or guidelines on a general basis at this time. Current use is below capacity, and in most cases well below capacity, for all resources other than the Forebay Recreation Area. Current use levels and patterns at the Project indicate it will be sufficient to reconsider the potential need for monitoring/management during periodic future updates of the recreation resource management plan that will be developed for the Project.

6 CONCLUSIONS

This section describes the completion status of each component of the RRS with respect to the study objectives, and summarizes the key findings and observations for each component based on the results presented in Chapter 5.

6.1. Recreation Surveys

The recreation surveys component of the RRS included six tasks. In terms of the level of study effort and the volume of information documented in the results section, the most significant tasks were the visitor counts and the visitor and area resident questionnaires. Because the value and validity of the results for these tasks depended heavily on successful implementation of the sampling plans for these tasks, the following discussion initially addresses the sampling coverage that was accomplished for the survey effort and the corresponding applicability of the survey results. That discussion is followed by a high-level summary of conclusions for the respective recreation survey tasks.

6.1.1. Survey Coverage and Applicability

The Recreation Surveys were implemented as planned, with the minor exceptions noted in Sections 4 and 7 of this report. Field sampling for the visitor counts and visitor questionnaire component of the study was implemented according to the schedule and level of effort indicated in the implementation plan, and resulted in the generation of large volumes of data concerning observed and self-reported visitor use patterns and visitor feedback on their characteristics, preferences, and satisfaction levels. Mail-based survey sampling for the area resident questionnaire was also implemented according to the process outlined in the implementation plan (Appendix 1), and resulted in the development of a large database of input from area residents concerning their use of the study area for recreation.

Section 5.1.2 provides a summary of the visitor count results from the sampling activity. That activity included the seasonal and geographic coverage required, as described in the RSP, and did not result in any gaps relative to the intended coverage. With respect to the types and volume of data collected, the visitor counts provided sufficient data for subsequent interpretation and analysis to meet the study objectives for the visitor count data. The visitor count data were used to develop the annual use estimates for the recreation facilities and use areas at the Project that are presented in Section 5.1.2.4.

The visitor questionnaire component of the study yielded a database compiled from 600 usable surveys returned by participants. The sample size for these questionnaires is large enough to allow researchers to make inferences about the visitor population within approximately a 5 percent margin of error at the 95 percent confidence level. Based on the overall level of recreational use for the study area (as indicated in the PAD, RSP, RRS implementation plan, and data presented in Section 5.1.2), there is cause for confidence that the visitor questionnaire sample represents a substantial portion of the total visitor population.

Similarly, the area resident component of the study yielded a database compiled from 583 usable surveys returned by participants. The applicable error margin and confidence levels for this sample will vary depending on how the sample results are applied, because there appear to be differences in recreational use of the study area between area residents living in Washington and British Columbia. If the sample of 583 is used to represent the responses from the entire base area population of approximately 15,000 people, it is large enough to provide better than a 4 percent margin of error at the 95 percent confidence level. Even if the sample from the Washington residents is split out, the sample of 239 completed surveys is large enough to provide a 5.4 percent margin of error at the 95 percent confidence level for the 900 Washington residents in the local area. Therefore, the area resident questionnaire is sufficient to address the objectives for this study component.

SCL is not aware of any set of conditions or events occurring during the 2007 sampling season that would limit the applicability of the study results. Weather, access, and related external conditions that can influence recreation use patterns and levels appear to have been “normal” during the 2007 recreation season. There were no major adverse weather, road construction, or forest fire events that prevented or inhibited access to or use of the study area in 2007. Therefore, the field sampling and survey data collected during 2007 appear to be fully applicable for characterizing recreational use conditions in the study area.

6.1.2. Visitor Counts

As noted in the RSP and in Section 2.1, the objectives of the Recreation Surveys were to 1) quantify existing recreational use in the Project area and 2) quantify visitor perceptions relative to Project-related recreation facilities, use areas, and opportunities.

The results from the visitor counts were the primary tool used to quantify existing recreational use in the Project area. Section 5.1.2 summarizes results from the field sampling activity during the 2007 recreation season at the developed recreation sites in the study area. A comparable summary for the inventoried dispersed recreation sites is provided in Section 5.3.3. Data

developed from the visitor counts were expanded to derive the seasonal use estimates presented in Section 5.1.2.4. Those estimates provide a general picture of recreation use levels and patterns for the individual use areas within the study area (i.e., specific developed recreation sites, the reservoir surface, and the dispersed sites).

The use estimates indicate the total annual level of recreation use at the Project is approximately 15,000 recreation days. A large majority of this activity occurs at the developed recreation facilities located at or near the key access points to the reservoir. SCL operates three developed recreation facilities (one of which includes a campground and a day-use area) that are the three most active sites at the Project and account for 11,100 recreation days, or 74 percent of the Project-area total. The SCL Forebay Recreation Area receives the most use of any site at the Project, with total day and overnight use estimated at 6,500 recreation days. This site is the only facility with developed camping opportunities, and is the predominant site for access to the reservoir for boating and other water-related activities. Three other developed recreation sites operated by the BLM, the Town of Metaline, and the Pend Oreille County PUD collectively account for approximately 2,500 recreation days of activity, and include the other two developed water access sites on the reservoir.

The visitor count data indicate that boating (motorized and non-motorized combined, plus fishing from a boat) is the most common recreational activity at the Project, with approximately 3,600 recreation days of annual use. Nearly all of the boating activity originates at one of the three developed water access sites, which visitors use to access other resources on the reservoir and along the shoreline. The use level for sightseeing/viewing scenery/photography is nearly as large as boating, at 3,500 recreation days, and is similar in nature to use in the visiting interpretive/educational facilities category. Developed and primitive camping combined account for 2,100 recreation days, almost all of which occurs at the Forebay Recreation Area campground.

6.1.3. Visitor and Area Resident Questionnaires

Data from the visitor questionnaires and area resident questionnaires were the primary tool used to quantify visitor perceptions about recreation facilities, use areas, and opportunities. Results from the questionnaires, particularly the visitor questionnaires, were valuable in defining important visitor characteristics such as trip frequency, party size, daytime and overnight use as a share of total use, activity participation, and the distribution of use among sites in the study area. The questionnaire results that are presented in Sections 5.1.3 and 5.1.4 are the basic tabulations of the responses to the survey questions from the two sets of surveys. The questionnaire responses comprise a voluminous database that provides a wide range of opportunities for in-depth analysis of the results. As noted in Section 6.1.1, the survey samples are adequate to meet the study objectives related to information about use patterns and user characteristics, perceptions and preferences, and provide a basis for more detailed consideration of specific questions. Section 5.1.5 presents results for the supplemental analysis of the survey results that SCL proposed to conduct as part of the 2008 study program. In general, those results address a variety of questions that may directly or indirectly relate to identification of recreation needs in the study area. SCL also anticipates that additional in-depth review and synthesis of the questionnaire results will occur as a component of the follow-on RNA, which will pull together the information needed to support a recreation management plan for the Project.

Highlights from the results tabulated from the completed visitor questionnaires can be summarized as follows:

- Based on the size of their visitor groups, the 600 people who completed the questionnaires represented a total population of more than 2,600 people. Given that many visitors to the Project engage in multiple activities during their trip, the total visitor population is substantially less than 15,000 (the number of recreation days of use estimated for the study area). Consequently, the visitor survey clearly reached a large percentage of all visitors to the Project in 2007.
- Over one-third of all survey respondents were from Spokane County, which was the largest group of respondents based on visitor origin. The northern Pend Oreille County communities of Ione, Metaline, and Metaline Falls accounted for 21 percent of the survey sample.
- Sightseeing and fishing were most often identified as the visitor's primary recreation activity on the trip, with each activity identified as the primary activity by 16 percent of the sample.
- Visitors to the Project reported high levels of satisfaction with their recreation experience; 41 percent rated their experience as excellent, and 93 percent provided above-average ratings.
- Few visitors reported feeling crowded or having conflicts with other people at their primary recreation site, and only 6 percent indicated they would be inclined to change their future recreation plans in response to crowding, conflict or other problems they encountered.
- Visitors rated the scenery in the Project area very highly, and 92 percent reported that views of the Project facilities enhanced or had no effect on their ability to enjoy the scenery.

Most of the questions in the area resident questionnaire were also included in the visitor questionnaire. In general, the results from the area resident survey were very similar to those from the visitor survey. A key finding from the area resident survey was that a large majority of the residents of nearby communities in British Columbia do not use the Project area for recreation.

6.1.4. Other Recreation Survey Tasks

The recreation surveys tasks also included review of existing regional survey and public input data, convening local resident focus group meetings, and conducting interviews with local providers of recreation facilities outside the immediate Project area. The primary conclusion from the review of existing regional survey and public input data was that in each case the study characterized a specific population or use pattern within a given geographic area, and the orientation was such that the results were not directly applicable to characterizing current or future outdoor recreation demand or needs relative to the study area. The local area focus group meetings were well attended and provided a large amount of detailed information about local resources and use patterns, along with many suggestions for potential future actions related to recreation in the local area. The focus group input helped to confirm or refine information developed through the RRS field sampling activity conducted in 2007, and provided

identification of recreation access and related opportunities for consideration in the RNA. The interviews with local recreation providers yielded detailed information about private and public recreation facilities (primarily campgrounds) that are located near the Project and represent alternative opportunities for people recreating in northern Pend Oreille County. This information was applied primarily in characterizing the regional recreation supply and understanding the regional context of the recreational opportunities present at the Project.

6.2. Regional Recreation Analysis

The regional recreation analysis documented a large and diverse supply of recreational opportunities within the five-county region that includes the Project, many of which are comparable to those found at the Project. For example, the supply of camping opportunities within the region consists of at least 168 campgrounds that provide a combined total of over 3,100 individual developed campsites. Similarly, there are at least 370 general day-use sites available within the regional study area, and nearly 200 recreation access sites in the region developed for boating, fishing, hunting, and related activities. Because the recreational facilities at the Project are smaller in scale, in quantitative terms they represent a small proportion of the regional supply inventory. For example, the 11 campsites provided at the Forebay Recreation Area represent approximately 0.4 percent of the total supply of campsites available in the study region, based on the inventory conducted for the regional recreation analysis. Similarly, the water access sites that are the dominant source of entry for users at the Project are three among several hundred such sites distributed around the region.

A resident of or visitor to the region who wants to select a location to camp, boat, and/or fish will choose a location among this very large set of initial opportunities. Factors such as quality, experience, distance, setting, available time, fuel prices, weather conditions, likely fishing success, sporting seasons, and others may enter into the decision and lead different users to different decisions. Users have their own respective preferences, and each recreation resource or location has specific characteristics that will appeal to some users but not others. The Project area has specific attributes, such as the Boundary Reservoir canyon area, that are likely quite important to many users and may lead them to select the Project area over some other locations with similar types of opportunities. For other potential users who do not have the same preferences, the wide distribution of similar settings and resources within the region provides a large set of comparable resource options.

Boundary Reservoir is similar in size, character, and setting to a number of other large lakes or impounded river reaches within the five-county region. Conversely, the reservoir and its recreation resources have some specific characteristics that distinguish them from other resources in the region. In particular, the scenery and setting in the canyon reach of the reservoir are unique features that distinguish Boundary Reservoir from other recreation attractions in the region. At the local level, i.e., within the context of northern Pend Oreille County, the most notable water features for recreational users are Boundary Reservoir, Box Canyon Reservoir, and Sullivan Lake. There are similarities among these water bodies that would make them all substitute resources for some users or under some circumstances. Conversely, Boundary Reservoir has some attributes that are not found elsewhere within the local area.

6.3. Dispersed Recreation

The dispersed recreation use, access, and condition analysis included three major components. Findings for the dispersed recreation site inventory, public access analysis, and dispersed recreation use components of this study element are summarized below.

6.3.1. Dispersed Recreation Site Inventory

The field inventory of the dispersed recreation sites in the study area resulted in documentation of applicable conditions at 25 such sites, as discussed in Section 5.3.1. The geographic distribution of the dispersed sites shows a strong concentration in the northern part of the study area, as 21 of the 25 sites are located north of Metaline Falls. Just over half of the sites (13 of 25) are located along or near the shoreline in the northern part of Boundary Reservoir, while another 8 sites are located along secondary roads away from the reservoir. The four dispersed sites in the southern part of the study area include three at shoreline locations along the reservoir and one road-accessible site away from the reservoir.

Key observations from the inventory of conditions recorded at the dispersed sites are summarized as follows:

- Ability to access sites by boat and/or boat and land access—The most common access condition, observed for 11 of the dispersed sites, is access only by boat from the reservoir. Another seven sites have access from a road and no water access, six sites have both boat-in and some means of land access, and one site is accessible only on foot.
- Camping capacity—The 25 inventoried sites have sufficient space to accommodate an estimated total of 57 tents. Depending on the average size of the tent assumed, the practical combined capacity of the 25 sites would be from approximately 170 to 230 people at one time.
- Existence of fire rings at most sites—All but one of the sites inventoried had at least one user-made fire ring, and seven sites had two or more fire rings.
- Sites are mostly near, but not directly on, the shoreline—While three quarters of the inventoried sites are located close to the shoreline of Boundary Reservoir or Crescent Lake (two sites), almost all of those are situated upland relative to the shoreline (i.e., on a terrace above a low or high bank to the water).
- Most sites have few or no significant human impacts—Evidence of trash, human and animal waste, tree damage, vegetation trampling, and social trails found in or near the dispersed sites was typically characterized as high for only four or five sites, and was considered to be non-existent, low or moderate at 80 percent or more of the sites.
- Most sites have little or no significant resource damage—Based on the observed site conditions and the lack of dispersed sites noted as being located near sensitive resources, the inventory did not indicate that a high level of dispersed recreation use or concentrated use at selected sites was resulting in notable issues of resource damage. Nevertheless, the dispersed site inventory and other recent observations indicate that vegetation clearing by users has caused noticeable damage at two locations..

6.3.2. Public Access Analysis

6.3.2.1. Existing Public Access Opportunities

The review of existing public access conditions, as summarized in Section 5.3.2.1, indicates that overall public access for dispersed recreation is limited by a number of factors such as steep terrain, rock faces, dense vegetation, land ownership patterns, and/or poor road conditions in much of the study area. Figure 5.3-2 characterizes the components of the existing road system within the study area as having high, medium, or low accessibility, based on the attributes applicable to each type of road. The general pattern is one of high accessibility around the periphery of the study area and low accessibility within most of the interior area, particularly in the northern part of the study area.

Existing road accessibility in the study area within the northwest, northeast, and southwest portions of the study area is generally good in the areas immediately adjacent to the primary roads, such as SR 31, POC 2975 and POC 3990/FR 3165. Although there are some opportunities for dispersed recreation adjacent to the main roads, road access for dispersed recreation in the area north of Metaline Falls depends primarily on use of poorer, secondary roads. Most of the secondary roads in this area are open to the public, although they are generally primitive roads with native surfaces that are best suited for use by high-clearance vehicles. Accessibility for the general public is therefore limited, and can be difficult.

Direct access to Boundary Reservoir itself via road is quite limited. SR 31 parallels the western side of the reservoir for several miles south of Metaline Falls and provides good visual access, but physical access to the reservoir is limited by extensive private land ownership and (to a lesser degree) steep slopes in some locations. Road access for dispersed recreation east of the reservoir and south of Metaline Falls is minimal because of land ownership, terrain, and road conditions. Elsewhere, direct road access to Boundary Reservoir is available in only two locations. SCL's West-Side Access Road and its spur to the Forebay Recreation Area provide access to the shoreline that is suitable for use by standard passenger vehicles. FR 6200-305, which provides land access to the BLM Boundary Recreation Area, is the only other public road that extends to the reservoir. This road is relatively long and rough, generally not maintained, and is best suited for use by high-clearance vehicles.

Trail access for dispersed recreation within the study area is minimal. Three existing developed trail opportunities exist including the short trail from the Sweet Creek Falls Rest Area to the Falls, the PNT route across the road atop Boundary Dam, and the viewpoint trail at the Vista House. There are no other existing designated and maintained trails in the study area.

On Boundary Reservoir, the gradient and substrate conditions along much of the shoreline in the southern part of the reservoir is such that there are numerous locations where boaters could beach their watercraft for temporary shore-based activities, particularly at lower reservoir levels where more beach or gravel bar area is exposed. Despite the physical conditions, however, access in this area for shore-based activities is constrained by the predominance of privately-owned land adjacent to the reservoir. The shoreline along much of the northern part of the reservoir is bordered by steep, rocky canyon walls and dense vegetation that provides little or no

opportunity for shore-based activities. There are a number of locations where it is possible to access the shoreline, as indicated by the existence of many of the dispersed recreation sites discussed in Section 5.3.1. Compared to the southern part of the reservoir, however, those opportunities are considerably more limited north of Metaline Falls.

6.3.2.2. Potential Future Access Opportunities

Figure 5.3-4 displays the classification of the study area into high, medium, and low categories with respect to potential future access opportunities via road. A dominant conclusion from the patterns on the map is that, based on the specific criteria applied, a large majority of the study area is classified as having low opportunities for development of public road access. Secondly, there are a number of relatively sizable areas that are displayed as high opportunity, although most of these areas are located adjacent to major roads and there are few that are adjacent to the reservoir.

The analysis of potential future access opportunities identified approximately 15 opportunities for future access by trail within the study area. None of the potential opportunities identified were considered to be in the high potential accessibility classification. In several cases the potential trail route crosses private land and obtaining landowner consent might be an issue. The viability of some potential trail options would appear to depend on whether trail development would be consistent with land management direction adopted by the respective agency. As indicated by the conclusions, however, there are a number of options that were rated as medium opportunities and would be logical candidates for further evaluation in the RNA.

Potential future opportunities for public access to the reservoir shoreline from the water were evaluated through a process similar to that described above for potential future road access. A limited GIS analysis indicated that the shoreline along the northern part of the reservoir is dominated by steep slopes. Consequently, although most of the adjacent land is in public ownership, virtually all of the shoreline in this area is shown as having low opportunity for shoreline access. For the southern part of the reservoir, there is a dominance of low-opportunity areas along the shoreline, although there are numerous shoreline segments rated as medium or high. Most of the shoreline area in these classifications represents locations of State of Washington ownership of river/reservoir bedlands or the SR 31 right-of-way. As noted previously, upland areas adjacent to these locations are generally in private ownership.

For some users, Boundary Reservoir is now functioning as a water trail. People traveling on the reservoir for trips of this type can and do use the existing developed access sites and dispersed recreation sites as stopping points along the way. Anecdotal information indicates that some one-way travelers set up their put-in and take-out points to avoid going through the Falls below the SR 31 bridge, while others portage around the Falls or enjoy the challenge of boating through the Falls. Establishing a formal, authorized portage at the Falls appears to be the primary action needed to allow the reservoir to function more effectively as a water trail route.

The Project reach of the Pend Oreille River has the potential for inclusion in a formal water trail designation. Future action by multiple parties would likely be needed for a potential Pend Oreille River water trail opportunity to be realized. To provide sufficient attraction for users, such a water trail would need to include more than the Boundary Reservoir reach of the river.

Therefore, establishment of a water trail would likely involve coordination by federal, state, and local government agencies and nongovernmental organizations throughout Pend Oreille County at a minimum, and conceivably would involve entities in Idaho as well.

6.3.3. Dispersed Recreation Use

The field sampling program for visitor counts and distribution of visitor questionnaires during the 2007 recreation season provided a record of observed recreation use at the inventoried dispersed sites in the study area, as discussed in Section 5.3.3. These observations document a pattern of relatively low use of the dispersed sites during the 2007 season. For all 25 inventoried sites, there were a total 58 occasions on which an inventoried site was recorded as occupied, or an overall average of 2.3 occupancies per site during the season. Most of these instances were observed camping activity, although in several cases day users were occupying a site that appears to typically receive overnight use.

The recreation sites at Crescent Lake (USFS) and the BLM Boundary Recreation Area (which are not truly dispersed sites) accounted for 43 percent of the total occupancy observed during dispersed-site monitoring in 2007, as indicated in Table 5.3-8. In addition, the two dispersed sites on the Crescent Lake shoreline accounted for 13 observed occupancies, or another 22 percent of the total observed use. Aside from these locations, the remaining dispersed sites included in the inventory received little observed recreational use, totaling 20 observed occupancies over a 5.5-month season. Two informal campsites located within 0.5 mile of SR 31 were in use 3 times and 5 times, respectively, with all of the observed uses occurring in September and October. The three dispersed sites in the South Reservoir sector accounted for 6 total use observations, which consisted of fishing and other day-use activities. Boat-in camping use at the dispersed sites was rarely observed, amounting to 5 total occupancies, and only occurred at three sites along the northern portion of the reservoir. In summary, the field sampling of dispersed recreation use in 2007 indicated a low level of overall use and a pattern of use generally distributed among the respective sites and areas, with no concentration of heavy use at any specific sites.

6.3.4. Future Recreation Analysis

Expected future recreation use at the Project was estimated by applying activity-specific growth rates for future years to the baseline use levels estimated for the project. This analysis was accomplished by using statewide recreation projections for Washington, which was considered to be the best available source of recreation growth rates for this purpose. Among the activities that are relatively common at the Project, the Washington projections indicate that the highest future growth rate is expected for picnicking and similar general day-use activities. The estimates developed for the Project indicate that total use is expected to increase to approximately 15,500 total recreation days by 2011 (the anticipated date of a new FERC license), an overall increase of 3.3 percent over the current baseline level. Use estimates for the 30-year projection period are approximately 16,900 recreation days by 2021; 18,200 recreation days by 2031; and 19,500 recreation days by 2041. Under that scenario, total use at the end of the projection period would be 30 percent more than current use. Periodic recreation planning updates for the Project will include evaluation of actual use levels relative to these estimates.

6.3.5. Recreation Carrying Capacity Analysis

The final component of the RRS was an evaluation of current conditions for the recreation resources at the Project relative to indicators of their carrying capacity. This assessment considered data on biophysical (natural resource), social and management carrying capacity factors for the developed sites and dispersed use areas within the study area. Based on the review of existing conditions, an initial conclusion from this task was that biophysical, social, and management carrying capacity considerations did not represent potential limiting factors for any of the resources. The review of limiting factors became focused on the level of current utilization of each resource relative to its physical capacity. Section 5.5 includes a table summarizing the findings for each site and resource area. The analysis determined that there is no indication that use levels are exceeding or even approaching capacity in the general case. The findings indicate that it would likely be appropriate to investigate utilization relative to capacity in more detail at the Forebay Recreation Area, where peak camping use has on occasion been in excess of the formal capacity for the site. Capacity conditions at this site are complicated by the fact that undefined areas of the site appear to be able to accommodate the excess demand that occurs. Nevertheless, it is possible that the quality of the experience at the site is diminished when the number of campers present is substantially more than the site is designed to accommodate. Above-capacity camping use at this location may also create crowding conditions for day-use visitors.

7 VARIANCES FROM FERC-APPROVED STUDY PLAN AND PROPOSED MODIFICATIONS

Work on RRS elements during 2007 reflected two variances from the FERC-approved plan for Study 21. The schedule for Study 21 provided in the RSP indicated that all elements of the Recreation Surveys were to be completed by the end of the first quarter of 2008. The implementation plan for the Recreation Surveys noted that it would be advantageous to hold the focus group meetings relatively late in the 2007 recreation season, so that participants could base their input on relatively fresh recollections, and that attendance at the meetings would likely be higher if the meetings did not occur during a peak period for vacation activity. Consequently, when the implementation plan was issued, SCL was planning to hold the focus group meetings during the early to middle part of September. Following additional discussion of this study element at the June 13, 2007, meeting with relicensing participants, SCL proposed to defer the focus group meetings to the second quarter of 2008 (early May, tentatively). This changed scheduling for the focus group meetings was expected to fit more efficiently with related or similar activities for the regional recreation analysis and the carrying capacity analysis, and to provide a better opportunity to validate data collected during 2007. Based on the agreement of the relicensing participants, the Recreation Survey activity was postponed to May 2008.

In addition, SCL had planned to develop a new visitor registry form for use at the Forebay Recreation Area during the 2007 season. Because SCL and Tetra Tech staff could not identify a suitable site and means to keep a registry at this location secure and protected from the elements, there was no registry at the Forebay Recreation Area in 2007. However, this area was sampled heavily by Tetra Tech staff during the 2007 season.

8 REFERENCES

Abern, J. 2008. Personal communication between J. Abern, Washington Department of Licensing, Olympia, Washington, and S. Brooks, Tetra Tech on October 17, 2008.

America's Byways. 2008. International Selkirk Loop pages on organization website. Available online at: http://www.byways.org/explore/byways (accessed on August 25, 2008).

Baird, G. 2008. Personal communication with G. Baird, SCL, Boundary Project, on July 29, 2008.

Berger, N. 2008. Personal communication with N. Berger, USFS, Colville National Forest. October 16, 2008.

BLM (Bureau of Land Management). 1985. Spokane Resource Management Plan/EIS. U.S. Department of the Interior, Bureau of Land Management, Spokane District. August 1985. Spokane, Washington.

BLM. 1987. Spokane Resource Management Plan Record of Decision. U.S. Department of the Interior, Bureau of Land Management, Spokane District. May 1987. Spokane, Washington.

BLM. 2008a. BLM Spokane District. Available online at: http://www.blm.gov/or/districts/spokane/about.php (accessed on August 22, 2008).

BLM. 2008b. BLM Coeur d'Alene Field Office. Available online at: http://www.blm.gov/id/st/en/fo/coeur_d_alene.html (accessed on August 22, 2008).

Bodie, J. and Wilkins, D. 2008. Personal communication with J. Bodie and D. Wilkins, USFS, Colville National Forest. November 4, 2008.

Bonner County Planning Department. 2002. Recreation Component, Bonner County Comprehensive Plan. Prepared with the assistance of J-U-B Engineers, Inc. Sandpoint, Idaho. January 15, 2002.

Bonner County Planning Department. 2008. Comprehensive Plan website page. Available online at: http://www.co.bonner.id.us/planning/plan-compplan.html (accessed on August 19, 2008).

City of Spokane Parks and Recreation Department. 2006. 2006 Annual Report. Spokane, Washington.

City of Spokane Parks and Recreation Department. 2008. Alphabetical list of park properties. Available online at: http://www.spokaneparks.org/alphabetical_list.html (accessed on August 20, 2008).

Clearwater Research, Inc. 2007. 2006 Outdoor Recreation Survey. Final Report. Presented to the Washington State Recreation and Conservation Office. Boise, Idaho. August 1.

Coeur d'Alene Tribe. 2006. Recreation Management Program. Accessed on August 21 at http://www.cdatribe.org/lake/p_recreation.shtml.

Cole, D. 1989. Wilderness Campsite Monitoring Methods: A Sourcebook. Gen. Tech. Rep. INT-259. Ogden, UT: U.S. Department of Agriculture, Forest Service. Intermountain Research Station. April 1989.

Cordell, H.K., C.J. Betz, J.M. Bowker, D.B.K. English, S.H. Mou, J.C. Bergstrom, R.J. Teasley, M.A. Tarrant, and J. Loomis. 1999. *Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends*. Sagamore Publishing. Champaign.

Curren, R. 2008. Personal communication with R. Curren, Pend Oreille County Public Works Department. October 17, 2008.

DeLorme. 2006. *Washington Atlas and Gazetteer*. Yarmouth, Maine.

DeLorme. 2007. *Idaho Atlas and Gazetteer*. Yarmouth, Maine.

DNR (Washington Department of Natural Resources). 2008. Recreation and Public Information: Trail Maps. Available online at: http://www.dnr.wa.gov/RecreationEducation/Topics/TrailsMapsFacilities/Pages/trail_maps.aspx (accessed on August 22, 2008).

Hammitt, W.E., and D.N. Cole. 1998. *Wildland Recreation: Ecology and Management.* 2nd Edition. John Wiley & Sons, Inc. New York.

IAC (formerly the Washington State Interagency Committee for Outdoor Recreation; currently the Washington State Recreation and Conservation Office). 1991. Washington State Trails Plan. Olympia.

IAC. 2002. An Assessment of Outdoor Recreation in Washington State: A State Comprehensive Outdoor Recreation Planning (SCORP) Document 2002-2007. October.

IAC. 2003. Estimates of Future Participation in Outdoor Recreation in Washington State. March.

IDFG (Idaho Department of Fish and Game). 2008a. Wildlife Management Areas. Available online at: http://fishandgame.idaho.gov/cms/wildlife/wma/ (accessed on August 22, 2008).

IDFG. 2008b. Panhandle Region Accessible Fishing Sites. Available online at: http://fishgame.idaho.gov/apps/ada/fish.cfm?region=Panhandle (accessed on August 22, 2008).

Idaho Department of Labor. 2008. Idaho Census 2000. Available online at: http://www.lmi.idaho.gov/Population/tabid/2021/Default.aspx (accessed on July 25, 2008).

IDL (Idaho Department of Lands). 2008. Idaho State Lands. Available online at: http://www.idl.idaho.gov/ (Accessed on August 22, 2008).

IDPR (Idaho Department of Parks and Recreation). 2003. Idaho State Comprehensive Outdoor Recreation and Tourism Plan (SCORTP). Available online at: http://parksandrecreation.idaho.gov/datacenter/statewide_planning.aspx (accessed on July 25, 2008).

IDPR. 2006. Idaho State Comprehensive Outdoor Recreation and Tourism Plan (SCORTP). Available online at: http://parksandrecreation.idaho.gov/datacenter/statewide_planning.aspx (accessed on July 25, 2008).

IDPR. 2008. Idaho State Parks. Available online at: http://parksandrecreation.idaho.gov/parks/index.aspx (accessed on August 22, 2008).

Idaho Transportation Department. 2008. Monthly average daily traffic counts, Counter # 16 Bonners Ferry automatic traffic recorder, 1990-2008. Available online at http://itd.idaho.gov/planning/roadwaydata/counters/016/index.html?print (accessed October 29, 2008).

International Selkirk Loop, Inc. 2005. International Selkirk Loop Corridor Management Plan. Bonners Ferry, Idaho.

IPNF (Idaho Panhandle National Forests). 2008. Panhandle National Forest Visitor Center. Accessed on August 22, 2008, at: http://www.fs.fed.us/ipnf/.

Jim Lillstrom & Associates. 2005. Northeast Washington Counties 2004 Visitor Profile. Prepared for Washington Department of Community, Trade and Economic Development, Tourism Office. Boulder, Colorado. Report available online at: www.experiencewashington.com/industry (Washington State Tourism Industry website).

Kootenai County. 2008. Parks and Waterways. Available online at: http://www.co.kootenai.id.us/departments/parkswaterways/ (accessed on August 22, 2008).

Lake Roosevelt Forum. 2008. Camping, Boating, and Service Information. Available online at: http://www.lrf.org/Rec/Rec-CampBoatLaunch.html (accessed on August 21, 2008).

Mansfield, Y., and A. Pizam. 1999. *Consumer Behavior in Travel and Tourism.* The Hawthorne Press, Inc.

McCool, S.F. 1996. Limits of acceptable change: A framework for managing National Protected Areas: Experiences from the United States. Paper presented at Workshop on Impact Management in Marine Parks, sponsored by Maritime Institute of Malaysia. August 13–14, 1996. Kuala Lumpur, Malaysia.

Natural Resources Council of Maine. 2008. Public Land Ownership by State. Available online at: http://www.nrcm.org/documents/publiclandownership.pdf (accessed on August 22, 2008).

NPS (National Park Service). 2008a. Lake Roosevelt National Recreation Area. Available online at: http://www.nps.gov/laro/ (accessed on August 22, 2008).

NPS (National Park Service). 2008b. Rivers, Trails and Conservation Assistance Program. Water Trails: Ribbons of Discovery. Available online at: http://www.nps.gov/ncrc/programs/rtca/whatwedo (accessed on October 20, 2008).

Olympic Security Company. 2008. Seattle City Light Tour Counts. Unpublished spreadsheet of daily tally for visitors taking Boundary Dam tour during 2008 season.

Pacific Northwest Trail Association. 2008. Pacific Northwest Trail. Available online at: http://www.pnt.org/ (accessed on August 22, 2008).

Pend Oreille County. 2005. Pend Oreille County Comprehensive Plan. Newport, Washington. October 17.

Pend Oreille County. 2008. County and community profile website pages. Available online at: http://www.co.pend-oreille.wa.us/profile.html (accessed on August 20, 2008).

Reiber, R. 2008. Personal communication with R. Reiber, Park Commissioner, Town of Metaline, on July 30, 2008.

Robinson, M. 2008. Personal communication between M. Robinson, Pend Oreille County Public Utility District, Newport, Washington, and Chris Lawson, Tetra Tech, on October 22, 2008.

Salant, P., and D.A. Dillman. 1994. *How to Conduct Your Own Survey*. John Wiley & Sons, Inc. New York.

Schaeffer, Richard L., William Mendenhall and Lyman Ott. 1996. *Elementary Survey Sampling*. 5th edition. PWS-Kent Publishers. Boston.

SCL (Seattle City Light). 2006. Pre-Application Document for the Boundary Hydroelectric Project (FERC No. 2144). Seattle, Washington. May 2006. Available online at: http://www.seattle.gov/light/news/issues/bndryRelic/br_document.asp

SCL. 2007a. 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. 2007b. Seattle City Light Boundary Project (FERC No. 2144), Usage of Recreational Facilities. Unpublished log of visitor observations at the Forebay Recreation Area recorded by Olympic Security staff during the 2007 recreation season.

SCL. 2008a. Study 21 – Recreation Resource Study Interim Report for the Boundary Hydroelectric Project (FERC No. 2144). Prepared by Tetra Tech. March 2008.

SCL. 2008b. Seattle City Light Tourist Counts. Unpublished spreadsheet of visitors to the Tailrace Recreation Area recorded by Olympic Security staff during the 2007 calendar year.

SCL. 2009a. Study 22 – Land and Roads Study Revised Final Report for the Boundary Hydroelectric Project (FERC No. 2144). Prepared by SCL and Tetra Tech. March 2009.

SCL. 2009b. Study 16 – Inventory of Riparian Trees and Shrubs Final Report for the Boundary Hydroelectric Project (FERC No. 2144). Prepared by Tetra Tech and Beck Botanical Services. March 2009.

SCL. 2009c. Study 1 – Erosion Study Final Report for the Boundary Hydroelectric Project (FERC No. 2144). Prepared by Watershed GeoDynamics and Tetra Tech. March 2009.

Sem, J., P. Goff, and S. Pearce. 1997. Interim Report on Colorado Scenic and Historic Byways Economic Impact Study. Transportation Research Record: Journal of the Transportation Research Board. Volume 1599, 1997. Pages 86–95.

Smith, S. 2008. Personal communication between S. Smith, Bureau of Land Management, Spokane District, and Chris Lawson, Tetra Tech, on July 25, 2008.

Spokane County. 2005. Department of Parks, Recreation, and Golf. Available online at: http://www.spokanecounty.org/parks/prhome.htm (accessed on August 22, 2008).

Stevens County. 2005. Stevens County Comprehensive Plan and Integrated Final Environmental Impact Statement. Colville, Washington. December 2005.

U.S. Census Bureau. 2005. Interim Projections of the Total Population for the United States and States: April 1, 2000, to July 1, 2030. Available online at http://quickfacts.census.gov/qfd/states/16000lk.html (accessed on July 25, 2008).

USACE (U.S. Army Corps of Engineers). 2008. Albeni Falls Dam and Lake Pend Oreille page on agency website. Available online at: http://corpslakes.usace.army.mil/visitors/projects.cfm?Id=G300200 (accessed on August 22, 2008).

USFS (U.S. Forest Service). 1965. Boundary Reservoir Area Recreation Plan. Colville National Forest. Newport, Washington. In collaboration with SCL. Seattle, Washington.

USFS. 1988. Colville National Forest Land and Resource Management Plan. Colville, Washington.

USFS. 2004. Colville National Forest Visitor Use Monitoring Results. USDA Forest Service, Region 6. Portland, Oregon. June 2004.

USFS. 2008. Colville National Forest website. Available online at: http://www.fs.fed.us/r6/colville/ (accessed on August 22, 2008).

USFWS (U.S. Fish and Wildlife Service). 2008a. Little Pend Oreille National Wildlife Refuge. Available online at: http://www.fws.gov/littlependoreille/ (accessed on August 22, 2008).

USFWS. 2008b. Turnbull National Wildlife Refuge. Available online at: http://www.fws.gov/turnbull/ (accessed on August 22, 2008).

Valley County Economic Development. 2008. Idaho population projections posted on the Valley County Economic Development website. Available online at: http://www.valleycountyeconomicdevelopment.com/pages/PopulationProjections.htm (accessed on July 25, 2008).

WDFW (Washington Department of Fish and Wildlife). 2002. Wildlife Areas and Access Points: LeClerc Wildlife Area. Available online at: http://wdfw.wa.gov/lands/r1leclrc.htm (accessed on August 22, 2008).

WOFM (Washington Office of Financial Management). 2007a. Population Estimates by Age and Sex, 1980-2007. Washington Office of Financial Management, Forecasting Division. September 7, 2007. Olympia.

WOFM. 2007b. 1990 Population Data. Available online at: http://www.ofm.wa.gov/pop/migration/default.asp (accessed on July 25, 2007).

WOFM. 2007c. Projections of the Total Resident Population for the Growth Management Act: Medium - 2000 to 2030 by Single Year After 2010. Available online at: http://www.ofm.wa.gov/pop/gma/projections07.asp (accessed on July 25, 2008).

WOFM. 2007d. Washington State Data Book. Available online at: http://www.ofm.wa.gov/databook/default.asp#resources (accessed on October 16, 2008).

WOFM. 2008a. Population Estimates from 2000-2008. Available online at: http://www.ofm.wa.gov/pop/april1/default.asp (accessed on July 25, 2008).

WOFM. 2008b. Population and Components of Population Change for the State: 1920 to 2008. Available online at: http://www.ofm.wa.gov/pop/april1/cmp_chg.pdf (accessed on August 17, 2008).

WOFM. 2008c. Population and Components of Population Change by County: April 1, 2000, to April 1, 2008, with ranking by Percent Population Change. Available online at: http://www.ofm.wa.gov/pop/april1/cocmpch2008.pdf (accessed on August 17, 2008).

WSDOT (Washington State Department of Transportation). 2003. North Pend Oreille Scenic Byway Corridor Management Plan. Olympia, Washington.

WSDOT. 2008. TRIPS System Annual Traffic Reports, 1990-2007. Available online at http://www.wsot.wa.gov/mapsdata/tdo/annualtrafficreport.htm (accessed October 29, 2008).

WSPRC (Washington State Parks Recreation Commission). 2008. Washington State Parks. Available online at: http://www.parks.wa.gov/parks/northeast.asp (accessed on August 22, 2008).

Washington Water Trails Association. 2008. Trails. Available online at: http://www.wwta.org/trails (accessed on October 20, 2008).

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Appendix 1: Recreation Surveys Implementation Plan

Study 21 Recreation Resource Study
Final Implementation Plan
For Recreation Surveys
Boundary Hydroelectric Project

Prepared for
Seattle City Light

Prepared by
Tetra Tech, Inc.

August 2007

Table of Contents

1 BACKGROUND 1
2 STUDY TASKS AND METHODS 1
2.1 Study Area 1
2.2 Tasks and Data Types 1
2.3 Data Collection Methods 4
3 FIELD SAMPLING PROGRAM 5
3.1 Sampling Objectives 6
3.2 Sampling Sites and Activities 8
3.2.1 Geographic Sectors 8
3.2.2 Sampling Activities by Sector 8
3.3 Sampling Frequency and Effort 13
3.4 Staffing and Equipment 16
4 OTHER (NON-FIELD) DATA COLLECTION ACTIVITIES 16
4.1 Visitor Registries 17
4.2 Local Area Provider Interviews 17
4.3 Area Resident Mail Survey 17
4.4 Local Area Focus Groups 18
4.5 Regional Recreation Analysis 19
5 DATA COMPILATION AND ANALYSIS 19
6 IMPLEMENTATION SUMMARY 19
7 REFERENCES 20

List of Tables

Table 1 Geographic Sectors for Field Sampling Activities 8
Table 2 Planned Distribution of Sampling Activity and Effort, 2007 Boundary Recreation Season 14
Table 3 Effort Allocated to Sampling by Weekend, Weekday, and Sector 15

List of Figures

Figure 1 Area Map 2

Study 21 Recreation Resource Study

Implementation Plan for Recreation Surveys

1 BACKGROUND

This document describes how Seattle City Light (SCL) proposes to implement the recreation survey component of the Recreation Resource Study (Study 21) at the Boundary Hydroelectric Project. The Recreation Resource Study is one of the 24 technical studies approved by the Federal Energy Regulatory Commission (FERC) that SCL will conduct in support of an application for a new license for the Project.

This implementation plan expands on the direction included in the Revised Study Plan (RSP) that SCL submitted to FERC, and that FERC approved in March 2007 (Study Plan Determination letter from FERC to SCL dated March 15, 2007). It provides a specific plan for implementing a recreation survey that will produce information on use of existing and potential recreational resources and visitor perceptions in the Boundary Project area. The remainder of this implementation plan is divided into six sections addressing study tasks and methods (Section 2), the field sampling program (Section 3), other (non-field) data collection activities (Section 4), data compilation and analysis (Section 5), implementation (Section 6) and references (Section7).

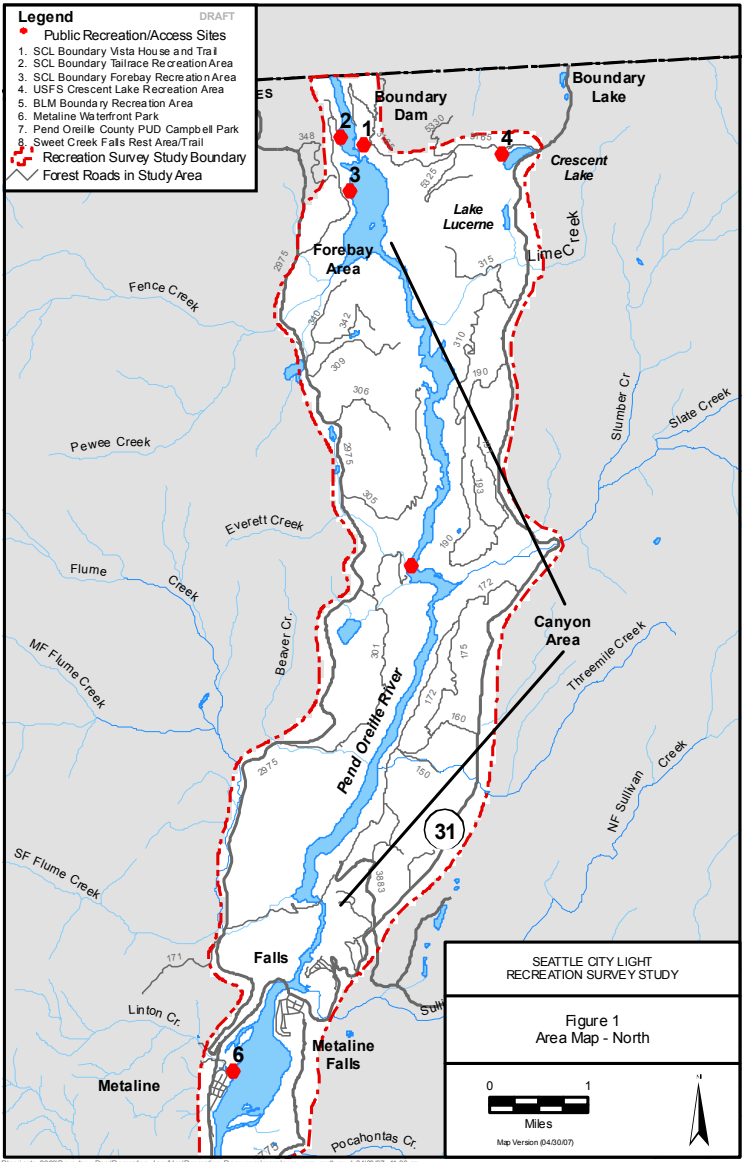
2 STUDY TASKS AND METHODS

2.1 Study Area

For a definition of the study area, refer to page 13 in Study 21 of the RSP. Figure 1 provides a graphic representation of the study area; this same map will be included in the recreation survey instrument.

2.2 Tasks and Data Types

The RSP identifies four specific tasks included within the recreation survey component of Study 21. The tasks and the types of data associated with each task are summarized as follows (please see Section 2.4 in Study 21 of the RSP for additional information on each task):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DRAFT
Public Recreation/Access Sites
1. SCL Boundary Vista House and Trail
2. SCL Boundary Tailrace Recreation Area
3. SCL Boundary Forebay Recreation Area
4. USFS Crescent Lake Recreation Area
5. BLM Boundary Recreation Area
6. Metaline Waterfront Park
7. Pend Oreille County PUD Campbell Park
8. Sweet Creek Falls Rest Area/Trail
Recreation Survey Study Boundary
Forest Roads in Study Area
Boundary Dam
Boundary Lake
Crescent Lake
Lake Lucerne
Forebay Area
Canyon Area
Falls
Metaline Falls
Metaline
Pend Oreille River
Fence Creek
Pewee Creek
Everett Creek
Flume Creek
MF Flume Creek
SF Flume Creek
Beaver Cr.
Linton Cr.
Lime Creek
Slumber Cr
Slate Creek
Threemile Creek
NF Sullivan Creek
Pocahontas Cr.
31
SEATTLE CITY LIGHT
RECREATION SURVEY STUDY
Figure 1
Area Map - North
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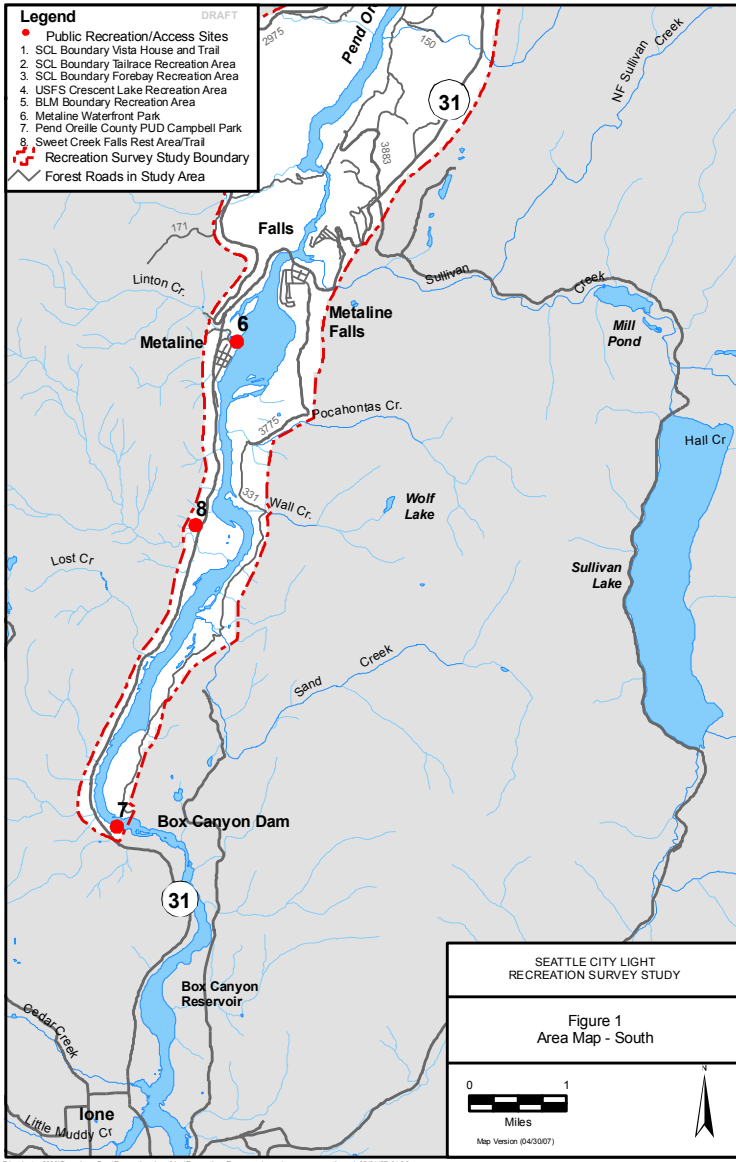
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7. Pend Oreille County PUD Campbell Park
8. Sweet Creek Falls Rest Area/Trail
Recreation Survey Study Boundary
Forest Roads in Study Area
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2975
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3883
Falls
171
Linton Cr.
Sullivan
Creek
Metaline
Falls
6
Metaline
Mill
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Pocahontas Cr.
3375
Hall Cr
331
Wall Cr.
Wolf
Lake
8
Lost Cr
Sullivan
Lake
Sand
Creek
7
Box Canyon Dam
31
Box Canyon
Reservoir
Cedar Creek
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SEATTLE CITY LIGHT
RECREATION SURVEY STUDY
Figure 1
Area Map - South
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- **Review of Other Existing Regional Survey and Public Input Data –** This task involves making direct contact with agencies and other organizations in the general vicinity of the Boundary Project that may have respondent survey or other public input data that are relevant to the Boundary Project and Study 21. Applicable data from these sources are to be reviewed and used to help characterize visitor use levels and attributes for the Project area. The list of agencies and organizations that will be contacted is provided in Section 2.4 of the RSP.
- **Visitor Counts –** This task involves observing and recording visitor numbers and patterns at developed recreation sites, at dispersed recreation sites and use areas, and on the reservoir surface. This task also includes an informal survey of private-sector recreation providers and U.S. Forest Service campground concessionaires to obtain similar information for the facilities they operate. Section 2.4 of the RSP identifies the specific types of data to be obtained for each type of recreation site or area.
- **Project Area Visitor Questionnaires and Area Resident Questionnaires/Focus Groups –** This task involves use of pre-printed questionnaires to obtain response information from project area recreational visitors and local area residents. The task also includes convening three focus group meetings with area residents to obtain more detailed public input data from specific user groups.
- **Compile and Summarize Recreation Surveys Results –** This task involves assembling, synthesizing, interpreting and documenting the information derived through the three previous data collection tasks.

2.3 Data Collection Methods

The RSP prescribes six methods for the data collection tasks, as follows:

1. Sampling recreational users in the field through direct contact, with responses recorded on questionnaires by respondents (in which case completed questionnaires would be deposited in drop boxes and mailed back);
2. Sampling recreational users in the field through structured observations, with results recorded on visitor count forms;
3. Sampling recreational users in the field through self-recorded information on visitor registries provided at selected developed recreation sites;
4. Sampling area residents remotely, via distribution of questionnaires by mail;
5. Contacting recreation providers directly to obtain applicable data they may have; and
6. Convening focus group meetings in the local area and recording detailed input data provided by the participants.

For the purpose of effectively organizing data collection activities, these six methods are divided into two groups, consisting of sampling activities in the field and other (non-field) data collection. Specific plans for implementing the field sampling program are described in Section 3. Section 4 provides plans for the non-field data collection activities.

3 FIELD SAMPLING PROGRAM

The field sampling program will include the first two data collection techniques identified above to derive information on recreation use levels and patterns. Sampling visitors in the Project area to obtain respondent information will be conducted via a self-administered, drop-off questionnaire. In addition, sampling of visitors at the Project will include counts and structured observations recorded on standardized data forms. These methods will be used with visitors in all types of recreation settings at the Project, including developed recreation sites, dispersed recreation sites and use areas, and on the reservoir surface.

The visitor count and questionnaire components will be conducted through a single, integrated field sampling program. In the Boundary Project area, the visitor population is difficult to quantify because accurate and complete visitor use data are lacking. Certain subgroups, or clusters, can be identified, however. Clusters can be geographical, social, or temporal units. Cluster sampling involves a random sample of clusters with the complete census of objects, individuals, or groups in each cluster (Watson et al. 2000). The field sampling for Study 21 will employ a multistage cluster sampling method, as summarized below.

The first stage of the sampling design will involve selecting a random sample of weekdays and a complete census of weekends and holidays to ensure extensive coverage of the main recreation season. The sampled days provide clusters of time. Because the staff required to sample the entire Project Area during a given day would be prohibitively large, sampling will include a second stage with randomly selected combinations of sectors (geographic clusters) by day period (time clusters) to cover the various recreation sites and the early and late portions of each sampling day. When two field crews are working, two of these combinations, or clusters, will be drawn per sample day. When three crews are working, three clusters can be drawn per sample day. For any day of sampling, there are 12 possible clusters (i.e., six sectors multiplied by two day periods) to be sampled. The 12 possibilities will be numbered sequentially from 1 to 12, and a simple random sample will be drawn using a table of random numbers. Complete data, or a census, will be taken from each of the sampled clusters.

The advantages of cluster sampling (Watson et al. 2000) are (1) lower field costs because it requires the enumeration of individuals in selected clusters only; (2) the characteristics of clusters, as well as those for the population, can be estimated; (3) data can be combined with those obtained in subsequent samples because clusters are selected, rather than individuals (assuming the properties of the clusters do not radically change); and (4) field crews can perform multiple data collection tasks once they arrive on site, because they do not have to spend time systematically selecting individual visitors. The disadvantages of cluster sampling (Watson et al. 2000) include (1) a lower statistical efficiency than some other techniques, such as simple random sampling and (2) because visitors must be uniquely assigned to a cluster, the characteristics defining the clusters must be clear and unambiguous.

Study 13 in the RSP, Recreational Fishery Study, requires field sampling of anglers at the Project during the study period. The RSP indicates that anglers will be contacted at boat access points and bank-fishing areas, using questionnaires to record respondent information. Based on the

similarity in study locations and administration methods, sampling for the angler survey study will be integrated with the field program for Study 21. Anglers will be given the opportunity to complete the general Project Area Visitor Questionnaire and will be asked to respond to a targeted section of the questionnaire designed specifically to address the creel and angler survey information needs.

The RSP prescribes that visitor counts and questionnaire surveys will be conducted during a 12-month period beginning in 2007 and ending in 2008. (Surveying may need to be repeated if unusual events distort use patterns during the 2007 season). The RSP also indicates that sampling for the angler survey is to take place during both the 2007 and 2008 seasons. The integrated field sampling program for Studies 21 and 13 during 2007 will begin in mid-May 2007 and extend through the end of October 2007 (see Section 3.2 for additional discussion of scheduling). Assuming no additional field sampling for Study 21 is needed in 2008, sampling for the angler survey will continue independently in 2008; a parallel implementation plan for Study 13 will provide a complete discussion of the proposed delivery of this angler study.

The field sampling program for 2007 will conclude at the end of October, because of the logistical difficulties of sampling during the fall and winter period and the reduced efficiencies associated with generally low levels of recreational use during this period. Nevertheless, data collection related to fall and winter use of the study area will occur through a variety of other means. Specifically, (1) the Area Visitor Questionnaire includes a series of questions aimed at frequency and seasons of use; (2) the Area Resident Questionnaire (see Section 4.4) will provide a suitable vehicle for investigating activities and use patterns during the fall and winter seasons; (3) interviews with local area recreation providers (see Section 4.2) will include questions about activity patterns throughout the year; and (4) local area focus group meetings will provide an opportunity for in-depth discussions with user groups associated with fall and winter activities such as hunting and winter sports. Visitor registries (see Section 4.1) will also be maintained throughout the fall and winter at a select number of recreation sites in the study area, although these will be limited to sites that are open and accessible in the winter and will not likely provide information on dispersed recreation activities.

Pages 15 through 23 in Study 21 provide a discussion of information types, study locations, data forms and sampling methodology for the visitor count and Project Area Visitor Questionnaire components of Study 21. In several instances the RSP is not specific as to how information will be obtained, or it identifies options for specific data collection activities. Section 3.1 of this implementation plan discusses general objectives for the sampling program, primarily related to use numbers and patterns and their implications for how the sampling program should be conducted. Sections 3.2 and 3.3 provide additional implementation details concerning sampling activities by location within the study area (Section 3.2) and sampling frequency and effort (Section 3.3) to supplement the guidance provided in the RSP.

3.1 Sampling Objectives

Recreational use at the Boundary Project varies by season, week and day. Visitation to the Project is typically highest during approximately a 2-month period of the summer, extending from early July through the end of August or early September. Visitation at the project is

considered to be quite low from late fall through early spring, begins to increase in April or May, and generally continues to build up to peak-season levels before declining after Labor Day. Broad-based experience with typical patterns for most recreational uses and facilities of the type found at the Project indicate that visitor numbers on weekends and holidays are consistently higher than on weekdays, and overall activity levels within the day tend to peak in the early afternoon hours. Peak times for some specific pursuits, such as fishing, can vary from the more typical daily pattern.

Accurate estimates of the size of the user population at the Boundary Project in general or at specific sites are not available, so minimum sample sizes for each component of the population cannot be identified. The PAD indicates that total use for the SCL facilities at the Project (Vista House, Tailrace Recreation Area and Forebay Recreation Area) was reported at 20,251 recreation days for 1991, 21,741 recreation days for 1996 and 4,503 recreation days for 2002. The PAD explains that the 1991 and 1996 estimates are thought to be overstated due to methodological errors, while the 2002 estimate may be accurate but reflects a season in which security restrictions may have resulted in abnormally low use. SCL also reported a separate estimate of total use of the Forebay Recreation Area in 2002 at 3,833 visitors. Documented use estimates for Metaline Waterfront Park, Sweet Creek Falls Rest Area and dispersed recreation sites at the Project are not available (and will need to be developed through analysis of data obtained in Study 21). The PAD provides estimates of capacity utilization for Campbell Park in 2000 and 2001, but does not translate those ratios into actual visitor numbers.

Based on the incomplete and dated information currently available, it is conceivable that total annual use in the Boundary Project vicinity may be in the range of 3,000 to 5,000 visitors. Alternatively, if it assumed that total use of the SCL facilities is similar to the 1991 and 1996 estimates, and that Metaline Waterfront Park and Sweet Creek Falls receive substantial use (e.g., similar to the SCL figure for the Forebay Recreation Area), and all of that activity is included in the Project, total annual use could plausibly be 20,000 visitors or more.

Several aspects of the existing recreational use patterns, as described above, must be considered when determining the appropriate field sampling coverage for the study. The sampling program must obtain a sufficient number and distribution of data points to account for the variation in use geographically and over time. For both the visitor counts and the visitor questionnaires, the primary need is to ensure that the records for the respective types of sites span an appropriate time distribution; specifically, the pattern and frequency of observations should be representative of use conditions on a daily, weekly and seasonal basis. In other words, observations should be recorded at appropriate times of the day relative to the activities and sites, there should be adequate coverage of both weekend/holiday and weekday conditions, and sampling must occur during all months of the active recreation season. The sampling program presented in this implementation plan is designed to provide representative coverage of all key components of the user population, based on both the activities of interest, range of recreation settings and sites, and temporal variation in use patterns.

3.2 Sampling Sites and Activities

3.2.1 Geographic Sectors

Based on study-area geography, access considerations and the types and locations of recreational use, the study area will be divided into six sectors for scheduling and execution of cluster sampling in the field. The six geographic sectors are defined in Table 1.

Table 1. Geographic Sectors for Field Sampling Activities

Sector	Area/Sites
1. Northeast	Vista House, east bank of river below Boundary Dam and Tailrace Recreation Area*
2. Forebay	Forebay Recreation Area
3. SR 31 South	Sweet Creek Falls Rest Area and Campbell Park
4. Roaded Dispersed	Road-accessible dispersed recreation sites and Crescent Lake
5. North Reservoir	Dispersed sites and reservoir surface north of Metaline Falls
6. South Reservoir	Metaline Waterfront Park, dispersed sites and reservoir surface south of Metaline Falls

* The Preliminary Application Document [PAD] for the Project indicates that the Tailrace Recreation Area generally has a daily operating schedule of 10:30 a.m. to 4:30 p.m. during the primary recreation season. In addition, the Tailrace Recreation Area was closed during 2002 and 2003 for Project security reasons. Consequently, the sampling schedule will, at a minimum, need to account for the limited operating hours for the Tailrace site. If this area should be closed again in 2007 and 2008, the sectors and scheduling may need to be adjusted accordingly.

3.2.2 Sampling Activities by Sector

Field sampling activities will be accomplished by two-person survey crews based at a facility in Ione. A crew will conduct sampling activities within a specific sector each time the sampling calendar requires sampling to occur there on a given date and period of the day. For all six sectors, crews will record visitor counts and contact visitors to distribute questionnaires. In appropriate locations (primarily Sectors 2, 3, 5 and 6) survey crews will distribute questionnaires to anglers; a subset of questions intended specifically to address the needs of the creel and angler surveys described in Study 13 will be included in the visitor questionnaire.

3.2.2.1 Visitor Counts

Survey activities to support the visitor counts will vary somewhat by geographic sector, based on site and access conditions in each sector. For each sector, the crews will observe key characteristics of recreation use (e.g., the number of people present, the number of vehicles entering/exiting the site and types of recreation activities evident) and record this information on pre-printed forms. One version of the visitor count form will be used for recording observations at developed sites in Sectors 1 through 3 and 6. A second version will be used to record activities at road-accessible dispersed sites in Sector 4, while a third form will be used for visitor counts at shoreline dispersed sites and on-water counts for reservoir areas in Sectors 5 and 6 (see Appendix A for copies of the forms).

Survey crews will travel to Sectors 1 through 4 by car, while sampling in Sectors 5 and 6 will be accomplished primarily by boat. Boundary Reservoir has been divided into two sectors to facilitate travel and data collection in each sector within a 6-hour block of time that will be used as the basic sampling period (see additional discussion below). The North Reservoir (Sector 5) and South Reservoir (Sector 6) are similar in length, although the travel time for a circuit of the

South Reservoir is considerably less than for the North Reservoir. Existing information documented in the PAD indicates that known dispersed recreation sites are not numerous (approximately 10 or less) and are concentrated in the northern part of the reservoir, indicating that sampling activity in this sector could require stops at multiple on-shore locations.

Once on station, survey crews will generally remain stationary, or nearly so, while observing and recording visitor counts in Sectors 2 and 3; these sectors consist of developed sites and can easily be covered from a relatively central location at the site. It is anticipated that the survey crew will record a complete census of the site upon arrival and at the end of the sampling period, and will attempt to track visitor arrivals and departures during the period. Arrival/departure data will be important for post-field calculation of length of stay and/or turnover rates for day-use facilities.

The specific pattern of sampling activity will vary somewhat among the geographic sectors, based on conditions unique to each sector. The prescribed approach for sampling each sector is summarized as follows:

1. Sector 1, Northeast: A crew will approach sites in this sector by traveling north from Metaline Falls on SR 31, then turning west on FR 3165 and proceeding to the Vista House. The crew members will take a census of activity at the Vista House upon arrival. Then, they will continue to observe activity and contact visitors to distribute surveys for the remainder of the sampling period. The visitor count observations at Vista House will include visitors and activities at the Tailrace Recreation Area and on the east bank of the Pend Oreille River below Boundary Dam, both of which can be readily observed from the vantage point offered by Vista House. Crew members sampling at Vista House can also contact visitors using the river bank area via a secondary road from a junction near the Vista House. Due to access and logistical constraints, survey crews will not directly contact visitors using the Tailrace Recreation Area. SCL will have the tour guides distribute questionnaires to all visitors taking tours of the powerhouse/tailrace area, and questionnaires distributed when the Northeast sector is being sampled will be specifically marked. The registry at the Visitors' Gallery will provide an additional source of data for this site.
2. Sector 2, Forebay: A crew will approach the Forebay Recreation Area by traveling north from Metaline on County Road 2975, then turning east on the Boundary Dam access road. The crew will take a census of activity at the site upon arrival, then, will continue to observe activity and contact visitors to distribute surveys for the remainder of the sampling period. Depending on the level of activity, one crew member may remain at a central location from which arriving and departing visitors can be observed while the other circulates among people on site to distribute questionnaires.
3. Sector 3, SR 31 South: A crew will begin work in this sector by traveling north from Ione on SR 31 to Campbell Park, at the upstream end of Boundary Reservoir. The crew will make an initial census of visitors present and contact users to distribute surveys. Following a sweep at Campbell Park the crew will continue north about 4 miles to the Sweet Creek Falls Rest Area. The crew will remain at this site for most of the remainder of the sampling period, recording visitor count observations and distributing questionnaires. Depending on the level of activity, one crew member may walk the trail to the falls while the other remains at the rest area. Approximately 15 to 30 minutes

before the end of the sampling period, the crew will return to Campbell Park for another census at that site before ending the sampling period. (This approach may result in less precise information about length of stay and specific activities for Campbell Park visitors, compared to the other developed sites. This is not expected to jeopardize results, however, because Pend Oreille County PUD will presumably be able to provide additional information about use at Campbell Park, and information collected from the questionnaires and visitor registry will be used to supplement the visitor count data.)

4. Sector 4, Roaded Dispersed: Little is currently known about use of Forest Service roads by visitors attempting to access Boundary Reservoir. Consequently, a separate geographic sector for field sampling has been developed to address this question. This sector will include inventoried dispersed sites, Crescent Lake, and forest roads that are near Boundary Reservoir (see Figure 1). A survey crew will sample this sector by traveling north from Ione in a generally counter-clockwise loop. The typical travel route for this circuit will include SR 31 on the west side of the Pend Oreille River between Ione and Metaline Falls; continuing north via SR 31 to sample portions of key Forest Service road systems west of the highway; traveling west on FR 3165 to cover the area between Crescent Lake and Vista House; proceeding west across Boundary Dam to the Boundary Dam access road; and completing the circuit by traveling south on County Road 2975 and SR 31 again. Based on current knowledge of accessibility and dispersed use conditions, the plan for regular sampling of Sector 4 is to cover the following locations: (1) the SCL wildlife lands south of Sand Creek, to be observed from the Eagles' Nest viewpoint on SR 31; (2) the area between Pocahontas Creek and Sand Creek, primarily the known dispersed-use area around Wolf Creek, to be observed from the unnamed pullout on SR 31; (3) an inventoried dispersed campsite on FR 3100-172approximately ¼ mile west of SR 31; (4) an inventoried dispersed campsite at the junction of FR 3100-190 and 3100-193, approximately ½ mile west of SR 31; (5) the area along FR 3165, including 3165-325 to its junction with 3165-328 and the short spurs at Crescent Lake; and (6) the portion of FR 6200-340 (toward Pewee Creek) that can be traveled by vehicle. On alternate sampling occasions the crew will travel the same circuit in a clockwise direction, so that the respective road sections will not always be sampled at the same times and in the same sequence. In all sampling periods the crews will take instantaneous visitor counts at inventoried dispersed sites and will distribute questionnaires to visitors at those sites. The crews will count visitors that they encounter along the route during travel, but no vehicles in motion will be stopped. Based on the geographic distribution of these road systems and the time required to cover them in one circuit, this sector will need to be sampled as a roving census with no time available for extended observation at most specific locations. Exceptions to this condition are the pullouts along SR 31 opposite Sand Creek and Wolf Creek, where crews will make extended observations for approximately 1 to 2 hours at each location. (On three representative holiday or weekend days during the summer season, survey crews sampling Sector 4 will make a full circuit of FR 3100-172 and the loop formed by FR 3100-190 and 3100-310, including the -197 and -316 spurs. Early sampling results for Sector 4 indicated minimal dispersed recreation activity occurred had along these roads. Consequently, on June 13, 2007 SCL and stakeholders agreed to sample the full circuit of Sector 4 infrequently during the remainder of the study period, and to reallocate sampling time for Sector 4 as described above. Sampling activity on FR 3100-

172 and FR 3100-190/310 may be increased again in the fall if observations indicate these areas are being used for hunting or other late-season activities.)

5. Sector 5, North Reservoir: Survey crews will travel by boat to record water-based recreational activity and use at shoreline dispersed recreation sites in Sector 5. Due to access constraints, all sampling for Sector 5 will involve launching a boat at the Forebay Recreation Area ramp, with north-south travel to Metaline Falls and a subsequent return trip. (Survey crews will need to trailer a boat from their base in Ione to the Forebay ramp on each sampling occasion, and travel and launch time will unavoidably consume from 1 to 2 hours of each sampling period.) For each specified sampling period, a field crew will make a sweeping directional count of the northern reservoir zone and record progressive counts of watercraft operating within that area using pre-printed forms (see Appendix A). As indicated in the RSP, observations will include number of watercraft by type and location, number of people, types of activities, and other pertinent information. The same crew will also record dispersed recreation activity during the same circuit. Coverage of dispersed recreation activity will include (1) activity at defined sites identified through the dispersed site inventory (another component of Study 21) and (2) fishing, swimming, picnicking, camping, and other activities along the shoreline. To minimize the potential for double-counting of observations, survey crews will perform the sweeping watercraft counts and dispersed activity counts on opposing legs of the sampling circuit (e.g., take watercraft counts on the north-south leg and dispersed counts on the return trip).
6. Sector 6, South Reservoir: The sampling pattern for Sector 6 will be similar to that described for Sector 5, although sampling in this sector will include coverage of Metaline Waterfront Park. Survey crews may need to launch boats at Metaline Waterfront Park for sampling of the South Reservoir zone, or they may have access to an existing dock at Box Canyon Motel near the southern end of Sector 6. In either case, the basic sampling pattern will be for the crew to make a complete sweep of the South Reservoir zone (as described above for Sector 5) at both the beginning and end of the sampling period, with extended observation at Metaline Waterfront Park between reservoir sweeps. Based on access conditions for the Sand Creek area on the east side of the reservoir, this circuit will also include a stop at the SCL Boundary Wildlife Preserve and a pedestrian check of activity in the interior of the parcel, which would not be visible from the Eagles' Nest viewpoint on SR 31. This will result in two counts of boat activity for this sector in each sampling period. Survey crews will be trained to note distinguishing features of watercraft counted, so they can avoid counting boats that were previously counted. (Due to access and travel constraints, the time available for sampling in Sector 6 will be divided proportionally between the on-water counts and sampling at Metaline Waterfront Park.)

3.2.2.2 Visitor Questionnaires

Administration of the Project Area Visitor Questionnaire will follow a predetermined schedule designed to provide representative coverage of the types of visitors, recreation settings, and times of day at the Project area for the period May 19 through October 31, 2007. Survey crews will contact visitors for the purpose of distributing questionnaires in conjunction with visitor counts and observations. (As noted previously, when the Northeast sector is being sampled, security

guards will be instructed to distribute questionnaires to visitors traveling to the Tailrace Recreation Area, while survey personnel stationed at the Vista House will record visitor counts in the Tailrace area.)

The crews will attempt to contact all visitors encountered at each sampled sector during the corresponding time of day (e.g., Forebay Recreation Area from 6:00 a.m. to 12 p.m.) Clusters will be randomly selected from a list of all possible clusters for each sampling day. Upon arriving on site, survey crews will contact visitors, introduce themselves and the study while communicating the importance of participating to help understand recreation use at the site. After these introductions, crews will ask visitors if they would be willing to complete the survey booklet. It is anticipated that the survey crews will be able to contact every visitor at a site under most conditions. If a site is particularly busy during a given sampling period, and it is not possible for the two person crew to take a census, the crews will contact as many visitors as possible while trying to match the diversity of users present at the site. For example, if a census is not possible, for each type of user present (anglers, pleasure boaters, campers, day visitors, etc.) crews will contact both males and females and visitors of all age groups represented. Crowded conditions when only a portion of the visitors can be contacted are expected to be rare.

Visitors who are willing to participate will be handed a questionnaire, a small golf pencil, and a self–addressed, postage-paid envelope. Visitor names, addresses, and telephone numbers will be collected at time of distribution so that reminders can be mailed. When visitors refuse to accept a survey, the crew will ask them to quickly answer 1 or 2 key questions (such as their home ZIP or postal code, primary destination at the Project, or frequency of visits to the Project) to later check for non-response bias (i.e., are the people who refused different from those who completed and returned the survey). Visitors will be instructed to complete the survey based on their present visit to the Project area. Visitors will be instructed to return their completed survey directly to one of the crew members, deposit it in one of several drop boxes that will be installed at recreation sites, or return it by mail.

The method of administration proposed in this implementation plan allows for a somewhat longer survey instrument that provides more response data, compared to reliance on completing interviews on-site. Crews will be onsite for approximately six hours, which allows them to collect completed surveys without rushing visitors. Boaters and anglers will have ample time to complete the survey while on the water, and the drop boxes will be placed at the boat ramps and in other highly visible locations. The self-administered, drop-off approach is designed to avoid the pressure on the visitor to complete a lengthy survey in the field, and minimize potential bias due to interviewer effects. One potential disadvantage to use of drop boxes is that a visitor accepting a blank questionnaire may be less inclined to complete it on his/her own time, compared to a visitor being interviewed in the field. The survey crews will be instructed to monitor trash receptacles at recreation sites to see if excessive numbers of questionnaires are being discarded.

In addition to the mailed reminders designed to boost response rate, an incentive program will be used to increase participation. At the time of initial contact, visitors will be informed that if they return a completed survey, they will be entered into a drawing for a cash prize. Specifically, the questionnaire instructions say that completed surveys will be entered into a series of prize

drawings to occur during and at the end of the 2007 season. At the end of the questionnaire, a space will be provided for respondents to provide contact information so that they may be notified if they are selected for a prize. Pools of 5 respondents each will be selected for cash prizes in three separate drawings that will occur in July, September and November. Individual prize amounts in each drawing will range from $10 to $100. Visitors will be assured that their personal information will not be associated with their responses or shared with third parties. Visitor contact information will be detached from the questionnaire.

SCL will pre-test the Area Visitor Questionnaire in the field at least 2 weeks prior to the planned beginning of formal field sampling. Study staff will distribute copies of the draft survey instrument to a number of SCL Project employees and to visitors encountered at key recreation sites, such as the Forebay Recreation Area and Metaline Waterfront Park, to get their feedback on the instrument. Recipients will be asked to write comments about the questions or the survey approach in the margins, and will be questioned about the length of the survey and other key factors. Information gained from the pre-test will be used to refine the draft survey instrument as needed before the sampling program begins. In addition, the first week or two of actual sampling will be used as a test period to identify any issues with administration of the study (both visitor count and survey activity). If survey crews receive visitor resistance to taking or completing the questionnaire, or if they get negative feedback about the questions or means of returning completed questionnaires, SCL will attempt to make adjustments in response to the feedback.

Appendix B provides a draft Project Area Visitor Questionnaire.

3.2.2.3 Angler Surveys

In practice, administration of the angler survey component of Study 21 (to satisfy the information needs for Study 13) will be nearly identical to and incorporated within the description above for the visitor questionnaires. As indicated in Table 1, anglers will be contacted in Sectors 2, 3, 5 and 6. The objective will be to get anglers to complete the standard visitor questionnaire, so that anglers will not be underrepresented in that sample, and provide the response information desired for Study 13. Consequently, the questionnaire to be used for the angler survey will be treated as a subset of the basic survey instrument, to be provided to all anglers contacted during the study period with the Area Visitor Questionnaire. Appendix B is a draft questionnaire that includes the targeted questions for the angler survey.

Provision of drop boxes and self–addressed, postage-paid envelops will increase the response rate for the angler survey component of the study, as will the incentive program discussed above.

3.3 Sampling Frequency and Effort

As discussed in Section 3.1, accurate estimates of the size of the user population at the Boundary Project in general and for specific sites are not available. Therefore, minimum sample sizes for the total user population or individual components of the population cannot be identified at this time. Because there is no reliable estimate of current use, the cluster sampling approach described in this plan is an appropriate method, as discussed previously. With the proposed approach, it is not necessary to define specific numerical targets for sample size based on

proportions of total current use. (Moreover, specifying a fraction of the population to be included in a sample is an inadequate basis for selecting a target sample size [Fowler 2002]. That is because the occurrence of sampling error primarily depends on the actual sample size and composition and the existence of non-response bias, and not on the proportion of a population represented in the sample).

The cluster sampling program described in this implementation plan will provide comprehensive sampling coverage of developed and dispersed sites, overnight and day users, and water-based and land-based activities within the study area. It is not foreseen that sample size considerations will indicate a need to continue sampling into the 2008 season for Study 21.

Sampling in the field for Study 21 will be scheduled based on a standard 6-hour block of time for sampling activity (including travel time and related activity, such as launching and trailering boats). For the entire survey period, the following daily sampling periods will be applied:

- 0600 – 1200 (6 a.m. to 12 p.m.)
- 1200 – 1800 (12 p.m. to 6 p.m.)

Because extended daylight hours occur during most of the summer, sampling from 1800 to 2000 hours (6 to 8 p.m.) is proposed during July and August. This will be achieved by extending the work day from 12 to 14 hours (i.e., two 7-hours periods) for July and August. Based on the number of sectors defined for the Project area, 2 daily time blocks, and the number of days in the season, a total of 274 sampling sessions are proposed as a means to yield adequate coverage of the variability of recreational use at the Project. This estimate ensures that field crews will have sufficient time to conduct visitor counts and observations in addition to administering the Project Visitor Questionnaire. Table 2 provides a summary of the distribution of sampling activity and effort that is planned for Study 21.

Table 2. Planned Distribution of Sampling Activity and Effort, 2007 Boundary Recreation Season

Month	Sampling Days	Weekend/Holiday Sampling Days (#sampling periods)	Weekdays (#sampling periods)	Field Crews/Personnel	6-hour Sampling Periods Per Day/(Month)	Sampling Hours/Month (personnel time in field)
May	7	5 (10)	2 (4)	2/4	2 (14)	168
June	23	9 (18)	14 (28)	2/4	2 (46)	552
July	23	10 (30)	13 (39)	3/6	3 (69)	828
August	23	8 (24)	15 (45)	3/6	3 (69)	828
September	23	11 (22)	12 (24)	2/4	2 (46)	552
October	15	6 (12)	9 (18)	2/4	2 (30)	360
Total	**114**	**49 (116)**	**65 (158)**	**4-6**	**274**	**3,288**

The sampling program summarized in Table 2 includes sampling on all weekend days and holidays (Memorial Day, July 4th and Labor Day) from May 19 through September 30, plus 6 weekend days in October 2007; this effort allocation will result in weekend/holiday sampling on 49 days. A simple random sample of 57 percent of all weekdays during this period will also be drawn, for a subtotal of 65 weekdays. The proposed sampling program will result in sampling

activity on 114 days from May 19 through October 31, or approximately 69 percent of all days in that period.

To provide the labor resources needed to cover the proposed number of sampling sessions, two full-time, 2-person field survey crews will work continuously from spring through fall, providing a baseline level of sampling activity for the entire study period. A third crew will be added for the peak summer season (late June through August). Field crews are assumed to work 8-hour days (one 6-hour sampling period in the field for each crew, plus time for preparation and follow-up, e.g., data entry before and after field work) during the study period. The proposed sampling program and staffing plan results in 3,288 total hours of labor time. (Time required to recruit and train field personnel, mobilize for the study and process study results is not included in this estimate.)

A detailed calendar of specific sampling locations (geographic sectors) by day period on individual dates will be developed during the mobilization period for the study. Table 3 summarizes the planned allocation of sampling periods and effort by sector for the 2007 season. Ongoing management of the sampling program will include accommodation for any unplanned sampling disruptions due to adverse weather or personnel availability. In general, the objective will be to replace missed sampling periods and locations with equivalent activity on days or periods that were otherwise not scheduled for sampling.

Because overnight camping and multiple day-use activities at the Forebay Recreation Area make it a key recreation site, this sector will be over-sampled, i.e., it will receive a level of sampling effort that is slightly larger than what would result from an even distribution among the six sectors (see Table 3). Likewise, Metaline Waterfront Park will also be over-sampled because it is highly accessible to visitors and appears to be a popular site (Table 3). Based on early indications of quite limited roaded dispersed use within the study area, SCL believes it would be advisable to delete sampling of FR 3100-310/190 and 3100-172 from all but 4 or 5 of the weekend sampling periods allocated to Sector 4, and to eliminate weekday sampling on these roads when Sector 4 work is scheduled. This change is now incorporated in the discussion of sampling for Sector 4.

Table 3. Effort Allocated to Sampling by Weekend, Weekday, and Sector

Sector	# Weekend Sample Periods (6-hr. periods)	#Weekday Sample Periods (6-hr. periods)	Total Effort (Workdays) (12-hr. periods)	Crew Hours on Site
1. Northeast	18	25	21.5	258
2. Forebay	22	29	25.5	306
3. SR 31 South	20	27	23.5	282
4. Roaded Dispersed	16	23	19.5	234
5. North Reservoir	18	25	21.5	258
6. South Res./MWP	22	29	25.5	306
Total	**116**	**158**	**137**	**1,644***

MWP = Metaline Waterfront Park
* Total personnel-hours are estimated at 3,288.

3.4 Staffing and Equipment

Two 2-person field crews working from spring through fall, with a third 2-person crew during July and August 2007, is required for this sampling program. The preferred option for staffing this field program is to hire 2-3 local residents, preferably from the northern part of Pend Oreille County so that each crew may have a member who is familiar with the area and the local population. This strategy is expected to increase visitor participation by reducing potential impressions on the part of the local visitors that the survey crews are outsiders who do not understand their needs. Job announcements for survey crew members and a crew chief will be published in local news media outlets and posted at suitable locations near the Project area. Announcements will also be circulated among SCL Boundary Project staff, as family members of Project employees are considered to represent a good potential source of personnel for this field effort. Organizations that frequently hire seasonal or temporary workers (such as the Colville National Forest) will be contacted to help identify and recruit potential candidates. If standard recruiting methods prove insufficient to supply the needed field personnel, other staffing options such as subcontracting with regional universities and colleges, research organizations or consultants will be considered.

Equipment and supplies needed to implement the recreation survey study are itemized as follows:

- High-clearance cars or trucks, preferably with 4-wheel drive and towing capacity (and related fuel)
- Boats and trailers (to accommodate relatively rare occasions when both north and south reservoir sectors are drawn at the same period on the same day), to be towed to various access points on Boundary Reservoir (and related fuel)
- Pre-printed visitor count forms and questionnaires, on both standard and write-in-the-rain paper
- Hand-held global positioning system (GPS) units
- Dispersed-site inventory logs and maps
- 6 drop boxes for receiving questionnaires at Vista House, Forebay Recreation Area, Tailrace Recreation Area, Metaline Waterfront Park, Sweet Creek Falls Rest Area and Campbell Park (pending agreement by Pend Oreille County PUD)
- Miscellaneous field supplies: golf pencils, clipboards, binoculars, radios, first-aid kit, etc.
- Computer and printer access for data entry, processing, and storage
- Photocopier access for copying forms and questionnaires completed on a daily basis

4 OTHER (NON-FIELD) DATA COLLECTION ACTIVITIES

The RSP describes several methods of data collection to be used in Study 21, other than the field sampling activities discussed above in Section 3. These include use of visitor registries,

interviews with local area recreation providers, a questionnaire-based survey of area residents and focus-group meetings with area residents.

4.1 Visitor Registries

As described in the RSP, visitor registries have recently been in use at the Vista House and Tailrace Recreation Area to encourage visitors to voluntarily report basic information about their use of the Project area. SCL is in the process of modifying the registry content for the Vista House and the Tailrace Recreation Area, and developing a new registry for use at the Forebay Recreation Area campground. New registries are not yet available, but are expected to be in place by approximately the middle of May.

4.2 Local Area Provider Interviews

The RSP prescribes conducting interviews with representatives of local recreation providers for two components of Study 21. Those include the initial review of existing regional survey and public input data and obtaining visitor count data from private-sector resort/campground operators, including concessionaires operating the Mill Pond and Sullivan Lake campgrounds administered by the U.S. Forest Service. The RSP describes the sources to be contacted and the types of information to be collected:

- Inventory of facilities, including any plans to expand or reduce facilities and services
- Facility use levels and capacity
- Season of operations
- Visitor information including origin, length of stay, party size, activities, etc.
- Anecdotal information about trends (in use levels or patterns)
- Fees charged and average funds expended by RV and tent campers

These efforts will involve initial contacts by telephone, possible transfer of information by mail or e-mail, and personal interviews with provider representatives in selected instances. Based on the relatively small number of potential sources and the varying types of information desired, this task will not require development of standard questionnaires or forms equivalent to the visitor questionnaire. Sheets will be prepared for recording these data based on the topic headings identified above.

4.3 Area Resident Mail Survey

Because there may be differences in perceptions, recreation activity patterns, and needs between local area residents and non-resident visitors to the Project, a separate questionnaire will be mailed to local residents in the Project vicinity. The Project vicinity as defined in Section 2.4 of the RSP is limited to the towns of Metaline, Metaline Falls and Ione in Washington and Salmo and Trail in British Columbia. The Area Resident Questionnaire (see Appendix C) will be developed to replicate most of the survey items used in the Project Area Visitor Questionnaire. Each household in the three Washington State towns will receive a questionnaire by mail; the

total population of these towns is approximately 800 persons, which means that the total number of households is conceivably less than 400. Drawing a sample from such a small population could produce unacceptable levels of response and sampling errors, so a census will be taken. For the two towns in Canada, residents will be randomly selected from a list of residents developed from county tax records, homeowners associations, and/or telephone directories. The total population of the British Columbia communities is estimated to be 10,000 people. Based on this population size, a target of approximately 370 completed surveys would achieve a 5% margin of sampling error at the 95% confidence level (Salant and Dillman 1994).

Four mailings are proposed for the Area Resident Questionnaire:

1. A personalized but short pre-notice letter will be mailed to tell people that the survey is coming and to inform residents that their participation in this important study is greatly appreciated.
2. One week after the first mailing, the cover letter, questionnaire, and stamped return envelope will be mailed.
3. Four to eight days after the surveys are mailed, each recipient will be sent a post card to thank those who have responded and to remind and encourage those who have not to please complete and return the questionnaire.
4. Three weeks after the second mailing, a new packet with a new personalized letter, questionnaire, and stamped return envelop will be sent out to everyone who has not returned the survey.

The draft Area Resident Questionnaire will be developed using the Area Visitor Questionnaire as a base. The introduction and specific questions in the survey instrument will be edited as necessary for adaptation as the Area Resident Questionnaire. When completed, this instrument will be included as Appendix C.

4.4 Local Area Focus Groups

The RSP indicates that focus group meetings will be held with area residents to obtain additional, detailed information about recreational use and preferences. The RSP anticipates a total of three focus group meetings, with selection of the groups to be defined by recreational activity types. Invitations to participate in focus group meetings will be based on information obtained from user organizations and other contacts within the local communities. The focus group meetings will occur in the vicinity of the Project and will cover discussions of use (or non-use) of the Project area and questions related to aesthetic considerations.

At this time, sufficient background information does not exist to provide specific details about the user types that will be identified to orient the focus group meetings or the agenda(s) that will be developed to guide discussion at the meetings. Pertinent scheduling considerations are that (1) it would be advantageous to hold the focus group meetings relatively late in the 2007 recreation season, so that participants can base their input on relatively fresh recollections and (2) attendance at the meetings will likely be higher if the meetings do not occur during a peak period for vacation activity. Consequently, the focus group meetings are proposed during the

early to middle part of September. Based on this scheduling, more detailed planning for the focus group meetings will be developed, based on additional background information developed through early study activities.

4.5 Regional Recreation Analysis

A separate study is to be conducted in 2008 to analyze current and future recreational use, opportunities and needs in the *region* of the Boundary Project area (see page 25 of the RSP). The objective of this Regional Recreation Analysis is to collect and analyze recreation information related to supply and demand of regional recreation resources. This is an important study element in planning for future recreation development, if needed, on or near Project lands. The boundary of the regional study area will be defined when planning for that study begins. Providers of recreation services within the defined region will be contacted and asked to provide relevant information. Potential questions include the types of inquiries that are being received from recreation enthusiasts in the region and what these recreation providers are currently telling people about the Project area. (For more detailed information on the Regional Recreation Study, see pages 25-32 in the RSP.)

5 DATA COMPILATION AND ANALYSIS

As discussed in Section 2.1, the fourth and final task in Study 21 is to compile and summarize the recreation surveys results. In summary, the survey crews will record visitor counts on the data forms included as Appendix A. Project-area visitors will record questionnaire responses on the survey instrument included in Appendix B. At the end of every sampling day, survey personnel will log, photocopy and file the original records (count forms and completed questionnaires) from that day's sampling activity at the local base of operations. On a weekly basis, field staff will forward packages of the original records to the Tetra Tech office in Bothell for custody, retaining the copies at the Project. Tetra Tech will maintain an up-to-date master file of completed field records, sorted by type of record (visitor count, visitor questionnaire, etc.) and date.

Data will periodically be tabulated for each type of visitor sampling activity, and a downstream analysis of the results will be performed according to guidance provided in the RSP. Separate databases will be developed to store results for each type of monitoring, and raw data will be entered into the databases periodically during the sampling season. Complete initial analysis of the results will be conducted after the survey work is concluded at the end of October, and used to support development of the interim report for the study. Supplemental analyses can be performed as needed to support other recreation tasks (such as the needs analysis). A final summary report documenting the implementation of the recreation survey study and its results will be prepared in 2008.

6 IMPLEMENTATION SUMMARY

A number of activities will need to be completed before implementing the field sampling program. Several other study activities will occur following the field sampling work to develop

and document the results of the study. The implementation activities for this study component are generally summarized as follows:

1. Recruit, interview and hire field crew personnel
2. Finalize visitor count forms and questionnaires
3. Assess actual field conditions applicable to the sites in the study area that will be monitored, to determine what (if any) adjustments to the sampling plan are needed
4. Train field personnel in study procedures
5. Make arrangements for vehicles, boats and other logistical needs
6. Field test proposed survey techniques, and adjust as necessary
7. Conduct field visits within the study area to implement the sampling plan
8. Process, store and evaluate field observation and questionnaire results (ongoing during the field sampling program, and after sampling is completed)
9. Analyze field and non-field survey data (following completion of data collection activities)
10. Prepare study report

7 REFERENCES

Fowler, F. J., Jr. 2002. Survey research methods (3rd Edition). Thousand Oaks, CA: Sage.

Salant, P. and Dillman, D. A. 1994. How to conduct your own survey. New York: Wiley.

Watson, A. E., Cole, D. N., Turner, D. L., Reynolds, P. S. 2000. Wilderness recreation use estimation: A handbook of methods and systems. Gen. Tech. Rep. RMRS-GTR-56. Ogden. UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 198 p.

Appendix 2: Visitor Count Documentation

Appendix 2a. Visitor Count Forms
Appendix 2b: Visitor Count Tables by sector/site
Appendix 2c: Vista House Visitor Registry Data
Appendix 2d: Visitor Use Estimate Calculations

Appendix 2a: Visitor Count Forms

Boundary Hydroelectric Project
Study 21 Recreation Surveys
Visitor Count Data Form – Developed Sites
(Sectors 1, 2, 3 and 6 [Metaline Waterfront Park only])

Observation sheet# _____	**Sector/site/observation point:** **_____ / _____ / _____**

BEFORE START TIME

Observer arrival time _____ (official/military time)

Observer name _____

Date (mm/dd/yy)____/____/____ **Day of Week (circle): M T W R F S SU**

Sampling period (circle): AM PM

Check visitor registry; record name, position, or number (if applicable) _____

AT START TIME

Weather: Gen temp _____ Sky/precip _____ Wind _____

Observation/count start time _____

Total number of people in view at start time _____

Number of parking spaces occupied _____ (Vehicles _____ Trailers _____ Veh. w/trailers _____)

Number of campsites occupied (if applicable) _____ (Camper Trailers/RV's_____ Tents_____)

Number of picnic sites occupied (if applicable) _____

DURING OBSERVATION INTERVAL (record counts with hash marks in groups of five)

Number of vehicles entering site during observation interval _____

Number of vehicles leaving site _____

Total number of boats launched _____

Total number of boats taken out _____

AT QUIT TIME

Observation quit time _____

Number of people in view at quit time _____

Number of parking spaces occupied _____ (Vehicles _____ Trailers _____ Veh. w/trailers _____)

Number of questionnaires handed out during interval _____

Number of questionnaires collected: Drop box _____ From visitors _____ Total _____

Check visitor registry, # of new entries since start time (if applicable) _____

Boundary Hydroelectric Project
Study 21 Recreation Surveys
Visitor Count Data Form – Developed Sites
(Sectors 1, 2, 3 and 6 [Metaline Waterfront Park only])

Visitor Observations

Case #	Time	Party Info.		Gender (approx.)		Recreation Use			
		Size	Type [1]	#Male	#Female	Actv1	Actv2	Actv3	Actv4
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

[1] **Type (party): F** = family **C** = couple **I** = individual **G** = apparent non-family group

<u>Activity Codes:</u> C=camping P=picnicking SW=swimming/sunbathing VSP=viewing scenery/photography F=fishing H=hunting WV=wildlife viewing BL=boat launching/retrieving HW=hiking/walking B=bicycling DT=drive through/restroom stop MR=motorized recreation WP=walking/pets SP=sports O=other

OBSERVER COMMENTS (noteworthy events, facility issues, visitor conflicts, complaints, conversations overheard, etc.)

_____

_____

_____

_____

Boundary Hydroelectric Project
Study 21 Recreation Surveys

Visitor Count Form
Sector 4: Dispersed Roaded Sites

Observation sheet# _____ **Starting side of river (circle): West East**

BEFORE START TIME ____ **AT OBSERVATION START TIME**

Observer name(s) _____ **Weather: Gen temp** _____ **Sky/precip** _____ **Wind** _____

Date (mm/dd/yy)____/____/____ **Start time** _____ **(official/military time)**

Day of week (circle): M T W R F S SU

Sampling period (circle): AM PM

Site-specific Counts, Observer A (Record the number of visible people, tents, etc. per site using hash marks for each.)

Road Site	Site Occupied Y/N	# People at Site	# Cars/ Trucks	# Off-Road Vehicles (describe)	# Campers/ Pop-ups	# Tents	# Water Craft (describe)	# Camp Fires	# Other (describe)
SR31	Visitor Pullouts								
Eagles Nest									
Wolf Creek									
Hooknose									
3100	172								
4RD172-1									
4RD172-2									
3100	190/310								
4RD190-1									
4RD310-1									
3165	305 Crescent Lake								
4RD305-1									
4RD305-2									
3165	310 Crescent Lake Campground								
4RD310-1									
4RD310-2									
4RD310-3									
3165	325/315								
4RD325-1									
4RD325-2									
6200	340/342								
4RD340-1									
CR2975	Visitor Pullouts								
Met. Falls									
Totals	---								

Boundary Hydroelectric Project
Study 21 Recreation Surveys

Visitor Count Form
Sector 4: Dispersed Roaded Sites

Observation sheet# _____

Recreation Activity Counts **Observer B** **(Record the number of individuals visibly doing each activity along the route and at numbered sites, using hash marks.)**

Road	Time in	Time out	C	P	SW	VSP	F	H	HW	B	Motorized Recreation (Code, #)	O (describe)	Total # People
Eagles Nest													
Wolf Creek													
Hooknose													
3100-172													
3100-190/310													
3165-305													
3165-310													
3165-325/315													
6200-340													
2975													
Totals	---	---											

Activity Codes: **C=camping** **P=picnicking** **SW=swimming/sunbathing** **VSP=viewing scenery/photography**
F=fishing **H=hunting** **WV= wildlife viewing/birding** **GP=gathering food/forest products**
HW=hiking/walking **B=bicycling** **SP=sports** **O=other**
4X4=driving jeep/pickup/SUV **ATV=driving quad/4-wheeler** **OHM=driving off-highway motorcycle**

OBSERVATION QUIT TIME _____
NUMBER QUESTIONNAIRES HANDED OUT _____ NUMBER COLLECTED _____

OBSERVER COMMENTS (road issues, unusual vehicles/behaviors, concerns, visitor conflicts/complaints, conversations overheard, etc.):

_____
_____
_____
_____
_____

Boundary Hydroelectric Project
Study 21 Recreation Surveys

Visitor Count Form

Sector 5: On-Water Boat Counts/Shoreline Dispersed Use

Observation sheet# _____

Sector (circle):
North Reservoir South Reservoir

BEFORE START TIME

Observer name(s)
_____

Date (mm/dd/yy)____/____/____

Day of week (circle): M T W R F S SU

Sampling period (circle): AM PM

AT OBSERVATION START TIME

Weather: Gen temp _____ Sky/precip _____ Wind _____

Put-in location/boat launch _____

Start time _____(official/military time boat leaving launch)

DURING OBSERVATION INTERVAL

General Counts Observer A (Record the number of visible watercraft, people, etc. using hash marks.)

On-Water Sweep	# Boats (Total craft)	# Power Boats	# Non-power (i.e. Kayaks, Canoes, etc.)	# Personal Watercraft	# Water Skiers	# People on Board (Total, all craft)	# People on Shore (Total)	# other (describe)
Travel Dir. Out: _____								
Travel Dir. Back: _____								
Totals								
Dispersed Site:	# People at Site	# Tents	# Off-Road Vehicles (*describe)	# Camp Fires	# Boats/ Watercraft Present (describe)	# Other (describe)	# Other (describe)	# Other (describe)
5NRFI-1								
5NRBLM-1								
5NRBLM-2								
5NRBLM-3								
5NREI-1								
5NREI-2								
5NREI-3								
5NRLC-1								
5NRMB-1								
5NRDE-1								
5NRDE-2								
5NRDE-3								
Totals								

*4X4=driving jeep/pickup/SUV ATV=driving quad/4-wheeler OHM=driving off-highway motorcycle

Boundary Hydroelectric Project
Study 21 Recreation Surveys

Visitor Count Form
Sector 5: On-Water Boat Counts/Shoreline Dispersed Use

Observation sheet# _____

Recreation Activity Counts Observer B (Record the number of individuals visibly doing each activity on the water, shoreline, and at inventoried dispersed sites; use one leg of a square per person, and a diagonal mark for the fifth person.)

Sweep /Site	Time in	Time out	C	P	SW	VSP	FB	FS	PB	WS	PD	PWC	O (describe)	Total # People
South														
North														
5NRFI-1														
5NRBLM-1														
5NRBLM-2														
5NRBLM-3														
5NREI-1														
5NREI-2														
5NREI-3														
5NRLC-1														
5NRMB-1														
5NRDE-1														
5NRDE-2														
5NRDE-3														
Totals	---	---												

Activity Codes: C=camping P=picnicking SW=swimming/sunbathing VSP=viewing scenery/photography FB=fishing/boat FS=fishing/shore WV=wildlife viewing/birding PB=pleasure boating WS=water skiing PD=paddling canoe/kayak/other craft PWC=personal watercraft use O=other

QUIT TIME _____

NUMBER QUESTIONNAIRES HANDED OUT _____ NUMBER COLLECTED _____

OBSERVER COMMENTS (use issues, unusual watercraft/behaviors, concerns, visitor conflicts/complaints, conversations overheard, etc.):

_____

_____

_____

_____

Boundary Hydroelectric Project
Study 21 Recreation Surveys

Visitor Count Form

Sector 6: On-Water Boat Counts/Shoreline Dispersed Use

Observation sheet# _____

Sector (circle):
North Reservoir South Reservoir

BEFORE START TIME

Observer name(s)
_____

Date (mm/dd/yy)____/____/____

Day of week (circle): M T W R F S SU

Sampling period (circle): AM PM

AT OBSERVATION START TIME

Weather: Gen temp _____ Sky/precip _____ Wind _____

Put-in location/boat launch _____

Start time _____(official/military time boat leaving launch)

DURING OBSERVATION INTERVAL

General Counts Observer A (Record the number of visible watercraft, people, etc. using hash marks.)

On-Water Sweep	# Boats (Total craft)	# Power Boats	# Non-power (i.e. Kayaks, Canoes, etc.)	# Personal Watercraft	# Water Skiers	# People on Board (Total, all craft)	# People on Shore (Total)	# other (describe)
Travel Dir. Out: _____								
Travel Dir. Back: _____								
Totals								
Dispersed Site:	# People at Site	# Tents	# Off-Road Vehicles (*describe)	# Camp Fires	# Boats/ Watercraft Present (describe)	# Other (describe)	# Other (describe)	# Other (describe)
6SRWC-1								
6SRGS-1								
6SRGS-2								
SCL-BWP								
Other 1								
Other 2								
Other 3								
Other 4								
Totals								

*4X4=driving jeep/pickup/SUV ATV=driving quad/4-wheeler OHM=driving off-highway motorcycle

Boundary Hydroelectric Project
Study 21 Recreation Surveys

Visitor Count Form
Sector 6: On-Water Boat Counts/Shoreline Dispersed Use

Observation sheet# _____

Recreation Activity Counts Observer B (Record the number of individuals visibly doing each activity on the water, shoreline, and at inventoried dispersed sites; use one leg of a square per person, and a diagonal mark for the fifth person.)

Sweep /Site	Time in	Time out	C	P	SW	VSP	FB	FS	PB	WS	PD	PWC	O (describe)	Total # People
South														
North														
6SRWC-1														
6SRGS-1														
6SRGS-2														
SCL-BWP														
Other 1														
Other 2														
Other 3														
Other 4														
Totals	---	---												

Activity Codes: C=camping P=picnicking SW=swimming/sunbathing VSP=viewing scenery/photography FB=fishing/boat FS=fishing/shore WV=wildlife viewing/birding PB=pleasure boating WS=water skiing PD=paddling canoe/kayak/other craft PWC=personal watercraft use O=other

QUIT TIME _____

NUMBER QUESTIONNAIRES HANDED OUT _____ NUMBER COLLECTED _____

OBSERVER COMMENTS (use issues, unusual watercraft/behaviors, concerns, visitor conflicts/complaints, conversations overheard, etc.):

_____

_____

_____

_____

Appendix 2b. Visitor Count Summaries

2b-1. Visitor Count Summary, Sector 1, Vista House
2b-2. Forebay Recreation Area day-use activity summary, 2007 observations
2b-3. Boundary Security 2007 Recreation Log, Forebay Recreation Area
2b-4. Metaline Waterfront Park day-use activity summary, 2007 observations
2b-5. Visitor Count Summary, Sector 3, Sweet Creek Falls Rest Area

Appendix 2b
Visitor Count Summary
Sector 1, Vista House

Observation Point	Date	Day	Period	Start Time	Quit Time	Duration (min)	Total Parties	Total People
Vista House	6/5/2007	T	AM	6:45	8:55	130	0	0
Vista House	6/5/2007	T	PM	13:20	15:50	150	0	0
Vista House	6/7/2007	R	AM	7:00	9:15	135	0	0
Vista House	6/19/2007	T	PM	13:10	16:15	185	2	6
Vista House	6/24/2007	SU	AM	7:45	10:40	175	0	0
Vista House	6/24/2007	SU	PM	12:45	16:00	195	4	9
Vista House	6/25/2007	M	PM	13:00	17:00	240	0	0
Vista House	7/2/2007	M	PM	14:00	19:15	315	3	5
Vista House	7/6/2007	F	AM	7:00	12:05	305	1	1
Vista House	7/7/2007	S	PM	14:00	18:00	240	9	25
Vista House	7/13/2007	F	AM	7:00	11:00	240	0	0
Vista House	7/14/2007	S	AM	7:00	12:00	300	0	0
Vista House	7/15/2007	SU	AM	7:00	12:00	300	4	8
Vista House	7/15/2007	SU	PM	14:10	19:00	290	6	12
Vista House	7/19/2007	R	PM	14:00	19:00	300	2	4
Vista House	7/24/2007	T	PM	15:00	19:00	240	3	7
Vista House	7/25/2007	W	AM	6:45	11:45	300	2	5
Vista House	7/28/2007	S	AM	6:45	11:45	300	2	6
Vista House	8/2/2007	R	AM	7:00	12:10	310	2	5
Vista House	8/6/2007	M	PM	14:23	19:08	285	4	9
Vista House	8/7/2007	T	AM	7:30	12:15	285	6	13
Vista House	8/8/2007	W	PM	14:15	18:20	245	2	4
Vista House	8/10/2007	F	AM	7:30	12:30	300	4	8
Vista House	8/12/2007	SU	PM	13:50	19:00	310	9	15
Vista House	8/17/2007	F	PM	13:55	19:00	305	5	9
Vista House	8/18/2007	S	AM	7:45	12:45	300	6	20
Vista House	8/18/2007	S	PM	12:30	19:10	400	10	25
Vista House	8/27/2007	M	AM	7:10	11:30	260	0	0
Vista House	8/28/2007	T	AM	7:00	12:00	300	1	2
Vista House	9/8/2007	S	PM	13:30	17:30	240	6	17
Vista House	9/9/2007	SU	AM	6:55	11:20	265	1	2
Vista House	9/15/2007	S	PM	13:00	17:10	250	8	22
Vista House	9/19/2007	W	AM	6:50	10:50	240	1	3
Vista House	9/21/2007	F	AM	7:10	11:00	230	1	1
Vista House	9/24/2007	M	AM	7:00	11:15	255	2	4
Vista House	10/3/2007	W	AM	7:00	11:00	240	1	1
Vista House	10/6/2007	S	PM	12:45	16:50	245	7	16
Vista House	10/8/2007	M	AM	7:00	11:00	240	0	0
Vista House	10/13/2007	S	AM	7:00	10:15	195	1	2
						10,040	**115**	**266**

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Table A.2b-2. Forebay Recreation Area day-use activity summary, 2007 observations.

Date	Day	Period	Vis. Parties	Tot. People	Camping	Picnicking	Swimming	View/ Photog	Fishing	Hunting	Wildlife View	Boat Launch	Hike/Walk	Biking	Drive Through	Motor Rec	Walk Pets	Sports	Other	Paddling	Total Activities
5/24/2007	R	AM	0	0																	
5/26/2007	S	PM	6	21				4	6											11	
5/28/2007	M	PM	5	8				4						1	4	3					
5/31/2007	R	AM	1	1								1									
6/9/2007	T	PM	3	7					3			5			2					2	
6/13/2007	W	AM	2	5					3						2		2				
6/17/2007	SU	AM	1	2								2									
6/20/2007	W	AM	2	2					1			1									
6/22/2007	F	AM	8	19	4	1			3			11			1						
6/27/2007	W	AM	2	4				3	1			3									
6/30/2007	S	AM	5	8	2							6									
7/1/2007	SU	AM,PM	23	49		6	5	8	12			15			14	2					
7/2/2007	M	PM	15	39	6	11	8		4			12			5				3		
7/4/2007	W	AM	9	23		4	9	2				13			6						
7/5/2007	R	PM	13	38	2		4					18			14						
7/6/2007	F	PM	17	45			23	12	6			7			9						
7/7/2007	S	AM	3	11					2			11				5		4		4	
7/9/2007	M	AM	4	10				9	1		2	10									
7/13/2007	F	AM	2	4			2	2				2									
7/15/2007	SU	PM	10	33			8		11			31			2						
7/18/2007	W	AM	2	4								4									
7/21/2007	S	AM	5	17	1							11			3				2		
7/22/2007	SU	PM	7	19		2		8				11									
7/25/2007	W	AM	3	15			14		8			15									
8/2/2007	R	PM	6	12			2	2				2			6						
8/3/2007	F	AM	8	23		7						21			2						
8/4/2007	S	AM	6	21	3	2	2	8				14			2	4					
8/5/2007	SU	PM	18	63		8	8					41			14		6				
8/6/2007	M	PM	3	10				2				8									
8/7/2007	T	AM	7	23								21			2						
8/8/2007	W	AM	6	22			8	4	10			17			5						
8/9/2007	R	AM,PM	17	74		8	6	16	2			46			8						
8/11/2007	S	PM	15	69		4		32	6			60			3					16	
8/14/2007	T	AM,PM	14	42		3	7					14			21						
8/15/2007	W	PM	7	20								18			2						
8/16/2007	R	AM	13	31			11	3				6	2		10						
8/18/2007	S	PM	36	112								92			20					23	
8/19/2007	SU	AM	8	18					2			10			6						
8/25/2007	S	AM	10	31								31							16		
8/27/2007	M	PM	8	35								35									
8/28/2007	T	AM	3	7				4	1						2						
8/29/2007	W	PM	12	15								13			2						
9/2/2007	SU	AM	7	20								20									
9/3/2007	M-hol	PM	16	63		2	15	11	13			14			29						
9/4/2007	T	PM	6	14			3		6			3			2				3		
9/13/2007	R	PM	1	2					2			2									
9/18/2007	T	AM	1	1				1													
9/23/2007	SU	AM,PM	7	26		3		7	7			18			8		6				
9/29/2007	S	AM	2	4				4				4									
10/1/2007	M	PM	0	0																	
10/5/2007	F	AM	0	0																	
10/9/2007	T	AM	1	2					2			2									
Total			**386**	**1144**	**18**	**61**	**135**	**146**	**112**	**0**	**2**	**701**	**2**	**1**	**206**	**14**	**14**	**4**	**24**	**56**	**1478**
Percent of Total						4.1	9.1	9.9	7.6	0.0	0.1	47.4	0.1	0.1	13.9	0.9	0.9	0.3	1.6	3.8%	

Note: Camping use excluded from day-use activity total and percentages.

Appendix 2b-3
Boundary Security 2007 Recreation Log,
Forebay Recreation Area

Date	# Overnight Campers	# Vehicles	# Boats	# Picnickers	Total People
5/6/2006	2	3	1		4
5/9/2006	2	3	1		4
5/12/2006	3	9	1		10
5/13/2006	2				6
5/14/2006	0	2		6	9
5/15/2006					
5/17/2006	1	1			2
5/24/2006	2	3			
5/25/2006	5	7			13
5/26/2006	7	9	4		16
5/27/2006	16	10	4		25-30
5/28/2006	17	18	4		30-35
5/29/2006	6	19	3	2	15
5/30/2006	1		1		
5/31/2006	1	2	1		2
6/1/2006	2	3	1		4
6/2/2006	3	5	1		8
6/6/2006		1	1		
6/9/2006	2	2			3
6/10/2006	6	11	2	30+	30+
6/12/2006	6	3			6
6/17/2006					
6/18/2006	1			4	15
6/20/2006	2	2			15
6/21/2006	1	2			2
6/22/2006	4	6	3		9
6/23/2006	5	8	2		12
6/24/2006	22	11	10	10	33
6/25/2006	18	9	2		18
6/26/2006	5	6	3		15
6/27/2006	4	6	2		15
6/29/2006	4	5			
6/30/2006	6	10	3	1	30
7/1/2006	9	15	6	6	27
7/2/2006	14	14	5	3	45+
7/3/2006	13	15	6	31	40
7/4/2006	10	11	9	6	30
7/5/2006	4	6			10
7/6/2006	4	5	2		8
7/7/2006	3	10	2		20
7/9/2006	12	10	3		24
7/10/2006	3	8	3		11
7/11/2006	2	2	3		6
7/12/2006	3	4	3		10
7/14/2006	5	6	3		12
7/15/2006	9	9	5		20
7/16/2006	11	14	3		30
7/17/2006	2	2			5
7/18/2006	4	5			8

Appendix 2b-3
Boundary Security 2007 Recreation Log,
Forebay Recreation Area

Date	# Overnight Campers	# Vehicles	# Boats	# Picnickers	Total People
7/19/2006					
7/21/2006	7	6	5	4	23
7/22/2006	9	25	12	20	40+
7/23/2006	9	8	4		24
7/24/2006	8	4	1		20
7/25/2006	7	3	3		20
7/26/2006	11	9	5	6	40
7/27/2006	20	15	5	3	50+
7/28/2006	22	22	6	10	55+
7/29/2006	36	28	12		100
7/30/2006	36	20	6		40+
7/31/2006	8	6	2		15
8/1/2006	15	14	4		35
8/2/2006	11	11	5		20
8/4/2006	22	15	5	15	37
8/5/2006	35+	38	12	40+	75+
8/6/2006	7	8	11		16
8/7/2006	8	9	10		16
8/8/2006	7	10	6		20
8/9/2006	12	12	4		30
8/12/2006	20	16	6		45
8/13/2006	20	18	6		40+
8/14/2006	15	7	2		15
8/15/2006	4	4	2		8
8/17/2006	7	4	2		15
8/18/2006	9	12	3		9
8/19/2006	30	18	8	6	36+
8/20/2006	30	21	5		30+
8/24/2006	15	12	3		30
8/25/2006	30	17	6		30+
8/26/2006	35+	22	6		35+
8/27/2006	12	8	2		12
8/28/2006	19	10	1		19
8/29/2006	19	2	10		19
8/30/2006	10	2	1		10
8/31/2006	16	9	2		30+
9/1/2006	65+	33	13		65+
9/2/2006	65	40	16		75
9/3/2006	40	40	20		100
9/4/2006	17	20	15		35
9/5/2006	7	9	6		20
9/6/2006	7	10	5		20
9/7/2006	8	10	4		15
9/9/2006	12	10	3		20+
9/20/2006	8	7	2		10
10/1/2006	8	8	1		12

Table A.2b-4. Metaline Waterfront Park day-use activity summary, 2007 observations.

Date	Day	Period	Vis. Parties	Tot. People	Camping	Picnicking	Swimming	View/Photog	Fishing	Hunting	Wildlife View	Boat Launch	Hike/Walk	Biking	Drive Through	Motor Rec	Walk Pets	Sports	Other	Total Activities
5/19/2007	S	PM	5	11		5							3	1					2	
5/20/2007	SU	PM	5	14									2	7		1	1		3	
5/26/2007	S	PM	4	5											5					
5/31/2007	R	PM	4	5			2						1				3			
6/2/2007	S	AM	7	14					2		1		5		4		3			
6/4/2007	M	PM	4	9								4					1		4	
6/12/2007	T	AM	1	1													1			
6/20/2007	W	PM	6	12			2	1	3			3		1	2		3			
6/26/2007	T	PM	7	21		9	2										7		3	
6/27/2007	W	AM	1	2											2					
6/28/2007	R	PM	4	5										2	2	1				
6/29/2007	F	AM,PM	23	74		58	4		1						5		4	47	5	
6/30/2007	S	PM	11	48		30			1					2	8	3		20		
7/4/2007	W-hol	PM	17	158		158													158	
7/6/2007	F	PM	11	24			5	1				1			2	5	5		4	
7/7/2007	S	PM	12	31			8	2	2			8			10		1			
7/8/2007	SU	AM,PM	20	52		10	2	2	6			18			13		3			
7/10/2007	T	PM	13	22					1			8	2		5		2		5	
7/14/2007	S	PM	9	21					5			5			4	3	3			
7/17/2007	T	PM	8	16			1		2						5	2	6			
7/20/2007	F	PM	5	10											2		3		5	
7/22/2007	SU	PM	4	9			2	5							5	2	2			
7/26/2007	R	AM	5	16		6						2			3				5	
7/27/2007	F	PM	2	5															5	
7/28/2007	S	AM	7	10			2		2			5					1			
7/29/2007	SU	AM	4	6					1			2				1	3			
7/31/2007	T	AM,PM	9	12		4	1		1			1			3	1	1			
8/2/2007	R	PM	12	27		2	10					4	2		2		4			
8/3/2007	F	PM	1	2											2					
8/7/2007	T	PM	8	20					12			5					1		8	
8/9/2007	R	AM	7	12								2			6		4			
8/11/2007	S	AM	3	5								4			1					
8/16/2007	R	PM	8	10		1		1				5			3	1				
8/17/2007	F	AM	7	18								4		1	7		2		4	
8/19/2007	SU	PM	10	20								5			12		3			
8/24/2007	F	PM	11	18				7							12					
8/25/2007	S	AM	11	18				3	1			7			5		3			
8/29/2007	W	AM	5	12				4				3	1		7		1			
9/6/2007	R	AM	11	15											15					
9/9/2007	SU	AM	9	17				17							5		7			
9/16/2007	SU	PM	6	13								2			4		4		3	
10/9/2007	T	AM	2	2									1				1			
10/22/2007	M	AM	1	1											1					
10/23/2007	T	AM	2	2								1					1			
10/26/2007	F	AM	1	1													1			
10/29/2007	M	AM	2	2													2			
Total			**325**	**828**	**0**	**283**	**41**	**43**	**40**	**0**	**1**	**99**	**17**	**14**	**162**	**20**	**87**	**67**	**214**	**1088**
Percent of Total					0.0	26.0	3.8	4.0	3.7	0.0	0.1	9.1	1.6	1.3	14.9	1.8	8.0	6.2	19.7	

Appendix 2b
Visitor Count Summary
Sector 3, Sweet Creek Falls Rest Area

Site	Date	Day	Period	Start Time	Quit Time	Duration (min)	Total Parties	Total People
Sweet Creek	5/19/2007	S	PM	15:30	17:30	120	4	12
Sweet Creek	5/20/2007	SU	AM	6:44	8:48	124	1	1
Sweet Creek	5/28/2007	M	AM	6:25	8:33	128	1	1
Sweet Creek	6/3/2007	SU	AM	6:30	8:45	135	2	4
Sweet Creek	6/7/2007	R	AM	6:30	8:50	140	5	6
Sweet Creek	6/10/2007	SU	PM	13:00	15:25	145	5	11
Sweet Creek	6/12/2007	T	PM	14:35	17:05	150	3	3
Sweet Creek	6/16/2007	S	AM	6:35	9:00	145	1	2
Sweet Creek	6/23/2007	S	PM	15:40	18:25	165	5	15
Sweet Creek	6/25/2007	M	PM	12:30	15:00	150	8	20
Sweet Creek	7/2/2007	M	AM	6:30	9:15	165	2	3
Sweet Creek	7/5/2007	R	AM	6:33	9:33	180	5	7
Sweet Creek	7/8/2007	SU	PM	13:30	16:15	165	15	32
Sweet Creek	7/9/2007	M	PM	16:30	19:10	160	3	4
Sweet Creek	7/10/2007	T	PM	13:44	16:02	138	7	18
Sweet Creek	7/17/2007	T	AM	6:20	8:50	150	3	4
Sweet Creek	7/17/2007	T	PM	13:21	18:21	300	7	15
Sweet Creek	7/19/2007	R	PM	13:48	16:42	174	10	22
Sweet Creek	7/22/2007	SU	PM	13:27	16:35	188	13	26
Sweet Creek	7/24/2007	T	PM	16:25	19:15	170	5	7
Sweet Creek	7/24/2007	T	AM	6:15	9:15	180	6	11
Sweet Creek	7/26/2007	R	PM	13:44	16:22	158	8	12
Sweet Creek	7/29/2007	S	AM	6:25	9:08	163	1	1
Sweet Creek	7/31/2007	T	PM	13:30	16:15	165	6	15
Sweet Creek	8/3/2007	F	AM	6:45	9:15	150	1	1
Sweet Creek	8/4/2007	S	PM	16:40	19:35	175	9	25
Sweet Creek	8/5/2007	SU	PM	13:35	16:35	180	17	38
Sweet Creek	8/6/2007	M	AM	6:44	9:30	166	4	7
Sweet Creek	8/9/2007	R	PM	16:40	19:35	175	4	6
Sweet Creek	8/11/2007	S	AM	7:30	10:05	155	6	9
Sweet Creek	8/12/2007	SU	PM	16:42	19:30	168	5	14
Sweet Creek	8/21/2007	F	PM	17:00	19:20	140	4	7
Sweet Creek	8/26/2007	SU	PM	16:30	19:00	150	8	23
Sweet Creek	8/26/2007	SU	AM	6:30	8:35	125	0	0
Sweet Creek	8/28/2007	T	AM	6:45	9:20	155	2	3
Sweet Creek	8/31/2007	F	PM	13:32	16:35	183	10	25
Sweet Creek	9/1/2007	S	PM	15:00	17:30	150	23	65
Sweet Creek	9/6/2007	R	AM	6:50	8:40	110	3	4
Sweet Creek	9/18/2007	T	PM	15:00	17:30	150	5	8
Sweet Creek	9/20/2007	R	AM	6:30	9:15	165	5	6
Sweet Creek	9/21/2007	F	PM	12:30	14:55	145	7	11
Sweet Creek	9/22/2007	S	PM	15:05	17:30	145	5	15
Sweet Creek	9/27/2007	R	AM	6:30	8:55	145	3	4
Sweet Creek	9/29/2007	S	PM	12:50	15:15	145	11	25
Sweet Creek	10/5/2007	F	PM	12:30	14:45	135	3	5
Sweet Creek	10/6/2007	S	PM	14:45	17:15	150	5	8
Sweet Creek	10/7/2007	SU	AM	7:15	9:15	120	3	6
Sweet Creek	10/16/2007	T	PM	11:30	13:45	135	5	9
Sweet Creek	10/26/2007	F	PM	14:50	16:50	120	0	0
						7,595	**274**	**576**

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Appendix 2c: Vista House Visitor Registry Data

Table A.2c-1. Vista House registry entries for visitors from Washington.

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	Primary Destination
Ellensburg	WA	98926	5/11/2007	11:30	2	1	1	1	
Colville	WA	99114	6/1/2007	13:30	2	1	1	1	vista point
Colville	WA	99114	6/2/2007	17:30	2	1	1	1	unknown
Kennewick	WA	99336	6/2/2007	16:20	2	1	1	1	
Medical Lake	WA	99022	6/8/2007	17:38	2	1	1	1	will spend the night close to Metaline Falls
Spokane	WA	99205	6/8/2007	11:30	2	2	0	1	SR 31
Ione	WA	99139	6/10/2007	14:00	2	1	1	1	Sunday drive (Ione)
Colville	WA	99114	6/12/2007		3	2	1	1	scenic drive
Ephrata	WA	98823	6/14/2007	12:55	2	1	1	1	Boundary Dam
Spokane	WA	99205	6/16/2007	14:20	4	2	2	1	Grandpa's house in Metaline
Metaline Falls	WA	99153	6/16/2007	14:10	3	1	2	1	view point
Ione	WA	99139	6/16/2007	15:20	3	1	2	1	all of it
Spokane	WA	99212	6/16/2007	13:30	4	2	2	1	
Seattle	WA		6/18/2007	18:30	2	1	1	1	out on viewing deck
Spokane	WA	99206	6/19/2007	14:30	3	2	1	1	Sullivan Lake
Rice	WA	99167	6/21/2007	15:30	2	1	1	1	Home
Ione	WA	99139	6/22/2007	14:30	3	0	3	1	Home
Fairchild AFB	WA	99011	6/23/2007		4	1	3	1	Sullivan Lake
Colbert	WA	99005	6/23/2007	13:15	2	1	1	1	
Metaline Falls	WA	99153	6/23/2007	14:15	2	1	1	1	
Arlington	WA	98223	6/24/2007		4	1	3	1	Metaline Falls
Centralia	WA	98531	6/27/2007	8:50	2	1	1	1	road trip
Colville	WA	99114	6/29/2007	15:00	2	1	1	1	Crawford State Park
Spokane	WA	99205	6/29/2007	18:00	2	1	1	1	everywhere
Metaline Falls	WA	99153	6/29/2007	11:00	2	1	1	1	Home
Suquamish	WA	98392	6/30/2007	14:44	2	0	2	1	Metaline Falls
Seattle	WA	98144	7/1/2007	15:55	2	1	1	1	Priest Lake, Idaho
Chewelah	WA	99109	7/1/2007		2	1	1	1	

Table A.2c-1, continued…

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	Primary Destination
Spokane	WA		7/1/2007	12:30	5	3	2	1	Sullivan Lake
Spokane	WA	99201	7/1/2007	13:45	2	1	1	1	Sullivan Lake
Rosalia	WA	99170	7/2/2007	13:37	2	1	1	1	Sullivan Lake East Campground
Colbert	WA		7/2/2007	12:45	2	1	1	1	
Colville	WA	99141	7/2/2007	14:30	2	1	1	1	
Spokane	WA		7/3/2007		2	1	1	1	
Liberty Lake	WA	99019	7/4/2007	17:00	2	1	1	1	Mt. Linton Campground
Spokane	WA	99208	7/5/2007	12:15	16	11	5	4	just touring
Malden	WA	99149	7/5/2007		4	2	2	1	
Spokane	WA	99205	7/5/2007	18:17	2	1	1	1	Boundaru Dam Campground
Federal Way	WA	98001	7/6/2007	13:46	2	1	1	1	Ione
Spokane	WA	99201	7/6/2007	12:17	2	1	1	1	Boundary Campgrounds
Spokane	WA	98208	7/6/2007	13:05	2	1	1	1	Sullivan Lake
Medical Lake	WA	99022	7/6/2007	13:10	6	3	3	1	Cusick/Medical Lake
Mead	WA	99021	7/7/2007	21:00	2	1	1	1	Z Canyon
Ione	WA		7/7/2007	14:00	4	2	2	1	
Chewelah	WA		7/8/2007	15:55	4	2	2	1	
Seattle	WA	98133	7/10/2007		2	1	1	1	In the information house
Metaline Falls	WA	99153	7/10/2007		10	3	7	1	Out in the information house
Spokane	WA	99207	7/10/2007	14:16	5	4	1	1	Leo Lake
Ione	WA	99139	7/11/2007	11:05	5	2	3	1	
Spokane	WA	99208	7/12/2007	late	2	0	2	1	in the Vista House
Spokane	WA	99224	7/12/2007	14:00	5	2	3	1	
Spokane	WA		7/13/2007	17:40	1	1	0	1	Spokane
Rice	WA	99167	7/13/2007	19:30	2	1	1	1	Kaslo, BC
Everett	WA	98203	7/14/2007		2	1	1	1	
Spokane	WA		7/14/2007		2	0	2	1	
Cashmere	WA	98815	7/14/2007	14:41	2	1	1	1	Boundary Dam Campground
Port Townsend	WA	98368	7/14/2007	15:15	4	3	1	1	

Table A.2c-1, continued…

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	Primary Destination
Colville	WA	99114	7/15/2007	15:15	1	0	1	1	Sullivan Lake/Boundary Dam
Spokane	WA	99208	7/16/2007	12:00	3	2	1	2	
Zillah	WA	98953	7/16/2007	12:25	5	2	3	1	Fruitvale, BC
Metaline Falls	WA	99153	7/19/2007	19:00	5	3	2	1	here
Ione	WA	99139	7/19/2007	20:20	3	2	1	1	Driving
Kettle Falls	WA	99141	7/23/2007	12:15	1	1	0	1	Vista House
Ione/Metaline Falls	WA	99139	7/23/2007	12:30	17	7	10	2	
Uniontown	WA	99179	7/24/2007		3	1	2	1	
Bremerton	WA	98310	7/26/2007	15:15	12	6	6	1	Caves
Mead	WA		7/26/2007		2	1	1	1	general area
Yakima	WA	98902	7/27/2007	14:00	1	0	1	1	General area
North Bend	WA	98045	7/27/2007	15:00	2	1	1	1	Ione
Spokane	WA	99207	7/27/2007		4	4	0	1	Crescent Lake
Spokane	WA	99205	7/27/2007		4	4	0	1	Bigfoot's lair
Richland	WA	99352	7/28/2007	16:00	4	2	2	1	Mill Creek
Spokane	WA	99206	7/28/2007	17:15	7	3	4	1	Lake Sullivan
Spokane	WA		7/28/2007		4	2	2	1	Sullivan Lake
Springdale	WA	99173	7/28/2007	12:30	2	1	1	1	just driving
Colville	WA	99114	7/29/2007	18:00	2	1	1	1	Gardner Cave
Spokane	WA	99212	7/29/2007	12:55	2	1	1	1	Ione
Spokane	WA	99218	7/29/2007		1	0	1	1	
Spokane	WA	99218	7/29/2007		2	1	1	1	
Colville	WA	99114	7/29/2007		2	1	1	1	
Nine Mile Falls	WA	99026	8/7/2007	12:30	5	1	4	1	Lake Sullivan
Ephrata	WA	98823	8/7/2007	15:10	4	2	2	1	North Idaho
Spokane	WA	99217	8/7/2007		4	2	2	1	Vista House
Spokane	WA	99203	8/7/2007	11:31	3	1	2	1	passing through: Nelson BC to Spokane
Vancouver	WA	98665	8/7/2007	12:15	2	1	1	1	Ione

Table A.2c-1, continued…

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	Primary Destination
Moses Lake	WA	98837	8/7/2007	15:10	4	2	2	1	North Idaho
Deer Park	WA	99006	8/8/2007	11:30	4	3	1	1	Ione, Metaline
Kennewick	WA	99337	8/9/2007	13:32	4	3	1	1	
Federal Way	WA	98023	8/9/2007	14:50	4	2	2	1	Sun Valley
Enumclaw	WA	98022	8/9/2007	11:50	4	2	2	1	
Addy	WA	99101	8/10/2007	12:25	11	6	5	1	
Addy	WA	99101	8/10/2007	12:30	11	6	5	1	Sullivan Lake
Kirkland	WA	98033	8/10/2007	15:00	3	1	2	1	Banff, Canada
Kirkland	WA	98033	8/10/2007	15:02	3	1	2	1	Banff, Canada
Newport	WA	99156	8/10/2007		4	2	2	1	
Colville	WA	99114	8/11/2007	13:15	3	1	2	1	Scenic loop/WA, Canada, WA
Chattaroy	WA	99003	8/11/2007	20:00	4	2	2	1	
Colville	WA	98844	8/12/2007	16:52	8	3	5	2	Everywhere, Sullivan Lake
Spokane	WA	99218	8/14/2007	14:15	4	2	2	1	
Cheney	WA	99004	8/16/2007	19:30	6	3	3	1	Mill Pond
Spokane	WA	99208	8/16/2007	13:30	4	2	2	1	
Colville	WA	99114	8/16/2007	14:10	4	2	2	1	
Seattle	WA	98125	8/16/2007	15:02	2	1	1	1	Creston, BC
Spokane	WA	99205	8/16/2007	16:00	6	1	5	2	Sullivan Lake
Spokane	WA	99206	8/16/2007		6	4	2	2	Crescent Lake, Lookout
Spokane	WA	99201	8/17/2007		2	1	1	1	Box Canyon Motel
Spokane	WA	99208	8/18/2007	14:25	4	2	2	1	
Spokane	WA	99207	8/18/2007	16:38	2	1	1	1	Weekend drive
Spokane	WA	99207	8/18/2007	14:22	3	1	2	1	Ione WA
Metaline Falls	WA		8/19/2007	8:00	2	0	2	1	
Elk	WA	99009	8/19/2007	16:30	4	2	2	1	Sullivan Lake
Deer Park	WA	99006	8/19/2007	14:31	4	2	2	1	
Spokane	WA	99207	8/20/2007	15:45	5	3	2	1	Sullivan Lake
Kirkland	WA	98034	8/22/2007	11:25	2	2	0	1	Edgewater Campground

Table A.2c-1, continued…

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	Primary Destination
Spokane Valley	WA	99206	8/22/2007	17:40	5	0	5	1	Beaver Lodge
Rockford	WA	99030	8/22/2007		1	0	1	1	Beaver Lodge
Colville	WA		8/23/2007	10:55	6	5	1	1	
Spokane Valley	WA	99216	8/25/2007	10:20	2	1	1	1	just looking at the beauty of the surrounding area
Bridgeport	WA	98813	8/25/2007	14:00	2	1	1	1	
Seattle	WA	98112	8/26/2007	8:45	2	1	1	1	Metaline Falls
Deer Park	WA	99006	8/29/2007	18:00	10	4	6	1	E. Sullivan Campground
Colville	WA	99141	8/31/2007	13:45	4	2	2	2	Crescent Lake
Seattle	WA	98103	9/1/2007	9:40	3	2	1	1	Banff, Canada
Newport	WA	99156	9/1/2007		3	2	1	1	
Spokane	WA	99006	9/1/2007	15:30	6	3	3	1	
Mead	WA	99021	9/1/2007	16:10	2	1	1	1	Metaline Falls
Cheney	WA	99004	9/1/2007	19:40	3	1	2	1	Gardner Caves and Metaline Falls
Odessa	WA	99159	9/1/2007	17:45	4	2	2	1	Metaline Falls
Usk	WA	99180	9/1/2007	17:50	2	1	1	1	home
Marcus	WA	99151	9/1/2007		4	2	2	2	Only God knows where
Medical Lake	WA	99022	9/2/2007		2	1	1	1	Ione
Spokane	WA	99206	9/2/2007		9	2	7	2	Ione
Spokane	WA	99212	9/2/2007		9	2	7	2	
Moses Lake	WA	98837	9/2/2007	16:00	2	1	1	1	
Olympia	WA	98512	9/2/2007	17:30	5	3	2	1	Sullivan Lake
Newport	WA	99156	9/3/2007	11:30	2	1	1	1	
Newport	WA	99156	9/3/2007	13:25	2	1	1	1	Residence
Spokane	WA	99223	9/3/2007	17:30	2	2	0	1	Metaline
North Bend	WA	98045	9/5/2007	15:00	3	2	1	1	
North Bend	WA	98045	9/5/2007	15:00	1	1	0	1	
Spokane	WA	99203	9/6/2007	11:45	2	1	1	1	Just travelling through
Enumclaw	WA	98022	9/7/2007	14:30	2	1	1	1	

Table A.2c-1, continued…

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	Primary Destination
Plain	WA	98826	9/8/2007	12:00	2	1	1	1	Ione
Everett	WA	98208	9/8/2007	14:20	3	1	2	1	Ione
Kent	WA		9/9/2007	15:00	2	1	1	1	Colville
Vancouver	WA	98661	9/9/2007	12:00	2	1	1	1	Blanchard, ID
Laurier	WA	99146	9/10/2007	15:00	2	1	1	1	Camping
Proctor	WA	26055	9/11/2007	15:00	4	2	2	1	Ione
Spokane	WA	99203	9/11/2007	15:45	2	1	1	1	
Spokane	WA	99208	9/11/2007	17:27	2	1	1	1	
Tacoma	WA	98466	9/13/2007	13:00	2	2	0	2	
Bellevue	WA	98007	9/13/2007	13:00	7	4	3	4	Princeton, BC
Spokane	WA	99202	9/13/2007	14:20	2	2	0	1	Boundary Dam Campground
Colville	WA	99114	9/13/2007	15:55	3	1	2	1	Sullivan Dam
Spokane	WA	99207	9/14/2007	12:30	1	1	0	1	Sullivan Lake
Spokane	WA	99223	9/18/2007	16:38	2	1	1	2	Sullivan Lake
Seattle	WA	98116	9/20/2007	9:10	1	1	0	1	
Seattle	WA	98199	9/20/2007	9:10	4	4	0	1	Boundary Dam
Chehalis	WA	98532	9/23/2007	11:20	2	1	1	1	wandering
Colville	WA	99114	9/23/2007	12:00	3	1	2	1	sightseeing
Naselle	WA	98638	9/23/2007	15:45	3	2	1	1	
E. Wenatchee	WA	98802	9/25/2007	14:00	2	1	1	1	
Deer Park	WA	99006	9/26/2007	14:25	1	0	1	1	Metaline Falls
Spokane	WA	99207	9/27/2007	14:40	4	1	3	1	Spokane, WA
Spokane	WA	99207	9/27/2007	16:45	3	1	2	1	Spokane, WA
Seattle	WA	98125	9/29/2007	13:00	2	1	1	1	
Federal Way	WA	98003	9/29/2007	12:00	1	0	1	1	Metaline Falls
Seattle	WA	98119	9/29/2007	14:45	2	1	1	1	Whole area - Selkirk Loop; on to Kellogg, ID.
Spokane	WA	99208	9/30/2007	14:15	2	2	0	1	camping
Cheney	WA	99004	10/1/2007	16:00	1	1	0	1	Sullivan Lake

Table A.2c-1, continued…

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	Primary Destination
Kennewick	WA	99338	10/9/2007	17:00	2	2	0	1	out on a hunting trip
Brewster	WA	98812	10/11/2007	17:20	2	1	1	1	Metaline
Spokane Valley	WA	99216	10/12/2007	14:30	4	2	2	1	Metaline
Seattle	WA		10/12/2007	15:00	2	1	1	1	Boundary was our destination
Pasco	WA		10/14/2007	11:30	3	0	3	1	Sullivan Lake/Metaline Falls
Metaline Falls	WA	99153	10/14/2007	11:30	3	0	3	1	
Metaline Falls	WA	99153	10/14/2007	15:20	2	0	2	1	Sullivan Lake
Metaline Falls	WA	99153	10/14/2007	15:20	2	0	2	1	
Westport	WA	98595	10/15/2007	12:20	2	1	1	1	Colville, WA
Carlsborg	WA		10/18/2007		2	1	1	1	
Spokane	WA				2	1	1	1	
Spokane	WA				2	1	1	1	
Metaline Falls	WA	99153			2	0	2	1	
Spokane	WA	99216			1	0	1	1	
Friday Harbor	WA				2	1	1	1	
Metaline Falls	WA	99153			2	1	1	1	
Ione/Cusick	WA	99119			3	1	2	1	Ione
Enumclaw	WA	98022			2	1	1	1	
Spokane	WA	99223			2	1	1	1	Ione
		98640	6/25/2007	11:00	2	1	1	1	Ione
		99223	6/25/2007	14:00	4	2	2	1	
					1	0	1	1	
					2	1	1	1	
					1	0	1	1	
					1	0	1	1	
Totals					**626**	**302**	**324**	**212**	

Table A.2c-2. Vista House registry entries for visitors from Idaho.

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	# of Watercraft	Primary Destination
Oldtown	ID	83822	6/20/2007	15:55	2	1	1	1	0	
Dalton Gardens	ID	83815	7/10/2007	18:30	2	1	1	1	0	
Post Falls	ID	83854	7/12/2007	16:00	1	0	1	1	0	
Bonners Ferry	ID	83805	7/12/2007	12:30	3	1	2	1	0	
Coeur d'Alene	ID	83814	7/29/2007	16:30	2	1	1	1	0	Sullivan Lake
St. Maries	ID	83861	7/29/2007	11:00	4	2	2	1	1	Boundary Dam Campground
Hayden Lake	ID	83835	8/7/2007	12:20	2	1	1	1	0	Sullivan Lake
Eagle	ID	83860	8/10/2007	15:30	2	1	1	1	0	
Priest River	ID	83856	8/11/2007	12:00	4	2	2	1	0	Ione (our cabin)
Coeur d'Alene	ID	83814	8/13/2007	15:23	1	0	1	1	0	Inside looking around & taking photos
Post Falls	ID	83854	8/16/2007	19:30	17	7	10	2	0	
Post Falls	ID	83854	8/16/2007	19:45	17	7	10	2	4	Boundary Dam
Hayden Lake	ID	83835	8/16/2007		2	1	1	1	0	Boundary Dam
Priest Lake	ID	83856	9/8/2007		5	1	4	1	0	Canada
Hauser	ID	83854	9/14/2007	12:00	2	1	1	1	0	Boundary Dam Campground
Council	ID	83612	9/23/2007	12:05	3	1	2	1	0	Boundary Dam
Oldtown	ID	83822	9/23/2007		3	1	2	1	0	
Moscow	ID	83843	10/4/2007	11:10	2	1	1	1	0	Nelson, BC
Post Falls	ID	83854	10/7/2007	11:00	2	1	1	1	0	on the way home from Ainsworth, BC.
Kellogg	ID	83837	10/16/2007	8:22	6	6	0	2	0	Working on the power line
Laclede	ID				4	2	2	1	0	
Hayden	ID	83835			2	1	1	1	0	
					88	**40**	**48**	**25**	**5**	

Table A.2c-3. Vista House registry entries for visitors from other U.S. states.

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	# of Watercraft	Primary Destination
Birmingham	AL	35213	7/17/2007	16:29	2	1	1	1	0	Bicycle trip
Birmingham	AL	35209	8/16/2007	12:30	6	4	2	2	0	Lookout & Dam, Crescent Lake
Vostivic Hills	AL	35216	8/16/2007	12:30	6	4	2	2	0	
Hot Springs Village	AR		9/2/2007	8:45	2	1	1	1	0	
Green Valley	AZ	85614	6/12/2007	14:05	4	2	2	1	0	
Surprise	AZ	85374	9/1/2007	16:00	4	2	2	1	0	
Prescott Valley	AZ	86314	9/9/2007	11:15	2	1	1	1	0	Nelson BC
Phoenix	AZ	85020	10/6/2007	16:00	2	1	1	1	0	Ione, WA
Palermo	CA	95968	6/2/2007	17:30	3	1	2	1	0	
San Diego	CA	92126	6/8/2007	14:00	2	1	1	1	0	just driving around from Ione to Canadian border
Van Nuys	CA		6/21/2007		1	0	1	1	0	
Burbank	CA		6/21/2007		1	0	1	1	0	
South San Francisco	CA	94080	7/11/2007	18:00	51	30	21	11	0	Sand Point, Idaho
Newport Beach	CA	92660	7/11/2007	11:40	2	1	1	1	0	
Imperial	CA	92251	7/24/2007	15:00	2	1	1	1	0	Vista view
Pacific Grove	CA	93950	7/26/2007	18:30	3	2	1	1	0	Metaline Falls WA
Palmdale	CA	93551	7/29/2007	11:50	4	1	3	1	0	
Chico	CA	95926	8/7/2007	12:15	2	1	1	1	0	Ione
Newport Beach	CA	92660	8/20/2007	13:40	2	1	1	1	0	Priest Lake - Nelson
Denair	CA	95316	9/7/2007	18:40	2	1	1	1	0	Washington side of Selkirk Loop
La Canada	CA	91011	10/16/2007	14:00	4	2	2	1	0	
Ojai	CA	93023			1	0	1	1	0	
Steamboat Springs	CO	80487	6/20/2007	16:50	1	1	0	1	0	
Breckenridge	CO	80424	7/11/2007	14:12	1	1	0	1	0	
Longmont	CO	80504	9/12/2007	11:15	3	1	2	1	0	
Denver	CO	80465	10/8/2007	15:00	5	3	2	1	0	visiting Spokane, WA

Table A.2c-3, continued…

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	# of Watercraft	Primary Destination
Middleburg	FL	32068	7/11/2007	10:00	2	1	1	1	0	Metaline Falls
Edgewater	FL	32141	9/14/2007	16:00	2	1	1	1	0	Nelson, BC
Ringgold	GA	30736	6/7/2007		1	1	0	1	0	
Brunswick	GA	31520	9/21/2007	9:00	1	1	0	1	0	Heaven
Bloomington	IL	61704	7/1/2007	14:00	2	1	1	1	0	Selkirk Loop
Bourbonnais	IL	60914	8/14/2007		2	1	1	1	0	
Mt. Sterling	IL	62353	9/27/2007	14:50	2	0	2	1	0	Spokane, WA
Lakin	KS	67860	6/3/2007		3	2	1	1	0	
Wichita	KS	67217	8/8/2007	11:45	4	2	2	1	0	Ione, WA
Baton Rouge	LA		6/17/2007	14:00	4	2	2	1	0	
Baton Rouge	LA	70817	10/15/2007	9:20	2	1	1	1	0	
Dartmouth	MA	02748	6/21/2007		1	0	1	1	0	
Spring Lake	MI	49456	9/25/2007	16:30	5	2	3	1	0	Ione, WA
Prinsburg	MN	56281	6/23/2007	16:15	2	1	1	1	0	
Centerville	MN	55038	7/3/2007	14:30	2	1	1	1	0	Ione
Eagle Lake	MN	56024	7/16/2007	11:43	3	2	1	1	0	
Salol	MN				1	1	0	1	0	
St. Charles	MO	63303	6/23/2007	14:20	1	1	0	1	0	Working on dam elevators
Villa Ridge	MO	63089	9/27/2007	14:50	2	1	1	1	0	Nelson, BC
Columbia	MS	39429	7/29/2007	13:37	4	3	1	1	0	Metaline Falls WA
Belgrade	MT	59714	9/28/2007	11:30	2	1	1	1	0	
Indian Trail	NC	28079	7/4/2007	15:20	2	1	1	1	0	Touring the NW
New Bern	NC	28562	7/6/2007	13:00	6	2	1	4	0	Sullivan Lake
Henderson	NV	89012	6/27/2007	13:30	2	1	1	1	0	
Battle Mountain	NV	89820	7/29/2007	17:20	4	3	1	1	0	Ione
Gardnerville	NV	89410	8/6/2007	14:15	1	1	0	1	0	
Henderson	NV	89012	8/11/2007	13:12	3	1	2	1	0	Canada
Ardmore	OK	73401	7/7/2007	12:00	2	1	1	1	0	Metaline Falls
Tualatin	OR	97062	6/19/2007	17:20	5	4	1	2	0	Boundary Dam

Table A.2c-3, continued…

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	# of Watercraft	Primary Destination
Tualatin	OR	97062	7/19/2007	12:50	2	1	1	1	0	Colville
Ione	OR	97843	8/18/2007	12:45	4	2	2	1	0	Metaline Falls WA
Eugene	OR	97405	8/26/2007	17:00	4	2	2	1	0	Driving home from Canada
Portland	OR		9/4/2007	16:45	3	0	3	1	0	
Portland	OR	97221	9/9/2007	12:20	2	1	1	1	0	Ione
Hillsboro	OR	97123	9/11/2007	14:30	2	1	1	1	0	Vista House
Springfield	OR	97478	9/27/2007	15:00	6	4	2	1	0	Metaline
Eugene	OR	97402	10/14/2007	11:30	3	0	3	1	0	
Johnston	RI	02919	6/24/2007		5	2	3	1	1	Cusick, WA
Lebanon	TN	37087	8/18/2007		2	1	1	1	0	Canada
Collinwood	TN		8/31/2007	14:00	2	1	1	1	0	just out cruisin and lookin
Wichita Falls	TX	76306	6/2/2007	15:30	4	1	3	1	0	Here - Spokane
Fritch	TX	79036	6/18/2007	18:06	4	2	2	1	0	Metaline
Frich	TX	79036	6/18/2007	18:06	4	2	2	1	0	Metaline
New Braunfels	TX	78130	7/16/2007	9:20	2	1	1	1	0	
Wichita Falls	TX	76309	7/26/2007		4	2	2	1	0	Metaline Falls
Tyler	TX	79703	7/29/2007	12:30	5	2	3	1	0	Nelson, BC
Livingston	TX	77399	8/10/2007		2	1	1	1	0	
Portland	TX	78374	8/28/2007	16:00	2	1	1	1	0	
San Antonio	TX	78163	10/6/2007	16:30	3	2	1	1	0	Liberty Lake, WA
Kearns	UT	84118	9/9/2007		0	0	0	1	0	
Huntington	UT	84528			7	4	3	1	0	here
Fredericksburg	VA	22508	8/31/2007	15:00	10	4	6	2	0	
Crawford	WV	26343			1	0	1	1	0	
Totals					**274**	**141**	**130**	**96**	**1**	

Table A.2c-4. Vista House registry entries for visitors from Canada.

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	# of Watercraft	Primary Destination
Medicine Hat	AB	T1A7B1	6/7/2007		4	2	2	1	0	
Cold Lake	AB	T9M1P1	6/8/2007	19:00	2	1	1	1	0	
Edmonton	AB	T5A1V8	7/16/2007		2	1	1	1	0	
Airdrie	AB	T4A1R8	9/22/2007		2	1	1	1	0	Home
Oasis	BC	V1R4U6	6/16/2007	17:30	2	1	1	1	0	
Fruitvale	BC		6/19/2007	10:39	2	1	1	1	0	inside house vista
Fruitvale	BC		7/1/2007		4	2	2	1	0	Pend Oreille River
Castlegar	BC	V1N4M6	7/12/2007	15:00	1	1	0	1	0	Hope, Idaho
Nelson	BC		7/13/2007	16:30	2	1	1	1	0	
Salem	BC	V0G1Z0	7/18/2007	17:00	3	2	1	1	0	Boundary Dam
Trail	BC		7/28/2007		2	0	2	1	0	
Salmo	BC	V0G1Z0	7/29/2007		3	0	0	1	0	
Montrose	BC		8/29/2007		3	1	2	1	0	
Castlegar	BC		9/30/2007		0	0	0	1	0	Metaline
Castlegar	BC	V1N2Z8	10/4/2007	17:00	4	3	1	1	0	Metaline
Castlegar	BC		10/14/2007		4	0	0	0	0	
Rossland	BC	V0G1Y0	10/14/2007	16:30	2	1	1	1	0	Ione - train excursion
Fort Langley	BC	V1M2R9			0	0	0	0	0	
Saskatoon	Canada	S7H4W8	8/12/2007	15:10	2	1	1	1	0	here
Totals					**44**	**19**	**18**	**17**	**0**	

Table A.2c-5. Vista House registry entries for visitors from other countries.

City	State	Zip Code	Date	Time	Group Size	# of Males	# of Females	# of Vehicles	# of Watercraft	Primary Destination
Kebah	Malaysia	06000	6/24/2007	11:30	0	0	0	0	0	
Kebah	Malaysia		6/24/2007		4	1	3	1	0	
Sydney	Australia		8/11/2007	13:15	3	1	2	1	0	Scenic loop/WA, Canada, WA
	China		8/20/2007	18:20	2	1	1	1	0	Sullivan Lake
Sao Paulo	Brazil				0	0	0	0	0	
Totals					**9**	**3**	**6**	**3**	**0**	

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Appendix 2d: Visitor Use Estimate Calculations

SCL Vista House

2007 Sampling Results

Observed use by month (see Appendix 2b):

Month	Parties	People (Recreation days)
May*	0	0
June	6	15
July	32	73
August	49	110
September	19	49
October	9	19
	115	266

* Due to road construction activity, access to site closed until early June

Observed use, 2007 sampling season (June 5 - October 15): 266 people

Observed use, primary season (June 15 - September 15): 224 people

Observed use, shoulder season (early June, after September 15): 42 people

Sampling activity duration -	Total	167.3 hours
	Primary	120.9 hours
	Shoulder	46.4 hours
Average observed use per hour -	Total	1.59 people, round to 1.6
	Primary	1.85, round to 1.9
	Shoulder	0.905, round to 0.9

Use Expansion from 2007 Results

Effective season of use: May 1 - October 31

Breakdown in days -	Total	184 days
	Primary	92 days
	Shoulder	92 days
Effective day length, average:	Primary	9 hours
	Shoulder	7 hours

(2007 observations showed minimal activity before 6 am or after 6-7 pm)

Expansion calculation:

Season	Days	Hours/Day	Tot. Hrs.	Use/Hr.	Total People
Primary	92	9	828	1.9	1573
Shoulder	92	7	644	0.9	580
Total Recreation Days					**2153**

Round to 2200

SCL Forebay Recreation Area - Campground

A. Based on Campsite Occupancy

2007 Sampling Results

Observed use, 2007 sampling season (May 19 - October 31):

Average occupancy, season:	5.3 sites
Average weekend occupancy (18 sample days):	7.8 sites
Average weekday occupancy (32 sample days):	3.9 sites

Observed use, primary season (Memorial Day - Labor Day):

Total	(251 sites, 41 sample days)	6.1 sites
Weekend	(136 sites, 16 sample days)	8.5 sites
Weekday	(115 sites, 25sample days)	4.6 sites

Observed use, shoulder season (pre-Mem. Day, after Labor Day): 1.7 sites

Use Expansion from 2007 Results

Effective season of use: May 15 - October 15

Primary season Memorial Day - Labor day:	105 days
	35 weekend
	70 weekday
Shoulder season	65 days

Expansion calculation:

Season	Days	Sites/Day	Tot. Site Nights	Group Size	Total People
Primary - weekend	35	8.5	297.5	2.6	774
Primary - weekday	70	4.6	322	2.6	837
Shoulder	65	1.7	110.5	2.6	287
Total	170		730		**1898**
				Round to 1900	

A. Based on Olympic Security Camper Counts

2007 Sampling Results

Observed use, 2007 season (May 8 - October 1):

May 8 - 24 (8 log entries in 17 days)	11 people=1.4/day
May 25 - Sep. 3 (80 log entries in 102 days)	1003 people=12.5/day
Sep. 4 - Oct. 1 (7 log entries in 28 days)	67 people=9.6/day

Use Expansion from 2007 Results

Effective season of use: May 15 - October 15

Primary season Memorial Day - Labor day:	105 days
Shoulder season	65 days

Expansion calculation:

Season	Days	Ave. People Per Day	Total Rec. Days
Primary	105	12.5	1312.5
Shoulder	65	4	260
Total	170		**1572.5**
			Round to 1600

SCL Forebay Recreation Area - Boat Launch/Day Use

A. Based on Study 21 Visitor Counts

2007 Sampling Results

Observed activity use, 2007 sampling season (May 19 - October 31):

Total users/recreation days:	1144
Total sampling periods	55
Average use per sampling period (rec. days):	20.8
Total sampling effort, hours	246
Average sampling duration (hours):	4.5

Observed use, primary season (Memorial Day - Labor Day):

Total users/recreation days:	1095
Total sampling periods	45
Average use per sampling period (rec. days):	24.3
Total sampling effort, hours	204.8
Average sampling duration (hours):	4.6

Observed use, shoulder season (pre-Mem. Day, after Labor Day): 1.7 sites

Total users/recreation days:	49
Total sampling periods	10
Average use per sampling period (rec. days):	4.9
Total sampling effort, hours	41.2
Average sampling duration (hours):	4.1

Use Expansion from 2007 Results

Effective season of use: May 1 - October 31

Primary season Memorial Day - Labor Day:	105 days
Shoulder season	80 days

Expansion calculation:

Season	Days	Users per Sample Period	Turnover Factor	Total Day Use
Primary	105	24.3	1.5	3827
Shoulder	80	4.9	2	784
Total Recreation Days				**4611**
			Round to 4600	

A. Based on Olympic Security User Counts

2007 Sampling Results

Observed day use, 2007 season (May 8 - October 1):

May 8 - 24 (8 log entries in 17 days)	23 people=2.9/day
May 25 - Sep. 3 (80 log entries in 102 days)	924 people=11.6/day
Sep. 4 - Oct. 1 (7 log entries in 28 days)	65 people=9.3/day

Use Expansion from 2007 Results

Effective season of use: May 1 - October 31

Primary season Memorial Day - Labor day:	105 days
Shoulder season	80 days

Expansion calculation:

Season	Days	Ave. People Per Day	Turnover Factor	Total Rec. Days
Primary	105	11.6	2	2436
Shoulder	80	9.3	2	1488
Total	185			**3924**
				Round to 3900

Metaline Waterfront Park

2007 Sampling Results

Observed activity use, 2007 sampling season (May 19 - October 31):

Total users/recreation days:	828
Total sampling periods	83
Total sampling effort, hours	139.1
Average sample period duration (hours):	1.7

Observed use, primary season (Memorial Day - Labor Day):

Total users/recreation days:	750
Total sampling periods*	67
Total sampling days*	36
Average use per sampling period (rec. days):	11.2
Average use per sampling day (rec. days):	20.8
Total sampling effort, hours	108.8
Average sample period duration (hours):	1.6

Observed use, shoulder season (pre-Mem. Day, after Labor Day):

Total users/recreation days:	78
Total sampling periods*	16
Total sampling days*	10
Average use per sampling period (rec. days):	4.9
Average use per sampling day (rec. days):	7.8
Total sampling effort, hours	30.3
Average sample period duration (hours):	1.9

* Sampling at Metaline typically involved two separate sample periods per day, before and after an on-water sweep of the South Reservoir

Use Expansion from 2007 Results

Effective season of use: April 1 - November 30

Primary season (Memorial Day - Labor Day):	105 days
Shoulder season (May 1-25, Sep. 5-Oct. 31)	80 days
Off season (April, November)	60 days

Expansion calculation:

Season	Days	Users per Sample Day	Turnover Factor	Total Use
Primary	105	20.8	2	4368
Shoulder	80	7.8	2	1248
Off**	60	4	2	480
Total Recreation Days				**6096**
			Round to 6100	

** No sample data for off-season period; use level assumed to be 50 percent of shoulder season rate

Use Adjustment for Mixed Water-Oriented and Local Park Activities

2007 sampling results show the following activity distribution for this site:

Boating/ramp use	9 percent
Fishing	4 percent
Viewing scenery/photography	4 percent
Swimming	4 percent
Picnicking	26 percent
Local park use (drive through, walk pets)	53 percent

Also, approximately 80 percent of picnic use observed in 2007 was associated with community or lage-group events, such as the annual Fourth of July picnic, family reunions or sports team gatherings.

Reservoir-related use is assumed to include all boating, fishing, viewing scenery and swimming, plus 25 percent of picnicing activity. These uses sum to 27.5 percent of total site use. Rounding upward, 30 percent is the share of total use estimated to be reservoir-related.

6100 total days X 0.3 =	1830 recreation days
Reservoir-related use =	**1800 rec. days (rounded)**

Sweet Creek Falls Rest Area

2007 Sampling Results

Observed activity use, 2007 sampling season (May 19 - October 31):

Total users/recreation days:	576
Total sampling periods	48
Total sampling effort, hours	126.6
Average sample period duration (hours):	2.6

Observed use, primary season (Memorial Day - Labor Day):

Total users/recreation days:	462
Total sampling periods	34
Average use per sampling period (rec. days):	13.6
Total sampling effort, hours	94.8
Average sample period duration (hours):	2.8
Average use per hour (rec. days)	4.9

Observed use, shoulder season (pre-Mem. Day, after Labor Day):

Total users/recreation days:	114
Total sampling periods	14
Average use per sampling period (rec. days):	8.1
Total sampling effort, hours	31.8
Average sample period duration (hours):	2.3
Average use per hour (rec. days)	3.6

Use Expansion from 2007 Results

Effective season of use: April 1 - November 30

Primary season (Memorial Day - Labor Day):	105 days
Shoulder season (May 1-25, Sep. 5-Oct. 31)	80 days
Off season (April, November)	60 days

Expansion calculation:

Season	Days	Hours/Day	Total Hours	Users per Hour	Total Use
Primary	105	12	1260	4.9	6174
Shoulder	80	10	800	3.6	2880
Off**	60	8	480	1.8	864
Total			2540		**9918**
				Round to 9900 rec. days	

** No sample data for off-season period; use level assumed to be 50 percent of shoulder season rate

Box Canyon Boat Launch

Boundary Project Components of Total Use at Box Canyon Dam/Campbell Park:

1. Boating (launch/retrieval activity)
2. Bank Fishing

A. Boating

2007 Sampling results

Observed launch operations, May 19-Oct. 31	5
Sampling activity duration, season	123.7 hour
Average observed use, season	0.04 ops/hr

Use Expansion from 2007 Results

Total sampling season hours (164 days X 13 hours per day)	2132 hrs
Total sampling season launch operations (2132 X 0.04)	85
Off-season launch operations (0.1 X 85)	8.5
Total annual launch operations (rounded)	100
Average group size (per visitor survey)	2.6
Total recreation days, boating	**260**

B. Bank Fishing

2007 Sampling results

Observed activity use, 2007 sampling season (May 19 - October 31):

Total users/recreation days:	70
Users at river bank (rest at Campbell Park lagoon)	35
Total sampling periods	47
Total sampling effort, hours	124
Average sample period duration (hours):	2.6
Average use per sample period	0.75

Use Expansion from 2007 Results

Effective season of use: April 1 - November 30

Primary season (Memorial Day - Labor Day):	105 days
Shoulder season (May 1-25, Sep. 5-Oct. 31)	80 days
Off season (April, November)	60 days

Expansion calculation:

Season	Days	Users per Sample Period	Turnover Factor	Total Use
Primary	105	0.75	2	158
Shoulder	80	0.75	2	120
Off**	60	0.25	2	30
Total Recreation Days				**308**

** No sample data for off-season period; use level assumed to be 33 percent of primary/shoulder season rate

C. Total Use

Rec. days by activity (rounded):

Boating	300
Bank Fishing	300
Total	**600 recreation days**

BLM Boundary Recreation Area

2007 Sampling Results

Observed use, 2007 sampling season (May 19 - October 31):

Site occupied on 7 of 45 sampling occasions; 6 camping, 1 day use
Overall occupancy rate 16%; weekend 25%, weekday 10%
6 occupancies from July 1 to September 1; also Sep. 16
3 observed uses on summer weekend day (10 samples), also 2 uses on Fridays
1-4 tents observed when site occupied, 11 total people observed camping

Use Expansion from 2007 Results

Effective season of use: May 15 - October 15

Primary season Memorial Day - Labor day:	105 days/15 weeks
Shoulder season	65 days/9+ weeks

Expansion calculation:

Season	Days	Occ. Rate	Tot. Site Nights	Group Size	Total People
Primary - weekend	35	0.33	11.6	2.6	30
Primary - weekday	70	0.2	14	2.6	36
Shoulder	65	0.1	6.5	2.6	17
Total	170		32.1		**83**
				Round to 100	

Boundary Reservoir Dispersed Sites

A. Camping Use

2007 Sampling Results

Observed use, 2007 sampling season (May 19 - October 31; Sector 5 sites only, less BLM-1) :

12 total shoreline dispersed sites in dataset
1 site occupied on 1 weekday sample (29 sampling occasions)
5 total sites in use on weekend samples (16 total samples)
6 total site uses on 45 sampling datys
Sampling occurred 45/160 days in season = 28 percent of days

Use Expansion from 2007 Results

Observed use = 28 percent of season total use
Total use = 6/.28 = 21 site nights
21 site nights x 2.6 people = 54.6 recreation days
Round to 100

B. Day Use

2007 Sampling Results

Observed use, 2007 sampling season (May 19 - October 31; Sector 6 sites only):

3 total shoreline dispersed sites in dataset
2 sites occupied on 1 weekday sample each (29 sampling occasions)
4 total site uses on weekend samples (16 total samples)
6 total site uses on 45 sampling datys
Sampling occurred 45/160 days in season = 28 percent of days
Sampling duration averaged ~2.5 hours = 23% of average day length
Sampling effort covered approximately 6.4 percent of available time in season (.28 x .23)

Use Expansion from 2007 Results

Observed use = 6.4 percent of season total use
Total use = 6/.064 = 93.8 site uses
94 site uses x 2.6 people = 244.4 recreation days
Round to 300

Use distribution:

Picnicking/general day use 33% = 100
Fishing 33% = 100
Swimming 33% = 100

Private Shoreline Use Areas

Resource/Use Status

5 identified locations on South Reservoir with apparent shoreline use from adjacent private property
1 private dock on shoreline currently operating
2-3 user-created launch locations potentially in current use
Estimate use based on 10 active use locations

Use Expansion

Assume 2 uses per location per week during primary season (15 weeks)
Assume 0.5 uses per location per week during shoulder season (9 weeks)

Season	Weeks	Uses per Week	Total Site Uses	Group Size	Total People
Primary - weekend	15	2	300.0	2.6	780
Shoulder	9	0.5	45	2.6	117
Total	24		345.0		**897**
				Round to 1000	

Use distribution:

Boating 40% =	400
Picnicking/general day use 20% =	200
Fishing 20% =	200
Swimming/sunbathing 20% =	200

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Appendix 3: Visitor Survey Documentation

Appendix 3a. Visitor Questionnaire and Survey Map

Appendix 3b. Sampling Log for Recreation Surveys (sectors sampled, by date)

Appendix 3c. Complete List of ZIP/Postal Codes Identified in Visitor Survey Responses

Appendix 3d. Question 21, Importance/Satisfaction Ratings for Recreation Facilities/Opportunities

Appendix 3e. Verbatim Responses to Visitor Survey Questions

Appendix 3a: Visitor Questionnaire and Survey Map

Seattle City Light

SURVEY

of Recreation Visitors to the

Boundary Reservoir Area

Northern Pend Oreille County, Washington

Site Name _____

Date _____

Introduction to Boundary Visitor Survey

Dear Visitor,

Seattle City Light (SCL) operates Boundary Dam and Reservoir and provides several recreation sites in the area. SCL is conducting a survey to learn about your opinions and experiences concerning recreation in the Boundary Reservoir Area and nearby areas in northern Pend Oreille County.

By completing this survey you will help SCL and other resource managers maintain and improve the recreation opportunities available at Boundary Reservoir. Your participation in the survey is completely voluntary and your answers will be kept in strict confidence. We estimate that it may take up to 15 minutes to complete.

To show our gratitude, all visitors completing a questionnaire will be entered into a prize drawing to occur at the end of the study. A pool of 10 people who complete the survey will be selected at random to receive cash prizes ranging from $20 to $150. There is a space at the end of the questionnaire for you to provide contact information so that we may notify you if you are selected for a cash prize. Your name and contact information will not be provided to a third party and will be destroyed after the drawing.

We encourage you to take time now to complete the questionnaire and hand it back to one of our crew members. If you complete your survey after we have left, please place it in one of the labeled drop boxes provided at the Vista House, the Boundary Dam Visitors' Gallery, the campground or the boat ramp at the Forebay Recreation Area, the boat ramp at Metaline Waterfront Park, the campground below Box Canyon Dam (Campbell Park), or at Sweet Creek Falls Rest Area. If you cannot complete the questionnaire during your visit, please place it in the stamped, self-addressed envelope provided and send it to us by mail within the next week.

Most of the questions ask you about your current visit to the Boundary Reservoir Area as opposed to visits that you have made in the past.

If you have any questions regarding this survey, please contact me at

509-446-3083 or **lonnie.johnson@seattle.gov**

or Michele Lynn, SCL's Recreation Resources Coordinator, at

206-386-4578 or **michele.lynn@seattle.gov**.

Thank you for your cooperation with this important recreation study!

Sincerely,

Lonnie Johnson

Boundary Powerhouse Supervisor

Information on Your Visit

1. Is this your first visit to the Boundary Reservoir Area? *(Please see map for extent of area. Circle one.)*

1 No → Skip to Question 3

2 Yes

2. Do you think that you would visit the Boundary Reservoir Area again? *(Circle one.)*

1 No

2 Yes

3 I'm not sure

3. How many people, including yourself, are in your group for this visit? *(Your group is all the people you arrived with and/or planned to meet here.)*

#_____ People #_____Males #_____Females

4. On this visit to the Boundary Reservoir Area, are you staying overnight? *(Circle one.)*

1 No, just passing through on the way to somewhere else → Skip to Question 6

2 No, just here today for a total of _____ hours *(Write number of hours.)* → Skip to Question 6

3 Yes, staying overnight for a total of _____ nights *(Write number of nights.)*

5. Where are you staying overnight? *(Circle all that apply if you are staying more than one night.)*

1 Campground at Boundary Dam (Forebay Area) in a tent _____ or in an RV/camper _____ *(Check one)*

2 Campground at Box Canyon Dam (Campbell Park) in a tent ____ or in an RV/camper ____ *(Check one)*

3 U.S. Forest Service campground *(Please name.)* _____

4 Privately-operated campground *(Please name.)* _____

5 Hotel, motel, resort or bed & breakfast *(Please name the town.)* _____

6 Private home of family or friends

7 Other *(Please describe.)* _____

6. What is the ZIP code or postal code at your primary residence? *(where you live on a permanent basis)*

ZIP/Postal Code _____

Recreation Activities

7. Please indicate which of the following activities you plan to do or have done <u>during this visit</u> to the Boundary Reservoir Area. *(Circle all that apply.)*

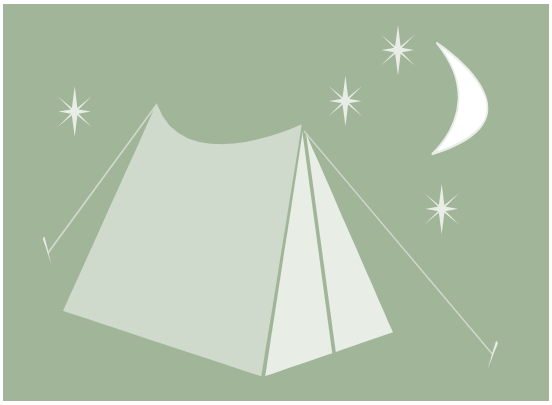
1 Fishing
2 Swimming
3 Picnicking
4 Motor boating for pleasure
5 Water skiing
6 Canoeing/kayaking
7 Personal watercraft (jet ski)
8 Viewing scenery/sight seeing
9 Viewing/visiting the dam(s)
10 Traveling State Route 31 North Pend Oreille Scenic Byway
11 Day hiking/nature trails
12 Walking/jogging
13 Bicycling
14 Photography
15 Nature study (bird/wildlife watching, flowers/rocks)
16 Collecting edible fruits, berries, mushrooms
17 Car/tent/RV camping (developed facilities, services, people present)
18 Car/tent/RV camping on back roads (secluded, no services, fewer amenities)
19 Boat-in camping along river shoreline
20 Socializing
21 Spending time alone
22 Off-roading (dirt bike, ATV, 4X4)
23 Hunting
24 Attend a special event/festival
25 Other (Please specify.)_____

8. Which <u>one</u> of the activities that you circled in the list above was <u>your primary recreation activity for this visit</u> to the Boundary Reservoir Area? *(Your primary recreation activity is the one that you spent the most time doing. Please write the number from the list on the previous page.)*

I spent most of my time doing activity # _____ during this visit.

9. Overall, how would you <u>rate the quality of your recreation experience</u> for this visit to the Boundary Reservoir Area? *(Circle one number on the scale.)*

1	2	3	4	5	6	7	8	9
Very Poor				Average				Excellent



IMPORTANT - PLEASE READ

The Fishing Section is only for visitors who are fishing on this visit to the Boundary Reservoir Area. If you did not circle fishing in Question 7 and your party does not plan to fish on this visit, pelase skip to Question 16 (on page 7).

10. How much time did/will <u>you and others in your party</u> spend fishing on this visit to the Boundary Reservoir Area? *(Please write the number.)*

Number of people fishing _____

Number of days fished _____

Average/typical number of hours fished per day _____

11. How did you go fishing during this visit to the Boundary Reservoir Area? *(Circle all that apply.)*

1 Boat/watercraft *(Please specify type.)*_____

2 Shore/bank

3 Both

4 Other means *(Please specify.)* _____

12. In what area(s) did/will you fish during this visit to the Boundary Reservoir Area? *(See map to identify areas. Circle all that apply.)*

1 Forebay area of Boundary Reservoir (Boundary Dam to north end of canyon)

2 Canyon area of Boundary Reservoir

3 Boundary Reservoir between Metaline and Metaline Falls

4 Boundary Reservoir between Metaline and Box Canyon

5 Mouth of creek(s) entering Boundary Reservoir *(Please specify.)* _____

6 Creek(s) entering Boundary Reservoir (above creek mouth) *(Please specify.)* _____

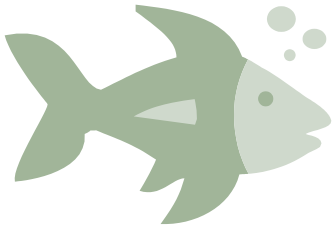
7 Other creek/stream in the area *(Please name.)*_____

8 Box Canyon Reservoir

9 Sullivan Lake

10 Mill Pond

11 Other lake/pond *(Please name.)* _____



Fishing

13. While fishing in the Boundary Reservoir Area, what species of fish do you want to catch? *(Circle all that apply.)*

1 Triploid rainbow trout

2 Other trout

3 Smallmouth bass

4 Largemouth bass

5 Other species *(Please identify.)* _____

14. Please tell us about the fish you and your party caught during this visit to the Boundary Reservoir Area. *(Please write your responses in the blanks.)*

Type of Fish	Number Caught	Size Range (inches)
Triploid rainbow trout	_____	_____
Other trout	_____	_____
Smallmouth bass	_____	_____
Largemouth bass	_____	_____
Other: _____	_____	_____
Other: _____	_____	_____

15. Overall, how would you rate your satisfaction with the fishing opportunities at Boundary Reservoir? *(Circle one number on the scale.)*

1	2	3	4	5	6	7	8	9
Very Poor				Average				Excellent

16. Did you operate or ride in a boat or other watercraft on Boundary Reservoir during this visit? *(Circle one.)*

1 No ➡ Skip to Question 19

2 Yes

17. Which boat launch did you use during this visit to the Boundary Reservoir Area? *(See map. Circle all that apply.)*

1 Launch at Boundary Dam (Forebay Area)

2 Metaline Waterfront Park launch

3 Launch below Box Canyon Dam (Campbell Park)

4 Private boat launch *(Please specify.)*_____

5 Launched directly from shore with no boat launch *(Specify.)* _____ ➡ Skip to Question 19

6 I'm not sure

18. Did the boat launch or launches that you circled in Question 17 adequately meet your needs for this visit to the Boundary Reservoir Area? *(Circle one.)*

1 Yes

2 No *(Describe below any boat launch problems you encountered.)*

19. Whether you used a boat or not, did the water conditions of the reservoir/river cause any problems for you during this visit to the Boundary Reservoir Area? *(For example, rising or falling water levels, fast currents, or rapids. Circle one.)*

1 I did not use or access the reservoir/river or its shoreline on this visit

2 No problems

3 Minor problems

4 Major problems, but this <u>would not</u> keep me from returning in the future

5 Major problems that <u>would</u> keep me from returning in the future

6 I'm not sure

(Please describe any problems with water conditions you encountered.)

Recreation Facilities and Service

20. Different people look for different recreation facilities and opportunities. Some of the items listed below may be found at the Boundary Reservoir Area and others may not be available. Thinking about your recreation needs, please rate how <u>important</u> it is to you to have each of these items available when you recreate. Then, rate your <u>satisfaction</u> with each item at the Boundary Reservoir Area. *(Circle one number for IMPORTANCE on the left and one number for SATISFACTION on the right. If something is not at all important to you or does not apply, you may circle NA.)*

	IMPORTANCE					SATISFACTION					
	Not at all Important				Extremely Important	Not at all Satisfied				Extremely Satisfied	Does Not App;y
Tent campsites	1	2	3	4	5	1	2	3	4	5	NA
RV campsites	1	2	3	4	5	1	2	3	4	5	NA
RV hookups/utilities	1	2	3	4	5	1	2	3	4	5	NA
Campsite fees	1	2	3	4	5	1	2	3	4	5	NA
Parking area	1	2	3	4	5	1	2	3	4	5	NA
Road access to recreation areas	1	2	3	4	5	1	2	3	4	5	NA
Access for the disabled	1	2	3	4	5	1	2	3	4	5	NA
Drinking water	1	2	3	4	5	1	2	3	4	5	NA
Flush toilets	1	2	3	4	5	1	2	3	4	5	NA
Vault/portable toilets	1	2	3	4	5	1	2	3	4	5	NA
Trash containers/collection	1	2	3	4	5	1	2	3	4	5	NA
Picnic sites	1	2	3	4	5	1	2	3	4	5	NA
Swimming/beach access	1	2	3	4	5	1	2	3	4	5	NA
Historic sites/information	1	2	3	4	5	1	2	3	4	5	NA
Scenic views/viewpoints	1	2	3	4	5	1	2	3	4	5	NA
Wildlife viewing/nature trails	1	2	3	4	5	1	2	3	4	5	NA
Interpretive/education programs	1	2	3	4	5	1	2	3	4	5	NA
Hiking trails	1	2	3	4	5	1	2	3	4	5	NA
Boat ramps	1	2	3	4	5	1	2	3	4	5	NA
Boat docks	1	2	3	4	5	1	2	3	4	5	NA
Boating safety information	1	2	3	4	5	1	2	3	4	5	NA
Navigation hazard marking	1	2	3	4	5	1	2	3	4	5	NA
River/shore access for fishing	1	2	3	4	5	1	2	3	4	5	NA
Fishing opportunities	1	2	3	4	5	1	2	3	4	5	NA
Hunting opportunities	1	2	3	4	5	1	2	3	4	5	NA
Boat-in campsites	1	2	3	4	5	1	2	3	4	5	NA
Canoe/kayak access facilities	1	2	3	4	5	1	2	3	4	5	NA
Other: _____	1	2	3	4	5	1	2	3	4	5	NA
Other: _____	1	2	3	4	5	1	2	3	4	5	NA

21. Based on your experiences during <u>this visit</u>, are there any improvements to the existing recreation opportunities at the Boundary Reservoir Area that you think are needed? *(These could be recreation ACTIVITIES that you would like to do here that are not currently available, or specific recreation FACILITIES that are not currently available or that do not adequately meet your needs. These should be activities or facilities THAT YOU WOULD USE YOURSELF if they were present. Circle one.)*

1 No, I am satisfied with the recreation activities/facilities currently available here

2 I'm not sure

3 Yes, I would like other recreation activities/facilities at this destination *(Please list.)*

Your Primary Destination

22. For this visit, what specific sites <u>in the Boundary Reservoir Area</u> do you intend to visit or have you already visited? *(See map. Circle all that apply.)*

1 Vista House
2 Boundary Dam Visitors' Gallery
3 Picnic area below Boundary Dam (Tailrace Area)
4 Campground at Boundary Dam (Forebay Area)
5 On the water in a boat/other watercraft
6 Crescent Lake
7 Metaline Waterfront Park
8 Campground below Box Canyon Dam (Campbell Park)
9 Sweet Creek Falls Rest Area/Trail
10 Small boat-in campsite or day use site on the reservoir/river
11 Other *(Specify)* _____

_____

23. Which one of the places that you circled in the list above was your primary destination for this visit to the Boundary Reservoir Area? *(Your primary destination is the site where you spent the most time during this visit. Please write the number from the above list.)*

I spent most of my time at site # _____ during this visit.

24. Please indicate whether or how much you felt crowded on this visit to your primary destination listed in Question 23. *(Circle one number on the scale.)*

1	2	3	4	5	6	7	8	9
Not at all Crowded				Moderately Crowded				Extremely Crowded

25. During this visit to the destination you listed in Question 23, did you experience any problems or conflicts with other visitors or their behaviors that detracted from your enjoyment of being there? *(Circle one.)*

1 No

2 Yes *(Please describe what occurred.)*

26. Based on your experiences during this visit at the destination you listed in Question 23, do you intend to adjust your recreation plans to avoid the presence or behaviors of other visitors at this site in the future? *(Circle one.)*

1 No → Skip to Question 28

2 Yes

27. How do you intend to adjust your recreation plans? *(Circle all that apply.)*

1 Move my activity to a different site in the Boundary Reservoir Area

2 Go to a different site in the region outside the Boundary Reservoir Area

3 Visit this same site earlier or later in the year to avoid busier times of year

4 Visit this same site on weekdays instead of weekends or holidays

5 Visit this same site at a different time of day to avoid busier times of day

6 Other *(Please specify.)* _____

28. For this visit, did you find the facilities at your primary destination that you listed in Question 23 to be adequately maintained? *(Circle one.)*

1 Yes

2 No *(Describe any maintenance needs you thought were not currently met.)*

Past Visits

29. How many times have you visited the Boundary Reservoir Area within the past 12 months? *(Write the number. Do not include this visit.)*

#_____ Visits in the past 12 months If this is your first visit → Skip to Question 32

30. About how many years have you been visiting the Boundary Reservoir Area? *(Write the number.)*

#_____ Years

31. In what seasons of the year do you visit the Boundary Reservoir Area? *(Circle all that apply.)*

Spring Summer Fall Winter

32. What do you particularly like about visiting the Boundary Reservoir Area or what is it that attracted you to come here? *(Circle all that apply.)*

1 The scenery/I like the views
2 It's close to home/easy to get to
3 It's a good place for fishing
4 It's a good place to go boating/recreate on the water
5 I like the small/low-key camping areas
6 I like the cost/it's affordable
7 It's quiet/peaceful
8 It's a good place to explore/I wanted to see a new area
9 Other reason *(Please specify.)* _____
_____
_____

33. Which other lakes or rivers in the region do you frequently visit for recreation? *(Please name up to three.)*

Lake/river _____ State/Province _____
Lake/river _____ State/Province _____
Lake/river _____ State/Province _____

34. Which other places or features in the region do you intend to visit or have you already visited during <u>this visit</u> to the Boundary Reservoir Area? *(Circle all that apply.)*

1 North Pend Oreille Scenic Byway (State Route 31)
2 Selkirk International Loop
3 British Columbia, Canada
4 Northern Idaho
5 Spokane, Washington
6 Colville, Washington
7 Newport, Washington
8 Little Pend Oreille National Wildlife Refuge
9 Colville National Forest
10 Little Pend Oreille Lakes
11 Sullivan Lake/Mill Pond area
12 Salmo-Priest Wilderness
13 Box Canyon Reservoir
14 Columbia River/Lake Roosevelt
15 Gardner Caves/Crawford State Park
16 Other places *(Please specify.)* _____
_____
_____

35. Overall, please rate the visual quality of the scenery at the Boundary Reservoir Area. *(Circle one number on the scale.)*

1	2	3	4	5	6	7	8	9
Very poor				Average				Excellent

36. During this visit to the Boundary Reservoir Area, have you seen any facilities or structures associated with the Boundary Hydroelectric Project? *(E.g., the dam itself, maintenance buildings, utility lines and towers near the dam, SCL recreation facilities, etc. Circle one.)*

1 No → Skip to Question 39

2 I'm not sure

3 Yes

37. Where were you when you saw these facilities? *(See map. Circle all that apply.)*

1 Vista House

2 Picnic area below Boundary Dam (Tailrace Area)

3 Campground at Boundary Dam (Forebay Area)

4 On the water/river (Boundary Reservoir surface)

5 Roads near reservoir

6 Other *(Please specify.)*_____

38. How did seeing these facilities affect your enjoyment of the scenery at the Boundary Reservoir Area on this visit? *(Circle one.)*

1 These facilities greatly enhanced my overall enjoyment of the scenery here.

2 These facilities slightly enhanced my overall enjoyment of the scenery here.

3 These facilities had no effect on my overall enjoyment of the scenery here.

4 These facilities slightly detracted from my overall enjoyment of the scenery here.

5 These facilities greatly detracted from my overall enjoyment of the scenery here.

(Please explain your response.)

Trip Expenses

39. Please estimate the total amount of money that you spent or will spend in Pend Oreille County for this visit to Boundary Reservoir Area for the following types of purchases. *(Please write the approximate amounts in U.S. dollars that you paid for yourself, for others in your group, and any portion of your shared expenses.)*

Someone else paid my expenses *(Circle one.)*

1 No 2 Yes → Skip to Question 40

	Amount Spent
Hotels, motels, bed & breakfast, other lodging	$_____
Camping/RV hookup fees	$_____
Eating/drinking establishments	$_____
Grocery/food and beverage purchases	$_____
Gasoline, oil, other auto supplies and services	$_____
Rentals of boats or recreation vehicles (including fuel/oil)	$_____
Hunting/fishing supplies (bait/tackle, ammunition)	$_____
Shopping/souvenirs	$_____
Recreational services (e.g., excursions, guided tours)	$ _____
Other expenses *(Please specify.)* _____	$ _____

About You and Your Party

40. Are you? *(Circle one.)*

Male Female

41. What is your age? *(Check one.)*

_____under 16 _____16-19 _____20-29 _____30-39 _____40-49 _____50-59 _____60-69 _____70 and up

42. What are the ages of the other people in your group? *(Please write the number of people for each.)*

#_____under 16 _____16-19 _____20-29 _____30-39 _____40-49 _____50-59 _____60-69 _____70 and up

Seattle City Light would like to thank you for your time. You have helped us to learn more about the people who visit and recreate at the Boundary Reservoir Area. We welcome any additional input or comments from you about how we can improve the management of the Boundary Reservoir Area. *(Please feel free to write any additional comments below.)*

Thank you for participating in this important study!

Please remember to provide your contact information so that we may enter your name in a drawing for a cash prize. *(Fully completed questionnaires will be considered for a cash prize. We will detach your contact information from your answers and will not share it with a third party.)*

Name _____

Address _____

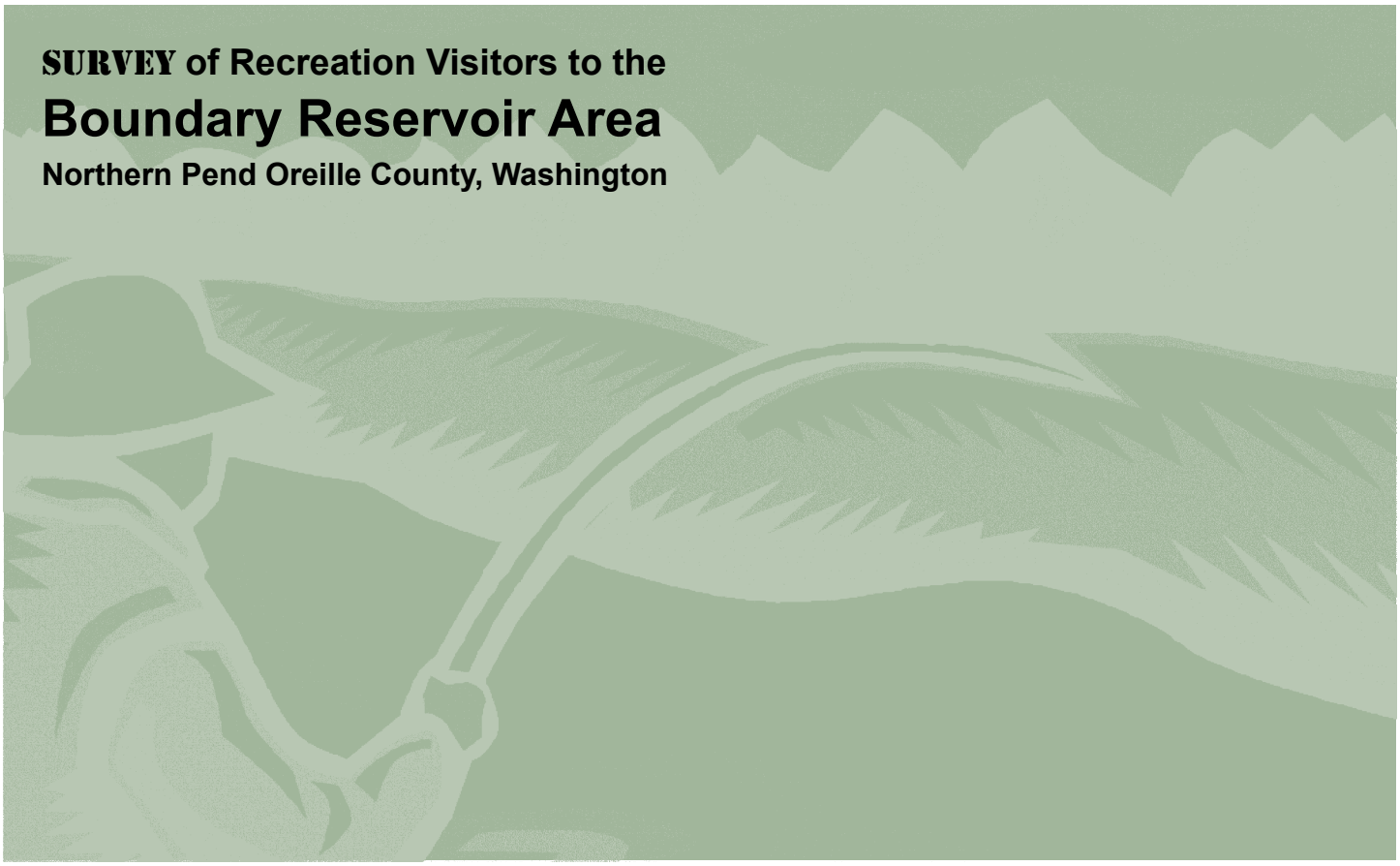
_____

Telephone # _____

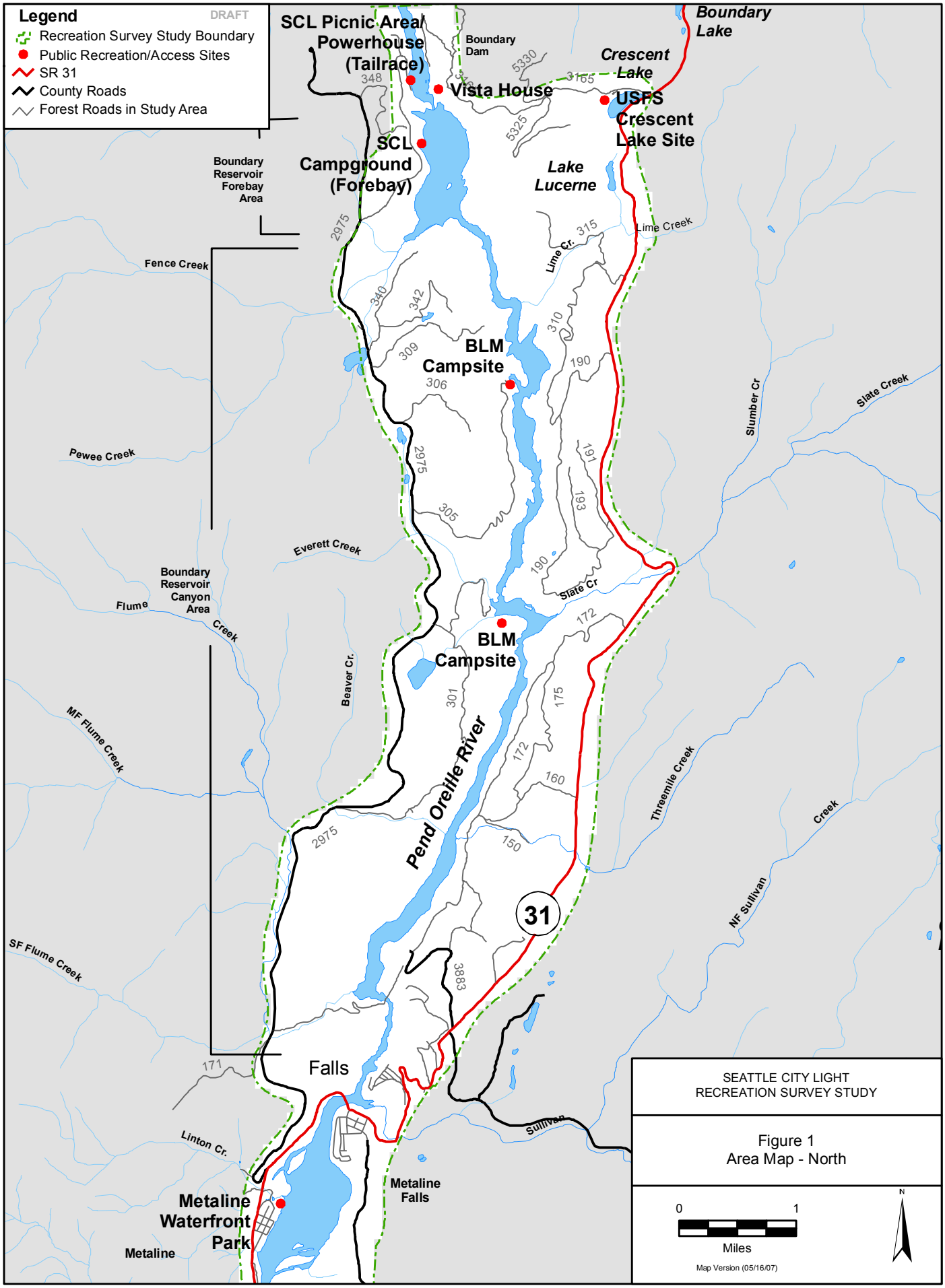
SURVEY of Recreation Visitors to the

Boundary Reservoir Area

Northern Pend Oreille County, Washington



P.O. Box 604
Ione, WA 99139



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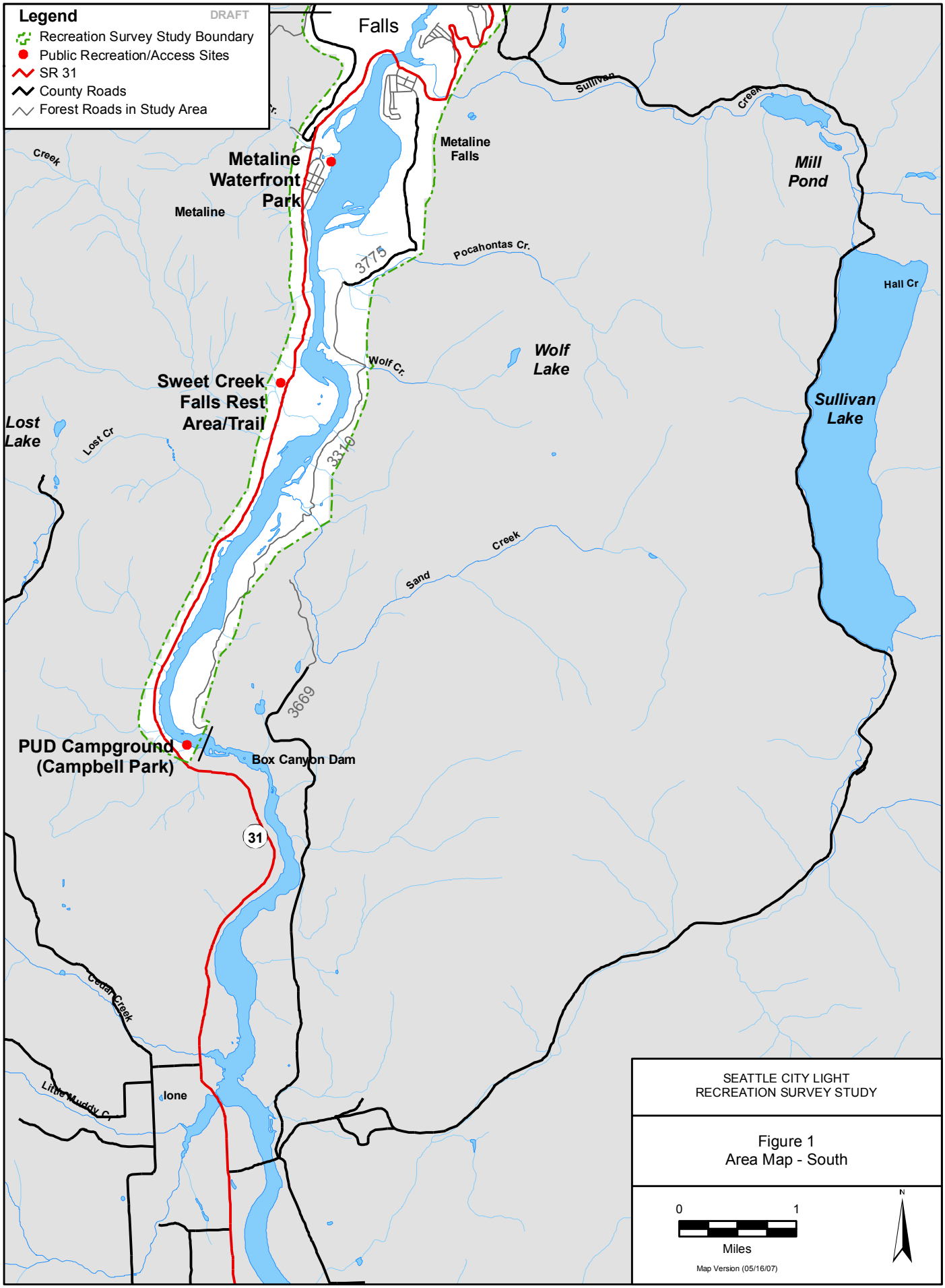

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Appendix 3b: Sampling Log for Recreation Surveys

Table A.3b-1. Sampling log for recreation surveys.

Sector	Location	Date	Day	AM/PM
		May		
3	Sweet Creek and Box Canyon	5/19/2007	S	PM
6	Metaline Park	5/19/2007	S	PM
6	South Reservoir	5/19/2007	S	PM
3	Sweet Creek and Box Canyon	5/20/2007	SU	AM
5	North Reservoir	5/20/2007	SU	PM
2	Forebay	5/24/2007	R	AM
6	Metaline Park	5/24/2007	R	PM
6	South Reservoir	5/24/2007	R	PM
2	Forebay	5/26/2007	S	PM
6	Metaline Park	5/26/2007	S	PM
6	South Reservoir	5/26/2007	S	PM
4	Roaded Dispersed	5/27/2007	SU	AM
2	Forebay	5/28/2007	M	PM
3	Sweet Creek and Box Canyon	5/28/2007	M	AM
2	Forebay	5/31/2007	R	AM
6	Metaline Park	5/31/2007	R	PM
6	South Reservoir	5/31/2007	R	PM
		June		
6	Metaline Park	6/2/2007	S	AM
6	South Reservoir	6/2/2007	S	AM
5	North Reservoir	6/2/2007	S	PM
3	Sweet Creek and Box Canyon	6/3/2007	SU	AM
4	Roaded Dispersed	6/3/2007	SU	PM
6	Metaline Park	6/4/2007	M	PM
6	South Reservoir	6/4/2007	M	PM
4	Roaded Dispersed	6/4/2007	M	PM
1	Vista House	6/5/2007	T	AM
1	Vista House	6/5/2007	T	PM
1	Vista House	6/7/2007	R	AM
3	Sweet Creek and Box Canyon	6/7/2007	R	AM
4	Roaded Dispersed	6/9/2007	S	AM
5	North Reservoir	6/9/2007	S	AM
4	Roaded Dispersed	6/10/2007	SU	PM
3	Sweet Creek and Box Canyon	6/10/2007	SU	PM
3	Sweet Creek and Box Canyon	6/12/2007	T	PM
6	Metaline Park	6/12/2007	T	AM
6	South Reservoir	6/12/2007	T	PM
2	Forebay	6/13/2007	W	AM
5	North Reservoir	6/13/2007	W	AM
3	Sweet Creek and Box Canyon	6/16/2007	S	AM
4	Roaded Dispersed	6/16/2007	S	AM
2	Forebay	6/17/2007	SU	AM
5	North Reservoir	6/17/2007	SU	PM

Table A.3b-1, continued…

Sector	Location	Date	Day	AM/PM
1	Vista House	6/19/2007	T	PM
2	Forebay	6/19/2007	T	PM
2	Forebay	6/20/2007	W	AM
6	Metaline Park	6/20/2007	W	PM
6	South Reservoir	6/20/2007	W	PM
2	Forebay	6/22/2007	F	AM
4	Roaded Dispersed	6/22/2007	F	AM
3	Sweet Creek and Box Canyon	6/23/2007	S	PM
4	Roaded Dispersed	6/23/2007	S	PM
1	Vista House	6/24/2007	SU	AM
1	Vista House	6/24/2007	SU	PM
1	Vista House	6/25/2007	M	PM
3	Sweet Creek and Box Canyon	6/25/2007	M	PM
6	Metaline Park	6/26/2007	T	PM
6	South Reservoir	6/26/2007	T	PM
5	North Reservoir	6/26/2007	T	AM
2	Forebay	6/27/2007	W	AM
6	Metaline Park	6/27/2007	W	AM
6	South Reservoir	6/27/2007	W	AM
6	Metaline Park	6/28/2007	R	PM
6	South Reservoir	6/28/2007	R	PM
4	Roaded Dispersed	6/28/2007	R	PM
6	Metaline Park	6/29/2007	F	PM
6	South Reservoir	6/29/2007	F	PM
6	Metaline Park	6/29/2007	F	AM
6	South Reservoir	6/29/2007	F	AM
2	Forebay	6/30/2007	S	AM
6	Metaline Park	6/30/2007	S	PM
6	South Reservoir	6/30/2007	S	PM
		July		
2	Forebay	7/1/2007	SU	AM
2	Forebay	7/1/2007	SU	PM
5	North Reservoir	7/1/2007	SU	PM
1	Vista House	7/2/2007	M	PM
2	Forebay	7/2/2007	M	PM
3	Sweet Creek and Box Canyon	7/2/2007	M	AM
2	Forebay	7/4/2007	W	AM
6	Metaline Park	7/4/2007	W	PM
6	South Reservoir	7/4/2007	W	PM
4	Roaded Dispersed	7/4/2007	W	AM
2	Forebay	7/5/2007	R	PM
3	Sweet Creek and Box Canyon	7/5/2007	R	AM
5	North Reservoir	7/5/2007	R	AM
1	Vista House	7/6/2007	F	AM
2	Forebay	7/6/2007	F	PM

Table A.3b-1, continued…

Sector	Location	Date	Day	AM/PM
6	Metaline Park	7/6/2007	F	PM
6	South Reservoir	7/6/2007	F	PM
1	Vista House	7/7/2007	S	PM
2	Forebay	7/7/2007	S	AM
6	Metaline Park	7/7/2007	S	PM
6	South Reservoir	7/7/2007	S	PM
3	Sweet Creek and Box Canyon	7/8/2007	SU	PM
6	Metaline Park	7/8/2007	SU	AM
6	South Reservoir	7/8/2007	SU	AM
6	Metaline Park	7/8/2007	SU	PM
6	South Reservoir	7/8/2007	SU	PM
2	Forebay	7/9/2007	M	AM
3	Sweet Creek and Box Canyon	7/9/2007	M	PM
5	North Reservoir	7/9/2007	M	PM
3	Sweet Creek and Box Canyon	7/10/2007	T	PM
6	Metaline Park	7/10/2007	T	PM
6	South Reservoir	7/10/2007	T	PM
5	North Reservoir	7/11/2007	W	PM
1	Vista House	7/13/2007	F	AM
2	Forebay	7/13/2007	F	AM
5	North Reservoir	7/13/2007	F	AM
1	Vista House	7/14/2007	S	AM
6	Metaline Park	7/14/2007	S	PM
6	South Reservoir	7/14/2007	S	PM
4	Roaded Dispersed	7/14/2007	S	PM
1	Vista House	7/15/2007	SU	AM
1	Vista House	7/15/2007	SU	PM
2	Forebay	7/15/2007	SU	PM
3	Sweet Creek and Box Canyon	7/17/2007	T	AM
3	Sweet Creek and Box Canyon	7/17/2007	T	PM
6	Metaline Park	7/17/2007	T	PM
6	South Reservoir	7/17/2007	T	PM
5	North Reservoir	7/17/2007	T	PM
2	Forebay	7/18/2007	W	AM
5	North Reservoir	7/18/2007	W	AM
1	Vista House	7/19/2007	R	PM
3	Sweet Creek and Box Canyon	7/19/2007	R	PM
5	North Reservoir	7/19/2007	R	PM
6	Metaline Park	7/20/2007	F	PM
6	South Reservoir	7/20/2007	F	PM
4	Roaded Dispersed	7/20/2007	F	PM
5	North Reservoir	7/20/2007	F	AM
2	Forebay	7/21/2007	S	AM
4	Roaded Dispersed	7/21/2007	S	AM
5	North Reservoir	7/21/2007	S	PM
2	Forebay	7/22/2007	SU	PM

Table A.3b-1, continued…

Sector	Location	Date	Day	AM/PM
3	Sweet Creek and Box Canyon	7/22/2007	SU	PM
6	Metaline Park	7/22/2007	SU	PM
6	South Reservoir	7/22/2007	SU	PM
1	Vista House	7/24/2007	T	PM
3	Sweet Creek and Box Canyon	7/24/2007	T	PM
3	Sweet Creek and Box Canyon	7/24/2007	T	AM
1	Vista House	7/25/2007	W	AM
2	Forebay	7/25/2007	W	AM
5	North Reservoir	7/25/2007	W	AM
3	Sweet Creek and Box Canyon	7/26/2007	R	PM
6	Metaline Park	7/26/2007	R	AM
6	South Reservoir	7/26/2007	R	AM
5	North Reservoir	7/26/2007	R	PM
1	Vista House	7/28/2007	S	AM
6	Metaline Park	7/28/2007	S	AM
6	South Reservoir	7/28/2007	S	AM
5	North Reservoir	7/28/2007	S	PM
3	Sweet Creek and Box Canyon	7/29/2007	SU	AM
6	Metaline Park	7/29/2007	SU	AM
6	South Reservoir	7/29/2007	SU	AM
4	Roaded Dispersed	7/29/2007	SU	PM
3	Sweet Creek and Box Canyon	7/31/2007	T	PM
6	Metaline Park	7/31/2007	T	AM
6	South Reservoir	7/31/2007	T	AM
6	Metaline Park	7/31/2007	T	PM
6	South Reservoir	7/31/2007	T	PM
		August		
1	Vista House	8/2/2007	R	AM
2	Forebay	8/2/2007	R	PM
6	Metaline Park	8/2/2007	R	PM
6	South Reservoir	8/2/2007	R	PM
2	Forebay	8/3/2007	F	AM
3	Sweet Creek and Box Canyon	8/3/2007	F	AM
6	Metaline Park	8/3/2007	F	PM
6	South Reservoir	8/3/2007	F	PM
2	Forebay	8/4/2007	S	AM
3	Sweet Creek and Box Canyon	8/4/2007	S	PM
5	North Reservoir	8/4/2007	S	PM
3	Sweet Creek and Box Canyon	8/5/2007	SU	PM
5	North Reservoir	8/5/2007	SU	PM
1	Vista House	8/6/2007	M	PM
2	Forebay	8/6/2007	M	PM
3	Sweet Creek and Box Canyon	8/6/2007	M	AM
1	Vista House	8/7/2007	T	AM
6	Metaline Park	8/7/2007	T	PM

Table A.3b-1, continued…

Sector	Location	Date	Day	AM/PM
6	South Reservoir	8/7/2007	T	PM
5	North Reservoir	8/7/2007	T	AM
1	Vista House	8/8/2007	W	PM
2	Forebay	8/8/2007	W	AM
5	North Reservoir	8/8/2007	W	AM
2	Forebay	8/9/2007	R	PM
3	Sweet Creek and Box Canyon	8/9/2007	R	PM
6	Metaline Park	8/9/2007	R	AM
6	South Reservoir	8/9/2007	R	AM
1	Vista House	8/10/2007	F	AM
5	North Reservoir	8/10/2007	F	PM
2	Forebay	8/11/2007	S	PM
3	Sweet Creek and Box Canyon	8/11/2007	S	AM
6	Metaline Park	8/11/2007	S	AM
6	South Reservoir	8/11/2007	S	AM
1	Vista House	8/12/2007	SU	PM
3	Sweet Creek and Box Canyon	8/12/2007	SU	PM
5	North Reservoir	8/12/2007	SU	PM
2	Forebay	8/14/2007	T	PM
2	Forebay	8/14/2007	T	AM
4	Roaded Dispersed	8/14/2007	T	AM
2	Forebay	8/16/2007	R	AM
6	Metaline Park	8/16/2007	R	PM
6	South Reservoir	8/16/2007	R	PM
5	North Reservoir	8/16/2007	R	AM
1	Vista House	8/17/2007	F	PM
6	Metaline Park	8/17/2007	F	AM
6	South Reservoir	8/17/2007	F	AM
1	Vista House	8/18/2007	S	AM
1	Vista House	8/18/2007	S	PM
2	Forebay	8/18/2007	S	PM
2	Forebay	8/19/2007	SU	PM
6	Metaline Park	8/19/2007	SU	PM
6	South Reservoir	8/19/2007	SU	PM
4	Roaded Dispersed	8/19/2007	SU	PM
3	Sweet Creek and Box Canyon	8/24/2007	F	PM
6	Metaline Park	8/24/2007	F	PM
6	South Reservoir	8/24/2007	F	PM
5	North Reservoir	8/24/2007	F	AM
2	Forebay	8/25/2007	S	AM
6	Metaline Park	8/25/2007	S	AM
6	South Reservoir	8/25/2007	S	AM
4	Roaded Dispersed	8/25/2007	S	PM
3	Sweet Creek and Box Canyon	8/26/2007	SU	PM
3	Sweet Creek and Box Canyon	8/26/2007	SU	AM
5	North Reservoir	8/26/2007	SU	PM

Table A.3b-1, continued…

Sector	Location	Date	Day	AM/PM
1	Vista House	8/27/2007	M	AM
2	Forebay	8/27/2007	M	PM
4	Roaded Dispersed	8/27/2007	M	PM
1	Vista House	8/28/2007	T	AM
2	Forebay	8/28/2007	T	AM
5	North Reservoir	8/28/2007	T	AM
3	Sweet Creek and Box Canyon	8/29/2007	W	AM
2	Forebay	8/29/2007	W	PM
6	Metaline Park	8/29/2007	W	AM
6	South Reservoir	8/29/2007	W	AM
3	Sweet Creek and Box Canyon	8/31/2007	F	PM
5	North Reservoir	8/31/2007	F	PM
5	North Reservoir	8/31/2007	F	AM
		September		
3	Sweet Creek and Box Canyon	9/1/2007	S	PM
5	North Reservoir	9/1/2007	S	PM
2	Forebay	9/2/2007	SU	AM
4	Roaded Dispersed	9/2/2007	SU	AM
2	Forebay	9/3/2007	M	PM
4	Roaded Dispersed	9/3/2007	M	PM
2	Forebay	9/4/2007	T	PM
2	Forebay	9/4/2007	T	AM
3	Sweet Creek and Box Canyon	9/6/2007	R	AM
6	Metaline Park	9/6/2007	R	AM
1	Vista House	9/8/2007	S	PM
4	Roaded Dispersed	9/8/2007	S	AM
1	Vista House	9/9/2007	SU	AM
6	Metaline Park	9/9/2007	SU	AM
6	South Reservoir	9/9/2007	SU	AM
2	Forebay	9/13/2007	R	PM
4	Roaded Dispersed	9/13/2007	R	PM
1	Vista House	9/15/2007	S	PM
4	Roaded Dispersed	9/15/2007	S	AM
6	Metaline Park	9/16/2007	SU	PM
6	South Reservoir	9/16/2007	SU	PM
5	North Reservoir	9/16/2007	SU	AM
2	Forebay	9/18/2007	T	AM
3	Sweet Creek and Box Canyon	9/18/2007	T	PM
1	Vista House	9/19/2007	W	AM
5	North Reservoir	9/19/2007	W	PM
3	Sweet Creek and Box Canyon	9/20/2007	R	AM
4	Roaded Dispersed	9/20/2007	R	AM
1	Vista House	9/21/2007	F	AM
3	Sweet Creek and Box Canyon	9/21/2007	F	PM
3	Sweet Creek and Box Canyon	9/22/2007	S	PM

Table A.3b-1, continued…

Sector	Location	Date	Day	AM/PM
4	Roaded Dispersed	9/22/2007	S	PM
2	Forebay	9/23/2007	SU	AM
2	Forebay	9/23/2007	SU	PM
1	Vista House	9/24/2007	M	AM
5	North Reservoir	9/24/2007	M	AM
3	Sweet Creek and Box Canyon	9/27/2007	R	AM
5	North Reservoir	9/27/2007	R	AM
2	Forebay	9/29/2007	S	AM
3	Sweet Creek and Box Canyon	9/29/2007	S	PM
4	Roaded Dispersed	9/30/2007	SU	PM
5	North Reservoir	9/30/2007	SU	AM
		October		
2	Forebay	10/1/2007	M	PM
5	North Reservoir	10/1/2007	M	AM
1	Vista House	10/3/2007	W	AM
5	North Reservoir	10/3/2007	W	PM
2	Forebay	10/5/2007	F	AM
3	Sweet Creek and Box Canyon	10/5/2007	F	PM
1	Vista House	10/6/2007	S	PM
3	Sweet Creek and Box Canyon	10/6/2007	S	PM
3	Sweet Creek and Box Canyon	10/7/2007	SU	AM
5	North Reservoir	10/7/2007	SU	PM
1	Vista House	10/8/2007	M	AM
4	Roaded Dispersed	10/8/2007	M	AM
2	Forebay	10/9/2007	T	AM
6	Metaline Park	10/9/2007	T	AM
6	South Reservoir	10/9/2007	T	AM
5	North Reservoir	10/11/2007	R	PM
5	North Reservoir	10/11/2007	R	AM
1	Vista House	10/13/2007	S	AM
4	Roaded Dispersed	10/13/2007	S	AM
3	Sweet Creek and Box Canyon	10/16/2007	T	PM
6	Metaline Park	10/16/2007	T	AM
6	South Reservoir	10/16/2007	T	AM
5	North Reservoir	10/17/2007	W	AM
4	Roaded Dispersed	10/18/2007	R	AM
4	Roaded Dispersed	10/20/2007	S	AM
6	Metaline Park	10/22/2007	M	AM
5	North Reservoir	10/22/2007	M	PM
6	South Reservoir	10/22/2007	M	AM
6	Metaline Park	10/23/2007	T	AM
6	South Reservoir	10/23/2007	T	AM
4	Roaded Dispersed	10/23/2007	T	PM
3	Sweet Creek and Box Canyon	10/26/2007	F	PM
6	Metaline Park	10/26/2007	F	AM

Table A.3b-1, continued…

Sector	Location	Date	Day	AM/PM
6	South Reservoir	10/26/2007	F	AM
4	Roaded Dispersed	10/27/2007	S	PM
6	Metaline Park	10/29/2007	M	AM
6	South Reservoir	10/29/2007	M	AM
5	North Reservoir	10/29/2007	M	PM

Appendix 3c: Complete List of ZIP/Postal Codes Identified in Visitor Survey Responses

Table A.3c-1. Complete list of ZIP/postal codes identified in visitor survey responses.

Postal code	City/Town	State/Province	Country	Frequency	Percent of sample[1]
V0B1G7	Creston	British Columbia	Canada	1	0.2
V1N4S4	Castlegar	British Columbia	Canada	1	0.2
V1L2S4	Nelson	British Columbia	Canada	1	0.2
V9V1B6	Nanaimo	British Columbia	Canada	1	0.2
V7V1A5	West Vancouver	British Columbia	Canada	1	0.2
V5A1B6	Burnaby	British Columbia	Canada	1	0.2
V4A9E9	Surrey	British Columbia	Canada	1	0.2
V3H2L4	Port Moody	British Columbia	Canada	1	0.2
V1R3X3	Trail	British Columbia	Canada	1	0.2
V1R1A7	Trail	British Columbia	Canada	1	0.2
V1N4T1	Castlegar	British Columbia	Canada	1	0.2
V1N3C9	Castlegar	British Columbia	Canada	1	0.2
V1N2K3	Castlegar	British Columbia	Canada	1	0.2
V1L6J2	Nelson	British Columbia	Canada	1	0.2
V1L6J1	Nelson	British Columbia	Canada	1	0.2
V1L6X9	Nelson	British Columbia	Canada	1	0.2
V1C5C5	Cranbrook	British Columbia	Canada	1	0.2
V0H1H0	Grand Forks	British Columbia	Canada	1	0.2
V0G2K0	Ymir	British Columbia	Canada	1	0.2
V0G1Z0	Salmo	British Columbia	Canada	5	0.8
V0G1Y0	Rossland	British Columbia	Canada	1	0.2
V0G1V0	Procter	British Columbia	Canada	1	0.2
V0B1Y0	Lister	British Columbia	Canada	1	0.2
V0B1G3	Creston	British Columbia	Canada	1	0.2
T9E2X1	Leduc	Alberta	Canada	1	0.2
T7X3V4	Spruce Grove	Alberta	Canada	1	0.2
T6E1B2	Edmonton	Alberta	Canada	1	0.2
T2E6E4	Calgary	Alberta	Canada	1	0.2
T0K0X0	Foremost	Alberta	Canada	1	0.2
DE5 8JD	Ripley	Derbyshire	England, UK	1	0.2
CH 7540	Pontresina	Graubuenden (Canton)	Switzerland	1	0.2
BT 38 8RL	Carrickfergus	County Antrim	Northern Ireland	1	0.2
99654	Wasilla	Alaska	USA	1	0.2
99352	Richland	Washington	USA	2	0.3
99323	Burbank	Washington	USA	1	0.2
99307	not valid			1	0.2
99224	Sunset Hill	Washington	USA	2	0.3
99223	Manito	Washington	USA	12	2.0

Table A.3c-1, continued…

Postal code	City/Town	State/Province	Country	Frequency	Percent of sample[1]
99218	Spokane	Washington	USA	1	0.2
99217	Spokane	Washington	USA	5	0.8
99216	Spokane	Washington	USA	14	2.3
99213	Spokane	Washington	USA	1	0.2
99212	Spokane	Washington	USA	10	1.7
99210	Spokane	Washington	USA	1	0.2
99208	Spokane	Washington	USA	19	3.2
99207	Spokane	Washington	USA	13	2.2
99206	Spokane	Washington	USA	11	1.8
99205	Spokane	Washington	USA	23	3.8
99203	Manito	Washington	USA	9	1.5
99202	Liberty Park	Washington	USA	6	1.0
99201	Spokane	Washington	USA	10	1.7
99185	Wilbur	Washington	USA	1	0.2
99181	Valley	Washington	USA	1	0.2
99180	Usk	Washington	USA	6	1.0
99170	Rosalia	Washington	USA	1	0.2
99169	Ritzville	Washington	USA	2	0.3
99166	Republic	Washington	USA	2	0.3
99163	Pullman	Washington	USA	1	0.2
99156	Newport	Washington	USA	19	3.2
99153	Metaline Falls	Washington	USA	36	6.0
99152	Metaline	Washington	USA	25	4.2
99150	Malo	Washington	USA	2	0.3
99148	Loon Lake	Washington	USA	2	0.3
99141	Kettle Falls	Washington	USA	2	0.3
99139	Ione	Washington	USA	49	8.2
99131	Gifford	Washington	USA	1	0.2
99126	Evans	Washington	USA	2	0.3
99122	Davenport	Washington	USA	4	0.7
99119	Cusick	Washington	USA	16	2.7
99114	Colville	Washington	USA	25	4.2
99111	Colfax	Washington	USA	1	0.2
99110	Clayton	Washington	USA	1	0.2
99109	Chewelah	Washington	USA	8	1.3
99037	Veradale	Washington	USA	2	0.3
99031	Spangle	Washington	USA	1	0.2
99029	Reardan	Washington	USA	2	0.3
99027	Otis Orchards	Washington	USA	5	0.8
99022	Medical Lake	Washington	USA	2	0.3

Table A.3c-1, continued…

Postal code	City/Town	State/Province	Country	Frequency	Percent of sample[1]
99021	Mead	Washington	USA	6	1.0
99020	Marshall	Washington	USA	1	0.2
99019	Liberty Lake	Washington	USA	2	0.3
99018	Latah	Washington	USA	1	0.2
99016	Greenacres	Washington	USA	3	0.5
99009	Elk	Washington	USA	7	1.2
99006	Deer Park	Washington	USA	11	1.8
99005	Colbert	Washington	USA	5	0.8
99004	Cheney	Washington	USA	5	0.8
99003	Chattaroy	Washington	USA	9	1.5
99001	Airway Heights	Washington	USA	1	0.2
98944	Sunnyside	Washington	USA	1	0.2
98937	Naches	Washington	USA	1	0.2
98902	Yakima	Washington	USA	1	0.2
98857	Warden	Washington	USA	1	0.2
98855	Tonasket	Washington	USA	1	0.2
98851	Soap Lake	Washington	USA	1	0.2
98844	Oroville	Washington	USA	1	0.2
98816	Chelan	Washington	USA	1	0.2
98812	Brewster	Washington	USA	1	0.2
98802	East Wenatchee	Washington	USA	1	0.2
98801	Wenatchee	Washington	USA	1	0.2
98685	Vancouver	Washington	USA	1	0.2
98674	Woodland	Washington	USA	1	0.2
98671	Washougal	Washington	USA	2	0.3
98584	Shelton	Washington	USA	1	0.2
98569	Ocean Shores	Washington	USA	1	0.2
98508	Olympia	Washington	USA	1	0.2
98506	Olympia	Washington	USA	1	0.2
98466	Tacoma	Washington	USA	1	0.2
98444	Tacoma	Washington	USA	1	0.2
98366	Port Orchard	Washington	USA	1	0.2
98363	Port Angeles	Washington	USA	1	0.2
98362	Port Angeles	Washington	USA	2	0.3
98342	Indianola	Washington	USA	1	0.2
98282	Camano Island	Washington	USA	1	0.2
98273	Mount Vernon	Washington	USA	1	0.2
98272	Monroe	Washington	USA	1	0.2
98241	Darrington	Washington	USA	1	0.2
98240	Custer	Washington	USA	1	0.2

Table A.3c-1, continued…

Postal code	City/Town	State/Province	Country	Frequency	Percent of sample[1]
98237	Concrete	Washington	USA	1	0.2
98233	Burlington	Washington	USA	1	0.2
98229	Bellingham	Washington	USA	1	0.2
98204	Everett	Washington	USA	1	0.2
98177	Seattle	Washington	USA	1	0.2
98126	Seattle	Washington	USA	1	0.2
98119	Seattle	Washington	USA	1	0.2
98112	Seattle	Washington	USA	1	0.2
98103	Seattle	Washington	USA	2	0.3
98056	Renton	Washington	USA	1	0.2
98042	Kent	Washington	USA	2	0.3
98040	Mercer Island	Washington	USA	1	0.2
98036	Lynnwood	Washington	USA	1	0.2
98020	Edmonds	Washington	USA	1	0.2
98003	Federal Way	Washington	USA	1	0.2
98001	Auburn	Washington	USA	1	0.2
97701	Bend	Oregon	USA	1	0.2
97405	Eugene	Oregon	USA	1	0.2
97229	Portland	Oregon	USA	1	0.2
97218	Portland	Oregon	USA	1	0.2
97113	Cornelius	Oregon	USA	1	0.2
97071	Woodburn	Oregon	USA	1	0.2
97062	Tualatin	Oregon	USA	1	0.2
96743	Kamuela	Hawaii	USA	1	0.2
96704	Captain Cook	Hawaii	USA	1	0.2
96135	Vinton	California	USA	1	0.2
96080	Red Bluff	California	USA	1	0.2
95356	Modesto	California	USA	1	0.2
95139	San Jose	California	USA	1	0.2
94044	Pacifica	California	USA	1	0.2
93442	Morro Bay	California	USA	2	0.3
93001	Ventura	California	USA	1	0.2
92321	Cedar Glen	California	USA	1	0.2
92309	Baker	California	USA	1	0.2
92057	Oceanside	California	USA	1	0.2
92004	Borrego Springs	California	USA	1	0.2
89121	Las Vegas	Nevada	USA	1	0.2
89041	Pahrump	Nevada	USA	1	0.2
89012	Henderson	Nevada	USA	1	0.2
89002	Henderson	Nevada	USA	1	0.2

Table A.3c-1, continued…

Postal code	City/Town	State/Province	Country	Frequency	Percent of sample[1]
85743	Tucson	Arizona	USA	1	0.2
85735	Tucson	Arizona	USA	1	0.2
85364	Yuma	Arizona	USA	1	0.2
85020	Phoenix	Arizona	USA	1	0.2
83873	Wallace	Idaho	USA	1	0.2
83869	Spirit Lake	Idaho	USA	2	0.3
83864	Sandpoint	Idaho	USA	2	0.3
83861	Saint Maries	Idaho	USA	1	0.2
83858	Rathdrum	Idaho	USA	1	0.2
83856	Priest River	Idaho	USA	4	0.7
83854	Post Falls	Idaho	USA	7	1.2
83845	Moyie Springs	Idaho	USA	1	0.2
83837	Kellogg	Idaho	USA	1	0.2
83835	Hayden	Idaho	USA	2	0.3
83822	Oldtown	Idaho	USA	1	0.2
83815	Coeur D'Alene	Idaho	USA	4	0.7
83805	Bonners Ferry	Idaho	USA	1	0.2
83804	Blanchard	Idaho	USA	2	0.3
83801	Athol	Idaho	USA	2	0.3
83537	Kendrick	Idaho	USA	1	0.2
83501	Lewiston	Idaho	USA	1	0.2
83404	Idaho Falls	Idaho	USA	1	0.2
80906	Colorado Springs	Colorado	USA	1	0.2
80487	Steamboat Springs	Colorado	USA	1	0.2
80215	Denver	Colorado	USA	1	0.2
80012	Aurora	Colorado	USA	1	0.2
78163	Bulverde	Texas	USA	1	0.2
75803	Palestine	Texas	USA	1	0.2
73170	Oklahoma City	Oklahoma	USA	1	0.2
73077	Perry	Oklahoma	USA	1	0.2
64114	Kansas City	Missouri	USA	1	0.2
60040	Highwood	Illinois	USA	1	0.2
59935	Troy	Montana	USA	1	0.2
59923	Libby	Montana	USA	1	0.2
59868	Seeley Lake	Montana	USA	1	0.2
59844	Heron	Montana	USA	1	0.2
59602	Helena	Montana	USA	1	0.2
59327	Forsyth	Montana	USA	1	0.2
57108	Sioux Falls	South Dakota	USA	1	0.2

Table A.3c-1, continued…

Postal code	City/Town	State/Province	Country	Frequency	Percent of sample[1]
55192	not valid			1	0.2
53593	Verona	Wisconsin	USA	1	0.2
51355	Okoboji	Iowa	USA	1	0.2
49456	Spring Lake	Michigan	USA	1	0.2
39429	Columbia	Mississippi	USA	1	0.2
37087	Lebanon	Tennessee	USA	1	0.2
37040	Clarksville	Tennessee	USA	1	0.2
34223	Englewood	Florida	USA	1	0.2
31521	Brunswick	Georgia	USA	1	0.2
30252	McDonough	Georgia	USA	1	0.2
29313	not valid			1	0.2
27613	Raleigh	North Carolina	USA	1	0.2
22180	Vienna	Virginia	USA	1	0.2
21401	Annapolis	Maryland	USA	1	0.2
Refused				8	1.3

Note:
1 600 respondents

Appendix 3d: Question 21, Importance/Satisfaction Ratings for Recreation Facilities/Opportunities

Table A.3d-1. Question 21, importance/satisfaction ratings for recreation facilities/opportunities.

	% Importance[1]				% Satisfaction[2]		
Opportunity	**Low**	**Moderate**	**High**		**Low**	**Moderate**	**High**
Tent campsites	21.0	16.5	62.5		2.3	24.8	72.9
RV campsites	24.6	14.7	60.7		6.4	27.6	66.0
RV hookups/utilities	45.9	23.1	31.0		25.1	34.3	40.6
Campsite fees	26.0	25.8	48.2		5.2	20.8	74.0
Parking areas	5.6	21.5	72.9		1.9	16.3	81.8
Road access to recreation	4.6	15.6	79.9		2.7	14.1	83.3
Disabled access	30.8	20.6	48.6		7.6	26.4	66.0
Drinking water	7.8	15.9	76.3		8.6	22.4	69.0
Flush toilets	21.7	18.9	59.4		11.5	20.5	68.0
Vault/portable toilets	17.9	29.4	52.8		12.7	28.1	59.2
Trash containers/collection	5.3	13.9	80.7		3.8	13.6	82.6
Picnic sites	7.9	23.4	68.7		4.2	15.8	79.9
Swimming/beach access	10.0	16.9	73.1		6.0	17.7	76.2
Historic sites/information	15.5	29.2	55.3		3.4	25.6	71.0
Scenic views/viewpoints	5.0	17.8	77.2		2.9	13.4	83.6
Wildlife viewing/nature trails	6.6	20.2	73.2		4.7	22.5	72.7
Interpretation/education	25.5	31.3	43.2		12.5	30.3	57.2
Hiking trails	12.4	22.7	64.8		8.6	25.7	65.5
Boat ramps	19.6	11.6	68.8		8.6	17.8	73.6
Boat docks	23.3	15.5	61.2		13.0	23.1	63.9
Boating safety information	27.9	23.5	48.6		10.1	35.1	54.8
Navigation hazard marking	18.5	10.3	71.2		9.9	26.3	63.8
River/shore access for fishing	19.9	18.7	61.4		10.5	26.6	62.9
Fishing opportunities	17.8	12.8	69.5		8.1	25.7	66.1
Hunting opportunities	40.9	12.8	46.2		9.1	30.0	60.9
Boat-in campsites	31.1	19.7	49.2		16.3	33.1	50.6
Canoe/kayak access facilities	26.1	21.9	52.0		10.4	25.7	63.9

Notes:

Table entries are valid percentages of respondents and account for missing responses.

1 Importance was measured using a 5-point Likert scale ranging from 1 = "not at all important" to 5 = "extremely important". Valid percentages were collapsed so that Low = 1 and 2, Moderate = 3, and High = 4 and 5.

2 Satisfaction was measured using a 5-point Likert scale ranging from 1 = "not at all satisfied" to 5 = "extremely satisfied". Valid percentages were collapsed so that Low = 1 and 2, Moderate = 3, and High = 4 and 5.

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Appendix 3e: Verbatim Responses to Visitor Survey Questions

Appendix 3e
Verbatim Responses to Visitor Survey Questions

Many questions in the Project area visitor survey included "Other" as a possible response, and/or provided space for respondents to enter open-ended responses to a question. In most cases, the space for open-ended responses was intended to allow respondents to explain or identify those additional responses that did not fit a pre-defined category. Appendix 3e documents the open-ended responses that were provided for the respective items on the questionnaire, as they were stated by the respondents (i.e., verbatim). Entries in these tables reflect possible misspelling in the responses and limitations on the ability to read or interpret some of the responses.

Question 5: Locations for overnight stays. Question 5 asked those respondents who indicated they were staying overnight in the Boundary Reservoir Area to name the facility or town in which they were staying. Open-ended responses entered for this category are grouped and listed in alphabetical order in Table A.3e-1.

Table A.3e-1. Responses for overnight stay locations for visitors to the Boundary Reservoir Area.

Type of Facility or Location	Frequency
U.S. Forest Service campgrounds	
Campbell Park	1
Crescent Lake	10
East Sullivan Lake	6
Edgewater Campground	1
Kettle River, Deer Creek	1
Mill Pond Campground	3
Riverside	1
Sullivan Lake	5
Sullivan Creek	2
Both Sullivan Lake and Crescent Lake	1
TBD	1
Private Campground	
Blue Slide Campground, Resort, Cusick, WA	3
Circle Motel RV Park	3
Mount Linton RV Park	7
RV park in Metaline (hookups)	1
Town for hotel stay	
Ainsworth Hot Springs resort in British Columbia, Canada	1
Box Canyon Resort, Ione, WA	5
Circle Motel, Metaline Falls	1
Colville	1
Ione	2
Metaline	1

Table A.3e-1, continued…

Type of Facility or Location	Frequency
Metaline Falls	6
Sandpoint	1
Spokane	1
Washington Motel, Metaline	2
Other Places Stayed Overnight	
1 night on Forest Service road by campground	1
Also going to Crescent & Boundary	1
Apartment in Metaline Falls	1
BLM campground between Metaline Falls & Boundary Dam	1
BLM Campsite- Forest Service Road 305	1
BLM lakeside canoe-in	1
Boat	1
Boat camping	1
Colville National Forest (Slate Creek)	1
Crescent	1
Dead end of Forest Service Road 193 (trailer)	1
Don't know which yet (campground)	1
Headed back home to Spokane	1
Home	1
Home	2
Home, we live in Colville.	1
I live here.	2
I live here, local.	1
I live here, and we expect 10 family members this week.	1
I live in Metaline.	1
I live north of here on Sullivan Lk Rd.	1
Live in area	1
Live in Metaline, just used boat launch	1
Local	1
Local hotel	1
Local resident	1
Metaline Chamber of Commerce parking	1
Moved here permanently	1
My house	1
My house in Ione	1
My mother's home	1
My sister's	1
NFS land out by Usk	1
Not staying, went home to Spokane	1
Our home	1
Our home south of Ione	1

Table A.3e-1, continued…

Type of Facility or Location	Frequency
Own home on river	1
Own property	1
Passing through, going back home	1
Pend Oreille Apartments, working at dam	1
Private home, we live in this area.	1
Private property	1
Private property (camper)	1
Rental home, moving to the area	1
Set up camp outside on private land	1
Slate Creek area	1
Tent camp on river between dam and Metaline Falls	1
USFS dispersed camping east of Sullivan Lake	1
We are fulltime residents of Metaline.	1
We are residents.	1
We have a cabin on Tiger Inlet.	1
We live here.	1
We live here (Metaline Falls).	1
We own property here.	1
Your designated BLM campsite across from Slate creek just south of Everett Creek	1

Question 7: Participation in recreation activities while visiting the Boundary Reservoir Area. Many respondents selected the "Other" activity category on the list of responses for this question and wrote in a specific activity. Those responses are listed in Table A.3e-2.

Table A.3e-2. Visitors responses for other recreation activities while visiting the Boundary Reservoir Area.

4th in park at Metaline
4th of July
4th of July event
Beading group
BLM recreation site check, and shoreline clearing by boat.
Camp
Celebrated the 4th of July out on the beautiful water
Church camp
Church family camp out (about 60 people)
Crawford State Park, Gardner Caves
Cycle touring Selkirk Loop
Dad and sons enjoying the great outdoors
Down River Days- Ione
Down River Days
Drinking

Table A.3e-2, continued…

Evaluate site for possible school function use
Family camping
Family gathering
Family reunion
Family time
Firewood cutting
Fireworks in Metaline
Flying R/C airplanes
Gardener Caves (7)
Geocaching (2)
Get dogs away from fireworks (city)
Golf
Honeymoon
I've lived here since 1948 and have done all of these things.
Lions Train Ione (2)
Looking at fall color
Looking for property to buy
Meeting friends
Moved here to live
Off road site seeing and fishing
Panning for gold on Sullivan Creek
Paper service
Passing through
Play at park
Play on toys
Playing games
Pretending I'm Pochahantas
Read Bible
Relaxing (3)
Ride train
Rock hounding
Romancing
RV campground property
Sand play
Scuba diving
See cave
Shopping
Sister lives here
Sleep
Snowmobile in winter
Snowshoeing
Summer job site
Sweating
To breathe & relieve stress :) also tanning

Table A.3e-2, continued…

To get away
Traveling thru to British Columbia
Visisting friends
Visited Nelson, B.C.
Wakeboarding
Will return
Work

Question 11: Means of fishing in the Boundary Reservoir Area. People who responded to the fishing questions were asked how they went fishing on this visit to the Boundary Reservoir Area. Open-ended responses provided for the type of boat or watercraft used are listed in Table A.3e-3. Several respondents also specified "Other means" for fishing; these are listed in Table A.3e-4.

Table A.3e-3. Types of boats/watercraft used by visitors for fishing in the Boundary Reservoir Area.

Type of boat used while fishing	Frequency
12' aluminum boat	1
12' rubber raft	1
12ft. Port-a-bote and 5 hp outboard	1
14'	1
14' boat	1
14' mirrow craft boat	1
14 ft aluminum	1
15' runabout (open boat 25hp)	1
16' Hewes Craft & kayak	1
16' runabout	1
18 ft jet boat	1
19' open bow boat	1
19' open bow boat	1
20' pontoon boat	1
8 ft	1
Aluminum fishing boat	1
Aluminum 14'	1
Aluminum boat	1
Aluminum boat	1
Bass boat	3
Boat - 15ft Smoker Craft	1
Boat	17
Boat & kayak	1
Boat Duckworth	1
canoe	1
Canoe	3

Table A.3e-3, continued…

Type of boat used while fishing	Frequency
Canoeing	1
Duckworth jet boat 22 ft	1
Duckworth 19' IO	1
Fishing boat	1
Glastron GX 185	1
Jet boat	3
Kayak/boat-electric motor	1
Motor boat	1
Motorboat	1
Not in water	1
Open boat	1
Outboard boat	1
Paddle boat	1
Pontoon boat	3
Pontoon power boat	1
Power Boat	1
Power boat (19') and personal pontoon boats	1
Ranger 20' bass boat	1
Reniel 185 power boat	1
Runabout	1
Ski power boat	1
Small fishing boat w/ motor	1
Sports boat	1
Sports fishing boat	1
Starcraft	1
Tracker	1
Triton bass boat	1
Trolling	1
Weldcraft 18' jet boat	1

Table A.3e-4. Other means of fishing used by visitors for fishing in the Boundary Reservoir Area.

Other means of fishing	Frequency
From a dock	2
Kayak	1
Pontoon	1
Walking	1
Did not fish	1

Question 12: Areas fished in the Boundary Reservoir Area. Question 12 included four spaces for respondents to provide open-ended input. They were asked to specify the locations if they fished the mouths of creeks entering Boundary Reservoir, if they fished creeks entering Boundary Reservoir above the creek mouth, or if they fished other creeks/ streams or lakes/ponds in the area. These open-ended responses are listed in Table A.3e-5.

Table A.3e-5. Specific areas fished during the visit to the Boundary Reservoir Area.

Area	Frequency
Mouth of creeks entering Boundary Reservoir	
At Metaline	1
I don't know names yet	1
Both Lime Creek and Slate Creek	2
Lime Creek, Slumber Creek, and S.F. Flume Creek	1
Lime, Slate, and Three Mile Creeks	1
Peewee Falls	3
Peewee, Slate, Sullivan, and Sweet Creeks	1
Slate Creek	12
Both Slate Creek and Everett Creek	3
Slate, Everett, and Fence Creeks	1
Slate and Flume Creeks	1
Slate and Peewee Creeks	1
Slate and Sullivan Creeks	1
Sweet Creek	2
Three Mile Creek	1
Creeks entering Boundary Reservoir (above creek mouth)	
SF Flume Creek	1
Flume Creek	1
Slate Creek	2
Slate and Everett	1
Le Clair Creek	1
Metaline	1
Sweet Creek	1
Bottom of the dam	1
Other creek/stream in the area	
Crescent Lake	1
Flume Creek	1
Pend Oreille at Ione	1
Pend Oreille south of Ione, 8 mile	1
Pend Oreille River	1
Sullivan Creek	1
Three Mile Creek	1
Other lake/pond in the area	
All shallow bays and flats 30' and less, lay downs between Boundary Reservoir and Metaline Falls	1

Table A.3e-5, continued…

Area	Frequency
Boundary Dam boat launch and swimming area	1
Boundary pond	1
Can't tell you, it's a secret, but last night I caught an 18 lb. trout.	1
Crescent Lake	8
Ione	1
I just tied up along the shore in several places.	1
Lime Creek	1
Lost Lake	1
Not fishing this trip	1
Pend Oreille	1
We live here. We fish all areas an unknown amount of days or hours, but it is a lot.	1
Yokum and Leo Lakes	1

Question 13: Fish species targeted in the Boundary Reservoir Area. Question 13 asked respondents to identify the species of fish they wanted to catch while fishing in the Boundary Reservoir Area. The open-ended responses for "Other species" are listed in Table A.3e-6.

Table A.3e-6. Other species of fish residents usually try to catch in the Boundary Reservoir Area.

"Cat Fish"
Any fish (3)
Any would have been fine
Anything for the kids
Anything that bites! (2)
Browns
Caught none
Crappie (3)
Crappie, perch
Crappie, suckerfish
Crappie, lake trout
Kokanee
Native rainbow
No specific goal
None, still a great day
None
Northern walleye
Northern Pike (3)
Not triploid rainbow trout
Peamouth and suckers
Perch, we do catch and release, so enjoy catching all fish.
Perch (8)

Table A.3e-6, continued…

Perch, sunfish (3)
Perch, whitefish (2)
Perch, squawfish
Salmon, sturgeon
Squawfish
Sunfish, bluegill
That's what is cool, there are many species, they are all fun to catch and except the scrap fish.
Trout
Tuna
Walleye (7)
Walleye, Northern pike (2)

Question 14: Fish species caught in the Boundary Reservoir Area. While Question 13 asked respondents the species of fish they *wanted to catch*, Question 14 asked them what they *actually catch* while fishing in the Boundary Reservoir Area. The open-ended responses for "Other" species are listed in Table A.3e-7.

Table A.3e-7. Other species of fish residents typically catch while fishing in the Boundary Reservoir Area.

Bull trout
Crappie
German brown trout
Kokanee (3)
Lake trout (2)
Northern pike
Pike minnow (2)
Perch (27)
Squawfish (7)
Sucker (3)
Sunfish (3)
Tench
Walleye
Whitefish (3)
Scrap fish
None

Question 18: Boat launch adequacy. Respondents who reported boat launches had not met their needs were asked to describe the problems they encountered. The open-ended responses to this part of Question 18 are listed in Table A.3e-8.

Table A.3e-8. Visitors' descriptions of launch problems they encountered.

Boundary good; Metaline due to depth & lack of dock; Box due to lack of dock & lack of breakwater to slow current
2 cleats loose; missing bolts to the dock

Table A.3e-8, continued…

Be nice with a jetty to cut down on current
Cement all broken up; no dock, no tie ups; too steep and gravel road
Could use some repairs to launch pad
Except it would be nice if one in Metaline did not have so much dog poop and garbage around.
Fishing opportunities could be a lot better, doesn't care for game department.
Fluctuating water levels, lack of enough docks, people in water at and around launch, not able to leave boat in water tied to the dock.
It was ok. Boat ramp is very broken up, and wasn't there a dock at one time?
Metaline needs lots of work, no dock, no pilings that are big enough, and the road and ramp are bad.
Metaline Park boat launch is very poorly designed- no dock, steep access, quite a challenge with large boat, especially at lower water level!
Metaline Park launch needs some serious work!
More sand, less big rocks (fiberglass canoe)
No dock, high water and current made loading boat very hard.
No docks
Not easy access
Not significant docks for boat mooring, west channel along current docks could be improved to accommodate additional docks for mooring.
Ok, water low for launch and fishing
Radical water fluctuation, moorage would be great! Small dock, flood light for early and late launch.
Ramp needs to be fixed up, where are the docks that were there a few years ago?
Rough approach and cement slab is broken up/ no dock to tie off; water drops enough at night to cause real problems getting out.
Small - need overnight mooring.
The dock is missing. The ramp is in dire need of repair.
The ramp at Metaline has seen better days. The ramp is all broken up and there is no dock for safe load and unloading of water crafts. We need a new ramp and dock for safe launching (please help).
The water fluctuates too much.
Very rough and broken up.
Wanted to put boat in at Box Canyon but too shallow and narrow
Water fluctuation makes all reservoir area ramps very hard to depend on - ramps need deeper jetty type channeled access to river channel.
Water is sometimes to low; difficult to launch
Water was down too low to use for several days.
Water was extremely low making it more difficult to launch, muddier & lots of milfoil

Question 19: Problems with water conditions when boating on Boundary Reservoir. In addition to indicating whether they experienced problems with water conditions and the degree of those problems, visitors were asked to describe any problems with water conditions they had encountered. The verbatim responses to this part of Question 19 are listed in Table A.3e-9.

Table A.3e-9. Visitors' descriptions of problems with water conditions during the visit to Boundary Reservoir.

"Low Water"

Table A.3e-9, continued…

Capsized kayak in Deadman's Eddy
Decreasing water elevation beached our boat while we were eating lunch in Metaline. In the afternoon we spent several hours downstream of the falls. When we returned the falls much faster and higher. Both problems were minor and expected.
Did not realize we would have to launch & load our boat every time we used it; first time to Forebay & was unaware; hard to break camp in camper & re-set it up just to launch/load. (Camper is a pop-up & we have to lower it to launch/load. We would (continues) …
Due to the daily changing water levels which affects the quality of fishing especially the trout!! When children can't even catch fish on a bait and bobber over a 3 day try is just "squaw" fish; its very poor fishing.
Extreme milfoil
Extremely low levels during the week days
Getting in & out of kayaks on shore line down canyon
Hard to control boat at times with current (electric trolling motor)
Hard to fish from shore; water level was low
I was going to access downstream shoreline, and the next day the water level was up and I could not access the shoreline downstream.
I wish it wasn't being lowered.
Large amounts of debris and fluctuations of water
Large floating timber in river
Large fluctuation in water level from Mon-Fri for re-licensing studies.
Launching boat requires care to ensure it does not bottom out with low water.
Low water-steep banks-unsteady rocks
Low water afternoon/evening
Many people make comments.
Milfoil
Milfoil upstream is likely to cause problems in Boundary Reservoir in the future.
Mostly falling water levels tend to make all Boundary Reservoirs useless.
My access is too muddy!
No sand only gravel on beach
One of the people with me can't swim here at Box Canyon Pond, because she gets a rash.
Only on the water noon to 3pm. Were apprehensive about lower water due to limited sites along shore to beach (put in) our kayak.
Our only concern was the litter (bottles & cans).
P.M. falling water levels forces us to come back early and miss the "late bite"!
Rapids at Metaline Falls
Smoke from a forest fire
Sometimes the water is too low and lose a lot of fishing gear.
Stayed after 6 P.M. was afraid to leave boat close to land because of water going down and leave the boat dry docked.
Testing
The water level fluctuations!
This visit
Too much milfoil, waste, scum, etc.
Unsure of draw down times, and how they affected Metaline Falls for access for kayaking
Very low water (cool), doing test with lowering water level

Table A.3e-9, continued…

Wake of power boats causing rocks to fall, erosion, and collision
Water level being raised up and down; fish wouldn't bite.
Water levels fluctuate too much, too fast.
Water low, muddy beach, milfoil
Water was very slow had to paddle kayaks more than expected
We were aware of the changing water levels from previous visits, so we were prepared.
Wind blew in our face on the way back, but that's hard to canoe (canoe trip up river); water level up and down

Question 21: Desired improvements to the existing recreation opportunities at the Boundary Reservoir Area. Respondents who indicated they thought improvements to existing recreation opportunities were needed were asked to list the activities or facilities they would like to see. The verbatim responses to this part of Question 21 are listed in Table A.3e-10.

Table A.3e-10. Visitors' descriptions of other recreation activities or facilities that they would like.

(Boat moorage) Due to fluctuating water levels you have to load your boat up every night.
1 additional vault toilet on north end of Campground. More access to water
1) We loved how the grassy area around the Forebay Picnic/Camp Area used to actually be green grass. Now it is all dead grass and knapweed. Would like to see the area irrigated from the reservoir to keep grass green. (would also reduce fire danger.) 2) We can camp without hookups, but it would be great to have potable water spigots at each campsite. If SCL ever decides to irrigate the grass maybe they could put in some additional water spigots at each campsite. Again, it would reduce fire danger. 3) The dust around the Forebay Launch Ramp is becoming a bigger problem. People drive too fast and it is so dusty it drifts over the campsites. Need to chip seal the area or pave it. 4) Thanks for providing this great recreation area!
1) Not enough privacy between camp sites or RV sites. I like trees for shade & for a more private area since we go to sleep relatively early & rise early. Since we arrived on Labor & folks were leaving, privacy wasn't a problem but since the parking area has been clear-cut, we wouldn't have stayed here if there were more folks. I'd suggest replanting trees between campsites. 2) Hot showers would be great, even 2 for all campers to share since there are just 2 toilets.
1. Extend the dock further out so that at lower water levels the dock may be used. 2. Spraying for weeds and thistles in the campsites is needed. Maybe water the grass.
1.) Campsites could be better distinguished as overnight campsites. 2.) Grass areas could be watered. 3.) Broaden the visit (tours) to Boundary Dam. After Labor Day. Do weekend tours possibly.
A better boat launch facility with trailer parking and turn around spot. Better shoreline fishing area.
A better ramp and a boat/fishing dock.
A dock for fishing or a food bridge to the other side of the river
A golf driving range
Bigger garbage cans available for trash.
A rest room close to the beach in Sullivan Lake West Campground. The only vault toilet is at least 3 blocks from the beach and there is evidence of people using the beach area for bathroom needs. Water available to wash hands near restroom.
A slide, playground, picnic tables on the grass by water, ramp down from parking to walk easier, maybe 1 more fountain
A) Some type of playground equipment for younger children! B) power hookups & dumpsites
Also- just curious about whether or not tap water is potable.
Always more water activities

Table A.3e-10, continued…

An area where motorized boats area not allowed, where only paddling canoe and kayak are permitted
Another boat launch, trash can closer to beach, more recycling containers, more sand on the beach
Another section of boat docking added to the present setup
ATV trails, bathrooms need maintained better :)
Backstop/bases, volleyball sandpit/ net, picnic tables/trash cans by beach(right next to it), diving board on dock
Better ATV access to town for fueling purposes and food
Better bathroom facilities would be nice.
Better facilities at launch points: bathrooms launch ramps
Better fishing for adults
Better garbage disposal.
Better landing and access at existing boat-in campsites for kayaks; more campsites
Better launching for boaters.
Better restroom facilities are definitely needed. The rest stop restroom is horrible. It is dirty and smells horrible. Flushing toilets are a must and running water for hand washing etc.
Better signage & more flush toilets. More descriptive & current info on activities available.
Better signage. Maps available online would be helpful, we looked at your site, does not give any lake boat launch areas where the waterfall is not trails marked, no campground marked. Patrol the campground; people know no one checks on them so they party with no rules to be enforced, so they trash a nice area. We were pleased with what mother nature has here; we were not pleased with how you have kept it up and let people know what is there. Water was not clean enough to swim in.
Bicycle trails
Bigger bathrooms/more stalls Showers graveled/leveled tent sites
Boat ramp in Metaline needs to be fixed- concrete ramp is significantly broken up. The dock @ Metaline boat ramp is gone- it would help greatly with handicap access to boats. Also- tourists' info (Peewee falls info etc.) would be neat to have @ each boat ramp.
Boat rental, cleaner bathroom facilities
Boat rentals
Buoyed swim area and floating dock.
Buoyed/marked off swim area. Larger beach area. Shade by beach area. Floating dock.
But- roads could be paved or repaved to lower dust & eliminate potholes All camper sites could be paved, graveled or re-graveled Security request dog owners (whose dogs are not on leash, to do so) & provide doggy cleanup bags & disposal so its not messy for others.(For a free campground, its great)
Canoe & kayak rental?
Clean the windows at the dam viewing site.
Designate narrow channels as "No wake zones" so that boaters will respect paddlers more. Consider limits on horsepower/noise from boats & jet skis
[ ] was an excellent guide at Boundary Dam - Very friendly and informative! We loved our visit to Boundary Dam, campsite and surrounding areas!!
Establish kayak (paddle-in only) picnic sites on island and/or shore. Identify number of tent-sites at boat-in campground(presuming the SCL Forebay campground is not car camping). Plant some trees. Disperse the tent sites- or limit group size - or establish group sites. Establish some jet-ski speed and proximity limitations in vicinity of canoes & kayaks - like < 5 knots within 50 yards of paddlers. - Of course that would "go with" notification & presence of authority or more frequent presence of any existing - even buoys marking areas. More picnic tables at Forebay are needed. Is there a map posted showing auto parking, RV parking, tent sites, RV overnight sites (are there any?) , picnic only [at the northern-most site there was one table, several auto spots (all not being used) and a motor home that appeared to have claimed all] etc.
Fish cleaning stayed by dock

Table A.3e-10, continued…

Flush toilets
Flush toilets w/ running water
Flushable toilets, water fountain/hand washing areas
Frisbee golf is a good all around activity to be created and can be created with little or low cost and is good exercise. With all the forest area Mountain bike trails could be cut and routed through the area. A rental facility for Canoes or kayaks could be added to generate more revenue. This is a beautiful area and I have enjoyed my visit.
Great everybody from this area are friendly I really enjoy all the time they spend up here. Thanks on for the place where all family love to come. :)
Handy caped fishing dock at S.E. end of fence assessable from picnic area. Put up brochure packets at bathrooms at boundary camp sight local business should then post activities and events. Canyon should be a no wake zone because of erosion and to stop near collisions.
Hiking trails along the river. Mt. bike/ ski loops to views of Z canyon area. Be sure to keep the facilities free of user fees. This is at least some compensation for the loss of the natural environment. Prohibit jet skies in Z canyon.
Hiking trails for camping area would be great.
Horse shoe pits would be nice
Horse trails & trail head access seems poor from what I saw and heard.
Horse trails along river and more view sites from shore along river and reservoir.
Horseshoe pits- maybe volleyball
I'd like to see a ORV trail head & trail established
I'm a 100% disabled Vet. Walking & hiking is one of my passions, but I can't do it anymore. I have on ATV, and it has become my extended legs. Maybe some ATV trails, with good rules and no hot rodders. Other states area having great success with these types of trails and good revenue also to those areas that cater to them... food for thought! :)
I have used over 100 facilities in the Western @ Southern States. Using this guide Boundary Reservoir is #1. Then include free/can't be beat/free stocked firewood unheard of! Thank You.
I love it here!
I would like more rest areas along the roads
I would like more trees and shade in camping area and more and better defined camp sites.
I would like some power hook ups so I don't have to listen to my generator and would be willing to pay for a spot. I love this campground and will continue to come for many years I'm sure. Power or not!!!
I would like the bathrooms open longer in the season.
I would like to see a boat launch for canoes, kayaks, and small boats below Metaline falls. Early in the season it is impossible for these watercrafts to navigate the rapids so there is a lot of lost opportunity to float the canyon.
I would like to see a few more pieces of playground equipment for 4 or 5 yr olds.
I would like to see a mare efficient boat launch & dock system located in the Metaline Park so that there is better access from the south end of the Boundary Reservoir as well as the north end.
I would like to see more hunting access
I would think having campsites would increase volume of visitors. There is land not used by park that could be used for this.
It's beautiful it's great....please keep it clean & as untouched as possible!
It would be great if there were a trail along the shoreline that led to the cove. 2.) Also, if there were an easier access to the Vista House look out that didn't require the drive around. 3.) As there are several smaller children that came here, a single play area would be cool. 4.) Water and power to sites would be cool, but it might take away from the uniqueness of the site
It would be nice if the motor boats & personal water craft would slow down when they pass kayaks or canoes.
It would be nice to have a volleyball court at the Box Canyon Campground! (Campbell Park)
It would be nice to have an ATV access from the western forest trails to preclude our illegal travel on paved road to get to the trails.

Table A.3e-10, continued…

Jogging trail around Metaline Park, trail to Peewee Falls.
Just showers
Longer boat ramp to accommodate water fluctuations. More docking space, more trout. More camping sites are needed. Please don't institute a camping reservation system. Keep first come, first serve.
Maybe a designated swimming/fishing dock. The boat launch dock can be difficult to use sometimes because of kids fishing and swimming on and around dock.
Maybe add some hook-ups for RVs, to a select number of campsites. We would gladly pay a nightly fee if hook-ups were available.
Maybe restroom @ the BLM Campsite and a fish cleaning station
Metaline better boat ramps, board walk along frontage road in Metaline, and all through the park also improve area at inlet and point north of boat launch.
Metaline launch are could use a water wall to ease heavy current. There is no dock at this time 6-5-07
Metaline park boat launch needs some serious work!
More boat docking/for overnight. Power to some campsites & RV sites in more wooded areas, not so open. Put a few more RV spots in the center of the drive thru camping area.
More 4X4 / off road trails. Compared to Western Washington, they are extremely lacking. Outdoor concerts, wine tasting, festivals. Outdoor celebrations. i.e. outdoor summer theater, movie viewings.
More attention to the campground. need daily person checking bathrooms and stocking, cleaning. Need daily person to take care to trash. Monitor night time campus activities.
More bathrooms
More boat-in campsites
More boat in campsites
More boat-in facilities (kayak or canoe) Power & water hookups for RV (with a dump site), reserveable campsites online. Camping fees to help pay for maintained of campground-
More boat in facilities
More camping sites along river & lake
More campsites if possible
More campsites, because more people are coming here.
More designated bass fishing ponds
More dock access e.g. overnight docks& tie-ups.
More drinking water locations. More road and campsite signs.
More fish
More Forest Service rd/boat access/ private campsites
More garbage spots!!!
More hiking trails (2)
More kids play equipment, kid’s events, more shaded spots, golf cart rentals.
More kids play equipment, swings, jungle gym, tether ball, water fountain to play in. Sports activities, baseball, volleyball, horse shoes, etc.
More level tent spots with parking
More parking
More restrooms- like one on the opposite side of the park by the camping sites.
More RV camping sites. It is usually full in the summer. Hookups & utilities would be nice. Tent campers are camping where RV's should camp.
More RV dumps with drinking water like Roosevelt area. Free facilities are best but if you must pay the fees should be based on how much you are dumping or getting water. I don't like rate fees because I have a small RV and feel discriminated against.

Table A.3e-10, continued…

More RV sites. Dump station. Ability to leave boat docked overnight (realize this is unrealistic due to need to draw down for power needs, but as long as we're dreaming. . .
More sites for longer RV's
More sites, kill knap weed & water grass. site could be made more level. New picnic tables at all sites
More tent camping sites
More trash containers needed at box canyon dam
More walleye in lake, didn't catch 1
More water taps to access
Multiple private enterprise offering kayak/canoe rental
My family and I would appreciate more campsites. But, this is a pretty awesome place just like it is.
Need better signs for where the view point is. i.e., at the turn to Sullivan Lake if you had a sign & mileage stating where the view point was, we were there years ago & knew it was somewhere on this road.
Need more shade trees for picnics
Need RV dump station
New boat ramp and dock at Metaline waterfront park. Better markings of islands hazards in the river.
No fishing in Box Canyon swimming hole. It is dangerous. I have had to take kids to the hospital with hooks in their feet. It is a swimming hole. Better access to the swimming hole from beaches for disabled. No sharp rocks off the point at the swimming hole. Dead fish floating in the swimming hole is nasty & stinky.
No this area, but- More tress on the large camping area at Boundary Dam. Otherwise, all are great. (where we were)- Bathrooms closer to day use beach at Sullivan - North. It's been moved quite a way from the beach. New swimming facilities -enlarged - are wonderful.
On July 2 we attempted to hike the trail Mt. but we had to turn back b/c of downed trees on the road to the trailhead
One thing it needs is a cleaning station for fish
You should provide life guards (to be returned when finished) I've seen sign w/hooks & life jackets. Very simple to "display" & make available small price to pay-even if the jackets are stolen. Maps that show all hiking, biking, horseback riding, campsites, etc... If these exist I don't know that so maybe they need to be more "available" Those maps can cover some other items such as wildlife, berries, flowers just some basic. Campgrounds in Alaska provide bear boxes at remote campsites which is like for backpacking. These are usually places where we pay after to be there. Look at the website for Alaska to get additional ideas.(State parks/National Parks)
Our camping experience was the best. The kids really enjoyed themselves & made some new friends. The only concern we had was the drug bust they had. Only because we had our kids with us. We were glad they were dealt with.
Outside shower for after swimming
Paved parking; shade trees
Perhaps, nature hikes, guided, perhaps more bathrooms and even a shower would be awesome! but other than those few things, this place is awesome!
Permanent type rest room facilities, not port-a-potties
Picnic area
Picnic sites improved/expanded
Play area for kids, water slide, concessions or vending machines
Play ground equipment slide into water
Play ground type structures
Play grounds equipment for kids, power hook ups for RVs or general power.
Please bulldoze in additional RV parking spaces for crowded weekends, as we spent the night on the boat trailer parking area.
Possibly a sign board showing different species of fish and animals in area to look for.

Table A.3e-10, continued…

Potable water needs visual improvement, way too milky in color.
Potable water, longer boat dock, swimming area away from boat dock/ ramp, longer launch ramp.
Programs for young children. Protecting environment/ roped off swimming area, small playground for children.
R.V. dump, water hazard markings
Rain shelter in picnic area
Ramp repair and dock at Metaline Park. Clean up (or out) small boat launch area at mill pond by Sullivan Lake.
Ramp repair and docks at Metaline Park
Re-open Crescent Lake campground that was closed
Recreational reader board with maps history of area, better definition of parking & camping areas. Certainly more areas for tent trailers & small, medium, & large RV's such as Heyburn Park in Idaho.
Remote camps up the canyon
Road access-lots of roads closed off hiking trails need to be cleared
RV Hookups
RV hookups at Box Canyon for power
RV hookups, Box Canyon
RV parking with or w/o utilities dump stations
RV sites with hookups campsite fees to pay for those sites. Upper level at Forebay Campground could be used for additional sites. Portable or vault toilets at some of the boat in sites. Pay phones!
Seeing little security I think people wanting to hurt our country could do damage and disrupt life in America by breaking the dam
Shade in the camp ground more privacy
Should have hot water in restrooms. Should have showers.
Showers
Showers at Boundary
Showers at Campsite!
Signing potable water better
Since I own a tent camper (pop- up camper), I would like to see more electric hook ups. Water hook- ups would be nice too but of less importance. Bathroom showers would also make the campground more appealing to me.
Small dock light (fore early and late fishing). Enforce 10 PM noise control. No generators! 4-wheelers and motorcycles for entering and leaving only! Not for riding laps around camp grounds. And licensed, of age riders, not little kids! I don't want to be liable for their inexperience and lack of knowledge of the road, and respect of others!
Somewhere to shower would've been fantastic. I think if we would've been able to shower, instead of just washing vital parts, we'd stay longer- The only other thing I'd really like to see is a noise curfew. Swimming at night is awesome, however people are yelling & being loud into wee hours of the morning - If someone could monitor the campsite periodically for noise & under age drinking that would improve the camping environment quite a bit- Thanks!
Speed limit on river or motor size limit
Swimming areas!!!
Thank you! We had a great time!
The dock needs to be there. The ramp needs repair badly. The concrete is broken up.
The lawn needs to be watered so people can picnic more comfortably. There were a lot of people here. There was not enough RV camping spots. Maybe reservations need to be an option so people don’t travel so for to get here only to find place filled.
The Metaline Park restrooms are very run-down and filthy; no boat dock at park.

Table A.3e-10, continued…

The only other thing is with this much lawn area and the water that's here, why there is no irrigation system to keep it watered and have it nice and green for kids and there other sporting activities on shore when not in the water. Other then that a very beautiful place.

The only thing I can think of would be a dock at the boat launch in Metaline.

The picnic table needs improvements

The swimming is great! Meets all our needs from ages 3mo to 16. The dock is great. Free camping, that I feel safe enough to camp here by myself with two small children, with fire wood! So I am not sure if I want to ask for shower facilities, as much more than what we have at Box Canyon and camping may not be free. I've been taking my boys here to camp for about 6+ yrs.

There could be more sites as this place gets very busy. Less gravel in the tent area. Rocks are hard to sleep on. More comfortable if area was more grassy.

This is the best river area in P.O Co - keep enhancing fishing opportunities and keep it as primitive as possible

This was a beautiful area. A little more privacy between camps spots would be nice, however overall we were very satisfied. Campground was very clean. Thanks much we will come again!

Up the hill toward guard station, could have more spaces!

Utilities

Volleyball court, badminton court, basketball court, horse shoes, mini golf, gondola to Hooknose, soccer field, more shore boat-in camping with restaurants and cabins, live wide grass (mowed and irrigated), bike trails, hiking trails, beer and restaurants

Walk way around the Metaline Park, hiking trail to Pee Wee falls.

Warning buoys on rock bars near Metaline, improved boat launch and a quality dock at Metaline. Please!

We appreciated the facilities and were grateful to stay there.

We are at a power dam and the power to the bathroom is great - However it would be nice to have power to the sites, even if there was a charge for it. We travel with s small dogs and we clean up behind them. It's too bad others don't do the same. Maybe if you supplied doggie doo bags people would get the message. We were very surprised to find fire wood at the site - nice touch- keep it up.

We are concerned about the safety of the trail to Sweet Creek Falls. Steep drop off, slimy when wet, big hole in trail by pipe. The falls is beautiful and picnic areas/ parking/ restroom were all in great condition. The kiosk information was delightfully informative.

We are pleased with present facilities.

We heard walleye fish could be found in this area, the habitat is perfect condition for this specie-maybe something to consider stocking

We need good dependable boat ramps and docks you can go to most any other reservoirs and learn how to make ramps and dock walkways that work fine with rising and falling water levels Its not rocket science its just a matter of doing it right once instead of wrong a half dozen times

We need more bicycle trails. More camp units. Child play area.

We visited on a Tuesday/ Wed. & stayed in the Boundary Forebay campground. The only access to the Vista House interpretive Center would have required a 25+ mile journey by auto when the site is a 1/4 mile across the river. If access from across the dam is not possible, a trailhead & hiking trail access from boating across would be nice. It would require a dock to accommodate the changing water levels.

We were uncertain as to whether the water provided be the boat launching was potable water. The sign appeared to have been defaced and perhaps someone had removed part of the sign to make it look like it was potable. Sign needs to be checked as it is confusing.

Would like Box Canyon Dam's visitor center open Saturdays.

Yes when we drove up to the Boundary Dam I didn't see the sign saying how many miles to dam. So Friday we went 3/4 of the way to the Dam and turned around. Sat. we saw sign that said 11 mile (I think) so we drove up again. We have Toy Hauler and 1 ATVS- we need to drive up without trailer and check out area more before pulling trailer that far, Sweet Creek is a nice little rest area.

You need people to care to the garbage & bathrooms during the weekends. But I had a great time :)

Table A.3e-10, continued…

Your map showing one BLM campsite is wrong. Our official campsite is approximately 2 miles north of the red-dotted site on your map. It's at the end of Forest Service road # 305, where it shows a large peninsula. This is actually on island 909 of the map. We have a fire-ring and two picnic tables at this primitive site. My name is [ ] - Call me if you would like more info. The survey is a great idea, this part of the P.O River is a tremendous asset.

Question 22: Specific recreation sites in the Boundary Reservoir Area visited. Question 22 included 10 pre-defined responses for specific sites or types of sites people might visit for recreation. The verbatim entries for the "Other" response to this question are listed in Table A.3e-11.

Table A.3e-11. Other sites in the Boundary Reservoir Area respondents visited or intended to visit.

All are beautiful
All!
BLM campsite at Everett Island
BLM campsite in the Boundary Reservoir Canyon Area
Blue Slide Resort area, scenic view points, Metaline Falls
Boat ramp area.
Boundary boat launch and on river
Boundary Dam camp
Box Canyon Dam
Box Canyon Dam & Gardner Caves (2)
Box Canyon Dam campground
Box Canyon Dam train - enjoyed very much, scenic
Box Canyon Motel
Box Canyon view point (2)
Camp at Mill Pond
Campbell Park waterhole
Caves, waterfall
Chalet w/ beer (Western Star)
Crawford State Park (2)
Crawford State Park, Metaline Falls (Affair on Main Street)
Crescent Lake USFS Campground
Dam tour
Down River Days
East Lake Sullivan
Edlenated
Family property (2)
Fishing below Box Canyon Dam
FS road 310
Gardner Caves (9)
Gardner Caves, Crawford Park
Gardner Caves, Metaline Falls, Metaline, Ione, Tiger Store
Guard shack

Table A.3e-11, continued…

Hiked trail on backside of Sullivan Lake
Hiking, gathering, hunting
Hunting local area-camped on Forest Service Road 193
Hunting this day
I live here
Ione
Ione Park, Sullivan Lake, Big Meadow Lake
Ione River Park
Lake Sullivan
Lime Stone Cave
Live in the area so we see/use all the time
Metaline Falls (2)
Metaline Falls golf course
Metaline Falls Visitor Center
Mill Pond (2)
Mill Pond interpretive area
Mountains
Mouth of Slate Creek
Mt. Linton RV park
Muddy beach and skipping rock heaven
N/A
National forest roads and trails
Off road hunting
One of the campsites, don't know which one yet
Parking lot
Pewee Falls (8)
Private Home
Rd 190-191 wood cutting
River bank, fishing
RV Park in Metaline Falls; visited all above numerous times
Season not conducive for some activity
Sullivan Creek/Lake
Sullivan Lake (5)
Sullivan Lake Campground
Sullivan Lake Day use (North) - not reservoirs (we frequently go to #8)
Sullivan Lake, Mill Pond, Lake Leo, Metaline Falls
Sullivan Lake, Lime Lake
Swim pond at Box Canyon (3)
The Apple [lagoon at Campbell Park] boat launch (shore fishing)
Touring/fishing the area
Towns of Ione, Metaline, and Metaline Falls
Trails, Hall Mtn.
Waterfall (2)
We travel through here as a scenic route into Washington

Table A.3e-11, continued…

We enjoy the outdoors we would be interested in all.
We were going to visit dam, but large group had gone in before us.

Question 25: Problems or conflicts with others at the primary recreation site. Respondents who indicated they had experienced problems or conflicts with other people or their behaviors at the place they listed in Question 23 (as their primary recreation site) were asked to describe what had occurred. The verbatim responses to this part of Question 25 are listed in Table A.3e-12.

Table A.3e-12. Visitors' descriptions of conflicts or problems they experienced at the Boundary Reservoir Area.

A dog without leash
At picnic site slobs left their garbage in the fire pit.
Boats pulling water-skiers up the canyon produce big wakes that are hazardous to kayakers. I don't think the canyon above the Forebay is an appropriate place to water-ski/wakeboard.
But I have in the past. Last Labor Day weekend there was an extremely rowdy, drunk, noisy , music playing group. They did not respond to security. Police should have been called in sooner.
Campers in RV at one sight were noisy late at night 11PM
Did have a drunk camper stumble down to dock while fishing w/our small children- but he didn't cause any problems.
Dogs fighting - was dangerous to the kids.
Dogs in restrooms, again someone needs to enforce rules.
Dogs not on leash bother us and get into our food.
dogs off leash & poop not being cleaned up
Dogs running lose. Dog poop not being cleaned up. Dogs harassing wild life. Dogs attacking our leashed dog and almost killing it. Sheriff should of been called in case these dogs so it again or hurt a human. Full garbage cans. Running out of TP. Speed through camp ground should be reduced. Horse shoe pits stakes should be fixed so people wont trip over them in the dark. Camping in play area at center of camp ground should be prohibited, More tables in the tent area should help with this.
Drunks and meth/ pot heads parents and children alike
For Labor Day weekend it wasn't crowded like most places. Our neighbors was close, friendly(happens to be from same area-and knows friends of our's-small world) Our visit was extraordinary!
Foul language from very young teens
Good this trip. Past visits marred by noise from jet skis in the narrow canyon areas
Guys kids walking around at night, 2 dogs yelping& barking
Haven' met a single person, no people at all
I actually listed is on question 21. Sorry!
I have four dogs myself so it's important to control my animals, for sound, picking up after them, walking and so on, I don't want this to have a negative effect, but some don't curb them or stop them from barking, I witnessed a dog reliving himself on grass and they did not pick it up I did. BBQ pits were over filled, so we cleaned them. Thank you for your work at keeping this so friendly to camp.
In all the years we've been coming here this was the only time we have had a neighbor that was not respectful of other campers. (loud adults, loud uncontrolled children, drunks, loud radio until 3 AM)!
It was only crowded (somewhat, not badly) because it was the 4th of July picnic!
Jet skis- loud and annoying
Kids throwing rocks, pushing kids off dock.

Table A.3e-12, continued…

Kids using bad language
Large party drinking being loud, drinking very loud after 10pm - until 1:30am & 1am Had spot lights on facing out into the camp ground until 1:30am and 1am as well when asked to be quite did so after a few hours. Would recommend quiet time from 10pm to 6am POSTED
Loose dogs
Lots of cursing/ swearing in one group but it was actually entertaining.
loud music after 11:00pm
Loud music late at night
Loud party passed 11:00pm at Box Canyon
Loudness at a late hour (unsupervised children)
Motor bikes kicking up dust & noisy generators (noise level) loud vehicles in the early AM
Motor boats speeding past kayaks.
[SCL Project Manager] has a particular beef about boaters using the dock to moor their boats. We understand that the water levels, can make the dock unusable, but it is still the best & safest place to leave boats during the day. We have used this dock for 10 years. We know when to get the boat off the dock due to low water. It is unsafe to ask us to tie/anchor our boats in front of swimming beach just to get them off the dock! Additional comments at in of survey.
My father and several other people we talked to were harassed by another hunter who was trying to kick people off of National Forest property by intimidating and threatening them
need to have a noise curfew
Neighbors were very noisy inconsiderate to other visitors w/ their noise levels, riding motorcycles and 4-wheelers late at night,
No but garbage did not get dumped from cans!
Noise - motorcycles and ORV's in campground, jet skis at beach and boat launch area. Would love to see motorcycles and Orv's banned in campground (i.e. - no riding in campground). Would love to see riding of jet skis banned in swimming and boat launch area. Would love to see dogs required on leash and owners pick up after them (a station at beach area with doggie do-do bags or ban dogs on beach).
Noisy campsite next to us who kept it going way to late! & lack of security checkups that we've become used to.
Not at all!
On Thursday night after 1030PM a group of people came in with several dogs and were very noisy. They had friends or family on both sites next to us and the next day they went back and forth continually.
One night loud group (drinking and probably drugs)
Only temporarily a few people in fishing access area not fishing
Other fishermen crowding into our fishing hole. Nimrods unfamiliar with how to launch a boat.
People at Sullivan always low-key, pleasant
People bringing their boats in the swimming area.
People can be very rude & say "smart-alecky" remarks, but for the most part everyone else was pleasant & friendly- there always seems to be one that ruins it for everyone else...
People from other camps steeling wood. Dogs being loud throughout the night.
People let their children run crazy/ unattended in the campground. Too noisy. Bears trying to eat me
People weren't putting their trash in the garbage can in the bathroom. My husband said the bathroom ran out of toilet paper.
People would come and ask us when we were leaving because they wanted the campsite we were in. Had this happen Saturday and Sunday both. I came here to enjoy myself, not to have people lined up to take our spot when we leave.
Pit bull dogs off leash barking & coming up face to face w/our 3-year & friends 3 year-old
Power boat wakes; inconsiderate jet-skiers

Table A.3e-12, continued…

Pushing and shoving on the dock area when small children were present.
Recommend some sort of patrol to keep the crack heads out.
River ran generator too 12:30am. Had to tell them to turn it off.
Saturday there was a lot of kids hot rodding cars. Making it dusty
Summer months get very crowded - a testament to this great place. However some, usually in motor homes monopolize the beach area- park crosswise & hoard the area- very inconsiderate considering this camping is free
The campsite felt crowded when we arrived but everyone left for home that day since it is Labor Day. We are enjoying the peace and solitude. You may want to a small camping & RV area with water access but no jet skis in the area. The boat ramp would be away from campers & RV's and swimmers
The motor boats speeding through the canyon while kayaking. Also the skiers and water boarders. It makes big wakes that makes you feel like you will capsize the kayak.
The obnoxious people next to us were loud/ shouting Fire works late into the night It would be nice if there was a regular quiet time like 10pm- 6 am
The other campers here arrived at about 1AM
There is a danger to small unmotorized craft in the narrow parts of upper river from larger speed boats. Although most we encountered were cautious.
There were 9 dogs with a group of people, none were on leashes. One dog went under our boat trailer and we could not get the dog to come out. I had to physically drag the dog, so we could move our trailer.
There were people smoking in the bathrooms.
Truck & boat trailer parked in front of toilets while setting up camp. Even witnessed a child leave his bike in the otherwise barely passable road, and indignant response to horn by adult.
Unleashed dog urinating in ours and others campsites while owner on dock. And fluctuating water levels (just kidding).
Very fast moving power boat; disrupted quiet setting, stirred up clear water at shore, created heavy wake
Wake boarders not slowing down for us in kayaks. Boats towing skiers not slowing down either. Felt like we would capsize when they speed by!!!
Water skiers and tubing - reckless driving boats need a speed limit The beauty is destroyed be the inconsiderate water skiers & tubing boats.
Wave Running! Reckless behavior on a watercraft!
We were the only people in the campground. We would have stayed next to the water but the goose droppings were too numerous!
We were uncomfortable the first night with someone walking in our campsite after we were in bed.
With the group of young adults that furnished the wood and collected the trash at 7:20 am----8:30am, they had the vehicle radio/stereo turned up so "loud" it woke up several campsites. The trio (2males,1 female) acted like it was nothing. However, as you know most people that take time to visit areas such as these would rather, sleep in late or just enjoy the sounds of nature rather than "head banging music" in the morning.

Question 28: Maintenance needs at primary recreation site. Respondents who indicated they had not found the facilities at their primary recreation site to be adequately maintained were asked to describe the maintenance needs they perceived. The verbatim responses to this part of Question 28 are listed in Table A.3e-13.

Table A.3e-13. Describe any maintenance needs you thought were not currently met.

Water the grass area.
A shower would be nice.

Table A.3e-13, continued…

As good as possible, given the heathen neighbors this trip. "Normally", they are well kept.
Bathroom facilities were not maintained. No toilet tissue, dirty facility, very bad smell, flies and other insects made it unusable.
Bathroom was very dirty.
Bathrooms need better maintenance
Bathrooms could be cleaned and stocked more often
Bathrooms could be cleaner.
Bathrooms not clean and restocked frequently enough
Bathrooms not maintained
Bathrooms were dirty and trashcans were full
Bathrooms and garbage
Beautiful!
Beautifully maintained
But we ran out of paper in men and women's bathroom
But was out of toilet paper last night. We come early for a spot.
Campground has been closed for awhile, although we still go because we love it up there.
Comment on Question #21 addresses day use, but not a problem of maintenance. We saw two different trucks of workers when we were on our outing, one cleaning/checking bathrooms and one collecting trash.
Corner cleat is loose due the dock wood rotting away
Did not use any facilities
Didn't use them, don't know what the bathrooms are like.
Dirty, smells horrible (restroom), no running water.
Dock needs to be there. Ramp needs repair
Done Well!
We drove a long ways and weren't sure if there would be room, worried it would be too dark to find another place.
Due to the amount of personnel utilizing and staying at this site the restrooms were "Not" maintained with even the basic essentials toilet paper, clean floors and soaps for all comers!! Also, whoever is in charge of replenishing the firewood showed up the day before the holiday and placed just enough wood in each campsite for a small fire for overnight and part of the next day for some sites. We had to go and collect some firewood from other areas outside of campground.
Needs RV power hookups
Extremely satisfied!
Fire pits appeared to be broken down.
Gate at Crescent Lake was locked on Labor Day weekend. If it is locked for fire reason's maybe a sign and a fine would be better than penalizing everyone for a few people who don't follow the rules.
Grass in picnic area beachfront at Forebay is dead or dying with lots of knapweed
I've fished here for 34 years. I've never had as much trouble as the last few years with people trashing the area around the water. It was nice when you could get around the end of the lake to the old campsites at Crescent Lake. People would put their trash away instead of leaving it spread about.
I think that it was actually better kept then some of the other campgrounds that we had to pay fees to stay and they did not offer free firewood either.
It was fairly well maintained but the toilets could have been cleaner and the garbage should be picked up more often. I was happy with the experience here.
Lawn care not good. Mostly weeds need mowing. Other than that, it was beautiful!
Less gravel and more grass in tent areas.
Locking stall door in men's restroom is broken
Maintenance is ok, but upgrading of trails needed.

Table A.3e-13, continued…

Metaline Waterfront Park needs more maintenance and repair of existing facilities and more parking for boat trailers. We don't use the boat ramp but they look to be in need of repair.
Need another bathroom on picnic side.
Need more trash cans
Need to mow more often at Box Canyon
Needs RV hookups
No garbage pick up daily, ran out of toilet paper in toilets
No paper towels in women's restroom
No toilet paper (2)
No toilet paper in bathrooms
Not enough garbage cans
Noxious weed control (knapweed, thistle, mullen) and litter along shoreline
Picnic tables and covers are really old. They need to be replaced.
Picnic tables very dirty, and no toilet paper in restrooms
Please dump garbage daily when campground is full or at least check them.
Please spray the knapweed on the lawns as required by state law.
Please water lawn
Poor restrooms, everything else is great.
Restrooms were filthy
Restroom needed maintenance attention. Boat ramp needs improvement. Boat dock missing.
Sink in restrooms to wash hands after using the facilities
Stinky outhouses
Thanks for the free campsite and firewood!
The bathroom had no toilet paper in it and smelled real bad.
The bathrooms were clean. Thanks for providing garbage cans, the tables and barbeques are very handy. The rope across the wading pool is cool. I've been coming here for 10 yrs and every year you improve little things. You should get a pat on the back for keeping this so clean. Thank you for the firewood. I'm disabled so that was a plus. I wouldn't be here if you charged a fee, because I can't afford to take all of us and the dogs camping for a week.
The dock never seems to be in at Metaline Park and the ramp itself is in need of repair. However, unless it is done right it would be mostly senseless.
The fire wood was provided, split and dry, which was a great surprise/amenity!
The launch getting on the water is rough.
The trash needed to be emptied a little more often
Trash and no toiler paper.
Very clean and well maintained
Very dry and grass, Sprinklers?
Very nice and clean.
Watering the grass areas!
We have been camping in our camper for 2 weeks at many campgrounds and the number one problem for us was overcrowding. I'd like to see dogs left at home since folks don't pick up poop, in general. Also, unattended children and noise at night and too much drinking by adults create a less than peaceful situation. I'd say "no alcohol & no dogs" on beaches, and a quiet hour set. RV owners starting generators are awful, when they start up early in the morning.
We, as a party, have been maintaining that campsite for several years, our party discovered it, created tent spaces, fire pits, and brought in a picnic table. We do all that is necessary to maintain a primitive campsite bringing in and taking out all we need.
Well maintained most of the time, (bathroom was out of toilet paper on more than one occasion).

Table A.3e-13, continued…

Would like to see something done to remove knapweed

Question 32: Attributes of the Boundary Reservoir Area that visitors particularly liked or that attracted them to the area. Respondents who selected the "Other reason" category for this question were asked to specify those reasons. The verbatim responses to this part of Question 32 are listed in Table A.3e-14.

Table A.3e-14. List of other reasons visitors gave for being attracted to the Boundary Reservoir Area.

Beauty
Best reason is no boat launch fees!
Big game animals here!
Birds and animals
Canoeing
Canoeing
Canoeing should be free...
Close to Crawford Caves
Close to friends who live Metaline Falls
Coeur d'Alene Lake
Come because of a job and love of the area.
Company picnic
Crawford
Crawford State Park, Gardner Caves
Dad lives close
Dam and facilities are very educational
Dam tour, sponsored by motorcycle store. 20 dams are chosen to visit each year. Last year was Boundary and this year was Box Canyon.
Easy for kids, dock is great. Keeps kids close so you can see them from campsite.
Easy set up for a 35' fifth wheel. We arrived during a time when there were many campsites available.
Easy to get to on paved road
Easy to take the kids on day trip
Family and friends
Family lives here
Family property
Family time
Firewood
Free firewood
Friend highly recommended
Friendly people!
Gardner Caves
Gardner Cave
Gardner Caves Crawford State Park and Sweet Creek Falls/Trail
Good area for small children
Good swimming area

Table A.3e-14, continued…

Good view of current fire (Pend Oreille)
Great for kids to play and swim
Great hiking. Great place to take children (when ours were young and living at home)
Great staff
Has not yet been discovered by the butt snakes from the big cities who ruin everything for everyone else. Don't tell anyone!
Hunting
Hunting toilets
I enjoy taking people up and down the river so they can see the scenery and enjoy the river.
I like the real bathrooms
I live here
I live locally so we utilize our surroundings.
I was exploring the northern part of WA State, scenic drives etc.
I was on route to BC but fell in love and stayed two nights
I was raised in Metaline Falls and Ione, its nice to come back too.
I work at Box Canyon so I can vacation at Campbell anytime and still work. We enjoy boating throughout the canyon.
Initial visit recommended, subsequent visit to kayak.
It's beautiful.
It's friendly and clean.
It's personable and not crowded. It's comfortable.
It’s free!
It’s on the highway to Canada where I’m traveling to.
Just love the area
Kayak trip
Less crowded, more undeveloped
Lots of wildlife, good hunting.
Meet friends
Most of the time it isn't very busy.
Moved due to fishing and hiking. Fishing has disappeared over last 1/2 year.
My wife was born in Metaline and it’s a nice place to spend retirement.
Need to check it out more
Nice place to ride ATV's
Nostalgia
Not many people
Not too many good forested areas like Western WA, but this comes close.
Old friends live here.
On the way to other destinations
Our church campout is here every year.
Part of the Selkirk Loop
Passing through to destination in Canada
Peewee Falls
People are friendly and courteous
People are nice in area.
Playground equipment for little one to play on

Table A.3e-14, continued…

Quiet break from traveling
Referred by another person.
Rural charter, family friendly
Safe swimming
Sentimental reasons
Snowmobiling, hunting
Socializing
Staff very accommodating, helpful
State Route 31 is my preferred route to Canada because of Pend Oreille River view
Swimming
Swimming access
Swimming area! Warm water in kid area.
Swimming for the kids
Swimming in Sullivan Lake
The air is clean
The beauty of the canyon
The caves
The kids like to play here
The people I've meet during past and present visits has made a lot of the trips to the reservoir.
The staff looking after us tourists. Very nice.
there is no cost
This camp is the best I've seen
This is my home town, I been living 5 years in Alaska
This is our favorite! It's clean!
Very kid friendly low depth wading pool means safety.
Well rounded for the children and easy access to the water front
Visit dam
Visit friends
Visiting the dam
Was recommended by a relative from Spokane
Waterfalls
We enjoy touring the dam.
We have a cabin on the Pend Oreille River
We heard it was good for fishing.
We love the area. Can't get enough.
We never use the other facilities in the area. We are always just passing through on the highway.
We pass through going from the Spokane airport to the Kootenays in British Columbia
We really like that there aren't a lot of people. Would hate to see that change.
When we are here we appreciate that we are not bombarded with rules and regulations.
Work
Work at Mine
Work for Colville National Forest
Work for BLM and personal reasons

Question 33: Other lakes and rivers visited. Respondents were asked to list up to three other (than Boundary) lakes or rivers in the region that they visit for water-based recreation. Only part of this sample provided three responses to this question, but over 400 respondents identified at least one other place in the region that they visit for water recreation. These respondents provided a total of 830 responses. The most frequent responses are summarized in Section 5.1.3 of the report. A complete list of all responses received for this item is provided in Table A.3e-15 below, generally in alphabetical order.

Table A.3e-15. Other lakes or rivers in the region frequently visited for recreation.

Other lake or river in region	Frequency of response	State/Province
Armee Lake	1	ID
Arrow	2	BC
Ashley Lake	1	MT
Badger	2	WA
Banks Lake	5	WA
Bead Lake	6	WA
Big Meadow Lake	7	WA
Box Canyon Reservoir	11	WA
Brown Lake	6	WA
Beatty Lakes	1	WA
Black Lake	1	WA
Blake Lake	1	WA
Boundary Dam	3	WA
Cain Lake	1	
Cauldwell Lake	1	WA
Cedar River	1	WA
Chain Lake	1	WA
Champion	1	BC
Christina Lake	1	BC
Clark Fork River	4	MT
Clear Lake	2	WA
Cowlet	1	WA
Coogalla	1	ID
Columbia River	52	WA, OR
Cougall Slough	1	ID
Crater Lake	1	
Crescent Lake	13	WA
Curlew Lake	4	WA
Davis Lake	6	WA
Deep Lake	4	WA
Deer Lake	4	WA
Deschutes River	2	OR

Table A.3e-15, continued…

Other lake or river in region	Frequency of response	State/Province
Detroit Lake	1	OR
Diamond Lake	15	WA
Downs	1	WA
Eloika Lake	1	
Evans	1	WA
Fan Lake	1	
Fish Trap Lake	1	WA
Fernan	1	ID
Fisher River	1	MT
Flathead Lake	1	MT
Frater	2	WA
Freeman Lake	1	ID
Gillette Lake	4	WA
Grand Ronde	1	OR
Hayden Lake	4	ID
Hells Canyon	1	ID, WA, OR
Hood Canal	1	WA
Horseshoe Lake	1	WA
Idaho River	1	ID
Kalama River	1	
Kalamalka	1	BC
Kasho	1	BC
Kookanusa River	2	MT
Kilarney	1	ID
Kettle Falls	3	WA, BC
Kettle River	7	WA, BC
Kings Lake	2	
Klamath Lake	1	OR
Kokanee Lake	1	BC
Kootenai River	3	ID
Kootenay Lake/River	13	BC
Lake Berryessa	1	CA
Lake Casitas	1	CA
Lake Chelan	6	WA
Lake Coeur d'Alene	45	ID
Lake Cushman	2	WA
Lake Ellen	3	WA
Lake Elsie	1	
Lake Kookanusa	1	MT
Lake Pend Oreille	11	ID
Lake Roosevelt	51	WA

Table A.3e-15, continued…

Other lake or river in region	Frequency of response	State/Province
Lake Shasta	1	CA
Lake Whatcom	1	
Ledbetter Lake	5	WA
LeClerc Creek	2	WA
Leo Lake	9	WA
Liberty Lake	2	WA
Little Pend Oreille Lakes	14	WA
Little Spokane River	5	WA
Little Twin Lakes	1	WA
Long Lake	9	WA
Loon Lake	2	WA
Lost Lake	3	ID
Marsgek Lake	1	WA
Marshall Lake	6	WA
Meadow Lake	3	WA
Metaline Falls	1	WA
Mill Pond	17	WA
Moses Lake	1	WA
Moyie River	1	
No Name Lake	1	WA
Noxon Reservoir	1	MT
Newman Lake	1	WA
North Fork of Clearwater	2	ID
Okanagan Lake	2	WA, BC
Pack River	2	WA
Palmer	1	WA
Payette River	1	ID
Pend Oreille River	94	WA, ID, BC
Potholes Lake	2	WA
Pierre Lake	2	WA
Priest Lake/ River	46	ID
Rogue River	1	
Rosebud Lake	1	WA, BC
Sacheen Lake	5	WA
Salmo River	1	BC
San Poil	1	WA
Satsop	1	WA
Silver Lake	1	
Slocan	1	BC
Staratia Lake	1	
Tahoo	1	

Table A.3e-15, continued…

Other lake or river in region	Frequency of response	State/Province
Skagit River	1	WA
Skaha Lake	1	BC
Slochs	1	BC
Sherry Lake	1	WA
Skookum Lake	3	WA
Snake River	6	WA
Spirit Lake	1	ID
Spokane River	12	WA
St. Joe River	4	ID
St. Maries	1	ID
Sullivan Creek	3	WA
Sullivan Lake	138	WA
Swan Lake - Republic	1	WA
Tarchanun	1	
Tacoma Creek (North of Cusick)	1	WA
Thomas Lake	4	WA
Twin Lakes	3	WA, ID
Two Rivers	1	WA
Waitts Lake	3	WA
Washington River	2	WA
Wenatchee River	2	WA
Willamette River	1	
Williams Lake	4	WA
Whiskeytown	1	CA
Wolf Creek	1	MT
Yokum Lake	10	WA
Many in eastern Washington	1	WA
Most of them	1	N/A
None	1	N/A
Miscellaneous	5	N/A
Missing	16	N/A
Total	830	N/A

Question 34: Other places or features in the region visited. Respondents were asked which other (than Boundary) places or features in the region that they had already visited or intended to visit on this trip. Fifteen choices were listed for selection. Responses enter by visitors who selected the "Other places" item are provided in Table A.3e-16 below.

Table A.3e-16. Other places or features in the region visited.

Train ride (Ione)
Alberta Canada and Glacier NP
All, we live here and its what we do
Athol ID- Silverwood Theme Park
Back roads to small lakes and streams.
Boundary Dam and Box Canyon Dam
Boundary Dam tour and Vista Point
Boundary Tour
Boundary Dam
Cathy's Cafe
Coeur d' Alene
Lake Chelan
Creston Wildlife Refuge
Dam tour
Davis Lake
I do not feel welcome in Colville National Forest
Down River Days, Ione.
Dry Falls, Boundary Dam, Soup Lake etc. - Like them all.
Gardner Caves always closed
Gardner Caves, tried to go it was closed.
Have visited them all on previous outings but none today.
Home in Spokane
I've been to all of them
I am a local resident
I live in Usk so have seen most all up here that interest me
Ione, Metaline Falls
Kettle Falls, WA
Lime Lake, Sullivan Lake, Serendipity Golf Course
Lions Club NPOV Train Ride
Live in area
Metaline Falls
Metaline, Metaline Falls, Ione
Nelson BC
Northern Idaho
Pend Oreille River (2)
Priest Lake
Priest lake and Bead lake
Scouting general area for hunting
Smackout Pass road
Spokane and Chewelah, Usk, Ione, Sullivan Lake, Metaline Falls, Boundary Dam, Vista House and Canadian border
Spokane River
Sullivan Lake and Mill Pond

Table A.3e-16, continued…

Sweet Creek Falls/Trail
The big waterfall down river
The dam
Tiger, private home on Pend Oreille River.
Too many to list.
Towns of Metaline Falls, Metaline, Ione
Trails in area
Tri-city area, campground on Snake River.
We live in North Idaho

Question 37: Visitor locations when they viewed Project facilities. Respondents who indicated they did had seen facilities or structures associated with the Boundary Hydroelectric Project when visiting the area were asked to indicate where they were when they saw the facilities. The verbatim entries for the "Other" responses to this part of Question 37 are listed in Table A.3e-17.

Table A.3e-17. Visitors' descriptions of where they saw views of Boundary Project structures.

Asleep in my tent
At the dam (tour)
Boundary Dam Gallery
Box Canyon
Box Canyon Dam
Box Canyon Dam bank
Box Canyon overlook
Campbell Park
Campbell park
Campbell Park
Campbell Park
Here, but they were unobtrusive, attractive.
My husband works at dam
I helped build the dam
I live here, so I've seen everything about the dam.
Moved here
My brother in law runs Box Canyon
My sister [ ] gave my friends and myself a wonderful tour of the dam.
On the dam bridge (bridge on the dam).
Power lines in Colville National Forest
State Route 31
The dam
Took a tour with a friend who works for the dam.
Took the tour of Boundary Dam
Took tour of Boundary Dam

Table A.3e-17, continued…

Tour
Tour of Dam
Tour of the Dam
Trails
Visitors Center
We toured the dam

Question 38: Effect of views of Project facilities on enjoyment of the scenery. Respondents who indicated they did had seen facilities or structures associated with the Boundary Hydroelectric Project when visiting the area were asked to describe how that affected their enjoyment of the scenery. The verbatim responses to this part of Question 38 are listed in Table A.3e-18.

Table A.3e-18. Visitors' explanations for how views of Boundary Project structures affected their enjoyment of the scenery.

A dam is a beautiful sight.
Access to water for kayaking views of dam
Although it is very important to view the dam, I have conflict about it, fish ladders that are absent. I think, isn't there a better way than to greatly disrupt the natural way? I do, however use the power generated. I didn't like hearing that Seattle uses over 50% of the power generated from the resources in my area!
An enjoyable visit and surprise at the amount of power generated by this facility for Seattle's use.
Breathtaking scenery!
Dam
Don't necessarily like seeing tension power lines everywhere, but I understand this is a facility created for a purpose and maintained by power, gas and dollars.
Enjoyed Vista House, dam tour, campground, boat launch (Boundary area) clean and well kept. Pickle Forks are impressive.
For these things to function you have to have some kind of structure. The Box Canyon Dam site is very pleasant to the eye.
For what I enjoy it fits me well. Problem is there are many people finding the same thing
Gods Country
Greatly appreciated overall care. People of area friendly.
I didn't visit the facilities but they didn't detract from my experience.
I don't mind seeing dam related structures because I understand the importance of hydro-electric power
I enjoyed the tour of the dam and the people and facilities are excellent
I find it fascinating that the dam was built.
I find these structures interesting
I love hydropower; man would and could not do a lot without it. It's our future.
I work at a rural electric coop and appreciate hydroelectric power.
I work here.
If facilities didn't exist, neither would lake or campground.
If they were there, I didn't notice.
Industrial development, while needed, rarely improves a wilderness/wildlife experience.
Information provided on trail to access viewing platform.

Table A.3e-18, continued…

It's always interesting to see the dam!
It's great to see man and nature working together to provide clean/renewable energy (unlike the morons who voted that hydropower isn't a renewable resource in WA)
It's nice to know how all of this beauty works in harmony as a tool for mankind
It doesn't bother me to see these facilities, and we enjoyed the tour of the dam
It is nice to see the workings at the dam- nice and educational for the kids.
It is something that has always been here. It would be weird if it wasn't. It is part of this place.
It is very beautiful
It was a pleasant stop with good information.
It was interesting to see how the dam works but I am more interested in the time spent with family and friends while visiting the reservoir.
It’s a power plant I expected to see towers and lines etc.
Just because I enjoyed the opportunity to easily paddle a canoe in both directions through a beautiful river canyon doesn't mean I've lost sight of the substantial negative impacts of hydropower. Hydro is NOT green power because it is not sustainable. So rather than spend more on mitigation of existing projects, I would much rather see more resources for wind and solar power projects.
Kids and us enjoyed seeing such a great creation, and hydro-electricity we need more.
Let’s face it, without Boundary Dam we could not get in the Canyon and that is the most scenic thing in the study area.
Nature's beauty and man made wonder, both mouth dropping.
No explanation needed.
Prefer nature, but this dam in part creates the area.
Power lines and structures are not natural.
Power lines through natural areas and roads to access power lines.
Stopped at picnic area to use facilities
Taking pictures, need to avoid power lines.
The Box Canyon Dam and control gates create the reservoir; so who could complain? The rusted steel transmission poles and associated right-of-way clearing are not aesthetically "pleasing" but necessary and not "objectionable" in my opinion.
Vista House has great views of the dam.
The dam itself is most unusual and pretty spectacular. The scenery is average for this northwest area.
The scenery is beautiful. I don't really notice power lines, only when I specifically looked for lines. The dam is amazing, beautiful in its own way.
The view in Z canyon and from the Boundary Visitors Gallery are beautiful
There is potential for them to seem offensive in the natural setting, however, I think. Overall, facilities have been dealt with appropriately as to not inhibit the experience of the natural scenery too much.
They add something to see, that’s interesting.
They are there for a reason. I don't pay attention to them.
They seem to fit fine at these locations.
Understandably, a lot of people rely on the power produced, as well as the local economy needs for recreation as a whole. Conflicts will be at the forefront of these issues. All attempts to maintain some natural and holistic appeals for all concerned and keeping the urban from taking over such beautiful visual and fantastic values from being over developed and more natural resources for future generations to enjoy!
Very unique/ interesting project.

Table A.3e-18, continued…

Vista House and the dam itself are impressive, although a necessary evil as far as scenery goes. Too bad views of the mine are visible from sections of Z Canyon. It makes one wonder how polluted the water falling into the river near there really is. Yin and Yang without the dam, a recreation area accessible to so many would not be possible, so thank you.
We enjoy visiting dams and learning of their history.
We knew that the facilities were present before this visit.
We were here to fish and had seen the support facilities before, they are needed so who's to complain.
We were visiting to see the nature. However to see a dam at work is quite impressive.
Without the dam there would be no reservoir. Without the dam the river would not be navigable for our boating and fishing enjoyment. Without Seattle City Light we would not have this wonderful, free campground at Boundary.

Question 39: Trip expenses. Respondents were asked to estimate their total expenses in Pend Oreille County for this visit to the area. The verbatim entries for the "Other expense" responses to this part of Question 39 are listed in Table A.3e-19.

Table A.3e-19. Visitors' entries for other expenses incurred on their trip to the Boundary Reservoir Area.

Alcohol
Cameras, clothing, bug spray, etc.
Camping supplies
Day fees
Day park
Donation to boxes in area
Donations
Fuel
Fireworks
Food
Expenses for four people
Gas, food, drinks, for 10 days was $1000
Hardware
I work construction so I've spent a lot more than usual. I've been living at Metaline RV Park for some time.
Just going home from work and stopped for a little while.
Licenses
Licensing tabs
Miscellaneous expenses
Movie at Metaline Falls
Only here for a few hours
P.O.V. Railroad
Swap meet
We camp 2 - 4 times per year in this area. We have spent more than this typically
Wood cutting permit
Worked here 7 months and played.

The following are open-ended comments that visitors provided on the last page of the questionnaire. With rare exceptions, they are unedited.

Table A.3e-20. Additional comments.

Having an awesome time. Great idea for a swimming hole. Looking forward to many more visits.
Being a local resident, I and other local residents have a big objection to having to pay at Sullivan Lake to park and enjoy swimming or boating activities while there. There is also a gripe of camping fees and the closing of gates in and out at night. Also the day use fees do not include the barbeque pits anymore so what's the point? We all realize that it takes upkeep, we a lot of residents, don't feel we should pay for day use of a place we grew up at.
"Great Job" I think the only thing I see is more access for the disabled, may God Bless and Keep you!
A balance between nature and man, but the amount of droppings all over from wildlife gave me cause for concern!
A few more rest stop areas on Highway 31 would be appreciated
A few more RV sites would be good. Thanks for a wonderful Labor Day weekend! Appreciate the firewood and security checks.
A leash requirement for dogs would be nice and the bathrooms need more upkeep.
A very nice area will spend more time here and we'll bring the boat next time. Thanks for providing access to a very well kept area.
A wonderful kayak experience. We will be back. Would be great if there were a few camp areas on the reservoir.
Add a more efficient boat launch and dock system in the Metaline Park. Other than that our limited lodging and restaurants could not accommodate a major increase in tourist activities that more campgrounds and RV parks could bring.
After a big holiday make sure campsites are cleaned up. There are people who abuse nature and it's very upsetting to those of us who see the after effects. I'm referring to a boat-in campsite fast up from the dock. There were trash bags full of beer cans hanging from at least a dozen trees.
Although I didn't show any interest in camping/recreation, it's because I'm an international student here, and as such I simply drove through the area. If I lived here, I'm sure I'd be more interested in recreational activities that I checked as being interested in question 20. It's an extremely beautiful area and whatever you do to make it better, don't stop. P.S. I wish there was a bridge closer connecting the east and west side of the dam (for cars).
Although I have not seen them on the last few trips, I really enjoy the heritage marker overlooking the bald eagles nest, just south of the Sweet Creek Rest Area. This was my first stay at the Crescent Lake Campground. The sites were very well maintained and I look forward to staying there again.
As you consider improvements and access to the region, look to quiet and eco-reverent visitation to retain the character and balance. This region is so incredible "because" it's an escape from a more hectic lifestyle. An eco-resort would be a good fit but "not" standard cut and run tourism. Birding, photography, biking, hiking canoeing and kayaking, quiet endeavors
Beautiful campground, we plan to do our next annual family camp-out here next Aug. (approx 12 people)
Beautiful scenery, green, with the fresh water sparkling blue everywhere. You are so lucky to live in such an area. Hope you can keep it unspoiled for the future generations to enjoy. Thank you.
Because of security, I did not realize that the picnic area, Tailrace was still open. I think better signage would let visitors know that area is still open.
Boundary Reservoir is amazingly beautiful and I enjoy it very much!!! The only additional comments about how we can improve the management of the Boundary Reservoir Area, is to just do your best and keep it beautiful!!!
Box Canyon was very kid friendly very enjoyable.
Campground is in excellent condition, security very polite and helpful; employees of Boundary Dam are very polite and helpful too. We really enjoy our stays here and will definitely return. Thank you.
Camping costs seem rather high, although understand it takes money to maintain the upkeep and pay employees for such duties to keep areas clean and presentable. Thank you for your concern of the sights and people who use them.
Church group ranged from 2yrs to 70yrs all at Blueslide

Table A.3e-20, continued…

Dam tours 7 days a week from early spring through late Fall.
We had a church camp out overnight, ages 10months to 75 years. About 50 people, several people fished, I was the only one that caught anything because I walked down to the river to fish. Several people played horseshoes. All the kids swam. We had an inspirational speaker Friday night. Breakfast and pot luck dinner on Saturday-clean up and ready to leave about 3:30-4:00. Thank you for making this possible.
Enjoyed the good roads with pullouts, guardrails etc.
Fantastic all the way around. Thank you.
Fish ladder needed here and at other dams
Flushing toilets, clean bathrooms and "SHOWERS"!! Noise curfew.
For the future, consider making a short trail from the launch area at Boundary Dam Reservoir to a view site of Peewee Falls.
Free camping and swimming is wonderful. To see so many more people use it. It would be nice to see more free sights like this. It would be a great service to humanity forever.
Good questions and good survey. Thanks for the effort. By far the best improvement anyone could make to this area is the complete and careful deconstruction and removal of the dams. Since the silting problem is as of yet unresolved, it will likely lead to the failure of all dams eventually, and this is what worries me the most. (Silting : Hydropower, Spent fuel: nuclear power) I can only naively dream that the same care that went into constructing the dams will go into their deconstruction, but given the historical absence of corporate responsibility for the environment in corporate America, I have no hope that this will be the case. So at this point, what would make the area better for me would be the acknowledgement by Seattle City Light that dams have limited life spans and that the company has a responsible plan for eventually returning the area to it's natural state once that lifespan has been completed. Dams or no dams, people will still recreate in this area, but hopefully it won't be with power boats, but with healthier, more sustainable means.
Great area! Loved our stay here!
Great place - Good job. Thanks for the no fee.
Great place thank you!!
Great place, keep it going
Had the opportunity to drive across the dam towards the Vista House. Employees were very personable and helpful. Great, thanks! I would recommend to others.
Have maps like the ones that were with this survey available at the different sites. I will keep this map to check out the area- Thank you for caring what we like..
Haven't been here long. Seems isolated, but great scenery.
Thousands use the Metaline Park as access to the Boundary Reservoir. (Events, weddings, reunions and celebrations). Funds spent on improving the park would benefit all. Due to extreme fluctuations in water levels in the reservoir the impacts affects all involved in recreation. I would encourage better access to the river. The Boundary Dam access is very well built and maintained. However, the Metaline access is at times unusable. The ramp is affected due to severe water levels. There are not adequate pylons or docks for boat launching. (Look at Cusick; they have a beautiful area for launch!) The river level fluctuations severely affect fish spawn; therefore game fish should be planted and encouraged more often for sport fishing. Please! Realize your potential to improve your impact in favorable manner.
I'd like to see more river access areas
I've addressed several things but to reiterate 1. Water grass 2. Better parking designation as there were more camping signs then tent and tents had more space than RVs and trailers etc. 3. Buoyed off swimming area. Kids wouldn't move out of way to incoming boats.
I've lived most of my life in Metaline. It's beautiful, quiet etc, a great place to live, this survey is for visitors!
I am retired and the wife and I moved to Metaline in June 1997. We both retired from Pacific Bell in Chico CA. My wife was born in Metaline, we like it here and have spent all of our vacations here with our family. When we retired we moved up here and remodeled the old family home. Now our children, grand children and great grandchildren like to spend their vacations in Metaline.

Table A.3e-20, continued…

I feel you folks are doing a great job! Keep up the great work!
I had a great time thank you.
I live here and would really appreciate any improvements.
I love the area, my family and I moved here 1.5 years ago from Libby MT. Being a resident made answering some of the questions a bit difficult. Maybe a separate survey for people that live locally with questions tailored to their experiences might help with your study.
I love the park, I would like to see more fishing areas that are marked. Overnight would be good!
I love the wood supply! It's beautiful. Visitors' area usually very nice. I also appreciate the free campsites.
I love this place. Don't change anything, except maybe cell phone service, just kidding!
I noticed some serious erosion taking place near Peewee falls. Maybe charging fees would keep out undesirable types and no wake zones to prevent erosion. Would also like to see campsites developed both at the dam and along the river. Reservations would be nice since I live 2 1/2 hours away and would not like to find the campground full.
I really appreciated the quiet low-key feel of the campground area (Forebay) and would look forward to an overnight camping trip there. We all agreed that we would love to have even more larger trout stocked! The bathrooms at the campground were well taken care of and clean- Thank You
I really love everything about this area. I will continue to come back year after year. Thank-you!
I very much encourage someone who cares and has the pull to get things done to visit the Kettle Falls campground on Lake Roosevelt and the campground at Boyer Park on the Snake River just below Lower Granite Dam and see how to build ramps and docks that work in rising and falling water level reservoirs and Seattle City Light makes plenty to do it in Metaline Park. Do they really care what the growing numbers of people who can use and enjoy for years and years to come, or do they just want their permits renewed?
I was not here very long, so I will be back to take advantage of all the opportunities near Boundary Dam. I had no idea there was so much to do in this area.
I work for a water utility and was wondering the number of services Seattle City Light has and its service area. Thanks.
I would encourage the Boundary Dam/Seattle City Light to maintain/provide the boat access and ramp system at Metaline Waterfront Park. Flush toilets near the launch and better trash cans would be beneficial. Thank you.
I would like to see Crescent Lake opened back up with limited campsites.
I would like to see more campsites at the Forebay Campground. I would also like to see the reservoir level not fluctuate during the times of the year when fish are spawning and during weekends. I would also like to see a boat moorage dock at the Forebay Campground. A shower at the Forebay Campground would also be nice but not a must.
I would like to see the survey results. I am mostly ignorant of available activities here i.e. back-roads and other than Forebay.
Identification signs along the river would be nice. Signs identifying creeks, Z- Canyon, Historic mines, etc. would make river travel a lot more enjoyable.
If you have focus groups please let me know.
If your have signs up that say use dock at your own risk, it should be adequate liability protection for Seattle City Light. You could also prohibit boats from being left tied up to the ramp side of the dock for ease of launching. Your security guards are truly embarrassed when they come to enforce the "no boats on dock" rule. They know it makes no sense.
In past years some trailers are parked in RV spots with no apparent campers present.
It is a family and friend tradition to camp at "Crescent Lake" every summer and there was not a time when we have encountered any sort of problem. We love it there and there is nothing that we would change about it. Thank you
It is a great place to do family fishing and camping, also beautiful scenery and getting out of the city. ThankYou
It was a bit difficult to get food accurate information about the area, including a good map.(i.e. –campgrounds, river access areas, river fluctuation times and levels, the map included with this survey was the best one.)

Table A.3e-20, continued…

It would be nice if someone was responsible (a job) and checked on the people who were at Campbell park. Sometimes, people don't follow the guide-lines, which makes it uncomfortable for other guests.
It would be nice if you can clear the weeds along the north side of Crescent Lake, moss too! Thank You
It would be nice to have one more bathroom on the facility, as it can be quite crowded.
It would be nice to see a few more RV sites established. Along with a sprinkler system, to provide a healthy grass look to the area instead of a weed patch, a RV dump station would be a great addition to the camp ground. Thank You to Seattle City Light and Employees for making every stay relaxing and memorable. I've met many people from different areas, beautiful sceneries and clean facilities and grounds. The canyon is one of the most beautiful places I've ever visited. It would be virtually inaccessible without the reservoir. Thanks again.
It would be nice to see someone monitor the campground. We would hate to see one of our favorite spots for a summer getaway.
It would be really nice to have hiking trails within walking distance from Boundary Dam camping
It’s kind of sad to see so many people coming from other counties and bringing more and more people and making it full for those of us that have been coming for years to find a spot. There is always someone who brings a dog and no shovel. Pack it in, pack it out. Sad to see people burning garbage in the fire pits (cans etc.)
June 17, 2007 Our visit to Boundary Dam was wonderful, our only regret was that we did not have more time to enjoy the lovely surroundings and free camping! The complimentary firewood is an appreciated touch of hospitality. We especially enjoyed the informative tour and educational displays. We shall definitely recommend this trip to our family and friends! Thank You!
Just keep up the great work at this location; it has always been a jewel!
Just maintain it the way it is, keep it clean and please don't "improve" the charm and beauty of it.
Keep enhancing the fishing opportunities. Keeping it a no charge campground is fantastic. Keep the motor homes from parking on the beach area. Keep it primitive. Keep it the water clean, avoid pollution, something comes in the river from the mine. This is an excellent facility.
Keep the area just like you are doing.
Keep the entire area as pristine and primitive as possible. That is the attraction! Don't advertise. Word of mouth brings in enough people as it is. Thank You for allowing us to comment!
Keep this place as wild as possible. It is one of the last places we can truly preserve!!!
Leave with all in the area
Love visiting the area! Majestic views and viewing. Have been looking for property here.
More boat docks, nothing else.
More drinking water locations. More road signs to campgrounds.
Mostly just driving through on the way to BC (Ainsworth Hot Springs). We do love the drive though.
Re-evaluate the policy of forcing boats to anchor away from the dock (in swimming area even) This is potentially very unsafe.
My family, friends, and relatives have camped at Boundary Dam Campground several times and have thoroughly enjoyed the facilities except once in the fall of 2006 (Labor Day) There was one large party there that was destroying it for everyone camped. They parked their vehicles everywhere on the grass and were loud (music) and were partying every night. There response was that was what they were here to do and anyone who didn't like it could go somewhere out. Several campers did leave because of them. It was very difficult for the security guards to control until the Border Patrol arrived. These people made it clear they came often and really do ruin it for other families and didn't care.
Need better signs on Highway 31 to Vista House and Vista Point.
Nice launch we would never have gone without that, nice dock. Put information on your web-site. Photos, maps directions, history, etc.
Nice, tranquil area, good weather and warm hospitality
No it's great!!
Not necessary, everything’s just gorgeous.

Table A.3e-20, continued…

Oh, I would very much like to see ideal biking areas, close to or from camp! Even if it went in a circle, not very far.
One of the main reasons we moved to this area is the Boundary Reservoir Area
Outstanding facilities i.e. firewood, dock, beach, washrooms etc.
Overall the scenic beauty of the area is part and parcel of what the real draw to this area is plentiful wildlife and habitat. Without the wildlife, the scenic beauty would seem much less significant; as amazing as it is. Boundary Reservoir is well managed and adds to the community in a meaningful way. Thank you for your efforts.
People were very friendly and very conscientious about visitors
Please contact me about what I can do to help get the boat ramp and dock replaced at Metaline Riverfront Park. I have talked to a lot of local people that use this ramp and would like to see it replaced. I would like to see a more regular fish planting program. Boat trailer wash not working at Boundary launch. Better marking of hazards in water ways.
Please keep up the good area. Don't change a thing. We enjoy boating, swimming and kayaking. Thank you.
Please put a sign that requests people recycle for the benefit of ecology and put larger signs near recycling bins and also at garbage dumps to remind people to recycle, I saw a large garbage can filled with recyclable glass bottles. Please help educate the people to recycle more. Thank you for free firewood.
Please put up no swimming signs at the dock there are lots of kids and parents watching in harms way. Install swimming area.
Please stabilize this river so it is able to maintain a fishery. Maintain quality launches and accesses. North Pend Oreille County has very little to offer other than North Pend Oreille County. It is beautiful and needs to stay that way so it can allow the local business's to survive and grow. I moved up here 5 yrs. ago when I retired and have used this area for going on 40 years. Since I have been up here I have seen a decline in the draw to the area due to in my personal opinion of the management of the river.
Regarding the cash prize. I would like it to stay in the city of Ione, Metaline etc.
RV dump station? Wonderful time, great tour of the dam.
Seattle bathrooms are ok, but Box Canyon needs to update.
Seattle City Light has been a great partner to the area helping with many different projects.
Security staff could be more friendly and knowledgeable. Would like easier access to and below Boundary Dam, for visiting the dam and fishing. An RV dump without any hassle. We have to go to Metaline now.
Since I live here, this survey does not really fit. Give me one for locals.
Sorry this survey is so late. Our jeep Cherokee broke down on our way home to Colville after leaving Sweet Creek. Your survey stayed in our jeep over a week while it was being repaired.
Speed bumps along the road in the area between the turnoff into Box and the sub- station. Some people go really fast! A water facet closer to the north end of the campground would be nice. We like the way you are fixing up the pond, it's much easier to get into and cleaner.
Stock more fish in all the lakes.
Surveys are important; this survey is 15 pages long and pretty expensive could have been done on a couple of pages.
Sweet Creek Falls rest stop is a very beautiful recreation spot. I love the short walk on the trail to the waterfall. I was very pleased when the rest stop opened and it has added considerable value to the area. I have visited this area for over 6 years. I wanted to share my experience with friends who were also visiting. They also loved the falls. But, we tried to use the bathroom facility after our hike and found it to be miserably dirty, smelly and with no supplies. Unfortunately my friends will remember the bathroom more than the beauty of the falls.
Thank you, we are enjoying our visit/ vacation very much. It's nice to know there are people curious about the consumers' reaction/ needs here.
Thank You.
Thank you for having a great place and not charging a dime for it, that is rare today.
Thank you so much for having such a nice place for families to go to. It's so clean and nice. And I feel very safe when we're here. It's also a nice place to meet other people. Thanks again.

Table A.3e-20, continued…

Thanks for the campground and facility. Seattle City Light does a great job providing and maintaining the Forebay area.
Thanks for the wood and a great place to camp.
Thanks to all of the employee's at Box Canyon Dam. It is clean, comfortable and a great place for the kids.
The Box Canyon camping facilities are just great plus it is free! You can't beat that.
The entire weekend was a blast! The scenery was out of the world! The campground was very well kept! The bathrooms clean and fully stocked (even toilet seat covers!)- It was a great experience. I love the small campgrounds with private areas, and it's all free which is the best! Don't change anything, the Boundary Dam campground is the best! It's my favorite in WA so far! (I've only lived here for 4 years, originally from AZ.) Thank you!!! I will be visiting again soon!!
The facilities were very well maintained. The tour guide for the dam was friendly and informative. We have friends visiting us later in the summer and we'll probably bring them here on a day outing.
The milfoil problem needs to be solved.
The only disappointment we had was not the fault of Seattle City Light but, we missed having a camp fire. Thanks for the swimming buoy's for the children and the light in the bathroom at Campbell Park
The only thing I would like so see improved is a shower area with hot water. I know that's a lot to ask for, but it sure would be sweet.
The people of the Box Canyon Dam were very friendly and very knowledgeable. The children's fishing pond is great fun for the kids. Just wish the weather was nicer!
This facility is very well run and maintained we have enjoyed it for many years and hope to in the future, the effort is greatly appreciated.
This has been the most beautiful place I have ever seen!
This is a great place. Could charge money if you need to help maintain bathrooms and water lawn, and make more RV sites.
This is a very beautiful and exciting area. There is so much to see and do I will be back many times with my family and friends. I hope we are not bothered by a passport. We think of Canada and United States as one, our country to enjoy and protect.
This is our favorite place to RV, boat and fish. It is at least a 2 hour drive one way to get here. We try to leave early on Friday to get a spot. Wish there were more RV sites but don't want to crowd it up either. Some RV sites need to be a bit more level. Wish there were handicap sites close to boat ramp since we always have my 90 year old mom with us. It was quite a hike for her to get to the boat. She still walks but with difficulty. We will probably bring a wheel chair next time to transport her back and forth. We love this area and love to bring visitors to experience it also. Would enjoy hookups and a dump station but we would probably never be able to get a spot then.
This survey is not applicable to us because we live in the area.
This was hard to fill out, I live here and love the area
This was my first visit to the Boundary Reservoir area. As we were heading out to the boat dock, I did not realize this happened until we returned (quite a few hours later) and to my surprise my wallet with nothing missing had been placed on the front seat of our jeep. I believe that one of your employees was responsible for this good deed. I wish I knew who to thank. This could have been a disaster being that we are here vacationing from California. Thank you, very much! This comment was from our guest that was up to see us and we took to Boundary.
To my dismay, more and more of the general public are "finding" this area. We enjoy it the way it is now. Quiet and peaceful! Your Dam people are good house keepers.
Too much alcohol, too many people could lead to horrible things but none here.
Totally enjoyed the camping facilities at the Dam. We do wish we could tour the Dam this time; however, the weekend here was fun and the weather beautiful. Thank you for a fun, free weekend!
Tour guide at boundary dam was a very pleasant and informative guide. He enhanced the visit to the dam and lake. What hunting is available?
Tour of the whole dam as the tour was previous to 9/11.
Trash pick up and toilet cleaning!

Table A.3e-20, continued…

Trim trees at Sweet Creek to enhance view of falls. I was disappointed that I couldn't get a better view and pictures of the falls because of trees beside the trail.
Unbelievably beautiful, please leave it pristine and not over advertise. It will ruin it eventually for the few that really appreciate it for what it is. Thanks, I was born and raised here since 1955.
Very clean and met nice people at Dam and campsites. Beautiful area.
Very enjoyable. Enjoyed the quietness of the lake. Thank you.
Very nice area. Very clean and neat.
Very nice recreational area. For the size of the hydro-project, not very many recreational opportunities. For this remote area, would like to see destination attraction, with tours from Seattle. Need upscale music, social opportunities with good food etc.
Very nice tour of dam
We appreciate that you don't act like [ ].
We are local summer residents who use the Pend Oreille River for recreational purposes. The water level is too low by early August to make this practical due to various weeds and the level, this problem is particularly true in the Usk, Cusick, and Newport area of the river.
We couldn't tell if there was a launch fee. More signage such as " provided free of charge by Seattle City Light-Enjoy" would have been nice.
We enjoy this campground/recreation area just the way it is. We especially enjoy the light crowds.
We enjoyed our visit very much. Tour guide was a great help to us when we planned our trip. Thank You. God Bless.
We had no idea we now live in such a beautiful area. We've lived in Newport for just a year. Thanks for your facilities.
We have property south of Ione on the river. We are in the area weekly and enjoy the recreational opportunities in the area frequently and year round.
We like to visit places where motorized vehicles are restricted, especially ATVs, jet skis and snowmobiles. Keep forests and wilderness wild. Thanks.
We love it here, my husband was born and raised here until he was 15 years old.
We love Sullivan Lake and the surrounding area. We have been visiting every other summer for the past 8 years.
We love this area just the way it is. We grew up here and don't want to see it commercialized or overcrowded. We come here for the beautiful scenery and wildlife and want to see our children enjoy it just the same as we do!
We love you guys! Thanks for the free firewood and the campground security!
We missed having a campfire but understand it is out of anyone's control due to the drought conditions of the area.
We moved to this area 10 years ago. We needed to spend our vacations (annual) in and around northern Washington and Idaho. Now we spend all year long enjoying what was only two to three weeks a year before and we still have so much to see. We still like to camp and enjoy all the camping areas we can access. Usually we do day trips, with occasional two to three day trips, due to our age and some difficulty getting around we appreciate the trails, camping areas, picnic areas and toilet facilities.
We really like the wild country.
We spent two nights at Campbell Park, at Box Canyon Dam in late September. We plan to explore and camp in the Boundary Reservoir area next spring/summer. We have been to Sullivan Lake several times. This area is great! Very scenic and peaceful with many recreational opportunities that we enjoy.
We took our 9 yr old granddaughter for her vacation. It was wonderful.
We totally enjoyed our time here. We plan on bringing our kids and grand kids next time. Thank you for a great experience!
We very much appreciate being allowed to visit Boundary Dam! We over-nighted once in a camper and were impressed with the care and concern by the park attendants. This is a place we are happy to take our visitors to enjoy Eastern Washington beauty. Thank you for providing us with this great place.
We very much enjoy our visits here. It's a "laid back" feel with few rules and friendly employees.

Table A.3e-20, continued…

We want free electricity! Thanks.
We were checking out the facilities on this trip. We have friends fishing while they are here. We will be using the campground while we are there. We plan on fishing and boating a lot at this site. So would love to see a better boat launch area. We visited Mill Pond and really liked the way you have set up the campsites. We didn't see any portable toilets, but may have just missed them.
We were extremely impressed by the courtesy of all the employees of Seattle City Light that we encountered from the security officers to the camp attendants. They were informative as it was our first time visiting this area, we will certainly come again. The tour guide at the dam was a pleasure to be with. In general our stay here was one that we will remember and recommend to our friends.
We were so impressed with everyone we encountered. The security guards and tour guide were very friendly and made us feel at home! Free wood too! We were astounded. Thank you. What a wonderful time! We fully intend to return!
We would be willing pay $10 per night fee for camping and for supplies. Nice to have a camp host to enforce camp ground rules, buy licenses, ask questions. Quiet time posted from 10pm to 6 am. No alcohol allowed. Really enjoyed Box Canyon Dam Visitors Center and tour guide did a nice job. That was a great time!
What a beautiful place! I like that it is not overpopulated. I would like it to remain that way! What I am looking for are: available campsites with out reservations months before (I think already in place) Dog access (responsibly) Please do not over- advertise this place! That is what creates over-crowding! Thank You.
What a really truly wonderful place this is.
When visiting the reservoir behind Boundary Dam below Gardner Caves, there was a very large party, drinking, boating, jet skiing and motorcycling in campground being very loud and disruptive. Maybe no alcohol and no motorized vehicles allowed in campground, accept boats of course.
While kayaking the shore of the reservoir looking at the shoreline I noticed recent damage caused by boat wakes. Several of the slides have occurred since my last visit. It was a weekend when draw down occurs quite slowly compared to weekdays. My recommendation is to draw the reservoir down a couple of feet prior to 9:00 when most of the boats get started. That way the wakes wouldn't have their erosive power on the dry soil.
Wonderful to know this wilderness gem is so close to home and to know it will be here for generations to come. Boundary Campground was clean, quiet and easy access for a variety of adventures. Thank you for the firewood, much appreciated. I will recommend this area to all my camping friends and relatives.
You guys kick ass! I love this area!
You may want to assign or keep a closer eye on replenishing the campground adequately in the future. Please feel free to contact me for additional input if needed!!
You people do a great job providing a beautiful place to camp or just play for a day. Don't tell anybody about it! My wife only had one "issue" and that she said the water was cold when she had to go overboard to "check the prop" Life is so not fair!
You pull into a yard-sale and always look at the free box. Boundary Dam (Free) what a gold-mine!
Your crew who did this survey was very nice and great attitudes, friendly and all about the survey here at recreation site. Thank you for your time.
Your keep me coming back year after year I brought 12 kids, this place has made many memories for many family's and I cannot tell you how much this place means to us, I just found out we are going to have 4 more to our party, so more fun for kids, thanks again for all you do. It means a lot to our growing group
Your map leaves off the BLM campsite at Everett Island, behind island, and your other one by Slate Creek is off, it's further south, and that road is not accessible that close.

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Appendix 4: Area Resident Survey Documentation

Appendix 4a. Blank Resident Questionnaire and Survey Map

Appendix 4b. Verbatim Responses (currently coded as “other”)

Appendix 4a. Blank Resident Questionnaire and Survey Map

Seattle City Light

SURVEY

Recreation Survey of Residents Living Near the

Boundary Reservoir Area

1234

Your Recreation Use at Boundary

1. Have you visited the Boundary Reservoir Area for the purpose of recreation? (This area includes the Pend Oreille River between Boundary and Box Canyon Dams and some of the lands next to the river. Please see map for extent of area.) *(Circle one.)*

1 Yes → Skip to Question 3

2 No, I have not visited this area for recreation

2. If you answered "No" to Question 1 (you have not visited the Boundary Reservoir Area for recreation), please indicate why you have not done so. *(Circle all that apply.)*

1 Not enough time for recreation activities

2 Not interested in the types of activities available in the area

3 Lack of adequate facilities/opportunities for the activities I'm interested in

4 Prefer other areas with similar opportunities

5 Poor health or physical condition

6 Other reason *(Please specify.)*

_____

Please skip to Question 41 if you do not use the Boundary Reservoir Area for recreation.

3. When you visit the Boundary Reservoir Area for recreation, what is your *main reason* for choosing this area? *(Circle only one.)*

1 Because I live here and it is so close by

2 Because this area is a good place to do the recreation activities that I enjoy

3 I come to the area to spend time with my family/other companions

4 I come to the area for the scenery/the views

5 I come to the area because it is a good place to relax outdoors

6 Other reason *(Please specify.)*

_____

4. When you visit the Boundary Reservoir Area for recreation, how many people, including yourself, are usually in your group? (Your group is all the people you arrive with and/or generally meet there.) *(Write number of people.)*

#____ People #____Males #____Females

5. Do you usually stay overnight somewhere other than your home when you visit the Boundary Reservoir Area for recreation? *(Circle one.)*

1 No, I usually go for the day and return home at night → Skip to Question 7

2 Yes, I usually stay overnight a total of ____ nights *(Write number of nights.)*

6. Where do you usually stay overnight? *(Circle all that apply.)*

1 Campground at Boundary Dam (Forebay Area) in a tent ____ or in an RV/camper ____ *(Check one.)*

2 Campground at Box Canyon Dam (Campbell Park) in a tent ___ or in an RV/camper ___ *(Check one.)*

3 U.S. Forest Service campground *(Please name.)*

_____

4 U.S. Bureau of Land Management Boundary Recreation Site *(Please name.)*

_____

5 Privately-operated campground *(Please name.)*

_____

6 Hotel, motel, resort or bed & breakfast *(Please name the town.)*

_____

7 Other *(Please describe.)*

_____

Recreation Activities

7. Please indicate which of the following activities you participate in while visiting the Boundary Reservoir Area. *(Circle all that apply.)*

1 Fishing—all types
2 Hunting—all types
3 Picnicking
4 Motor boating for pleasure
5 Water skiing
6 Canoeing/kayaking
7 Personal watercraft (jet ski)
8 Viewing scenery/scenic driving
9 Viewing/visiting the dam(s)
10 Cross-country skiing, snowshoeing
11 Day hiking/nature trails
12 Walking/jogging
13 Bicycling, including mountain bikes
14 Photography
15 Nature study (bird/wildlife watching, flowers/rocks)
16 Collecting edible fruits, berries, mushrooms
17 Car/tent/RV camping (developed facilities, services, people present)
18 Car/tent/RV camping on back roads (secluded, no services, fewer amenities)
19 Boat-in camping along river shoreline
20 Swimming
21 Spending time alone
22 Off-roading (dirt bike, ATV, 4X4)
23 Snowmobile travel
24 Attend a special event/festival
25 Resting/relaxing
26 Other

_____

8. Which *one* of the activities that you circled in the list above usually is *your main reason* for choosing the Boundary Reservoir Area as a place for recreation? *(Please write the number from the above list.)*

I usually do activity # _____ when I visit the area.

9. Overall, how would you *rate the quality of the recreation* opportunities at the Boundary Reservoir Area? *(Circle one number on the scale.)*

1	2	3	4	5	6	7	8	9
Very Poor				Average				Excellent

Fishing

IMPORTANT PLEASE READ
The Fishing Section is only for residents who usually go fishing in the Boundary Reservoir Area. If you did not circle fishing in Question 7, please skip to Question 17 (page 7).

10. How long have you been fishing in the Boundary Reservoir Area? *(Please write the number of years.)*

____ Years

11. About how many days per year do you usually fish in the Boundary Reservoir Area? *(Write the number of days for each season.)*

Spring (Mar – May) _____ # Days
Summer (Jun – Aug) _____ # Days
Fall (Sep – Nov) _____ # Days
Winter (Dec – Feb) _____ # Days

12. How do you *usually* go fishing in the Boundary Reservoir Area?

1 Boat/watercraft *(Please specify type.)*

_____

2 Shore/bank
3 Both
4 Other means *(Specify.)*

_____
_____
_____

13. In what area(s) do you usually fish when you visit the Boundary Reservoir Area? *(See map to identify areas. Circle all that apply.)*

1 Forebay area of Boundary Reservoir (Boundary Dam to north end of canyon)
2 Canyon area of Boundary Reservoir
3 Boundary Reservoir between Metaline and Metaline Falls
4 Boundary Reservoir between Metaline and Box Canyon
5 Mouth of creek(s) entering Boundary Reservoir *(Please specify.)*

_____

6 Creek(s) entering Boundary Reservoir (above creek mouth) *(Please specify.)*

_____

7 Other creek/stream in the area *(Please name.)*

_____

8 Box Canyon Reservoir
9 Sullivan Lake
10 Mill Pond
11 Other lake/pond *(Please name.)*

_____

14. While fishing in the Boundary Reservoir Area, what species of fish do you usually try to catch? *(Circle all that apply.)*

1 Triploid rainbow trout
2 Other trout
3 Smallmouth bass
4 Largemouth bass
5 Other species *(Please identify)*

_____
_____
_____
_____

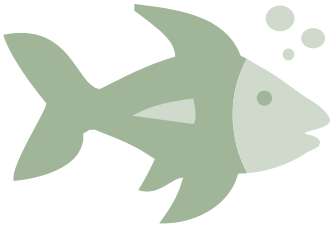
Fishing

15. Please tell us about the fish you and your party typically catch while on a fishing trip at the Boundary Reservoir Area. *(Please write your responses in the blanks.)*

Type of Fish	Number Caught	Size Range (inches)
Triploid rainbow trout	_____	_____
Other trout	_____	_____
Smallmouth bass	_____	_____
Largemouth bass	_____	_____
Other: _____	_____	_____
Other: _____	_____	_____

16. Overall, how would you *rate your satisfaction with the fishing* opportunities in the Boundary Reservoir Area? *(Circle one number on the scale.)*

1	2	3	4	5	6	7	8	9
Very Poor				Average				Excellent



Boating and Reservoir Use

17. Do you often operate or ride in a boat or other watercraft for pleasure/travel on Boundary Reservoir when you visit the area for recreation (this includes motor boats, personal watercraft, and craft that are paddled)? *(Circle one.)*

1 No → Skip to Question 23
2 Yes

18. How long have you been boating on Boundary Reservoir? *(Please write the number of years.)*

____ Years

19. About how many days per year do you usually boat on Boundary Reservoir? *(Write the number of days for each season.)*

Spring (Mar – May) _____ # Days Fall (Sep – Nov) _____ # Days
Summer (Jun – Aug) _____ # Days Winter (Dec – Feb) _____ # Days

20. Which boat launch or launches do you usually use at Boundary Reservoir (see map)? *(Circle all that apply.)*

1 Launch at Boundary Dam (Forebay Area)
2 Metaline Waterfront Park launch
3 Launch below Box Canyon Dam (Campbell Park)
4 Private boat launch *(Please specify.)*

_____

5 I launch directly from shore with no boat launch *(Specify.)*

_____

_____ → Skip to Question 22

6 I'm not sure

21. Do the boat launches that you have used at Boundary Reservoir usually meet your needs? *(Circle one.)*

1 Yes
2 No *(Describe any boat launch problems you have encountered there.)*

_____
_____
_____
_____
_____
_____

22. When you go boating on Boundary Reservoir, do you ever experience problems with water conditions (for example, rising or falling water levels, fast currents, or rapids)? *(Circle one.)*

1 No problems → Skip to Question 23
2 Minor problems
3 Major problems, but this would not keep me from returning in the future
4 Major problems that would keep me from returning in the future
5 I'm not sure

Please describe any problems with water conditions you have encountered.

_____
_____
_____
_____
_____
_____

Recreation Facilities and Services

23. Different people look for different recreation facilities and opportunities. Some of the items listed below may be found at the Boundary Reservoir Area and others may not be available. Thinking about your recreation needs, please rate how *important* it is to you to have each of these items available when you recreate. Then, rate your *satisfaction* with each item at the Boundary Reservoir Area. *(Circle one number for IMPORTANCE on the left and one number for SATISFACTION on the right. If something is not at all important to you or does not apply, you may circle NA.)*

	IMPORTANCE					SATISFACTION					
	Not at all Important				Extremely Important	Not at all Satisfied				Extremely Satisfied	Does Not Apply
Tent campsites	1	2	3	4	5	1	2	3	4	5	NA
RV campsites	1	2	3	4	5	1	2	3	4	5	NA
RV hookups/utilities	1	2	3	4	5	1	2	3	4	5	NA
Campsite fees	1	2	3	4	5	1	2	3	4	5	NA
Parking area	1	2	3	4	5	1	2	3	4	5	NA
Road access to recreation areas	1	2	3	4	5	1	2	3	4	5	NA
Access for the disabled	1	2	3	4	5	1	2	3	4	5	NA
Drinking water	1	2	3	4	5	1	2	3	4	5	NA
Flush toilets	1	2	3	4	5	1	2	3	4	5	NA
Vault/portable toilets	1	2	3	4	5	1	2	3	4	5	NA
Trash containers/collection	1	2	3	4	5	1	2	3	4	5	NA
Picnic sites	1	2	3	4	5	1	2	3	4	5	NA
Swimming/beach access	1	2	3	4	5	1	2	3	4	5	NA
Historic sites/information	1	2	3	4	5	1	2	3	4	5	NA
Scenic views/viewpoints	1	2	3	4	5	1	2	3	4	5	NA
Wildlife viewing/nature trails	1	2	3	4	5	1	2	3	4	5	NA
Interpretive/education programs	1	2	3	4	5	1	2	3	4	5	NA
Hiking trails	1	2	3	4	5	1	2	3	4	5	NA
Boat ramps	1	2	3	4	5	1	2	3	4	5	NA
Boat docks	1	2	3	4	5	1	2	3	4	5	NA
Boating safety information	1	2	3	4	5	1	2	3	4	5	NA
Navigation hazard marking	1	2	3	4	5	1	2	3	4	5	NA
River/shore access for fishing	1	2	3	4	5	1	2	3	4	5	NA
Fishing opportunities	1	2	3	4	5	1	2	3	4	5	NA
Hunting opportunities	1	2	3	4	5	1	2	3	4	5	NA
Boat-in campsites	1	2	3	4	5	1	2	3	4	5	NA
Canoe/kayak access facilities	1	2	3	4	5	1	2	3	4	5	NA
Other: _____	1	2	3	4	5	1	2	3	4	5	NA
Other: _____	1	2	3	4	5	1	2	3	4	5	NA

Recreation Facilities and Services

24. Based on your experiences, are there any improvements to the existing recreation opportunities at the Boundary Reservoir Area that you think are needed? (These could be recreation activities that you would like to do there that are not currently available, or specific recreation facilities that are not currently available or that do not adequately meet your needs. These should be activities or facilities that you would use yourself if they were present.) *(Circle one.)*

1 No, I am satisfied with the recreation activities/facilities currently available
2 I'm not sure
3 Yes, I would like other recreation activities/facilities *(Please list.)*

_____
_____
_____
_____

Recreation Sites

25. What specific sites *in the Boundary Reservoir Area* do you usually or often visit for recreation? (See map.) *(Circle all that apply.)*

1 Vista House
2 Boundary Dam Visitors' Gallery
3 Picnic area below Boundary Dam (Tailrace Area)
4 Campground at Boundary Dam (Forebay Area)
5 On the water in a boat/other watercraft
6 Crescent Lake
7 Metaline Waterfront Park
8 Campground below Box Canyon Dam (Campbell Park)
9 Sweet Creek Falls Rest Area/Trail
10 Small boat-in campsite or day use site on the reservoir/river
11 Other *(Specify.)*

_____

26. At which *one* of the places that you circled above do you usually spend the most time when you visit the Boundary Reservoir Area? *(Please write the number from the above list.)*

I spend most of my time at site # _____ when I visit the area.

27. Please indicate whether or how much you feel crowded on a typical recreation visit to the place that you listed in Question 26. *(Circle one number on the scale.)*

1	2	3	4	5	6	7	8	9
Not at all Crowded			Somewhat Crowded		Moderately Crowded			Extremely Crowded

28. Have you ever experienced any problems or conflicts with other people or their behaviors at the place you listed in Question 26 that detracted from your enjoyment of being there? *(Circle one.)*

1 No
2 Yes *(Please describe what occurred.)*

_____
_____
_____
_____
_____

Recreation Sites

29. Based on your experiences visiting the destination you listed in Question 26, do you intend to adjust your recreation plans to avoid the presence or behaviors of other visitors at this site in the future? *(Circle one.)*

1 No → Skip to Question 31
2 Yes

30. How do you intend to adjust your recreation plans? *(Circle all that apply.)*

1 Move my activity to a different site in the Boundary Reservoir Area
2 Go to a different site in the region outside the Boundary Reservoir Area
3 Visit this same site earlier or later in the year to avoid busier times of year
4 Visit this same site on weekdays instead of weekends or holidays
5 Visit this same site at a different time of day to avoid busier times of day
6 Other *(Please specify.)*

_____
_____
_____
_____
_____
_____

31. When you visit the place that you listed in Question 26, do you find the facilities there to be adequately maintained? *(Circle one.)*

1 Yes
2 No *(Describe any maintenance needs you think are not currently met.)*

_____
_____
_____
_____
_____
_____
_____
_____
_____

Your History in the Area

32. When was the last time you visited the Boundary Reservoir Area for recreation? *(Write the date.)*

Month _____ Year _____

33. How many times have you visited the Boundary Reservoir Area for recreation within the past 12 months? *(Write the number. Do not include your last visit.)*

#____ Visits in the past 12 months

If your last visit was your first time ➡ Skip to Question 35

34. In what seasons of the year do you visit the Boundary Reservoir Area for recreation? *(Circle all that apply.)*

Spring Summer Fall Winter

35. Are there any sites or locations in the Boundary Reservoir Area that are really special or meaningful to you or your family as a place for recreation? *(Circle one.)*

1 No

2 Yes *(Please list/describe your special places at Boundary Reservoir Area.)*

_____

_____

_____

_____

_____

_____

36. Which other lakes or rivers in the region do you frequently visit for recreation? *(Please name up to three.)*

Lake/river _____State/Province _____

Lake/river _____State/Province _____

Lake/river _____State/Province _____

Scenery

37. Overall, please *rate the visual quality of the scenery* at the Boundary Reservoir Area. *(Circle one number on the scale.)*

1	2	3	4	5	6	7	8	9
Very Poor				Average				Excellent

38. When you visit the Boundary Reservoir Area, do you ever notice or pay attention to the facilities or structures associated with the Boundary Hydroelectric Project? (That is, the dam itself, maintenance buildings, utility lines and towers near the dam, SCL recreation facilities, etc.) *(Circle one.)*

1 No ➡ Skip to Question 40

2 I don't know

3 Yes

39. How does seeing or noticing these facilities affect your enjoyment of the scenery at the Boundary Reservoir Area when you visit? *(Circle one.)*

1 These facilities greatly enhance my overall enjoyment of the scenery.

2 These facilities slightly enhance my overall enjoyment of the scenery.

3 These facilities have no effect on my overall enjoyment of the scenery.

4 These facilities slightly detract from my overall enjoyment of the scenery.

5 These facilities greatly detract from my overall enjoyment of the scenery.

Please explain your response above.

_____

_____

_____

_____

_____

_____

About You and Your Companions

40. When you visit the Boundary Reservoir Area, what are the ages of the other people that are typically in your group? *(Please write the number of people for each age group.)*

#____under 16
#____16-19
#____20-29
#____30-39
#____40-49
#____50-59
#____60-69
#____70 and up
_____Check here if you usually visit by yourself

41. What is your age? *(Check one.)*

____under 16
____16-19
____20-29
____30-39
____40-49
____50-59
____60-69
____70 and up

42. Are you? *(Circle one.)*

Male Female

43. How long have you lived at this address? *(Write the number.)*

____ Years # ____ Months

44. How many people, including you, live at this address? *(Write the number.)*

____ People

Thank You for Participating!

Seattle City Light would like to thank you for your time. You have helped us to learn more about the people who live in the Boundary Reservoir Area. We welcome any additional input or comments from you about how we can improve the management of the Boundary Reservoir Area. *(Please feel free to write any additional comments below.)*

Thank you for participating in this important study!

Please remember to provide your contact information so that we may enter your name in a drawing for a cash prize. (Fully completed questionnaires will be considered for a cash prize. We will detach your contact information from your answers and will not share it with a third party.)

Name_____

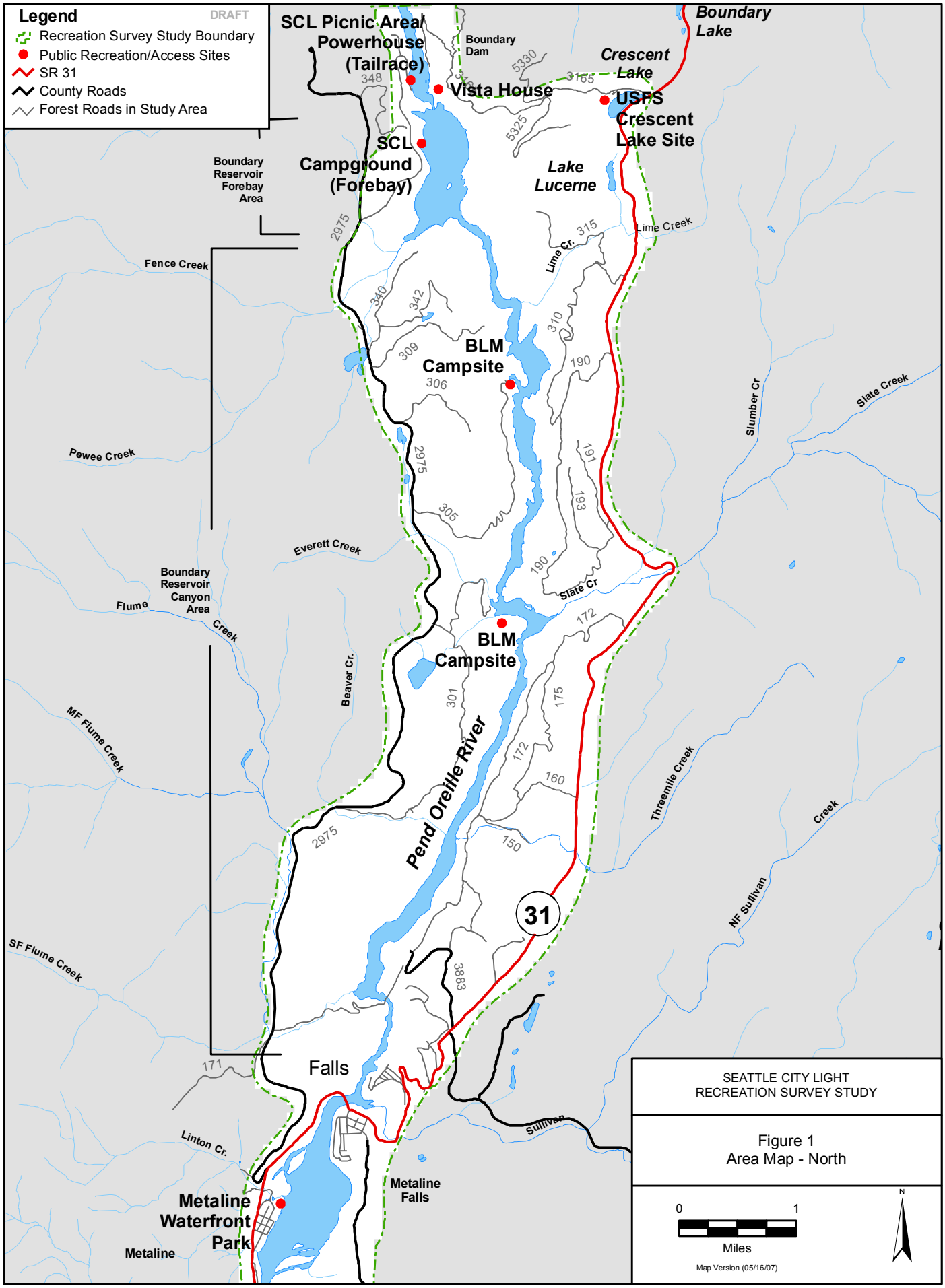
Address_____

_____

_____

Telephone # _____

The Boundary Reservoir Area and You



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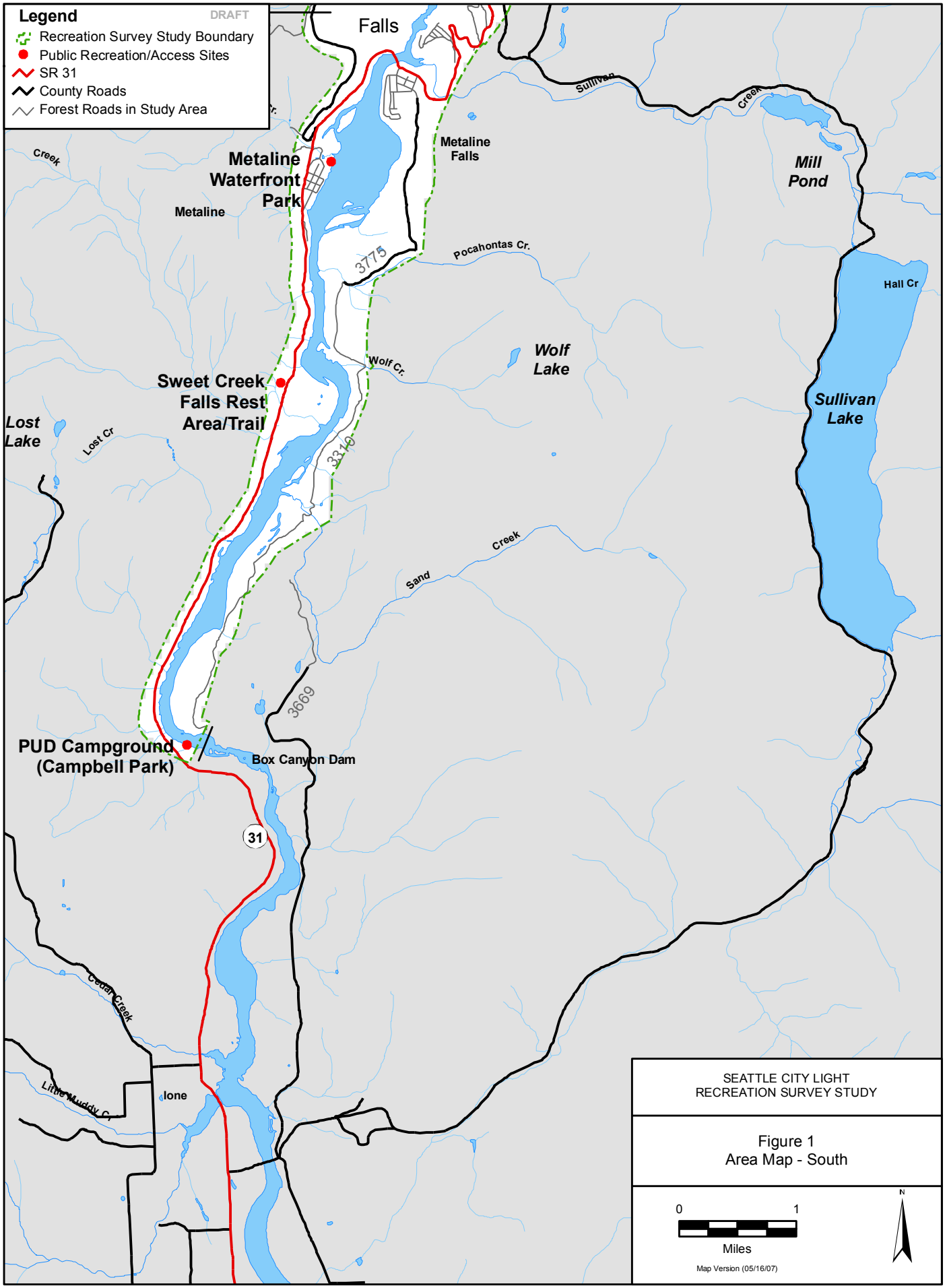

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Appendix 4b. Verbatim Responses to Resident Survey Questions

Verbatim Responses to Area Resident Survey Questions

Many questions in the area resident survey included "Other" as a possible response, and/or provided space for respondents to enter open-ended responses to a question. In most cases, the space for open-ended responses was intended to allow respondents to explain or identify those additional responses that did not fit a pre-defined category. This appendix documents the open-ended responses that were provided for the respective items on the questionnaire, as they were stated by the respondents (i.e., verbatim). Entries in these tables reflect possible misspelling in the responses and limitations on the ability to read or interpret some of the responses.

Question 2: Reasons for not visiting the Boundary Reservoir Area for recreation. Those respondents who answered "No" to Question 1, that they have not visited the Boundary Reservoir Area for recreation, were asked why they have not done so. Response 6 to this question was stated as "Other reason (Please specify)." All open-ended responses entered for this category are listed in alphabetical order in Table A.4b-1.

Table A.4b-1. Other reasons respondents gave for not visiting the Boundary Reservoir Area for recreation.

Also, when I travel I go further south in the U.S.
I'm 91 years old but still enjoy tennis
Age 70
Age and health keep us home
As it is across the line, and I also have the lower 7mile reservoir.
Border crossing too much hassle
Border restrictiveness
Cannot afford to go on any holidays
Caring for and enjoying my place is all the recreation I need!
Children are too young, but will visit
Discovered golf
Didn't know it was there
Did not know about them
Did not know it existed
Did not know what is offered in this area
Didn't know about it.
Didn't know what was available
Didn't realize there were so many good facilities in this area. The kids are grown now and we don't camp much anymore.
Do not camp anymore
Do not do camping etc.
Do not drive

Table A.4b-1, continued...

Do not travel to the USA.
Don't camp by myself (widowed)
Don't go to the states.
Don't go camping anymore
Don't go to the US, too much hassle
Don't know where it is
Due to security concerns I prefer not to go across the border
Have a place on the lake in Canada
Have my own place at Christina Lake BC
Have not been down Metaline way
Have permanent recreation spot on Kootenay Lake near Nelson BC
Have property at Christina Lake so that’s our recreation area
Have property on Deep Lake
Haven't camped in years
Haven't made enough time for local recreation although area appears good for recreation.
Husbands poor health
I'm from another country and can't afford it.
I don't camp or fish
I don't camp or go boating
I don't drive that direction.
I don't have a vehicle
I don't know the area well enough but would like to know more.
I live in Metaline and my boat motor is not running properly
I only fish anymore and prefer the lakes.
I use the Canadian side of region
I was not aware of what was happening
I work away from home 3 weeks a month
I work there
In BC we have all.
Just don't fit into plans
Just moved here getting settled in first.
Just moved to the area
Live in Canada and have to cross border
Live in Canada visit Canadian side
More Canadian grounds becoming available
My husband is not into camping

Table A.4b-1, continued...

Never thought of the area
Never thought of this area
New to area and unfamiliar of details on what recreation area offers.
New to area 6 months
No car
No need to
No Time!
No vehicle
No vehicle to get there
Not a camper
Not aware of the area, make many visits in our area.
Not aware of what is there
Not campers at all
Not camping
Not familiar with facilities
Not in my area
Not interested
Not on my normal travel routes
Old age
On a day trip around area
Out of our way
Own summer home on Kootenay Lake
Personal!
Pete passed away in 1998
Recently moved to area
Rode train from Ione to Metaline usually pass through headed for Silverwood
Same opportunities exist closer to home
Seniors do not go to recreation area anymore
Sir this survey is not really applicable to me or my family. We do not use this area.
Suitable occasion has not arisen
Taking care of seniors and a handicapped person
To see my dentist at the time (he has now passed away).
Too busy working to pay for blood sucking govt.
Too much hassle at US Border Crossing
We camped with friends who preferred the warmer water of Christina Lake.
We do not cross the border

Table A.4b-1, continued...

We go somewhere else
We have a spot at Crescent Beach BC
We no longer camp etc.
We own lake property
We use the Pend Oreille River on the Canadian side.
We utilize other recreational facilities.
Why cross the border when we have opportunities in CANADA. You've sent me two packages in the mail begging for my response. Why does your request not include questions about the portion of the Pend Oreille that is in Canada?

Question 3: When you visit the Boundary Reservoir Area for Recreation, what is your main reason for choosing this area?

Table A.4b-2. Other reasons residents gave for recreating at Boundary.

All of the above
All of the above and no camp host to annoy us.
Boating
Cannot choose just one, they all apply
Great swimming (Pend Oreille)
Have not been recently
Passing through to stop for rest/lunch
Played slow pitch softball
The river access stopped there
To show off the area to friends and relatives from Alberta, Saskatchewan and Manitoba
To swim
Usually passing through

Question 6: Location(s) for overnight stays. Respondents who indicated they stayed overnight when visiting the Boundary Reservoir Area were asked where they usually stayed. Verbatim responses to portions of this question are listed in Table A.4b-3.

Table A.4b-3. Specific places residents reported for overnight stays.

Forest Service areas
Crescent Lake
Gillette Lake/Kettle Falls/Evans
Meadow Lake
Noisy Creek

Table A.4b-3, continued...

Lake Leo Campground
Sullivan Creek
Sullivan Lake (2)
Sullivan Lake north side
Private facilities
Blueslide
Porters Motel
Name of town for hotel, motel, resort or bed and breakfast stay
Ione
Metaline (2)
Spokane (2)
Other places residents stayed overnight
Don't remember
On the river across from slate creek
Can't remember
SCL Forebay Campground
Was like a KOA
At friends in Coeur d' Alene
Camp on side of river
Campsites on side of river
Home
My friends place
My own home
Our house boat
Usually return back to Canada

Question 7: Participation in recreation activities while visiting the Boundary Reservoir Area. Respondents who selected the "Other" activity category on the list of responses for this question generally wrote in a specific activity. Those responses are listed in Table A.4b-4.

Table A.4b-4. Resident responses for other recreation activities while visiting the Boundary Area.

Caves
Collecting rocks
Enjoying the quiet
Firewood gathering, exploring, appreciating historical sites and associations
Golfing
Great for everyone

Table A.4b-4, continued...

Horseback riding
Jet boat 3-4 times
Miss cooking hotdogs at the lower dam
Passing through
Prospecting
Shopping
Slow pitch softball
Star gazing, music
Steamboating
Taking three dogs to swim when hot
Viewing wildlife
Wood gathering
Work

Question 12: Means of fishing in the Boundary Reservoir Area. People who responded to the fishing questions were asked how they usually go fishing in the Boundary Reservoir Area. Open-ended responses were provided for the type of boat or watercrafts used, and are listed in Table A.4b-5; one respondent specified "Other means" for fishing as flotation.

Table A.4b-5. Types of boats/watercraft used by residents for fishing in the Boundary Reservoir Area.

12' aluminum
12' fishing boat with electric motor
12 foot aluminum
14' aluminum boat
14' boat
14 foot aluminum with motor
14" fishing boat (Hewes Craft)
15' boat or personal pontoons
20' cuddy cabin I/O (usually)
Aluminum craft
Boat
Boat Duckworth
Boating
Canoe
Canoeing
Don't usually go there, once in a boat
Fishing boat
fishing boat and kayak
Flat bottom boat
Inflatable Zodiac
Jet boat
Kayak

Table A.4b-5, continued...

Motorboat
Motorboat 17'
Outboard
Outboard and canoe
Outboard skiff
Pontoon
Pontoon boat
Row
Row boat and speed boat
Skiff
Small boats
Small outboard motorboat
Steam outboard (wood fired)
Weldcraft jet boat
Other means of fishing
Flotation

Question 13: Areas fished in the Boundary Reservoir Area. Question 13 included four spaces for respondents to provide open-ended input. They were asked to specify the locations if they fished the mouths of creeks entering Boundary Reservoir, if they fished creeks entering Boundary Reservoir above the creek mouth, or if they fished other creeks/ streams or lakes/ponds in the area. These open-ended responses are listed in Table A.4b-6.

Table A.4b-6. Specific areas fished when visiting the Boundary Reservoir Area.

Mouths of creeks entering Boundary Reservoir
All
Any and all creek mouths.
Beaver and Threemile Creek areas
Before security got so tight we would fish the Tailrace
Don't know
Slate Creek (2)
Slate, Sullivan and Peewee
Slate and Flume Creek
Slate and Lime Creek
Slate Creek and Flume Creek
Slate Creek and Everett Creek
Slate Creek, Three Mile Creek and Lime Creek
Slate Creek, Wolf Creek
Slate, others. We would fish from the falls up, but can't access the river without a dock! Why hasn't there been a dock available in Metaline Falls? We always enjoyed fishing that area, but didn't this year because of no dock.

Table A.4b-6, continued...

Sullivan Creek (2)
Sullivan, Slate, Peewee and Flume Creeks
Sullivan, Flume, Slate and Sweet Creek
Sweet Creek (2)
Sweet Creek and Slate Creek
Sweet Creek, Slate Creek and Peewee Falls
Sweet Creek and all others
Creeks entering Boundary Reservoir (above creek mouth)
All
Flume Creek (2)
Noisy Creek
Slate Creek (2)
Sullivan Creek (2)
Sweet and Slate Creeks
Sweet Creek
Other creek/stream in the area
7 Mile Dam
Above 7 Mile dam
All
Below Box Canyon Dam
Cedar Creek (2)
Salmo River
Sullivan Creek
Other lake/pond in the area
Crescent Lake (3)
Crescent, Beatty, and Ledbetter
Ione Park
Lake Leo
Lake Leo and Crescent
Ledbetter and Crescent
Ledbetter and Leadking Lake
Like to fish Beatty Lake
Meadow and all others
Meadow Lake
Most small lakes
Pend Oreille River
Yokum Lake

Question 14: Fish species targeted in the Boundary Reservoir Area. Question 14 asked respondents to identify the species of fish they usually try to catch while fishing in the Boundary Reservoir Area. The open-ended responses for "Other species" are listed in Table A.4b-7.

Table A.4b-7. Other species of fish residents usually try to catch in the Boundary Reservoir Area.

All
Any fish that will eat a worm or night crawler. Would like western cutthroat trout put in river, its native.
Anything
Catfish
Catfish, walleye, whitefish
Crappie, perch, bullheads, whitefish, squaw
I don't fish there. We camp mostly on Kootenay Lake.
I like to fish for eastern brook trout in Ledbetter and when they were in Leadking or Beatty Lakes. Eastern brooks are great in these small lakes.
Lin cod
Northern pike, perch, walleye
Perch
Perch, anything that bites
Perch, sunfish
Perch and sunfish
Pike
Pike minnow
Suckers for the garden. I think they should have a bounty on suckers like near the Bonneville Dam. I'd do all the fishing I'd want.
Walleye
Walleye and perch
Walleye, perch, northern pike
We usually catch perch and sun fish.

Question 15: Fish species typically caught in the Boundary Reservoir Area. While Question 14 asked respondents the species of fish they usually *try to catch*, Question 15 asked them what they *typically catch* while fishing in the Boundary Reservoir Area. The open-ended responses for "Other" species are listed in Table A.4b-8.

Table A.4b-8. Other species of fish residents typically catch while fishing in the Boundary Reservoir Area.

Crappie
Northern
Perch
Pike
Pikeminnow

Table A.4b-8, continued...

Rainbow
Squawfish (4)
Suckers
Walleye
White fish
Eastern brook
Northern pike
Suckers
Tench
Walleye

Question 20: Boat launch(es) typically used in the Boundary Reservoir Area. Respondents who reported they used a private boat launch or launched directly from shore were asked to specify where they launched. These locations are listed in Table A.4b-9.

Table A.4b-9. Residents who specified either a private launch or direct launch location.

Type of Launch	Location
Direct	Behind the Village
Private	Buckley campgrounds
Private	From friends residence
Public Boat Launch	Ione City Park (2)
Private	My dock
Private	Our home's beach.
Private	Trading Post Resort
Direct	Beside the old Grandview Powerhouse near Pend Oreille Village
?	Club 200!!
Private and direct	Home, various areas (kayaks)
Direct	Kayak
Direct	Wolf Creek

Question 21: Boat launch adequacy. Respondents who reported boat launches had not met their needs were asked to describe the problems they encountered. The open-ended responses to this part of Question 21 are listed in Table A.4b-10.

Table A.4b-10. Residents' descriptions of launch problems they encountered.

1. Need more docks to meet lake level fluctuations. 2. Current problems and no dock at Metaline. 3. Current

Table A.4b-10, continued...

problems and no dock at Box Canyon
Boundary Dam Launch is great. Badly need some sort of dock in Metaline
Boundary excellent, Metaline Falls dock was gone also hard to access when water level drops.
Box Canyon one is dangerous
Broken concrete hard on equipment!
Campbell Park could use a jetty to cut the side flow down to make it easier to launch.
Due to fluctuation ramps unusable or difficult a large percentage of time, especially Metaline launch.
Due to varying water levels it makes it very difficult to re-trailer at times.
Have trouble walking to boat
I'm very cautious and don't cross Metaline Falls, usually put in above or below.
I got stuck at Forebay area on low water
I would like to see a boat launch north of Metaline Falls
Launch at Metaline sucks. It is in the current and has no dock etc. It needs moved out of the current.
Launches need repairs and holes filled in.
Metaline City launch is sure to damage boat, very poor. Boundary needs to be deeper, very slippery when cold.
Metaline could use a dock
Metaline launch could use some work
Metaline launch is very poor shape
Metaline launch not usable when water is at extremely low.
Metaline Park launch (ramp) is very broken up, and no dock (to load people in boat) is available. Without a dock, handicapped or elderly relatives cannot join in boating.
Metaline Park launch is often unusable for the boat (afternoons), Boundary launch is excellent
Most are in poor state of repair, long lines
Need to be longer and need maintenance and a dock in Metaline
No dock
No dock at Metaline Park launch
No docks
No docks bad launch area
No! For the last several years we have been unable to launch a boat at Crescent Lake due to large boulders across the access
Not long enough with water level changes
Some people at the Forebay Campground tie up and walk away making it difficult to take out and put in sometimes.
Sometimes the water is too low in Metaline
Sometimes water level is too low
Sometimes we have not been able to get our boat out because the water level dropped.
The Boundary Dam launch is closed in spring and fall for early or late fishing and duck hunting season. There is no accessible launch in late spring/early summer to put in below Metaline Falls when the rapids are too dangerous.
The launch at Metaline needs a dock and needs to be re-graveled. Low water levels at Boundary Dam
Water levels variations
When the water is low, can't use the one at Boundary. Metaline needs a dock!

Question 22: Problems with water conditions when boating on Boundary Reservoir. In addition to indicating whether they experienced problems with water conditions and the degree of those problems, residents were asked to describe any problems with water conditions they had encountered. The verbatim responses to this part of Question 22 are listed in Table A.4b-11.

Table A.4b-11. Residents' descriptions of problems with water conditions when boating at Boundary Reservoir.

Boat dock and launch sometimes is out of water.
Care going over Metaline Falls
Water levels change daily
Dragging bottom unexpectedly
Falling water levels at main Boundary Dam without specific times of falling or rising
Falls gets a little rough
Fluctuating water levels and conditions at the site of the former falls. Occasional wakes from motorboats that fail to slow down when passing canoes.
For dam relicensing the water was so low we couldn't launch once!
Had to leave our boat over night as we could not get it out.
Hard to launch sometimes at Metaline Park
I tried to kayak over Metaline Falls
It would be nice to go to Boundary Dam from Metaline and back without worrying about water level lowering so you couldn't make it back.
Just the water levels high or low, but I take precaution and common sense
Launch a problem at Metaline
Launching due to water levels
Level changes hide or expose rocks.
Low water
Low water at Metaline
Low water, hitting submerged rocks.
Major rapids at certain times at Metaline Falls
Milfoil, just being aware of depths, we're learning!
On occasion rise and fall of water at the falls area but has not been a biggy
Rising and falling (mostly falling) water levels
Rough water at Metaline Falls after having been down river for 6 to 8 hours.
See above
Sometimes low water makes it hard to retrieve or load boat
The rapids in spring provide a real rush
Too much water fluctuation
Variable depths at launch have caused damage to boat.
Varying levels require attention on overnight trips and often difficult landings and launchings occur.
Water fluctuates as Boundary uses water
Water level changes daily
Water level changes hamper launches
Water level was so low that the boat was grounded
Water levels fluctuates so much you have to be careful of sandbars and passing through rapids (rapids can change

Table A.4b-11, continued...

before you travel back through)
We've learned to watch the water levels; we had trouble taking out once because levels dropped so much.
We have to call and find out when they are to drop the water level. If it is too low we wouldn't go boating or fishing
We know what to expect
When the falls are rough I do not run them! We will Launch at Boundary to fish and boat the north area and Metaline to access south of falls.

Question 24: Desired improvements to the existing recreation opportunities at the Boundary Reservoir Area. Respondents who indicated they thought improvements to existing recreation opportunities were needed were asked to list the activities or facilities they would like to see. The verbatim responses to this part of Question 22 are listed in Table A.4b-12.

Table A.4b-12. Residents' descriptions of other recreation activities or facilities that they would like.

A better access road to the Wolf Creek beach
A few more hiking/walking trails
A separate dock away from boat launch up at the Forebay. We spend a lot of time worrying for my kid's safety with all the boat traffic while they swim.
Access to toilets in winter time
Additional docks for swimming and mooring
Better access to creeks in the area.
Better access to the river to fish especially from Metaline Falls to Boundary Dam.
Better beach access for day visitors not camping
Better boat launch
Better boat launch at Metaline
Better Boat Ramps
Better fire pits in campsites. More garbage cans. Marked swimming area by boat launch. Larger docks to accommodate more boats.
Better fishing, scenic hiking trails
Boat access to Crescent Lake
Boat dock at Metaline riverfront park
Boat in campsites with limited developments fire pits. Trails to viewpoints, e.g. Peewee Falls viewed from the east shore.
Boat launch and docks other than at Boundary Dam
Boat launch east side of river between Box Canyon and Boundary
Boat ramp improved in Metaline, boat dock installed in Metaline.
Boat ramps should be made usable at all water levels
Boundary needs a better dock and Metaline needs a better ramp and docks
Bring more business in
Campground at Boundary gets full. More campsites, picnic tables and toilets would be nice

Table A.4b-12, continued...

Canoe access north of falls, Pend Oreille Village
Canoe launch access below Metaline Falls. Easier fishing access to Tailrace area below the dam.
Clean the river to make it a real destination for fishermen.
Difficulty level for hiking trails so families can determine if appropriate for younger hikers
Docks need attention. SCL does no other recreation on their reservoir except at the dam. They should put the docks back in at the Metaline Waterfront Park.
Edgewater Campground's beach area needs lots of help
Except fast moving motorboats on narrow sections of river
For what we want and need we have been very satisfied.
Greener grass
Hiking trail to Peewee Falls
Hiking trails and boat in campsites
I only visit Boundary Recreation Area once or twice yearly can't remember.
I would like to see a campground and boat launch located between Metaline Falls and Boundary Dam
I would like to see better swimming facilities at Boundary Dam and Metaline Park
If made much better it would get crowded.
Improve boat ramps at all three areas develop groomed cross country ski trails
Improved boat launches that can be used under all water levels
Improved docking better access or disabled
Improved motor vehicle access to river from Metaline Falls to Boundary Dam
Introduce such species as crappie and walleye. Removal of milfoil from river
It has been more than 5 years since visiting so I can't honestly say.
It was nice to see a few new RV sites this year. As it gets so crowded sometimes, I would like a couple more RV sites if possible.
It would be nice for a dock for shore fishing only (platform). It would be also nice to open the small picnic area to residents only next to the bottom of the dam (miss it).
It would be nice to develop the boat in campsites. Also a dock to leave your boat in the water overnight would increase convenience.
Maintain more consistent water levels, keep out jet skis and personal water craft
Maybe there can be a time set for lowering the river.
Metaline boat ramp access needs repaved, Ione milfoil big problem
More access sites, but the cliff and steep terrain would make this very difficult
More ATV and UTV trails
More ATV Trails
More boat ramps, better maintenance of some, more parking areas, more RV sites/less fees
More campsites
More fish planted
More off-road ATV trails

Table A.4b-12, continued...

More RV campsites
More than satisfied there are plenty of sites
More trails for horses with places to park horse trailers
More wheel chair access would be nice.
Mountain bike trails or loops with a suspension bridge over river
Musical and art hobbies for extended campers who stay longer than a few days. Cheaper rates also on parking and camping
No fishing at Box swimming hole, hooks stinks
Open access to the north section of the river below the dam (Canadian side)
Overnight docking for boats
Paved areas better handicap access
Places for 4-wheelers to go
Pretty much self-contained
Rappelling down the rock face of Peewee Falls and other rocks
River access from highways by car
Rock collection display, old mine site, history of mining
Roosevelt lake more camp sites
Secluded but accessible (by boat) campsites between Boundary Reservoir and Metaline Falls. Better boat launch below Box Canyon Dam
Shallow roped off areas for families with children would be great.
Showers
Showers and hot water
Sites set up for horses
Stock more fish
The boat ramps and boat docks need some repairs and maintenance
Used to go to Crescent Lake. But it's a mess now.
Very nice and large swimming/day use area. Commercial enterprise ok- use fees expected.
View point for Pee Wee Falls
View point to Peewee Falls and hiking trail around Metaline Park
Visitor center depicting pre-dam, historic human uses in the project area.
Volleyball net poles and net if possible
Walking and biking trails made along Boundary Dam Road
We need a dock at Metaline. Warning buoys on gravel bars.
Would like to see Crescent Lake Campground re-opened
Would like to see more trees at the Boundary Campsites

Question 25: Specific recreation sites in the Boundary Reservoir Area visited. Question 25 included 10 pre-defined responses for specific sites or types of sites residents might visit for recreation. The verbatim entries for the "Other" response to this question are listed in TableA.4b-13.

Table A.4b-13. Other sites in the Boundary Reservoir Area visited for recreation by residents.

A few more picnic areas would do
ATV and UTV trails
BLM Campsite
Box Canyon Lake
Buckley's, 7 Mile Dam Area
Falls RV area
Gardner Caves
I haven't been there for years
Like to move along shoreline
Logging roads on ATV
Metaline Campground
Mill Pond
North BLM campsite
Peewee Falls, picnic beach south of Boundary Dam.
Pend Oreille between 7 Mile Dam and Salmo BC
Pend Oreille, Buckley's, 7 Mile Dam BC
Pend Oreille River
Pend Oreille
Specific viewpoints and areas of historical associations
Sullivan Lake
Swimming hole at Box Canyon Dam
Train ride
Various shoreline fishing
Vista house road is usually closed. I live here and see most.

Question 28: Problems or conflicts with others at the primary recreation site. Respondents who indicated they had experienced problems or conflicts with other people or their behaviors at the place they listed in Question 26 (as their primary recreation site) were asked to describe what had occurred. The verbatim responses to this part of Question 28 are listed in Table A.4b-14.

Table A.4b-14. Residents' descriptions of conflicts or problems they experienced at the Boundary Reservoir Area.

Another party had moved into one of the few sites for a ten day stay. A limit would be nice.
Parking on occasion is difficult for cars and trailers. Large RV's may park in area making it difficult to turn around or back in.
Boating is crowded

Table A.4b-14, continued...

Children not properly supervised by parents.
Children poking out fish eyes etc. Leave on beach with frogs etc.
Cigarette butts/empty packs, soda and beer cans
Dogs biting and fighting. Drunks. Teen parties.
Dogs not on leashes and people not picking up after their dogs
Drunk or stoned people, swim in the nude and foul language.
Drunken behavior and out of control pets.
I am Canadian at that point in time it was if I was put up with for the ball tournament
I don't go until after school starts.
Litter, underage drinking
Loud music
Loud young kids
Male telling children they couldn't play
Most people are great! But sometimes people camping at the Forebay take "ownership" of the dock, making it difficult to put in and take out. Also their kids ride bikes on the dock. This group camped for a week or two.
Motor home came in late at night and started portable generator and it ran all night
Noise
Noisy overbearing guests
Not personally, but discarded fishing gear, unwanted fish and food (plastic and paper bags)
On one occasion, a party was camping and they had been drinking and decided it would be fun to catch and kill a marmot. It was not a good thing for the kids who were camping to have seen. Security did come and speak to these people.
On one visit there was an American fellow that yelled and screamed at his wife that escalated with other campers. This turned extremely confrontational and there was no policing in the area. As most Americans are gun nuts, we were a little worried.
Only good times
Parking and camping on road access to Crescent. No one else could get by.
People getting drunk and foul mouth.
People swimming at dog beaches at Sullivan Lake, taking up the whole beach with their kids, and they have no dogs!!!
People who are not boating taking up the boat docks and ramps with swimming and float tubes.
People with large amounts in their campsite and dogs and they get drunk and disorderly and are mean to the other swimmers or day users of it.
Personal watercraft
Picnickers with boom boxes at Peewee Falls
Plugging launch with moored boats and swimmers
[ ] owns on river and threatens people lives literally for using existing road to access river, which I've been doing 30 yrs. up till 2 yrs. ago incident.
Some not much
The game warden is no fun. The trout limit is two

Table A.4b-14, continued...

The noise from high powered racing type boats is deafening. Jet skis are annoying but what are you going to do?
Too noisy at night
Twice in 10 years, the Forebay parking area was over full. Not a big deal.
Unsupervised children. People bringing their dogs during large functions (4th July, fireman picnic)
Wake from motorboats on narrow sections of river
We deal with it!!!!
Youth throwing rocks across swim area

Question 30: Intent to adjust recreation plans. Question 30 included five pre-defined responses for specific types of adjustments residents might make to their recreation plans in response to their experiences. The verbatim entries for the "Other" response to this question are listed in Table A.4b-15.

Table A.4b-15. How residents specifically intended to adjust their recreation plans.

Just try hard to get along with each crowd of people and perhaps lend a helping hand if needed and share the area as a whole and everyone will get along better
No problems
Watch for warden, laugh when people dump fish
We usually avoid weekends use area Mon-Fri

Question 31: Maintenance needs at primary recreation site. Respondents who indicated they had not found the facilities at their primary recreation site to be adequately maintained were asked to describe the maintenance needs they perceived. The verbatim responses to this part of Question 31 are listed in Table A.4b-16.

Table A.4b-16. Describe any maintenance needs you think are not currently met.

Appreciate hose/water to wash boats down
Bathrooms not clean, not stocked with TP, and garbage overflowing. Grass not watered, dry only weeds, no area to play. Bad rodent problem!
Bathrooms run out of toilet paper and can get pretty messy when there is a full campground. Quarter operated showers would be nice.
Because there is no facilities in that area, it is just beautiful wilderness
Boat launches at Metaline Park need replacement
Boat ramp is not maintained
Boat ramp not usable at low water levels
Boat ramps could be better
But you need to open the road around the back side.
Could have more cleaning on busy weekends

Table A.4b-16, continued...

Could use more shade
Don't know if it could be any better, but if there was more shore line access for wheel chairs.
For that time period
Great
Hazardous walkway paralleling Sweet Creek the last twenty yards or so from the falls. A fifty to seventy foot 80 degree to 90 degree drop to creek bed. Probably requires a steel walkway in this area. A heavily traveled path, high liability!
I have been in area when toilets were locked.
I helped mow the grass
Improve facilities by adding more camping sites, picnic and walking areas. Make better use of the historic cabin and maintain it better. Provide more local information. Provide better signage on fire conditions.
It's beautiful!
Large amount of garbage thrown lately bears in area.
Launches
Maybe the boat ramp could be repaired. We tried to fill in some of the broken areas. But we are quite pleased with the launch.
Metaline Park needs new grass also needs dog leash law enforcement. Signs would be great.
Need a restroom near the launch.
Needs docks
No access to camping area road blocked
No boat access
No docks boat launch need work picnic area are run down.
No facilities
No restrooms, picnic facilities, no campground, there isn't anything there.
Old beach area heavily infested with knapweed
Picnic tables need work
Re-open campground at Crescent Lake
Restrooms need cleaning
Restrooms need more attention
SCL has nothing to do with my visit to Metaline Waterfront Park. SCL does nothing for our communities since the retirement of [former manager]. Current manager refuses to assist our small community. Metaline does a fine job maintaining their park.
Since we live here we usually visit with visitors from out of area. Rarely just use facilities ourselves. We're glad they are here.
Soap and hot water are nice, clean facilities
Sometimes toilet paper is gone when lots of people are there. Other than that they maintain it great. Garbage pickup is slow at times, usually great.
Tables and covers need help
The bathrooms are always disgusting but everything else is fine.
The parking lot and the way to the boat launch needs to be leveled nicer.

Table A.4b-16, continued...

There are no boat ramps, and poor shore access. The campground is very small.
There are no facilities
There are no facilities at any of those sites.
They are usually fairly good. There are some people that will always try to make a mess.
This area is a missed area at times, some trash could use visits to tidy up, spruce up, add fish!!!
Tie up area for boats and a pit toilet
Toilet paper and trash
Town of Metaline is financially unable to fully maintain their park. The park is very popular by all types of boaters and fisherman. The shelter is used by many people and groups, SCL should support this park.
Trash along trail
Usually, large amount of garbage around lately. Bears in area
Very hard to answer as we are seniors and do not expect the very best of everything!
What facilities!
Yes, but there is no way to keep up with it all! People are such slobs!

Question 35: Sites or locations in the Boundary Reservoir Area that are special or meaningful as a place for recreation. Respondents who indicated they did have sites or locations that were really special or meaningful to them as a place for recreation were asked to list or describe those places. The verbatim responses to this part of Question 35 are listed in Table A.4b-17.

Table A.4b-17. List of special places for recreation at the Boundary Reservoir Area reported by residents.

(Sweet Creek Area) My mom lives there, so we spend a lot of time swimming and fishing there.
A pond with frogs that only we know of.
All
All along the river between Metaline and the dam
All of it
All this is all we have and we love it. We don't need to go to far.
BLM campsite
BLM campsite at Slate Creek and Peewee Falls
BLM campsite below Lead King, boating the canyon
Boundary Dam Campground
Box Canyon has always been a family environment, very well maintained and "homey"
Box Canyon lake and Sullivan lake, we love to drive through the whole scenic area.
Box Canyon swimming and camping. Sweet Creek
Buckley camp site
But the whole system is great as I am a lifelong resident of Metaline Falls/Metaline and the dam has opened the area for great recreational opportunities and without the dam the river would be "iffy"
Campbell Park
Campbell Park the canyon between Metaline and Boundary Dam
Campsites between the dam and the falls
Canyon areas, boat in campsites
Carl Harvey's Cabin, various placer mining sites associated with Flume, Three mile, Everett, Beaver and Peewee Creeks. The Falls (when water level drops 20+ feet). The entire river, pre-dam.
Crescent Lake
Crescent Lake for camping
Crescent Lake, Box Canyon Dam, Sullivan Creek campsites
Crescent Lake. Spent a lot of time there when younger. But beach and campsites are wrecked.
Definitely the Boundary Dam Tour always enjoyable and informative. My friends, family have always been treated royally. Staff should be commended.
Every year we visit the Vista House, it's an awesome site
First date with the woman who is now my wife was on the Lion's Club Pend Oreille Train Ride. The train stopped on the trestle over Box Canyon Dam. Later, on our first holiday together, our first rest stop was Campbell Park. To our surprise, as we didn't know it was running that weekend, the train came along and stopped on the trestle. Campbell Park is special for these memories.
Flume Creek at river area below boundary to Canada
Forebay is a very pretty setting
Gardner Caves, Metaline Falls, visited several times in 1980's when children were young.
Hoagy's

Table A.4b-17, continued...

I enjoy the river between Boundary Dam and Metaline Falls
I just like going down the river, it's very pretty.
I live in Pend Oreille Co. and fish a lot of the lakes.
Metaline
Metaline Park, kids going fishing when they were little
Metaline Park
Metaline Park all the family events we've held
Metaline Waterfront Park, mainly because it is easy to get to.
Mill Creek
Mill Pond and below Box
My home and surrounding area on Boundary Road
My husband and I got married in Metaline Park
Natural waterfalls
No family
North BLM campsite, Dead Man's Eddy with the old Pelton wheel
Peewee Falls, picnic site on beach several miles south of Boundary Dam (beach w/table, firepit)
Peewee Falls
Peewee Falls
Peewee Falls and Metaline Park
Peewee Falls and Sweet Creek Falls
Peewee Falls, across from the High School, Metaline area, Slate Creek mouth, Boundary Dam and Vista House.
Pend Oreille Valley
Picnic area and campground at Forebay
Picnic campsite at rock narrows
Pend Oreille River between Forebay and falls. We like the numerous small falls along this section of river.
Power lines for ATV riding and Box for swimming
River through Z Canyon
Slate Creek
Slate Creek, Peewee Creek, campground across from Slate (BLM)
Small water fall going down river on right side. Slate Creek area
Snowshoeing by Gardner Cave
Sullivan Lake
Sweet Creek
Sweet Creek Falls
Sweet Creek trail is a favorite
The campgrounds

Table A.4b-17, continued...

The complete trip from Box Canyon Dam to Boundary.
The falls
The falls and canyon
The hiking trails and skiing trails.
The kids really like swimming at Box Canyon
The old mine sites, waste ore piles
The small picnic area below the dam. Box Canyon recreation park. Above the dam. The lookout over the dam.
Threemile Creek, BLM campsites, graveyard, Crescent Lake, SCL campgrounds
Very beautiful trip up the river from the dam by kayaking. Just love it. Pretty spot just down the river at 9 mile dam, but too many riff-raff-low-class hell-raisers go there. Haven't run into that problem at Boundary Dam camp.
Washington Rock
Water sport, boating
We are from Salmo, so it is just 25 miles away.
We enjoy taking family and friends through canyon by boat. One year we went five times and never tired of the scenery.
We just drive around occasionally to different places
We love to boat up to Peewee Falls and swim there.
Yes, the whole reservoir. Camping by boat in only areas.
Z-Canyon
Z Canyon and Peewee Falls all the little falls the whole stretch is to be treasured
Z Canyon, Metaline Park, PUD Campground

Question 36: Other lakes and rivers visited. Respondents were asked to list up to three other (than Boundary) lakes or rivers in the region that they visit for water-based recreation. The most frequent responses are summarized in Section 5.1.4 of the report. A complete list of all responses received for this item is provided in Table A.4b-18 below, generally in alphabetical order.

Table A.4b-18. Other lakes or rivers in the region frequently visited for recreation.

Lake or River	Frequency
Washington	
Beatty Lakes	2
Big Meadow Lake	16
Black Lake	2
Bonaparte	1
Box Canyon	5
Browns Lake	1
Cedar Lake	1
Chain Lakes	1

Table A.4b-18, continued...

Coffin	1
Columbia River/Lake Roosevelt	37
Crescent Lake	7
Davis Lake	2
Deep Lake	1
Frater Lake	4
Gillette Lake	4
Lake Leo	9
Ledbetter Lake	2
Little Pend Oreille Lakes	3
Loon Lake	4
Lost Lake	1
Mill Pond	8
Nile Lake	3
Pend Oreille River	50
Riffe Lake	1
Similkameen River	1
South Skookum	2
Spokane River	4
Sullivan Creek	3
Sullivan Lake	93
Thomas Lake	2
Trout Lake	1
Twin Lakes	1
Two Rivers	1
Yocum Lake	5
Total	**279**
British Columbia	
7 Mile Dam	1
Arrow Lake	6
Beaver Creek	1
Buckley	2
Champion Lakes	3
Christina Lake	9
Erie	1
Frazier River	1
Gyro Park (Trail)	1
Kettle River	1
Kootenay Lake	17
Kootenay River	1
Nancy Greene	2
Okangan Lake	1

Table A.4b-18, continued...

Osoyoos	1
Rosebud Lake	2
Salmo River	2
Shuskan	1
Slocum	2
Waits Lake	1
Wasa Lake	1
Total	**57**
Idaho	
Couer d'Alene	1
Lake Pend Oreille	2
Priest Lake	13
Round Lake	1
Total	**17**
Montana	
Clark Fork River	2
Flathead Lake	2
Koocanusa	1
Stillwater River	1
Swan Lake	1
Swan River	2
Total	**9**

Question 39: Effect of views of Project facilities on enjoyment of the scenery. Respondents who indicated they did had seen facilities or structures associated with the Boundary Hydroelectric Project when visiting the area were asked to describe their response about how that affected their enjoyment of the scenery. The verbatim responses to this part of Question 39 are listed in Table A.4b-19.

Table A.4b-19. Residents' explanations for how views of Boundary Project structures affected their enjoyment of the scenery.

Amusing
An impressive site in a beautiful setting
Boundary Dam is a fascinating accomplishment and I am in awe, each time I visit and see the facilities.
Boundary Dam is one of the most interesting forms of dam construction I have seen also the powerhouse generation (inside rock)
Boundary Dam is truly beautiful. We lived in Tacoma before coming here and it is an enjoyable spot to relax. It's a perfect dam for a laser light show (hint). Better than Coolie Dam. I have small laser shows that I do for my wife and daughter. (My wife is deaf so visual entertainment is ideal). We sure do miss picnicking at the lower part of the dam.
Don't care

Table A.4b-19, continued...

Don't go to see the buildings
Educates my kids
Electricity is a beautiful thing and clean renewable energy!
Except in the big picture what could Z Canyon and the river have been like without a dam
Garbage, dead grass
Generally visit as tourist might or showing the visitors the beauty of North Pend Oreille County
I accept them as necessary
I have worked in hydropower for many years. I check rusty steel and crumbling concrete
I am in awe of the engineering aspect of the dam and the towers and lines.
I appreciate having a great access to the area, boat launch, facilities, and no fee is great. Water the lawn in late summer would enhance the experience.
I considered working on the Dam when it was being built.
I do not like seeing any manmade structures when I am recreating.
I enjoy the manner the facilities are made to enhance and compliment the scenery.
I enjoy viewing all aspects of the dam and area. The river is nice, but the reason for it is the dam and power plant.
I enjoyed them the first time and show them to visitors.
I know they are there to make the dam run, so it doesn't take away from the scenery.
I like dams
I like the fact that we are using a clean energy source to create electricity for so many people. It makes me feel like we are all a part of trying to preserve and conserve natural resources.
I like to see the birds that hang around the trash catcher.
I overlook things; I see scenery over most things.
I realize that without these facilities, access and recreation all opportunities wouldn't be what they are. Also they provide important jobs to the area
I see the dam as an important part to our life so I don't really take much notice of it in the scenery. We actually enjoy looking at the dams and discuss with amazement the construction aspect of the dams.
I see them every day as the power lines go through my property
I spend most of my time up the river. I can't imagine many spot being as lovely as this one. Just gorgeous I would love to Kayak from the bridge in Metaline Falls down to the dam but not sure if current too strong from the bridge down the first bit of the journey???
I think Boundary Dam is quite a remarkable project
I work there
I worked at Box Canyon Dam for 22 years so am used to seeing the different structures. I do like looking at how things work there as opposed to box canyon dam.
I would rather see the Dam than houses, one after another like we see on the Ione side of the river
If facilities are poorly maintained/groomed it affects our enjoyment of area. This has not been the case.
If the dams weren't here the scenery would be different maybe nicer. I didn't live here before dams. I hear and see from old pictures it was spectacular at times. It is still spectacular at times.
Impressed with quality engineering, well run/kept facility
Industry/business does not negatively influence my opinion of the scenery
It's a dam so what would you expect to see.
It's a saw off, without the facilities there would be much less to see
It's as truly enjoyable to get out to that sort of area for the beauty.
It's the perfect blend of human activity and natures place.
It is all part of the dam and what it is about like a town needs businesses and homes to be a town.

Table A.4b-19, continued...

Like watching the spring runoff over the spillways, tours of turbine rooms are interesting of course I have never seen what the river looked like before the dams as natural waterfalls are also interesting.
Local history
Looks cool to me knowing the hydroelectric operation is a source of renewable energy fascinates me. I love the way it looks.
Man made structures such as dams impress me.
My wife and I wish that we could go camping and other things, but are disabled. We are lucky to be able to swim a little bit. Wish that we could have moved here when we did a lot of those things, we can still get in the viewing.
My wife worked at the dam from 1964-67. SCL has been great addition to our area since their entrance in 1967. I only wish the forest service had a 1/3rd of your expert work as far as the recreation is concerned.
Not natural! No fish ladders! Noisy!
One reason for visiting is to look at these facilities and show them to others.
Restrooms
Since they would not be my problem don't pay them too much attention
Spillways in spring. Generator port holes in rock wall of generator rooms very impressive
Survey the power lines
Takes away from natural beauty
That's partly what we go for. Just to check things out.
The dam creates the recreational importance and adds to enjoyment of the scenery.
The dam itself is an impressive structure, no reservoir without dam.
The dam itself is fantastic in the way it is carved out of rock.
The dams contribute to the water being there. The only adverse effect would be the loss of a salmon run from the Pacific.
The dams or buildings are not detracting to me.
The facilities are s?????? and need service a recreational site for the area.
The Seattle light dam is a wonderful energy source. I enjoy seeing how it was built into the spectacular rock formation. The dam performs its function and at the same time fits in it's place without ruining the natural scenery.
The unique underground mountain mechanical structure. The dam itself.
The way everything flows together, nature and manmade
These facilities bring money and employment to the community.
These facilities provide access. Security is overdone.
They add to my amazement of what man can do to help insure the beauty God placed here on earth.
They are eyesores
They are interesting.
They are necessary
They are part of the whole experience
They did when I first moved here, but now I suppose I must overlook them. Too much other beauty to make a difference!
They need to plant some grass and maybe some landscaping clean up the whole facility
They remind me of what we have chosen to forego by converting the Pend Oreille River into a lake. They are also less than aesthetic.
We are all users of hydroelectric power and so should be tolerant of their visual impact.
We have a family connection to the dam since the 60's. We have history in this area and appreciate all aspects of Boundary Reservoir.
We like the dams. Bridges are cool too. Kids are especially impressed to see the Vista House from the Reservoir.

Table A.4b-19, continued...

We like the shape of the dam and watching water shoot out the gates. Don't like those huge power poles though.
We love the great outdoors
We love to take camping trips up to the dam. They are always so impressive!!!
We need power, the dams make power, they have been there since before I was born, so I am used to seeing them.
We own property nearby that has some "wildness" left structures rarely detract as does powerboat use and the danger sign & net nearby.
We take visitors on the river up to see the reservoir & the dam, its very interesting.
Well maintained; touring available, interesting
Without the dam the river would be unavailable to boating!!
You guys do a good job always.
You need power!!!

The following are open-ended comments that area residents provided on the last page of the questionnaire. With rare exceptions, they are unedited.

Table 4b-20. Resident additional comments.

650% increase in property tax. How much will electricity go up to feed you blood suckers!!!
Additional access to areas along river would be nice if feasible; not a big deal though.
Again, we thank you for not having camp hosts etc., to harass us!
Although my husband and I aren't campers, we do take day trips and have enjoyed traveling through some of the area. We are lookie -louers. We don't hike or anything like that, we have car binoculars. Thank You and please do not enter us in any contest.
As stated earlier, water fluctuation restricts the use of boat launches and has strongly effected the populations of fish. We have lost our trout size and quality. I catch and release fish and trout size is about half of what it was as little as two years ago.
Being new to the area I have been quite disappointed in the current business practices of PUD who provide electric service to the community from the public hydro plant at Box Canyon. Seems PUD is more concerned with income than in providing electric service to the local community. I am disabled and was told that w/out $14,000 PUD would not install electric to my property....As there is no way for me to get 14K guess I'm screwed.....
Better boat launch facilities are necessary. It shouldn't be an adventure to launch. The daily dam fluctuation should be posted at the launches in both the Forebay and Metaline Park.
Boundary Reservoir reaches from Boundary Dam to Box Canyon dam. SCL needs to partnership with the town of Metaline to improve recreation of the river. There's no longer access to the river at Flume Creek. Do something to open this road again. The reservoir isn't just at Boundary Dam. The current manager refuses to help with any community projects.
Can Boundary do anything about the milfoil in river?
At this time in our lives, we do not fish or camp in the Boundary Reservoir Area. When we were young and had young children, we loved camping at Sullivan Lake.
Dear Sir: Received your last letter on Friday 12. I did not send the first survey because I did not think any of my answers would be pertinent to the issue. When we were first married 60 plus years ago, we did go down across the border to camp and picnic. It was a lot easier to cross then. But up in BC where we did not have the population our roads left a lot to be desired. We went to Sullivan Lake; well maintained grounds looked after by the forestry people. The last time we went we flew into the small strip there. However since then our roads have been improved and the Arrow Lakes became accessible. It is the same distance to Arrow and the camping, picnicking, had more choices to go to. And no customs people to contend with. Then there was a growing family and it's attending problems. My wife reminds me, that I was stricken with cancer 15 years ago. I am stable now, but am left with a great tiredness. Outdoor activity is just too much. There you have it. We can now do day trips in a shorter time, great facilities and no hassle with over eager border guards. And that is getting worse by the day. Sorry but put me down as a no show.
Do not camp
Do not drop water level of the river, the clouds need the water to accumulate moisture to create rain. I believe our spring and summers have been extremely dry because of falling river levels. My 30yr neighbor agrees. Post no hunting signs on dam and river areas on all SCL lands. Do as Yellowstone NP. With the price of property and the cutting of trees hope all your land is surveyed, suggest is should be all fenced. Plant apple (red) trees where you want the bears to stay. Thanks for hearing us.
Do you feel that the changes you may make to the operation of your reservoirs may not affect our experience in this watershed as well? If you ask for my assistance, you should try to make it relative to my experience.
E.I.S.analysis for FERC relicensing of the dam has failed to address impacts from power-boat wakes on shorelines and their habitats. This is becoming a problem for many shore owners along the river.
Fishing in the swimming hole is dangerous. Hooks get in feet and the water. It causes dead and floating fish that stink. There is a lot of other places for kids to fish. This is the swimming hole!
Fishing is lousy at Mill Pond
For your information I did return the first survey

Table A.4b-20, continued…

Forest Service P.R. stinks!! and please don't ask the Indians for any help with management on fishing or fish (selection) Note: I don't care if you share any of the enclosed information. I only hope it helps your survey

Have had a number of friends who both camp and enjoy the day swimming in the area. Most of our friends with whom we camped enjoyed the warmer water of Christina Lake.

This is the first time I have heard of the Boundary Recreation Area. I have lived in the Trail BC area for over 50 years.

I'd really like to see some more access sites to the river between Metaline Falls and Canada. I'd also like them to be easily accessible for "old" guys like me. Where we can fish from shore. I'd also like to sell the big island across the river from Metaline for wildlife refuge. The BLM cadastral survey at Portland Oregon says I own it. If you need to do some mitigation that would be a good project. Please contact me. I am botanist and it disturbs me that in recent years you have destroyed almost all the habitat and several hundred plants of a very rare endangered species of fern. It is on the ES list. Fishing opportunities is terrible especially since the introduction of triploid rainbow trout.

I am not a camper or fisher. Have no time. This is a waste of your money sending this to me and a waste of my time to finish filling something I don't do. Many others can help you but not me. Sorry

I am very angry that the Columbia river no longer has salmon coming to spawn. The river has been dammed and they can't navigate any more. What in the hell is the matter with those in charge? Do they or you have any clue as to how many jobs it would create in the fisheries? How was this allowed to happen? Give us back our salmon!!!!

I come from the Canada side and travel along the Pend Oreille road north of the water. I did not recognize much from the map provided, some grotto I visit up the Salmo River from where it enters the Pend Oreille waters and on to Trail, BC. Those are the sites I go to.

I have been up to Boundary Dam only a couple of times since 2001. I used to take all friends and family to see the dams as they came to visit for the first time, because it is such an impressive sight. However now that we cannot go in and now that the eastern road is closed from Crescent lake, I don't go up.

I have lived in the area for 50 years

I haven't been in the States in over 10 years so do not feel I can properly answer this questionnaire.

I love the map of the area. Thank-you

I only fish anymore and prefer the lakes to the river. Too much milfoil...

I really like to fish in Ledbetter and Beatty Lakes. Especially for eastern brook trout. I know all about the conflict with non-native species, eastern brook trout and bull trout, but planting brook trout in these small lakes will have no affect on bull trout in the rivers or streams. If there is one thing that I could change it would be to plant brook trout in our small lakes again.

I sent the first survey as well but didn't put postage on it, so maybe can post Sat on it, didn't send it on postage due.

I understand that the Pend Oreille Valley supports a varied bat population and that there are some important bat habitats just south of US/Canada Nelson border. Even though I haven't visited the area myself. I have attended lectures on this subject. Any hydro electric activities should respect and protect these habitats

I waited for this survey to come to see what information you wanted. I have never visited the Boundary Area, sorry I can't help you.

I wasn't aware these facilities existed - will definitely be checking them out next summer!

I went to Sullivan Lake camping in summer in my early 20's.

I would like to see SCL participate financially in more community programs. Seems like I always see Teck Cominco donating to projects here but seldom see SCL doing so.

I would say you guys do a very good job. Hoped I helped

If I had more time I would enjoy visiting your recreation area. Thank You.

If we didn't live so close we would camp there. We bring all our visitors to see it.

It has been awhile since we have been to the dam and lookout. We will be going down for a round trip pretty soon. I found the tour of the dam very noisy.

Table A.4b-20, continued…

It has been years since I camped at Boundary. When my husband became ill we did not camp. We missed it as both of us loved the outdoors. He often said he would give anything to hike the mountain. I am sure his is now hiking with no pain.

It would be nice to have a shower to clean off after swimming.

It would be real easy to dig a channel at low water to make the Metaline Launch usable at all levels.

I've lived in Trail and area since 1934. I'm 94 years and sure think it's a great idea to canvas this area, we are so short of places of recreation, my husband did go fishing etc...and now a grandson. I'm in favor of this great place, Trail is 5 miles away & it's a great place. So go ahead with your plans, the young families will realize what a great place it is.

Just don't forget to be part of the area, people after all this is over!

Many years ago we (my husband & I) drove through Metaline Falls. My husband golfed at a small course near there. Due to my age I do not participate in any recreation this far from my hometown of Trail BC Can. Other than walking along the Columbia at Gyro Park Trail BC & participation in functions at Gyro Park and enjoying walking along our river.

My husband worked for City Light, he passed away Jan '91

No thank you

Now that I know the recreation site exists I plan to visit

Often I am heading to or from Spokane WA and love to take pictures of the area, picnic along the way, or take a swim. I have not utilized this area for a long time, but any facilities added would surely bring more people and more pleasure to the area.

P.S. We moved here from Seattle in 1993. Being in the boundary area makes us feel more at home.

Please do not pass this on to a third party. Thanks.

Please enforce speeding laws!

Please remove my husband's initials from your registry as it has been a year of his passing. Thank You and Please DO NOT send me anymore of these things.

Re #23 I use those facilities only 1-2 times yearly and don't have enough time there to comment accurately. I live in Ione on the Pend Oreille River and seldom use any other facilities.

Really enjoy and appreciate the no fee campsites always were maintained one of my favorite places to go camping fishing, paddling.

SCL has always supported the area communities financially and providing manpower and equipment. They are a great neighbor, but town of Metaline needs on-going support for their parks.

See attached sheets on Diamond-host rocks. Kimberlite and hampiophyre in the Pend Oreille Valley. I am a rock hound

Since 9/11 my visits to the USA have been minimal it has become Fortress America, the border is no longer open to Canadians as I have livid in this area my lifetime and have several American friends. I find it an unwelcoming Border with " " Border Guards

Sorry I can't be more accurate with my answers...time passing and my recollections aren't clear.

Sorry we are not very helpful

Thank-you but I only use the Boundary area for crossing the border at Ulanete when going to visit in the US Thanks Again

Thanks for all you do. We support the clean local Industries like SCL and specifically Boundary Dam.

Thanks for caring!!!

That will be $15.00 please...

The area in question is a beautiful recreation area and visits by several people I know. I would have no problems

Table A.4b-20, continued…

using it but I just don't go there.

The Boundary Dam facility is of high quality and in no way does it detract from my pleasure when recreating. I am a math teacher at Selkirk. The employees are also very willing to share the experience with the math students! The dam is a huge part of our community I am very pleased with how they support local business, schools, and the local residents!

There are more and more people in wheel chairs every year. The more wheel chair access the better. Thank you

This is the 2nd time I filled out this questionnaire.

We are relatively new comers, bought property in 2000, but snowbirded until 2005, now built a house. I have this year operated two net pens rearing 20,000 rainbow under the W. Fish & Wildlife as a volunteer. I have been assisted in this by Boundary Dam personnel.

We have found all the public facilities at dam sites to be clean and well maintained. Such is the case at Boundary and Box Canyon Dams. We have also enjoyed many others such as Albeni Falls, Grand Coulee, Bonneville (watch the fish counting was fascinating), Glen Canyon. Clean restrooms, picnic facilities and visitor centers are nice to come across. We expect the presence of security is why these facilities are always well maintained and not subject to vandalism. As long as someone is watching the dam anyway, why not have a nice park people can enjoy? It would be a shame if these where ever discontinued due to the costs of maintaining the grounds as they are a real asset.

We love our fishing time

We travel through the Boundary Reservoir Area from time to time for hockey or baseball trips with my boys. If I had more time for outdoor activities I would definitely come to this area too.

We use the Canadian portion of the river.

We used to really enjoy Crescent Lake, just south of the US/CAN border crossing at Nelson, BC/ Metaline Falls, US. It appears to not be in use now, which is too bad. Very pleasant site for camping/picnicking/swimming. Thank you for maintaining recreation sites in the Boundary Area. Many people in the Columbia River Basin in SE BC have anxiety and frustration with great drawing down of water by American water powers for their dams and irrigation. Our recreation sites on our lakes/rivers are definitely compromised. Vying for water control, now and future is hugely important to all of us, and may become a very serious problem.

We would like to see improvements in the camping/recreation area. Such as: more campsites, better fire pits, green grass, better garbage storage, and maintaining bathroom cleanliness and keeping it stocked. Also, posting information on: reservoir hazards, dock area rules and campground rules. Metaline boat launch needs improvements, maybe docking facilities and longer ramp into the water.

We, my husband and I moved from the West Kooteneys in August 2007. We have moved into a senior's residence in Ashcraft. Ashcraft is situated in the Caribou Region of BC. It is situated on the famous Gold Trail of the Caribou. We lived in Nebuay Custers North of Metaline Fallls and of course we are going to miss your lovely region.

When I was growing up I frequently visited the area, several times a month for the purpose of preaching the good news of God's Kingdom Witnesses. The area is quite beautiful and perhaps my wife and I will visit again in the summer. Thank You for the opportunity I'm sorry I couldn't be more helpful.

When my husband was alive & my children were small we used to go down often, my children are grown my husband died & my friends in Metaline are gone. I don't go down much anymore. I miss it. Thank you. I did fill out the other question sheet

Will building a dam effect the Canadian side of the border, and will you put in fish ladders.

Will visit the site again since I have not gone for sometime now

Would be nice to have a few more campsites and some trees for shade

You guys rock all we need is more fish and less people...Thank you.

Appendix 5: Dispersed Site Inventory Documentation

Appendix 5a. Blank Site Inventory Form

Appendix 5b. Site Inventory Entries

Appendix 5a. Blank Site Inventory Form

Boundary Hydroelectric Project
Study 21 Dispersed Recreation Analysis
Site Inventory Form

Date:_____ **Section/Loc. Code:**_____ **Photo #s:**_____

Name:_____ **Site Code:**_____ **Sketch Map:**_____

SITE INVENTORY DATA

1. Site Delineation

1.1 GPS reading:_____

1.2 Reference points:_____

1.3 Size, shape:_____

1.4 Estimated Capacity:

_____No. tents/units _____No. vehicles

2. Site Access

2.1 Means of access to site:

_____road _____road/walk-in _____trail/hike-in

_____boat-in

2.2 Distance (feet) to site from:

_____road _____reservoir _____trail

2.3 Access conditions:

_____2wd _____4wd _____ATV _____easy by foot

_____difficult by foot _____no land access (boat-in)

3. Physical Setting

3.1 Predominant cover type:

_____older forest _____young forest _____riparian

_____grass/shrub _____river/lakebed _____other

3.2 Shade cover (percent):

_____0-25 _____26-50 _____51-75 _____76-100

3.3 Location relative to shoreline

_____set back in trees _____upland on shoreline

_____below full-pool shoreline _____not applicable

3.4 Distance to nearest waterbody (feet):_____

3.5 Name/type of waterbody:_____

4. Human Use Condition

4.1 Number of user-made fire rings:_____

4.2 Evidence of use:

_____high _____mod _____low _____none

4.3 Trash (in fire rings, scattered around site, etc.)

_____high _____mod _____low _____none

4.4 Human/animal waste:

_____high _____mod _____low _____none

4.5 Vegetation trampling/loss:

_____high _____mod _____low _____none

4.6 User-made trails:

_____high _____mod _____low _____none

4.7 Tree damage:

_____high _____mod _____low _____none

4.8 Other:_____

_____

NOTES

Boundary Hydroelectric Project
Study 21 Dispersed Recreation Analysis
Site Inventory Form

5. Site Facilities

toilets _____no. _____condition
trash cans: _____no. _____condition
picnic tables: _____no. _____condition
signs: _____no. _____condition
fire pits: _____no. _____condition
tent pads: _____no. _____condition
other: _____
other: _____

_____
_____

NOTES

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6. Visual Setting

6.1 Predominant views from site:
_____reservoir _____creek/stream _____mountain
_____enclosed

6.2 Evidence of development:
_____roads _____powerlines/dam _____mining operations
_____harvest _____other

6.3 Other recreation sites in view (number/type):_____

6.4 Screening around site:
_____high _____mod _____low _____none

_____
_____
_____
_____
_____
_____
_____
_____
_____

7. Shoreline Conditions

7.1 Is there surface water shoreline within/adjacent to the site? _____Yes _____No
If YES, continue; if NO, skip remaining items.

7.2 Type of shoreline:
_____low bank _____high bank
_____vegetated _____rock outcropping
_____sand/silt _____gravel

7.3 Type of access to shoreline:
_____vehicle _____foot _____none

7.4 Boat launching access at shoreline:
_____trailer _____hand launch only
_____easy _____difficult _____none

7.5 Boating hazard/boat landing difficulty:
_____high _____mod _____low _____none

7.6 Type of substrate at shoreline:
_____sand/silt _____gravel _____cobble _____boulders

_____
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Boundary Hydroelectric Project
Study 21 Dispersed Recreation Analysis
Site Inventory Form

Sketch Map of Site

Boundary Hydroelectric Project
Study 21 Dispersed Recreation Analysis
Site Inventory Form

Site Photos

Boundary Hydroelectric Project
Study 21 Dispersed Recreation Analysis
Site Inventory Form

Site Photos

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Appendix 5b: Site Inventory Entries

Appendix 5b
Site Inventory Entries
Sections 1-3

Site/Code	1.4 Est Tent Capacity	1.4 Est Vehicle Capacity	2.1 Site Access Means	2.2 Distance to Site	2.3 Access Conditions	3.1 Cover Type	3.2 Shade Cover %	3.3 Location re Shoreline	3.4 Distance to Water	3.5 Name of Water
3SR31SC-1	1	0	rd/w; t/h	600 ' rd; 2' t	easy byft	o for	51-75	NA	40'	Sweet Ck
4RD325-1	1	1	rd	5' r	2wd; 4wd	old for; y for	0-25	na	3000'	res
4RD325-2	2	2	rd	45' r	2wd; 4wd	y for; grass/sh	0-25	na	5280'	res
4RD305-1	3	3	rd	1' r	2wd	o for; rip	0-25	upland	2'	crescent
4RD305-2	1	2	rd	1' r	2wd	o for; rip	0-25	upland	2'	crescent
4RD310-1	2	2	rd	3' r	2wd; 4wd; atv	y for; grass/sh	0-25	na	2810'	res
4RD190-1	3	3	rd	150' r	2wd	o for	26-50	na	1000'	na
4RD172-1	5	4	rd	159' r	2wd	o for; y for; grass/sh	0-25	na	5280'	res
4RD172-2	1	0	rd/w; boat	40' r; 400' res	easy by ft; boat	o for	26-50	set back; upland	400'	res
6SRWC-1	0	0	rd/w; boat	200'r; 0' res	4wd; atv; boat	riv/lk	0-25	below f	0'	res
6SRSG-2	1	0	bt	20' res	boat	grass/sh	0-25	upland	25'	res
6SRSG-1	1	5	rd; bt	200' rd; 15' res	2wd; 4wd; bt	o for; grass/sh	0-25	upland	15'	res
5NRFI-1	2	0	bt	15' res	bt	o for; grass/sh	0-25	upland	15'	res
5NRLC-1	8	0	bt	5' res	diff ft; bt	o for; y for; grass/sh	0-25	upland	5'	res
5NREI-1	4	0	bt	5' res	bt	o for; y for; grass/sh	0-25	upland	5'	res
5NREI-2	1	0	bt	25' res	bt	o for; y for; grass/sh	0-25	upland	25'	res
5NREI-3	1	0	bt	30' res	bt	o for; y for; grass/sh	0-25	upland	30'	res
5NRBLM-1	6	3	rd; bt	15' r; 25' res	4wd; easy ft; bt	o for	0-25	upland	25'	res
5NRBLM-4	1	0	bt	10' res	bt	o for; y for	51-75	set back; upland	10'	res
5NRMB-1	5	0	bt	40' res	atv; easy ft; bt	o for; y for; grass/sh	51-75	set back	50'	res
5NRBLM-2	2	0	bt	25' res	bt	o for; y for	26-50	set back; upland	25'	res
5NRBLM-3	4	0	bt	20' res	bt	o for; y for	51-75	upland	20'	res
5NRDE-1	1	0	bt	20' res	bt	o for	0-25	upland	20'	res
5NRDE-2	4	2	rd; bt	40' res	4wd; atv; boat	o for; grass/sh	0-25	upland	40'	res
5NRDE-3	1	0	bt	100' res	bt	o for	51-75	upland	100'	res

Appendix 5b
Site Inventory Entries
Sections 4-6

Site/Code	4.1 # User-Made Fire Rings	4.2 Evidence of Use	4.3 Trash	4.4 Human/Animal Waste	4.5 Vegetation Tramp./ Loss	4.6 User-Made Trails	4.7 Tree Danage	5 Toilets	5 Trash Cans	5 Picnic Tables	5 Signs	5 Fire Pits	5 Tent Pads	5 Other	6.1 View Type	6.2 Evidence of Devel.	6.3 Rec Sites in View	6.4 Screening at Site
3SR31SC-1	1	Low	Low	None	Low	Mod	None	0	0	0	0	1	0	0	Ck/St/Encl	none	none	Low
4RD325-1	1	Low	low	mod	low	none	none	0	0	0	0	1	0	0	mt/encl	rd	none	none
4RD325-2	1	low	Low	None	none	none	None	0	0	0	0	1	0	0	mt/encl	rd	none	low
4RD305-1	2	high	mod	none	high	low	none	0	0	0	0	2	0	0	mt/encl	rd	4rd-2	none
4RD305-2	3	high	low	None	high	low	None	0	0	0	0	3	0	0	mt/encl	rd	4rd-30S-1	none
4RD310-1	1	mod	mod	None	low	none	None	0	0	0	0	1	0	0	mt/encl	rd	none	none
4RD190-1	1	high	mod	high	mod	none	None	1	0	0	0	1	0	0	encl	rd	none	mod
4RD172-1	1	mod	high	None	low	none	low	0	0	0	0	1	0	sk pole	mt/encl	rd	none	mod
4RD172-2	1	low	low	low	low	none	low	0	0	0	0	1	0	sk pole	res/encl	rd	none	mod
6SRWC-1	0	none	none	none	none	none	none	0	0	0	0	0	0	0	res/encl	rd/powerline	none	none
6SRSG-2	1	low	none	low	low	low	None	0	0	0	0	1	0	0	res	none	6sr-sg1	none
6SRSG-1	2	mod	mod	None	low	low	None	0	0	0	0	2	0	0	res/encl	rd	6sr-sg2	Low
5NRFI-1	1	low	low	low	Low	mod	None	0	0	0	0	1	1	0	res/encl	rd/; powerline	Bcampgr	Low
5NRLC-1	2	mod	low	high	mod	mod	low	1	0	0	0	2	4	0	res	none	5NRREI-1	low
5NREI-1	2	low	mod	low	low	low	None	0	0	0	0	2	1	0	res	none	LC	none
5NREI-2	2	low	none	none	low	none	None	0	0	0	0	2	1	0	res/encl	none	EI1/BLM1	mod
5NREI-3	1	mod	mod	low	low	low	None	0	0	0	0	1	1	0	res	rd	BLM1	mod
5NRBLM-1	1	high	high	high	low	low	low	1	0	2	0	2	2	0	res	rd	EI1/EI3	mod
5NRBLM-4	1	mod	mod	None	low	none	mod	0	0	0	0	1	1	0	mt/res	none	none	mod
5NRMB-1	1	mod	low	high	mod	mod	mod	1	0	0	0	1	4	0	res/encl	none	none	high
5NRBLM-2	1	mod	mod	None	low	low	high	0	0	0	0	1	2	0	res	none	none	mod
5NRBLM-3	1	high	high	high	mod	mod	None	1	0	1	0	1	4	0	res/encl	none	none	high
5NRDE-1	1	mod	mod	low	low	low	None	0	0	0	0	1	0	0	res/encl	mine	none	low
5NRDE-2	4	high	high	low	mod	low	None	0	0	0	0	4	0	0	res/encl	mine	none	mod
5NRDE-3	1	mod	low	None	loww	low	None	0	0	0	0	1	0	0	res/ckst	none	yes	high
	34											35						

Appendix 5b
Site Inventory Entries
Section 7

Site/Code	7.1 Shoreline Present	7.2 Type of Shoreline	7.3 Type of Access	7.4 Boat Launch Access	7.5 Boat Hazard	7.6 Type of Substrate
3SR31SC-1	No	NA	NA	NA	NA	NA
4RD325-1	no	NA	NA	NA	NA	NA
4RD325-2	no	NA	NA	NA	NA	NA
4RD305-1	yes	low b; veg	veh; ft	hand l; easy	low	gravel
4RD305-2	yes	low b; veg	veh	hand l; easy	low	gravel
4RD310-1	no	na	na	na	na	na
4RD190-1	no	na	na	na	na	na
4RD172-1	no	na	na	na	na	na
4RD172-2	yes	high b; rock out	ft	hand l; easy	low	gravel; cobble
6SRWC-1	yes	lowb; sand/silt; grav	veh	hand l; easy	low	sand/silt; cobble
6SRSG-2	yes	high b; veg; sand/silt	ft	hand l; easy	low	sand/silt
6SRSG-1	yes	low b; veg; sand/silt	veh; ft	hand l; easy	low	sand/silt; cobble
5NRFI-1	yes	h bank; l bank; rock out	ft	hand l; easy	low	cobble
5NRLC-1	yes	l bank; veg; gravel	ft	hand l; easy	low	sand/silt; grav
5NREI-1	yes	l bank; grav	ft	hand l; easy	low	sand/silt; grav
5NREI-2	yes	l bank; grav	ft	hand l; easy	low	sand/silt; grav
5NREI-3	yes	l bank; veg; rock	ft	hand l; easy	low	grav/boulders
5NRBLM-1	yes	l bank; grav	veh; ft	hand l	low	grav/cobble
5NRBLM-4	yes	l bank; veg; grav	ft	hand l	low	cobb/bould
5NRMB-1	yes	l bank; sand/silt; rock	ft	hand l; easy	low	sand/silt; grav
5NRBLM-2	yes	h bank; rock	ft	hand l; diff	mod	boulders
5NRBLM-3	yes	h bank; grav	ft	hand l; easy	low	grav
5NRDE-1	yes	h bank; veg	ft	hand l; easy	low	boulders
5NRDE-2	yes	h bank; veg; grav	veh; ft	hand l; easy	mod	cobble
5NRDE-3	yes	h bank; rock	ft	easy	mod	sand/silt

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Appendix 6: Recreation Focus Group Meeting Summaries

Seattle City Light
Boundary Hydroelectric Project Relicensing
Recreation Focus Group Meeting
Ione, Washington
May 6, 2008
6:30 – 9:00 pm

In Attendance

Focus Group Participants
Bob Briggs, Circle Motel (BB)
Dean Cummings, Pend Oreille County Commission (DC)
Suzanne Harris, Pend Oreille River Tourism Alliance, PORTA (SH)
Lonnie Johnson, Seattle City Light/International Selkirk Loop (LJ)
Nathan Jones, Pend Oreille PUD (NJ)
Jon Knechtel, Pacific Northwest Trail Association (JK)
Tara Leininger, Mayor, Town of Metaline Falls (TL)
Bill Newsome, Pend Oreille County Parks and Recreation (BN)
Dick Norton, Fire District #2/Lion's Club (DN)
Gabe Osbourn, Cedar RV Park and Campground (GO)
Don Wilson, Metaline Chamber of Commerce (DW)

Seattle City Light Representatives
Matt Bates, Tetra Tech (TT)
Jenna Borovansky, Long View Associates (LVA)
Chuck Everett, EDAW
Chris Lawson, TT

Note that statements are attributed to individuals where possible. During some instances, the group discussed issues with several individuals expressing similar opinions. In these cases, the statements are not attributed to any specific individual.

Meeting Summary

Chuck Everett opened the meeting and thanked participants for attending. Chuck introduced the SCL team and reviewed the agenda (Attachment 1), as well as the questions that would be asked over the course of the meeting and the purpose of the meeting (Attachment 2). Chuck noted that there would be a second focus group meeting in Metaline Falls the following night and that those participants would be asked the same questions. Participants all introduced themselves and their organizations. Chuck gave a brief overview of the FERC relicensing process, and noted that the second year of studies are currently ongoing. He noted that first year study reports are available on-line and that the comment period is open until May 12, 2008. Chuck asked if anyone had questions regarding the FERC process or the purpose of the meeting. Several questions regarding the Boundary Hydroelectric Project (Project) were discussed.

- *Comment:* Gabe Osbourn asked why the term of the license was so long.

Response: Chuck Everett noted that the length of the license is FERC's decision – and it will be between 30-50 years. He noted that the new Integrated Licensing Process requires extensive information to be collected as various potential mitigation measures may be required in a new license. Chuck also noted that the public can weigh-in with FERC regarding the proposed length of the license or proposed actions, if desired. Chuck referred meeting attendees to SCL's web-site for more information about the relicensing process and timeframes.

- *Comment:* Dean Cummings asked if peaking operations were expected in the future. He also commented that development on the reservoir may be limited because of the fluctuations in the reservoir due to current operations.
  Response: Lonnie Johnson replied that Boundary currently does some load following, primarily during the daytime through early evening. He noted that SCL would like to continue operating the project similarly into the future, as there are great efficiencies with current operations. In its license application to FERC, SCL will propose future operations. Chuck Everett noted that the purpose of the study program is to look at all potential project effects and that proposed operations would be based on results of the overall multi-resource study program.

Chuck Everett reviewed the FERC Project boundary line with participants, and asked that discussions regarding recreation be focused within this boundary. Lonnie Johnson noted that in the upper pool where there is private property, the Project boundary line is close to the shoreline. Depending on the location along the reservoir, the FERC boundary ranges from 200 feet horizontally to 5 feet horizontally, depending on topography; participants reviewed a map of the Project Boundary (Attachment 3). Chuck Everett noted that the location of the Project boundary line will be reviewed during relicensing. He clarified that changes to the FERC Project boundary line will only be recommended if there are areas that are critical to Project operations that are not currently within the boundary; for example, the Boundary Wildlife Preserve lands and the maintenance area adjacent to the dam.

Meeting participants were curious about the location and purpose for the Boundary Wildlife Preserve. Bill Newsome asked about the size of the preserve and whether there could ever be any development there. Lonnie Johnson described the preserve and access, and noted that it was about 50 acres in size [Correction: the Boundary Wildlife Preserve covers approximately 85 acres]. Chuck Everett noted that there are some concerns regarding OHV use in this general area. Participants followed up with questions about whether viewing spots or other recreational amenities were permissible within the Preserve.

- *Comment:* Bob Briggs asked if a viewing area might be permitted in the wildlife preserve.
  Response: Lonnie Johnson noted that the preserve was originally created in 1986/87 and its purpose is open space and habitat preservation. While a viewing area is not currently planned, it would likely be consistent with the objectives of the Preserve.
  Comment: Suzanne Harris asked what wildlife were present at the Preserve. She asked if there were walking or viewing trails currently and also noted that the information that SCL is collecting regarding wildlife species would be helpful to

tourism organizations, like hers, as there are very serious birders and other wildlife viewers that can be attracted to the area to see wildlife.
Response: Lonnie Johnson noted that all wildlife found in the local area generally use the Preserve, for example, elk, deer, bear, otter, eagles, and geese.
Comment: Don Wilson noted that the scenic byway group had a proposal to install a telescope for viewing the area from the Eagles Nest site on the west side of the river.
Response: Lonnie Johnson confirmed that the Eagles Nest viewpoint site is a part of the North Pend Oreille Scenic Byway/International Selkirk Loop program, and that funds were secured and construction would begin in the fall. He noted that at this time, a viewing scope was not planned. Current plans include a maintained road pull-off, parking, and some day use benches, as well as interpretive signs that explain the riverine habitat visible from the viewpoint. An interpretive sign already exists at this highway pullout.

Chris Lawson summarized recreation study activities that had been completed to date, and reviewed study activities to be completed over the next year. He noted that there are 26 studies for the relicensing process, and that the recreation study is "Study 21" if people would like to review the information on SCL's web-site. He described the five components of the recreation study, including: area resident and visitor surveys and visitor counts; regional recreation analysis, future recreation analysis; dispersed recreation analysis; and an assessment of recreational carrying capacity. In 2007, visitor and area resident surveys were administered and initial information is summarized in the Study 21 Initial Study Report. He noted that there was a very high response rate, with 600 completed visitor questionnaires (63 percent response rate) and a 30 percent response rate for area resident surveys. He noted that there is a lot of information in the surveys, and that the majority of all survey respondents reported satisfaction with their recreation experience. He noted that in 2008 more analysis of survey responses will be conducted and that creel surveys will be conducted. The focus of 2008 efforts will be to assess how well the current recreation resources are working, and to link this analysis to an assessment of future recreation needs.

Meeting Questions

Chuck introduced the list of questions that would be discussed at the meeting (Attachment 2). He also reminded participants to try to focus answers on the Project area and vicinity, which roughly encompasses the area from County Road 2975 on the west to SR 31 on the east in the northern portion of the reservoir, and generally following the river corridor in the southern portion of the Project area.

Question 1: What are your overall recreation interests in the study area? How familiar are you with the Boundary Hydroelectric Project and the study area? How do you currently use the study area?

- Uses Vista House dam overlook as attraction when family and friends come to town (GO)
- Uses the Forebay boat ramp (GO)

- Takes visitors to see waterfalls, goes birding, recently took a photographer on the reservoir who was taking pictures for local gift shop (GO)
- Not that familiar with the Project area, but in the past year, has worked with the TT crew on the recreation survey; filled out the area resident questionnaire (GO)
- Uses the Forebay boat launch, Vista House, and goes to nearby Sullivan Lake (GO)
- If nicer, would use the Metaline Waterfront Park boat launch (GO)
- Does not like to operate his boat south of Metaline Falls (GO)
- Has not visited the State Park caves or toured the dam, because the timing of openings has not been right (GO)
- Refers customers to the State Park caves, Boundary Dam tours, and the Vista House (GO, BB)
- Occasionally takes visitors out on a boat, including international travelers last year (GO)
- Primarily interested in tourism, believes financial future for tourism is not tapped yet (BB)
- Utilizes his business website to describe the area and its available activities (BB)
- Fishes the river near Box Canyon (BB)
- Takes guests to Boundary Dam for tours, hopes the tours will continue (BB)
- Representative of the visitors bureau – has a peripheral interest in the Project studies for the contribution to information about tourism resources in the area – i.e. they want to distribute good information on what people might want to see when visiting the area (SH)
- Appreciates SCL participation in promoting the area and support for community activities, especially Lonnie's active engagement (SH)
- Interested in unique features of the area that may draw tourists in; could use the results of the relicensing studies to help identify other unique features (e.g., bird lists for traveling birders seeking life list species) (SH)
- Appreciates SCL collecting and sharing information on the area (SH)
- Lived in area for about 7 years and uses the reservoir to boat, fish, swim; utilizes the entire Project area (NJ)
- Does cycling in the area (NJ)
- Enjoys riffles created by fluctuating water levels (in inner tubes) – "one of the most fun experiences" riding riffles in tubes with kids (NJ)
- Has a professional connection to the Pend Oreille River as a Pend Oreille County PUD employee managing the upstream Box Canyon Dam and reservoir, has seen a big increase in recreation at Campbell Park (NJ)
- The PUD has an interest in sharing in potential improvements at Campbell Park with SCL (NJ)
- Sees many similar recreational uses in the Boundary and Box Canyon reservoirs (kayaking, boat fishing, jet skiing), but he uses Boundary Reservoir more (NJ)
- Has visited the area since 1969 and owned a home here since 1990/91 (DW)
- Likes to go fishing, boating, and mushrooming (DW)
- Enjoys the Bassin Assassin tournament (160 entrants this year, it has grown in the last 7 years, and is still growing) (DW)
- Works with the Chamber of Commerce – speaks with groups interested in the area, from as far away as Spain, helped arrange a visit by 700 motorcyclists from Portland,

organized weddings in Metaline Waterfront Park and rents the park out for activities (DW)

- Receives inquiries from Boise and other areas every week – sends out locational and recreational information to potential visitors (DW)
- The area is growing, people marvel at the beauty, the scenery can't be found elsewhere (DW)
- Recommends to visitors and potential residents that they combine visits of the two dams, the State Park caves, and reservoir recreation opportunities (DW)
- Has visited the area since the 1970s (JK)
- Is a hiker (JK)
- Is promoting new legislation just introduced in Congress to have the Pacific Northwest Trail (the current trail route crosses Boundary Dam) designated as a National Scenic Trail (HR 5926, S2943) [Group discussed Washington legislative support and interest] (JK)
- Expects a major increase in hiker numbers if PNT designated a National Scenic Trail (JK)
- This trail is about 1,200 miles long (from Glacier National Park to Pacific Ocean) (JK)
- Pend Oreille County and the US Forest Service have funded his organization to work on an ORV system, but not hiking trails (JK)
- Personally hiked through to Priest/Salmo Wilderness Area several times, also by horseback (JK)
- Believes all recreation users need to work together to get things done (JK)
- His organization has logged more than 20,000 hours work/year on trails (JK)
- Dam crossings are done with an escort, just call SCL at the dam (phone number is published in the PNT guide), no advance notice is needed (some dam operators do not require an escort, but SCL does) (JK)
- Annual use of the trail varies by location (e.g., 50 long-distance through hikers, with the rest of the use being more local [1.5 million users near Deception Pass, Blanchard 50,000/year]) (JK)
- Many trail users are distance hikers; hikers don't necessarily stop in each area they pass through (JK)
- Is a member of the North Pend Oreille Scenic Byway leadership committee, the Selkirk International Loop organization and the local economic development council (LJ)
- Tourism is generally untapped in area to date (LJ)
- Personally participates in virtually every form of outdoor recreation in the area (fishing, jet skiing, boating, hunting, OHV riding, etc.) (LJ)
- Pend Oreille County offers unique OHV riding opportunities (LJ)
- Very familiar with the area – visited for fishing since the 1980s, has lived and worked in the area since the early 1990s (LJ)
- Personal use of the area is primarily equestrian – uses the horse trails (300-400 miles of Pacific Northwest trail), but mainly in Montana (DC)
- Views of water shooting out below the dam "takes your breath away;" hopes that during high water events, SCL would better inform visitors and allow them into the area to see and experience a spill/dam release. Hopes that security in the area does not limit this opportunity (DC)
- Has filmed wildlife in the area (DC)

- Has ridden equestrian trails in the area, the US Forest Service has no money to maintain trails. Would like to see help to better maintain horse trails, hiking trails (DC)
- Noted that ATV users maintain their own trails which is unique among user groups (DC)
- Wonders if there is an opportunity to increase backpacking in the area, for example, would like to see a new trail all the way around the canyon reach of the reservoir, or a Noisy Creek/Sullivan Lake loop (though not in the Project area), could be a great 2-3 day camping trip (DC)
- Has an interest in sailing in the area, but has not sailed on Boundary Reservoir yet; uses the Cusik area, Lake Pend Oreille, and Lake Roosevelt (DC)
- Not sure if there is a chart for this section of the river; one would be useful if made [Lonnie Johnson noted that the wind on Boundary Reservoir is generally one-way, so it may be difficult to go sailing and return to your point of origin] (DC)
- Pend Oreille County perspective is that SCL can help promote tourism in the area; Pend Oreille County has decided it is ready for a new paid tourism staffer but needs the help from the broader community to fund this position and to develop a more focused tourism effort (DC)
- State Park's Gardener Caves Park is hopefully going to be open longer during the year; the Metaline Chamber of Commerce is working to keep the park open longer as it is a big draw to the area (DC)
- Would like to see Boundary Dam stay open later into the season (DC)
- Has been in the area since the 1970s, and full-time since 2002 (DN)
- Thanked SCL for contributing to the local fire district that provides an ambulance and a full-time paramedic, having these resources is very unique to a community of this size (DN)
- Has hosted several weddings on a pontoon boat in the Forebay (DN)
- Visitors think the narrow river/canyon area is very unique, so different than at Metaline (DN)
- Suggested it would be nice to have more sandy beaches, but then it would be busier and it is nice the way it is (DN)
- Works with the Lions Club who operates the train from Metaline/Ione, sells tickets; also directs visitors to the Vista House, to the State Park caves, and to area scenery (DN)
- Uses include hunting, hiking, swimming, boating, day use/picnicking with kids at Metaline Waterfront Park (DN)
- Uses the Forebay boat launch thinks it is well maintained; also uses Box Canyon Reservoir (DN)
- Lions Club hosts 300 cyclists who bike from the Box Canyon area into Canada with a stop at the Vista House along the way (DN)
- Uses the river for shore fishing with kids/family, also uses the Sullivan Lake area; family visitors can't get enough of fishing (TL)
- Area is beautiful, quiet, and accessible; you don't have to be on the water to appreciate it (TL)
- Hikes in the Forebay area (TL)
- Has conducted 17 weddings at Metaline Waterfront Park with 2 more planned; also hosts Easter and summer church services at the park (TL)

- Serves on the Cutter Theatre Board of Directors, appreciates SCL's sponsorship of activities and purchases of advertising (TL)
- As Metaline Falls Mayor, always gets asked what to do in the area, recommends the Sullivan Lake area, Boundary Dam Tour, and recreation on the river (TL)
- What exists now is good (TL)
- Thought during the drawdown in September [2007] it was great fun to be able to walk across the river (TL)
- Has hunted and fished in the area from the community of Usk up to the Boundary Dam since the late 1970s (BN)
- Area is good for hiking, horse-back riding, riding jeeps, and OHV use (BN)
- Got involved with the Washington Off-Highway Vehicle (OHV) Association a few years ago, which lead to the development of ordinances for small jurisdictions to develop OHV use and trail systems. County and City OHV use ordinances are unique; Pend Oreille County currently is working on an OHV trails system This is a good idea for tourism for the area; cited examples in other states (BN)
- Member of the Blue Ribbon Coalition and WA State Trails Association; feels that motorized and non-motorized users need to work together (BN)
- Visitors use the entire river reach from Box Canyon Dam to the Boundary Forebay (BN)
- Sees more people coming from British Columbia in the future (BN)
- Likes to run the Narrows (BN)
- Sees water trails as important; tremendous kayak and canoe opportunities, has been promoting the need to have the Pend Oreille River on the WA State Water Trail Map (BN)
- While supportive of tourism, we need to be mindful that it is a scenic and fragile area that needs to be protected for its intrinsic value (BN)
- There is a need to limit visitors at the Forebay Campground; nothing worse than camping with lots of people surrounding your campsite (LJ)
- We can increase recreational use in county, but we always need to maintain/protect values that bring people to the county in the first place (LJ)
- The County has a lot of motorized vehicle users, but there are also folks who don't want to hear engines, so we need to balance these uses. Noted that the County has made an effort to attract additional OHV use. (NJ)
- Balance is needed, but OHV riders do bring in money to the County (SH)
- User fees may help to regulate use (e.g. Sullivan) (BB)
- Would not like to start charging fees at Boundary Reservoir at this time. Would like to see better delineation of recreation sites and vehicle parking at the Forebay recreation area (LJ)

Based on the interests and activities that people identified in response to the first question, Chuck Everett noted there seemed to be general consensus in the room in favor of promoting tourism. He than asked the group if they thought this was also the general opinion in the community.

There was group discussion in response, and it was generally agreed that not all in the community agreed that there is a need to promote tourism in the Boundary Reservoir area. It was noted that there is a transition going on in the County away from a resource extraction

economy (mining more limited, timber cuts limited) to a more diversified and tourism-based economy. Participants believed that tourism is a good opportunity for economic growth in the area. Better means to share information with the outside world is needed. It was noted that promotion of the area is ongoing (e.g., Southwest Airlines magazine, Selkirk Loop is advertising in the United Kingdom, Rand McNally 2009, National Geographic Explorer has a picture of Sullivan Lake). The population base in the area is low, so each organization needs to do its part and spread out the effort. Tourism is a way to have people come to the area, enjoy it, and leave their money behind. The shoulder months are the most difficult, but there is potential for growth in the area. The consensus of this group was that tourism is good for Pend Oreille County. However, participants noted that the community as a whole is not always in support of additional tourism, and an example was given where a community in the area protested a proposed 600 unit RV park and the park was later scaled back to 200 units.

Question 2: What is your current use (or non-use) of the study area? If you do not currently use the study area, or do not use particular areas, why is that?

- The falls is problematic for some boaters; does not take pontoon boats through the falls because he doesn't want to "test his luck" with fluctuating pool levels and river flows (DN) [LJ responded that the falls are not a problem for all boaters; however, in the Pend Oreille River, there are lots of gravel bars, particularly in the upper reach. The river/reservoir can be shallow at times, especially in the winter.
- The Newport Chamber of Commerce has noticed that visitors from outside the County are nervous about visiting the Project area because it is not signed well. The US Forest Service is working on adding some signs. Tourists need consistent signage, plus directional information once they get to an area (SH)
- Pend Oreille County is limited by a lack of larger, quality motel/hotel accommodations (DC)
- The shoulder season and the winter are difficult for this specific area. There is no good way to get lots of people in and hotel/motel owners will not build in the area because there is not a large enough population base or tourism volume to support expansion (BB)
- Promoting a hunting and snowmobile season may help increase winter use (DC)
- Need to develop more winter sport activities; the County only has the 49 Degrees North facility, so capacity for larger groups is low. If winter use increases, then incentive to increase lodging capacity may also increase. (SH)
- Development in the area is limited by having 94 percent public land within 30 miles of the border, there is not developable land for resorts, etc. (DW)
- Access to the reservoir from the land is limited in both north/south reaches (LJ)
- There is a lack of developed trails (LJ)
- There is not a lot of hiking or snowshoeing and no significant delineated trails along the reservoir (LJ)
- In the canyon area, it is nice to be alone there and it is likely not a good place for heavy recreation, but there could be more use than there is now (LJ)
- Access and boat launching is limited when the pool level/river flow is down in the upper reach; in the Metaline area people are wary (DN)

- Chuck Everett noted that pool level/river flow fluctuation analyses will look at impact on all resources, including boat launch access. This includes fisheries and water quality in addition to recreation.
- The fishery has likely adapted to the current fluctuation regime, so maintaining this regime is preferred and should not create any new negative effects. A positive action could be to introduce more fish in the reservoir (DC)

Question 3: What is your impression of how well study-area recreation resources are functioning? On a scale of 1 to 9 (with 1 being poor and 9 being excellent), how would you rate the quality of your current recreational experiences in the study area?

Group responses:
- 9 – two votes
- 8 – four votes
- 7 – five votes

- Chris Lawson noted that this was a bit higher for this group compared to the overall survey results
- For activities along the shoreline, hiking is important and is enjoyed. Uses road spurs and explores off shore (TL)
- For hiking, gave the area a 7. Should consider a guidebook, highlighting camping at the Forebay, access to the nearby Salmo/Priest Wilderness Area, and Flume Creek. Generally, people hike 20+ miles in a day (some up to 42 miles/day); trail hikers are different than weekend users/campers (JK)
- There is a need for a high quality restaurant in the area (DN)

Chuck Everett indicated that studies showed lower use at Vista House than expected by researchers and asked participants to discuss this. Responses were as follows:

- It is not a place for repeat visits, we bring family/visitors for their first visit, but then do not return during repeat visits (TL)
- There are security issues with the US/Canada border; there was a time when the road was closed. There previously was little interpretive information, but SCL has installed new interpretive signage (LJ)
- The video is good, but sometimes the road is closed, so would be good to know when it is open and when it is closed in order to send visitors (BB) [LF noted that information is available on the Boundary Dam tours section of SCL's web-site]

Chuck Everett directed discussion to how well the existing recreation resources were functioning at specific key sites. Responses are summarized as follows:

SCL Forebay Recreation Area
- The boat launch is good here
- SCL wants to add a pavilion or shelter for more day use opportunities in the future (LJ)
- Are all hazards from the falls to the Forebay marked? (GO) [LJ responded that all known hazards to a depth of about 15 feet are marked]

- Day use areas could be expanded, boat tours could be provided to view rock formations and waterfalls, would make great pictures (BN)
- More day use picnic tables are desired, people camping at day use picnic sites is a problem (BN)
- Matt Bates noted that during summer surveys, there were not a lot of complaints, however, people did ask about the grass being brown [LJ noted that SCL has water rights and has added irrigation]

Town of Metaline Waterfront Park (non-SCL facility)

- Used for the bass tournament
- What is really needed here is a good boat ramp (DW, with lots of agreement). Also a dock. If there was a dock, boaters could launch better; currently can't launch there easily
- It was noted that SCL loans a dock for the bass tournament, but cannot leave a dock there during high flows due to the strong currents that would rip out a dock; even in a normal year, at high flows the water level will be up to the grass in the park (LJ)
- Some visitors do not use the upper reach because of a lack of access, similar to the canyon reach
- The group discussed various types of dock and/or jetty configurations that might make the ramp work better, and the conditions in the river at this location

Pend Oreille County PUD, Box Canyon Dam/Campbell Park

- The Box Canyon boat ramp at Campbell Park is not good for public use, surprised that it is open (GO, with general agreement)
- Pend Oreille PUD has a plan to renovate the boat ramp, as it is a very difficult site, and they hope to complete the project this year (NJ)

Question 4: We would like to know about your desired future condition in the study area over the next license term. Over the next 30-50 years (the range of the next FERC license term), what are your top three recreation opportunities that you would like to see at the Project/study area (including maintaining existing, improving, or adding new opportunities)? What about recently observed changes in recreational activity taking place that might be considered "emerging uses"?

- TL: 1) cross country trails developed, perhaps in the Forebay area (they used to ski around Metaline Park; others mentioned Frater Lake and Priest Lake as locations for skiing); 2) promote tourism, give the northern county area an identity, promote winter sports, camping, hotel visitation, and the SCL wildlife preserve; and 3) create activities for multiple day visits, and promote the Cutter Theater as a potential conference site
- DN: 1) increased day use opportunities in the Forebay; 2) more put-ins along the river; and 3) places where you could safely hike from SR 31 to the river for day use
- DC: 1) something like an Iditarod event, maybe from Nordman to Republic – develop more winter recreation and use of the reservoir in the winter; 2) develop areas off SR 31, other areas to get access to water; and 3) would not like to see a change in what the pool looks like now (re: amount of development), maintain the pool area visually the same, protect wildlife/trees

- LJ: 1) increased day use/access for mobility constrained visitors, increase in low impact recreation opportunities because of an aging population; 2) promote multi-day visits to the area (e.g., marketing of the Selkirk Trail, people spend 3-4 days, target taking advantage of this to keep people in the area); and 3) a trail to Pee Wee Falls from the land (unanimous agreement on this point)
- JK: 1) trail along the reservoir shoreline from Slate Creek up to the dam and back down the west side
- BN: 1) more handicapped accessible sites on the river, it is currently very limited and no ramps on the river are ADA-accessible
- DW: 1) would like to see the quality of life is maintained whatever the future of recreation is in the area
- NJ: 1) improvement in the Metaline Waterfront Park and Box Canyon Campbell Park boat ramps; and 2) new fishing access downstream of Box Canyon Dam near the USGS gage (off SR 31), with improved parking for safety
- SH: 1) development should not be too intensive – balance with the pristine environment that draws people to the area, and preserve/maintain the "sustainable beauty"; and 2) the future demographics of the region and the area are going to drive visitors – baby boomers are a target, so we need ADA accessibility in all facilities where possible and opportunities for an aging population
- BB: 1) maintain the rural character; 2) find a vehicle to promote tourism, help others experience what those who live in the area are able to experience, do not overbuild; and 3) we need opportunities for 2-3 day visits with good meal and motel services, and trail access to Pee Wee Falls would be good (mentioned the magic "three events", noting that tourists need/want at least three individual activities in an area to be enticed to visit and stay awhile)
- GO: 1) maintain the current reservoir pool/shoreline aesthetic; 2) ADA accessible facilities should be increased; and 3) SCL during the new license, should continue to work with stakeholders to implement actions

As a follow-up question, Chuck Everett asked participants what they see as a priority for SCL contributing to recreation in the Project area, and what SCL should do if they were to help in promoting tourism.

- Increase Signage (TL, JK)
- SCL has the ability to draw people together and can help support tourism in the area, but unsure of the exact format yet (there is the need for a tourism leader supported by multiple entities); SCL can participate in on-going tourism efforts; the northern part of county relies on SCL support (SH)
- SCL currently is viewed as part of the community, not as an outsider, and should continue to maintain this relationship (TL)
- There is a misconception that SCL has deep pockets; all in the county need to combine efforts, and SCL could be a catalyst for development of tourism resources, all in the county have something to contribute (BB)
- Don't be short-sighted about Boundary Reservoir, protect the integrity of the environment (fish/wildlife) while expanding tourism; wildlife are accustomed to the current operations; identify key access points to accommodate more people to benefit

tourism (e.g., Slate Creek is pristine and there is an eagle nest site, would hate to see people camping there – need to look for appropriate places to direct more people) (BN)

- Increase lower impact recreational opportunities (e.g., develop road pull-outs and viewpoints) (LJ)
- FERC and Dept. of Homeland Security (DHS) involvement at the Project creates unique challenges. But perhaps visitors to the Vista House and the Forebay Recreation Area could have controlled access across the dam for day use visits with minimum impact; SCL has considered creating a viewing opportunity like Vista House on the west side of the dam (LJ)
- All residents in the area live near the Colville National Forest, which has been designated as a "Concept Forest." The US Forest Service is going to be implementing new timber harvest methods where once harvest is complete, the skid trails will be developed into hiking or ORV trails. There will be no more clear cuts and the US Forest Service will utilize thinning as the primary harvest method. This will increase timber harvest rates and bring income to the local economy. This is going to impact lands surrounding the reservoir over the next 10 years. We need to be aware of these changes. (DC)

Chuck Everett thanked participants and noted that further information on the Project will continue to be available on SCL's web-site: www.seattle.gov/boundary and that participants may contact Michele Lynn at Seattle City Light with questions about the ongoing relicensing efforts.

The meeting adjourned at 9:15 pm.

Seattle City Light
Boundary Hydroelectric Project Relicensing
Recreation Focus Group Meeting
Metaline Falls, Washington
May 7, 2008
6:30 – 9:00 pm

In Attendance

Focus Group Participants
Mike Aho, Spokane Parks and Recreation Department (MA)
DeLane Cates, Boundary Tours (DC)
Trent Hanson, Mayor, Town of Metaline (TH)
Derrick Knowles, Northeast Washington Forestry Coalition (DK)
Ken Oliver, Pend Oreille County Commissioner (KO)
Donald Sherry, Selkirk Trailblazers (DS)

Seattle City Light Representatives
Matt Bates, Tetra Tech (TT)
Jenna Borovansky, Long View Associates (LVA)
Chuck Everett, EDAW
Chris Lawson, TT

Note that statements are attributed to individuals where possible. During some instances, the in these cases, the statements are not attributed to any specific individual.

Meeting Summary

Chuck Everett reviewed the agenda (Attachment 1) and purpose and key questions for the evening (Attachment 2). The group noted that they were familiar with the FERC process. Chuck reviewed the FERC Project boundary lines (Attachment 3) and highlighted the locations of existing recreational areas, including SCL-maintained facilities (Vista House, Tailrace Recreation Area, and Forebay Recreation Area/boat launch) and non-SCL maintained facilities (City of Metaline Waterfront Park/boat launch, BLM Boundary Reservoir site, and Pend Oreille County PUD Campbell Park/boat launch).

Chuck gave a brief overview of the FERC relicensing process, and noted that the first year study reports are available on-line and that the comment period is open until May 12, 2008. He outlined the future schedule, explaining that the second year of studies will be completed in February 2009, the Preliminary License Proposal (PLP), which will outline the draft license proposal for the next 30-50 years, will be filed with FERC in April, 2009. In September 2009, the final License Application will be filed with FERC.

Chris Lawson summarized recreation study activities that had been completed to date, and reviewed study activities to be completed over the next year. He noted that there are 26 studies

for the relicensing process, and that the recreation study is "Study 21" if people would like to review the information on SCL's web-site. He described the five components of the recreation study, including: resident and visitor surveys; regional recreation analysis, future recreation analysis; dispersed recreation analysis; and assessment of recreational carrying capacity. In 2007, visitor and resident surveys were administered and initial information is summarized in the Initial Study Report. He noted that there was a very high response rate, with 600 completed visitor questionnaires (63 percent response rate) and a 30 percent response rate for area resident surveys. He noted that there is a lot of information in the surveys, and that the majority of all survey respondents reported satisfaction with their recreation experience. He noted that in 2008 more analysis of survey responses will be conducted and that creel surveys will be conducted. The focus of 2008 efforts will be to assess how well the current recreation resources are working and to link this analysis to an assessment of future recreation needs. Chris explained that the focus groups are an effort to provide additional detail beyond the survey data, and to explore current and future recreation use and needs in the Project area.

Participants were asked to introduce themselves and their affiliation, and then address the first question.

Question 1: What are your overall recreation interests in the study area? How familiar are you with the Boundary Hydroelectric Project and the study area? How do you currently use the study area?

- Has been coming to the area from Spokane for about 17 years (MA)
- Runs an outdoor recreation program for the City of Spokane that is not confined to the City limits. The program services the entire inland Northwest and is the largest municipal outdoor recreation program in the country (MA)
- Interested in the area as a recreation outlet for Spokane area residents; noted that there is a strong non-motorized interest from his participants (MA)
- Fishes in the Metaline Falls area (DS)
- Works with the Lions Club to run train rides along the river (DS)
- Was not familiar with the Project until he was called to participate (DS)
- Utilizes all parts of the reservoir (DC)
- Is a non-motorized recreation user (kayak/canoe), and also camps, goes fishing, any activity on the water (DC)
- Very familiar with the area from Metaline to Boundary Dam (DC)
- Uses the Boundary area almost exclusively for customer tours (DC)
- Goes paddling, rock climbing (Washington Rock – boat access only) (DC)
    - Other areas that may have good climbing include across and down from Everett Island, has interesting geology where an arch used to be
    - Some areas are utilized by local families, but not a place to go with tours
- Takes groups of camp participants on boating trips (DC)
- Sees opportunities for mountain biking in the area along the river (DC)
- Represents a forestry coalition – interest is to coordinate forest health, recreation and scenic concerns (DK)
- Personal use includes elk hunting, hiking, mountain biking on closed forest roads, kayaking, would like to climb (but there is a need for facilities, parking) (DK)

- Need for access to hiking/biking/climbing opportunities – miles of cliffs (DK)
- Also interested in wildlife health and habitat – hunting access is an interest (DK)
- Lived in Metaline Falls since 1992, also spent time in Newport (TH)
- Bass tournament is a draw (TH)
- Metaline hosted its first winter festival this year, which highlighted a future need for more winter activities like this (TH)
- Potential for Metaline Waterfront Park to have a ski trail (1.5 miles if route around the edge, passes the lagoons and wetland areas, could develop a trail system through here) (TH)
- Lots of boating use on the river, sees higher boat traffic, especially in the last three years (TH)
- There are many opportunities on the river (TH)
    - Nowhere for fuel (may be an issue with Washington Department of Ecology, City of Ione did not want to have such a facility)
- Worked at Boundary Dam as a security guard in the past, so he is very familiar with the facility, believes it is well-maintained, well-run (TH)
- SCL has been generous in the past helping with community projects and hopes that this will continue into the future (TH)
- The community is growing and changing, more building on waterfront property; sees more and more interest in the river (TH)
- Involved in the Chamber of Commerce (TH)
    - Usually 2-3 large groups/year contact them, but there are not enough places to stay in town
    - Overnight stays are not allowed in Metaline Park
- Been in the area since 1949 – has experienced pre/post dam (KO)
- Participates in motorized and non-motorized uses – he does it all, Selkirk Trailblazers, hunts elk, turkey, pheasants, and is involved in salmon, wolf, cougar management efforts; has habitat and wildlife interests (KO)
- Involved in many organizations that have interest in river and surrounding area, including Chamber, Lions Club, Selkirk Trailblazers, Rocky Mt. Elk Foundation, etc. (KO)

Question 2: What is your current use (or non-use) of the study area? If you do not currently use the study area, or do not use particular areas, why is that?

- Runs kayaking trips upstream of the falls, looks for caves/adits, also runs group trips to Gardner Caves/Crawford S.P. (MA)
- Late-summer and fall is the best time to visit (avoid motorized users) (MA)
- Interested in lower reservoir opportunities too, but does not know the resources or access there as well (MA)
- Advertises trips to the area from Spokane, but could fill 10 more trips; had 4 trips this year, all on weekends, 12 people per trip, could fill spots for at least 100 visitors/year
- Works with State Parks to plan trips in other areas and has tried (unsuccessfully) to work with the US Forest Service in this area (MA)
- Sees a great interest in hiking and mountain biking, a need for more of these programs (MA)

- Currently does a little boating and fishing in the area (DS)
- Trailblazers – ATV/snowmobile group would like to see improved access to US Forest Service trails (DS)
- Trailblazers run a "watercross" event on the Pend Oreille County PUD reservoir (DS)
- The area from Box Canyon to Metaline is isolated and harder to access, there are fewer people here (DS)
- Fishing is good at the mouth of Sullivan Creek and near Boundary Dam (DS)
- Uses the entire Project area, starts kayak/canoe trips at Metaline and goes to Boundary Dam, takes about 6 hours for a trip of 12-miles (stops for swimming, hiking, and fishing), goes slow to enjoy the wildlife including osprey, elk, deer, bear, moose (DC)
- Later in the day he can't get back up through the falls, so there are limitations on access (DC)
- Other users he encounters are typically courteous on the river and in the Forebay area. His tours do not typically have problems, but he noted that last year there was an issue in the canyon with wake boarders, and jet skiers can sometimes be an issue for kayakers (DC)
- Operates from Memorial Day into the fall season on weekends, limited by weather (DC)
- Winter – hard core users can crash through the ice (DC)
- Stops he utilizes include Whisky Gulch on the west side, and the BLM site across from Everett Island (gets less attractive as the season goes on and more people have been using it, and because it is also accessible by car), plus the site near Lime Creek on the east side (DC)
    - Would like to see composting toilets on at BLM site near Everett Island and on US Forest Service-managed lands, better suited in some areas
- Trends in business – has had ups and downs, uses word of mouth. A good year has about 100 people/year. He takes smaller groups (8-12) and hopes to get to 200-300 customers/year (DC)
- Under some flow conditions, usually in late summer, it is possible to paddle upstream through the falls; at other times, flows make it difficult to get around the falls (DC)
- There are ways to get around the falls by land; would like to see a portage at the falls, which could use the old PUD road at Sullivan Creek near the old powerhouse, but there is a problem getting around an old dump site (DC)
- Areas of interest include Dead Man's Eddy at the falls, old relics of the Josephine Mine, the original Pend Oreille Mine, and lots of cultural sites to point out (DC)
- Camps and hunts in the area (DK)
- Hasn't used the area yet for climbing (not sure how to access the area, heard rumors that parking and access are issues) (DK)
- Would kayak in the area, but doesn't know where to put-in and take-out (DK)
- These opportunities are not signed or marked (DK)
- Not as many developed recreation sites as some other areas (e.g., trails and signs) (DK)
- Local residents know these areas, but visitors do not (DC)
- Goes fishing and boating in the area (TH)
- Works with the Special Olympics (picnicking, walking, and other outdoor recreation) (TH)

- Fishes from shore and a boat, goes south from the boat launch at Metaline Waterfront Park, thinks this part of the reservoir is better for bass (TH)
- Fall/winter/spring – generally sticks to using Metaline Waterfront Park and the Sweet Creek area (TH)
- Uses the reservoir and goes to Boundary Dam with friends (TH)
- Quality of the river adds to the recreational experience – users are generally satisfied, was there when TT was conducting the surveys and received positive feedback from visitors (TH)
- Thinks that recreational use will grow in the area (TH)
- Winter festival this year went well – 350 people participated, could handle 500 people; they would like to develop a new warming hut as the first year was focused on children's activities (TH)
- Has been in town for 16 years (TH)
- Fishing – there are more bass at the Metaline Falls end than farther south; uses the Mill Pond area, but not Sullivan Lake (TH)
- Bass tournament is a big event: 161 boats this year, bigger every year (also one on Box Canyon Reservoir later in the year) (KO)
- History: Washington Rock was named because of the President's face, but it has fallen off now, good place to see the face is from the SR 31 bridge (KO)
- Could use a trail to view Pee Wee Falls (which used to exist), with a gravel pit providing a natural location for a parking lot, though we need to protect the natural area (KO)
- Traveling through the falls in watercraft is treacherous, Dead Man's Eddy gathers debris and can suck people underwater if out of their watercraft (KO)
- Several thoughts for new opportunities:
    - Tours that could include camping - but need to keep a balance with preserving the pristine area and unique experience (KO)
    - Pontoon/party boats have been used in the past for weddings, could provide a basis for more events
    - Consider a lodge accessible by water, something similar to Ross Lake, may be a good addition
    - Gardner Caves/Crawford State Park nearby – keep it open longer
    - Link the Boundary Dam tours with State Parks cave tours – keeps people in area longer
    - Need better and more restaurants/hotels
    - Need a tourism coordinator (through PORTA or the County)
    - Wildlife tourism is very popular and eco-tourism is growing
    - Baby boomers are retiring
    - It's a natural draw and we need to protect habitat, but it could bring lots of money (see attachment 4, study summary of wolf task force work provided by KO)
- Wildlife and geology of the area are a draw and of interest to visitors (DC)
- Industry is decreasing, so the next best thing is using our natural habitat as an asset (KO)
- Tourism helps all aspects of the community (DC)
- Teck Cominco has someone working on plans for future closure of its properties, will be offering property for sale, expect that the mining operations will be closed in the next 50 years (TH)

- Hiking trails could be expanded; there is a need for covered picnic areas (TH)
- Keep large vehicles away from the river in the canyon area; water access would be best (TH)
- More places to stay are needed (TH)
- Other potential ideas for the area: boat launch improvements, maps of the area with trails, volunteers for tourism, additional interpretation at the Vista House, and funding of a tourism coordinator

Question 3: Review current condition and potential improvements at facilities on the Reservoir.

- Vista House
    - There is not much there to do now
- Lonnie Johnson noted that interpretive materials have been updated
- Boundary Tours – are OK, at least if you get the "special" tour, rather than the regular tour
- Forebay Recreation Area/Boat Launch
    - When water is high, launching at the Forebay is OK
    - Some visitors are camping on the beach
    - Swimming is intimidating at the beach because of boat traffic at the adjacent boat launch; should create a dedicated swimming area with a dock away from the boat ramp and dock
    - Sometimes it is difficult to use the dock area for access for non-motorized watercraft
- Non-SCL facilities:
    - Metaline Waterfront Park/Boat Launch
        - There is limited parking here. Parking is not usually a problem, except at busy times. Question of whether there was access to the old ball field for overflow parking
        - Consider adding trails around lagoons near the park for wildlife viewing, walking, and a Nordic ski trail
        - There is an area that could be used for a swimming/wading area for kids, perhaps by the dock (but not as elaborate as the one at Box Canyon's Campbell Park). Generally, people want places to play in the water
    - BLM Boundary Recreation Site
        - This is a good site
        - Historically, there are local teenager parties here resulting in a mess (lots of garbage). Some of this also occurs at Flume Creek
        - There are no facilities and it gets "ratty" by August
        - Teenagers appear to access the site mostly by vehicle, not by boat
        - The area on the west side opposite Slate Creek is a good camping area; this is a boat-in site where about 15 years ago a scout troop had cleared tent sites and built picnic tables
        - By the Lucky Strike Mine, a pit toilet could be used. On any nice weekend, this site will be full; however, boat moorage is an issue when the water is low

Question 3 (continued): On a scale of 1 to 9 (with 1 being poor and 9 being excellent), how would you rate the quality of your current recreational experiences in the study area?

- 9 – three votes
- 8 – one vote
- 6/7 – one vote
- 5/6 – one vote (because there is room for improvement)

Reasons for these rankings:

- The area is remote and there is a lack of trails along the river
- What is offered is excellent (but need more of it)
- Limited access walking to the river
- Lead trips here from Spokane; trips to the Pend Oreille River are highly rated, filling up in January for summer trips. A frequent comment is that people don't know about the area
- There is an "Ah" factor about the inaccessibility of the area that adds to the overall remote experience
- Water quality is great in the Pend Oreille River (clarity is less at high water)
- Fluctuating pool levels/river flows can be a problem; Boundary Reservoir fluctuates much more than Box Canyon Reservoir (which is only 2-3 feet)
- The river is a 9 – but improvements are a 5/6
- Below Boundary Dam there are great views and fishing; it would be nice if SCL could let people down there again (KO)

Is fluctuation an issue?

- Fluctuation is an issue for fisheries (DC)
- For paddling, fluctuation creates a different river, which exposes caves at different times, etc. (DC)
- Prior to the dam being built, remembers going out on a rock in the river and fishing for big trout (KO)

Question 4: We would like to know about your desired future condition in the study area over the next license term. Over the next 30-50 years (the range of the next FERC license term), what are your top three recreation opportunities that you would like to see at the Project/study area (including maintaining existing, improving, or adding new opportunities)? What about recently observed changes in recreational activity taking place that might be considered "emerging uses"?

- Trends in 30-50 years will mirror the next 5 years, with the "Echo" generation (the kids of the baby boomers) recreating in masses and keeping trends relatively stable (MA)
- Human-powered recreation is going to grow – along with the need for hiking trails, especially linear trails like the Centennial Trail in Spokane. For this new population, the guesswork needs to be removed from the trail experience by adding signage, linear trails

with landmarks like the river, and long/short-distance options with multiple access points (MA)

- There is a growing interest in snowshoeing, which is huge now and will be again in 30-35 years (MA)
- Critical elements to serving needs in the next 30-50 years (MA):
    - Interpretive maps – simple, with landmarks and signs
    - Themed Trips (e.g., cultural, wildlife events or a food tie-in, such as a combined salmon BBQ with hiking)
    - Pend Oreille River is going to seem a lot closer to Spokane over time, especially with planned north/south highway expansion and continued outward growth of the Spokane metro area
- Locals sometime want no change, but change is coming; locals should "take the reins" (DC)
- Add interpretive signs for wildlife with pictures so that people can learn about wildlife whether they see it or not; make it an experience (DK)
- East-side trail along the river is needed (DK)
    - Others noted that there is an historic trail that was cleared by the CCC that is now grown over (Blue Bonnet Trail)
    - It was noted that there are no trail crews to maintain trails on the Colville National Forest
- Increase mountain biking and hiking opportunities, but know that trails need money for maintenance (DK)
- Increased signage is a huge need for outside visitors (DK)
- Need clearer contact information in towns – Seattle City Light and Boundary Dam are not immediately connected when visitors look in the phone book. Others in town get lots of calls for visitors trying to locate Boundary Dam (DC)
- In Metaline, scenic byway money will be used to add street lights (along a 3-block area from the Town Hall to Main Street), a walking trail alongside the ballpark, two crosswalks, and signage to Metaline Waterfront Park. The Town hopes to do more beyond that to continue to focus on tourism (TH)
- Towns should support tourism through growth and thinking big, beyond just Boundary relicensing, which will help the communities to figure out what the priorities should be (e.g., adding camping and hotel accommodations) (TH)
- Need to encourage a shift to year-round tourism (TH)
- At the Project, 5 to 7 years ago the Machine Hall tour used to be more thorough, now it just includes the highlights; SCL should think about making this more extensive, if security allows (TH)
- Metaline used to have 500-600 residents. The towns need to attract more people and improve private lands (e.g., junk cars, houses that need upkeep), provide incentives to clean-up towns. Property values and tourism are impacted by untidy areas in town (KO)
- Current benefits are offered in the area by the Economic Development Council (although it was noted that these funds are only available to businesses with employees, which does not help sole-proprietor small businesses) (DC)
- Teck Cominco offers 150 jobs in the area; when they are gone, there will be a substantial loss

- There is garbage in the forest; need to promote clean-up

Chuck Everett asked the group if they thought the location of the Boundary Project (at the end of the road to Canada) impacted visitation. Responses included:

- 40,000 to 50,000 people cross at the border now. If 10,000 more crossed, it would be a boon to the economy
- There are a lot of enforcement actions needed at the border crossing. Crossing may not speed up (DS)
- There is a boat launch near the border, but it is not used by the public due to border crossing issues. (DS)

Chuck Everett summarized the next steps for the recreation component of Boundary relicensing, which are to finish the studies and conduct the Recreation Needs Analysis. This focus group information will be considered in these analyses. Participants can contact Michele Lynn at SCL if they have questions about relicensing efforts.

The meeting adjourned at 8:40 pm.

Attachment 1: Agendas for Ione and Metaline Falls Focus Group Meetings

Agenda
Focus Group Meetings

Seattle City Light
Boundary Hydroelectric Project
FERC Project No. 2144

Ione, WA – Tuesday, May 6, 2008 at Ione Community Center

Metaline Falls, WA – Wednesday, May 7, 2008 at Cutter Theater

6:30pm	Welcome and brief introductions, meeting logistics (Chuck Everett)
6:40pm	Meeting purpose and desired input from focus group attendees (Chuck Everett)
6:50pm	Overview of FERC relicensing process and Recreation Resource Study (Michele Lynn and Chris Lawson)

<u>For the following 4 items, please refer to the list of questions on the back of this agenda:</u>

7:00pm	Your overall interests and familiarity with the study area (Chuck Everett / All)
7:15pm	Your current use (or non-use) of the study area (Chuck Everett / All)
7:45pm	Your impression of how well study-area recreation resources are functioning (Chuck Everett / All)
8:15pm	Your desired future condition in the study area over the next license term (Chuck Everett / All)
8:45pm	Wrap-up and next steps (Chuck Everett and Michele Lynn)
9:00pm	End (may be done earlier)

Attachment 2: Focus Group Questions

Focus Group Questions

Overall Interests

1. What is your community? Do you belong to any recreation group or multiple groups?
2. What are your overall recreational interests in the study area?
3. How familiar are you with the Boundary Hydroelectric Project and the study area?

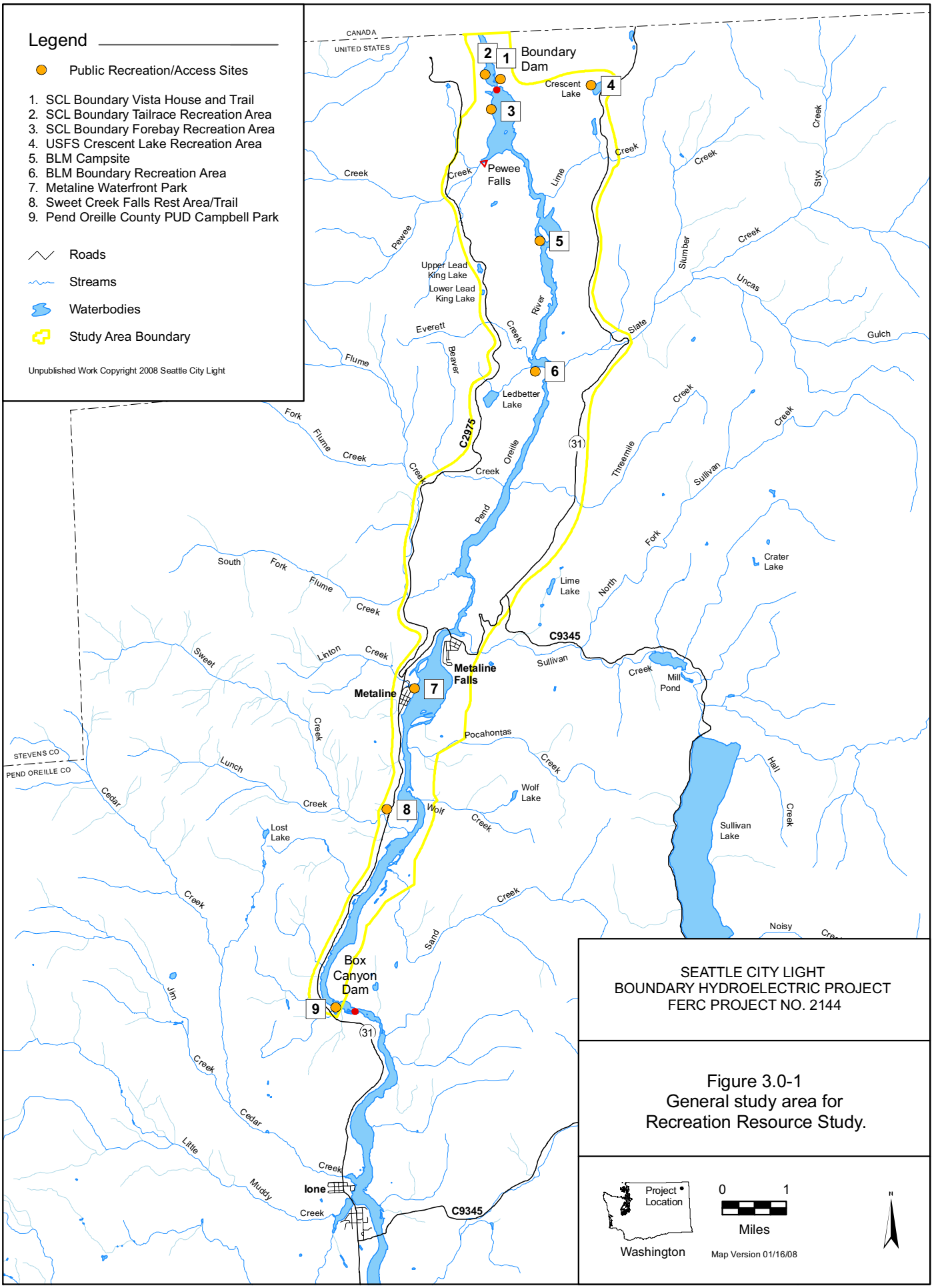
Current Use (or Non-Use) of the Study Area

1. How do you currently use the study area?
2. What areas do you use during late fall, winter and early spring?
3. If you do not currently use the study area, or use it very little, why?
4. What is your experience with water conditions on the reservoir?
5. On a scale of 1 to 9 (with 1 being poor and 9 being excellent), how would you rate the quality of your current recreational experiences in the study area?

Desired Future Condition

1. Have you recently observed any recreational activity taking place in the study area that could be classified as an "emerging use" (a new activity that did not previously occur, but seems to be an indicator of a future pattern). If so, what have you seen and where have you seen it?
2. Over the next 30 to 50 years (the next FERC license term), what would you like to see at the Project/study area that may not be there now?
3. What would be your top three recreational priorities for the future?

Attachment 3: Map of Recreation Study Area


Legend
Public Recreation/Access Sites
1. SCL Boundary Vista House and Trail
2. SCL Boundary Tailrace Recreation Area
3. SCL Boundary Forebay Recreation Area
4. USFS Crescent Lake Recreation Area
5. BLM Campsite
6. BLM Boundary Recreation Area
7. Metaline Waterfront Park
8. Sweet Creek Falls Rest Area/Trail
9. Pend Oreille County PUD Campbell Park
Roads
Streams
Waterbodies
Study Area Boundary
Unpublished Work Copyright 2008 Seattle City Light
CANADA
UNITED STATES
Boundary Dam
Crescent Lake
Pewee Falls
Upper Lead King Lake
Lower Lead King Lake
Ledbetter Lake
Lime Lake
Crater Lake
Mill Pond
Metaline Falls
Metaline
Wolf Lake
Lost Lake
Sullivan Lake
Box Canyon Dam
Ione
STEVENS CO
PEND OREILLE CO
C2975
C9345
31
SEATTLE CITY LIGHT
BOUNDARY HYDROELECTRIC PROJECT
FERC PROJECT NO. 2144
Figure 3.0-1
General study area for
Recreation Resource Study.
Project Location
Washington
0
1
Miles
Map Version 01/16/08
N

Attachment 4: Summary of Wolf Task Force Objectives Regarding Wildlife Tourism Potential Provided by Ken Oliver at Focus Group Meeting

NOTE TO THE READER

The Wolf Working Group is developing recommendations for the Washington Department of Fish and Wildlife to consider as they develop a draft Wolf Conservation and Management Plan. This draft section was developed based in part on the initial deliberations of the WWG, in part on work of other states, and in part on preliminary thoughts by WDFW staff. This version is intended to be a "canvas" for the WWG to evaluate and discuss and should be considered a review document only.

with elk and deer hunting in Washington during the past decade (Figures 13, 15, 23), there appears to be some capacity for the state to absorb the game losses caused by wolves.

In the future, there could be revenue generated for WDFW if wolves recover to the point that they are delisted and eventually become a hunted species. Revenue could be generated through special permit application sales, auctions, and raffles. It is unknown how much revenue would be generated from these sources. Such sales might be similar to those obtained for bighorn sheep, moose, and mountain goats during most of the past decade (Figure 24), an estimated $50,000 to $150,000 per year, but could be substantially lower at $10,000 to $50,000 (D. Ware, WDFW, pers. comm.).

D. Wildlife Tourism

Ecotourism, or travel to natural areas for environmentally responsible outdoor experiences, is one of the fastest growing segments of the overall world tourism industry. Wildlife viewing is a large part of this business and is hugely popular in the United States.

According to the 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, more than 71 million Americans 16 years old and older (31% of the U.S residents in this age bracket) participated in wildlife watching activities (i.e., observing, feeding, photographing, etc.; includes fish viewing) in 2006 (USFWS and USCB 2007). Of these, almost 23 million people took trips more than one mile from their homes specifically to see wildlife. Participation in wildlife viewing increased 8% nationally from 2001 to 2006, in contrast to fishing and hunting, which fell 12% and 4%, respectively. Wildlife watchers spent nearly $46 billion in 2006, or about $650 per participant, with trip-related expenditures increasing 38% between 2001 and 2006. Seventy percent (16.2 million people) of the wildlife watchers traveling away from home observed, fed, or photographed land mammals, with 56% (12.8 million people) specifically interested in large mammals such as deer, bears, and coyotes. Eighty-three percent of wildlife watchers traveling away from home did so in their home state; 33% visited other states.

In Washington during 2006, an estimated 2.33 million people 16 years old and older participated in some form of wildlife watching, which ranked the state 11th in the nation for participation (USFWS and USCB 2007). About 2.01 million participants were state residents (40% of the state's total population in this age group), with the remainder being non-residents. An estimated 628,000 residents and 331,000 non-residents in this age group traveled more than one mile away from home to view wildlife in Washington during the year. Residents spent an estimated 8.0 million days (88% of the total; average of 12.7 days per person) and non-residents spent an estimated 1.1 million days (12%; average of 3.3 days per person) watching wildlife away from home in the state during the year. Washington residents spent an additional 1.48 million days watching wildlife in other states in 2006. Overall, wildlife watchers outnumbered hunters and anglers combined by nearly three times in Washington.

NOTE TO THE READER

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Annual spending in Washington by resident and non-resident wildlife watchers on travel, food, lodging, equipment, and other goods and services totaled an estimated $1.5 billion in 2006, ranking the state seventh in the nation behind California, Florida, Texas, Michigan, Georgia, and New York (USFWS and USCB 2007). About $595 million was spent during the year on equipment, $442 million on trip-related costs, and $466 million on other costs (Table 18). Annual spending by wildlife watchers in the state rose 53% from 2001 to 2006 (USFWS and USCB 2003, 2007). Participants spent an average of $644 per person in 2006 (Table 18). Wildlife viewing generated an estimated 22,439 jobs in Washington in 2001 (USFWS 2003).

Table 18. Estimated total expenditures and average expenditures per participant for all types of wildlife-watching activities in Washington in 2006, including both those around the home and away from home (from USFWS and USCB 2007). Estimates are for state residents and non-residents combined.

Category of expenditure	Total amount	Average amount per participant[a]
Total expenditures	$1,502,311,000	$644
Total trip related	441,652,000	189
Food and lodging	227,721,000	98
Transportation	157,045,000	67
Other trip costs (boating costs, guide/outfitter fees, public and private land use fees, equipment rental, other)	56,886,000	24
Total equipment	594,706,000	255
Wildlife-watching equipment (wildlife feed, cameras, binoculars, hiking equipment, other)	262,335,000	113
Auxiliary equipment (camping equipment, other)	29,797,000	13
Special equipment (off-road vehicles, campers, boats, other)	302,574,000	130
Other items (land leasing and ownership, plantings around homes that benefit wildlife, membership dues, contributions, literature, other)	465,953,000	200

[a] Based on an estimated total of 2,331,000 wildlife-watching participants in Washington.

Wolf-Related Ecotourism in North America

Commercial wolf watching has grown in significance in North America over the past several decades, especially in the lower 48 states, and has resulted in regional economic benefits. Yellowstone National Park has become the premier wolf viewing location on the continent, with a thriving and rapidly growing wolf-watching business since the species was reintroduced in 1995 and 1996. Visitor surveys in 2005 showed that the opportunity to see or hear wolves increased annual