RA-01 RECREATION USE AND FACILITY ASSESSMENT REPORT

SKAGIT RIVER HYDROELECTRIC PROJECT FERC NO. 553

Seattle City Light

Prepared by:
HDR Engineering, Inc.

March 2023
Updated Study Report

TABLE OF CONTENTS

Section No.	Description	Page No.
1.0	**Introduction**	**1-1**
2.0	**Study Goals and Objectives**	**2-1**
3.0	**Study Area**	**3-1**
4.0	**Methods**	**4-1**
4.1	Inventory and Evaluate Existing Recreation Facilities	4-1
4.1.1	Inventory Recreation Facilities	4-1
4.1.2	Facility Condition Assessment	4-4
4.1.3	Accessibility Compliance Assessment	4-5
4.1.4	Qualitative Trail Accessibility Assessment	4-6
4.1.5	Recreation Use Impact Assessment	4-6
4.1.6	Gorge Lake Boat Launch Ramp Assessment	4-7
4.2	Identify Recreation Uses and Visitor Attitudes, Beliefs, and Preferences	4-7
4.2.1	Observation Survey	4-7
4.2.2	Visitor Survey	4-8
4.2.2.1	Types of Visitor Surveys	4-11
4.2.2.2	Visitor Survey Development	4-11
4.2.2.3	Sampling Approach and Data Collection	4-12
4.2.2.4	Trail Use Counts	4-14
4.3	Estimate Current Recreation Use at Recreation Resource Areas	4-14
4.3.1	Recreation Use Estimate	4-15
4.4	Identify Future Use and Demand Opportunities	4-18
4.4.1	Existing Unmet Demand Assessment	4-18
4.4.1.1	Assess Statewide and Regional Unmet Recreation Demand Information	4-18
4.4.1.2	Collect Unmet Recreation Demand Information	4-18
4.4.1.3	Identify Potential Activities with High Unmet Demand	4-18
4.4.2	Future Recreation Demand Assessment	4-18
4.4.2.1	Review Existing Recreation Use Trends	4-19
4.4.2.2	Review Existing Population and Recreation Activity Participation Projections	4-19
4.4.2.3	Review Reasonably Foreseeable Events that May Influence Future Use	4-19
4.4.2.4	Estimate Future Recreation Use over the New License Period	4-19
4.4.3	Regional Uniqueness and Significance Assessment	4-19
4.4.3.1	Review Results of Visitor Surveys	4-20

4.4.3.2 Identify Regional Recreation Opportunities 4-20
4.4.3.3 Assess the Uniqueness and Significance of the Recreation Opportunities 4-20
4.5 Data Analysis and Report Preparation 4-21
5.0 Results 5-1
5.1 Recreation Facility Inventory 5-1
5.1.1 Ross Lake 5-1
5.1.1.1 Project Recreation Facilities 5-1
5.1.1.2 Non-Project Recreation Facilities 5-1
5.1.2 Diablo Lake 5-7
5.1.2.1 Project Recreation Facilities 5-7
5.1.2.2 Non-Project Recreation Facilities 5-11
5.1.3 Gorge Lake 5-19
5.1.3.1 Project Recreation Facilities 5-19
5.1.3.2 Non-Project Recreation Facilities 5-20
5.1.4 Newhalem 5-24
5.1.4.1 Project Recreation Facilities 5-24
5.1.4.2 Non-Project Recreation Facilities 5-28
5.1.5 Skagit River 5-28
5.1.6 Project Recreation Facilities 5-28
5.1.6.1 Non-Project Recreation Facilities 5-28
5.1.6.2 Goodell Creek Boat Launch 5-29
5.1.7 Gorge Lake Boat Launch Ramp Assessment 5-32
5.2 Visitor Attitudes, Beliefs, and Preferences 5-32
5.2.1 Visitor Survey Response 5-32
5.2.2 Visitor Characteristics and Socio-Demographic Information 5-35
5.2.3 Visitor Trip Planning and Trip Motivation 5-39
5.2.4 Study Area Site Visitation 5-43
5.2.5 Activity Participation 5-47
5.2.6 Barriers to Activity Participation 5-49
5.2.7 Amenity Satisfaction 5-53
5.2.8 User Conflicts 5-55
5.2.9 Crowding 5-56
5.2.9.1 General Location Crowding 5-57
5.2.9.2 Site-Specific Crowding 5-60
5.2.10 Hypothetical Condition Responses 5-61
5.3 Observed Recreation Use 5-62
5.3.1 Ross Lake 5-62

5.3.1.1 Ross Dam Trailhead (Non-Project Facility [NPS]) 5-62
5.3.2 Diablo Lake 5-64
5.3.2.1 Colonial Creek Boat Launch (Non-Project Facility [NPS]) 5-64
5.3.2.2 Thunder Knob Trailhead (Non-Project Facility [NPS]) 5-67
5.3.2.3 Thunder Creek Trailhead (Non-Project Facility [NPS]) 5-68
5.3.2.4 Diablo Dam Parking Area (Project Facility [City Light]) ... 5-69
5.3.2.5 Skagit Tour Dock (Project facility [City Light]) 5-70
5.3.2.6 West Ferry Landing (Project Facility [City Light]) 5-71
5.3.2.7 ELC Parking Area (Project Facility [City Light]) 5-72
5.3.3 Gorge Lake 5-74
5.3.3.1 Gorge Lake Boat Launch (Project Facility [City Light]) 5-74
5.3.3.2 Diablo Dam Trailhead (Non-Project Facility [NPS]) 5-76
5.3.3.3 Sourdough Mountain Trailhead (Non-Project Facility [NPS]) 5-77
5.3.3.4 Gorge Creek Overlook (Non-Project Facility [NPS]) 5-78
5.3.3.5 Ross Lodge Picnic Shelter (Project Facility [City Light]) ... 5-80
5.3.4 Newhalem 5-81
5.3.4.1 Gorge Powerhouse Parking Area (Project Facility [City Light]) 5-81
5.3.4.2 Main Street Parking Area (Project Facility [City Light]) 5-82
5.3.4.3 SR 20 Parking Area (Project Facility [City Light]) 5-84
5.3.5 Skagit River 5-85
5.3.5.1 Goodell Creek Boat Launch (Non-Project Facility [NPS]) . 5-85
5.3.5.2 Marblemount Boat Launch (Non-Project Facility [USFS]). 5-88
5.3.6 Trail Use Counts 5-89
5.3.6.1 Ross Lake 5-94
5.3.6.2 Diablo Lake 5-98
5.3.6.3 Gorge Lake 5-98
5.3.6.4 Newhalem 5-98
5.4 Recreation Use Estimates 5-102
5.4.1 Project Use Estimate 5-102
5.4.2 Non-Project Use Estimate 5-104
5.5 Future Use and Demand Assessments 5-105
5.5.1 Existing Unmet Demand Assessment 5-105
5.5.1.1 Statewide and Regional Unmet Recreation Demand Information 5-105
5.5.1.2 Potential Activities with High Unmet Demand 5-111
5.5.2 Future Recreation Demand Assessment 5-111
5.5.2.1 Review Existing Recreation Use Trends 5-111

5.5.2.2 Estimate Future Recreation Use over the New License Period 5-116
5.5.2.3 Review Reasonably Foreseeable Events that May Influence Future Use 5-120
5.5.3 Regional Uniqueness and Significance Assessment 5-120
6.0 Discussion and Findings 6-1
6.1 Adequacy of Recreation Facilities 6-1
6.1.1 Facility Conditions, Accessibility Compliance and Use Impacts 6-1
6.1.2 Trail Accessibility 6-1
6.1.3 Gorge Lake Boat Launch Ramp Usable Periods 6-2
6.2 Visitor Use Assessment 6-2
6.2.1 Trip Reasons and Recreation Activity Participation 6-2
6.2.2 Barriers and Limitations to Activity Participation 6-2
6.2.3 User Conflict and Crowding 6-3
6.2.4 Facility Satisfaction 6-4
6.2.5 Unmet Demand 6-4
6.3 Recreation Use Levels and Trends 6-4
7.0 Variances from FERC-Approved Study Plan and Proposed Modifications 7-1
8.0 References 8-1

List of Figures

Figure No.	Description	Page No.
Figure 5.3-1.	Summary of trail users at the northern Ross Lake trail counter locations (non-Project trails).	5-96
Figure 5.3-2.	Summary of trail users at the southern Ross Lake trail counter locations (non-Project trails).	5-97
Figure 5.3-3.	Summary of trail users at Diablo Lake trail counter locations (non-Project trails). Note: Thunder Knob Trail data began on June 25, 2022 once NPS opened the trail.	5-99
Figure 5.3-4.	Summary of trail users at Gorge Lake trail counter locations (non-Project trails).	5-100
Figure 5.3-5.	Summary of trail users at Newhalem trail counter locations (Project trails).	5-101
Figure 5.4-1.	Number of annual visits to the RLNRA, 2013-2022.	5-112
Figure 5.4-2.	Number of annual overnight visits to the RLNRA, 2013-2022.	5-112
Figure 5.4-3.	Number of annual overnight visits to Colonial Creek Campground, 2013-2022	5-113
Figure 5.4-4.	Number of participants on City Light tours, 2013-2019	5-114
Figure 5.4-5.	Number of participants at Environmental Learning Center programs, 2013-2022	5-114

Figure 5.4-6. Number of overnight stays at Ross Lake Resort, 2013-2022. 5-115
Figure 5.4-7. Number of sites occupied and campers at Marble Creek Campground, 2020-2022..... 5-116

List of Tables

Table No.	Description	Page No.
Table 4.1-1.	Study area recreation facilities inventoried and evaluated for condition, accessibility compliance, and use impacts.	4-2
Table 4.1-2.	Facility condition evaluation categories and criteria.	4-4
Table 4.1-3.	Overall facility condition evaluation categories, rating score, and general rehabilitation timeframes.	4-5
Table 4.1-4.	Level of accessibility compliance rating system and categories.	4-5
Table 4.1-5.	Recreation use impact assessment rating system and categories.	4-6
Table 4.2-1.	Study areas and sites for the observation survey (use spot count).	4-9
Table 4.2-2.	Survey areas, study sites, and specific locations for the visitor survey.	4-10
Table 4.2-3.	Trail counter study locations.	4-14
Table 4.2-4.	Study area recreation facilities where use and occupancy will be estimated via study observation surveys and use counts.	4-16
Table 4.2-5.	Study area recreation facilities where use data will be collected via non-study methods (as available).	4-17
Table 4.4-1.	Regional uniqueness categories and rating system.	4-20
Table 5.1-1.	Accessibility evaluation summary at Winnebago Flats Boat Launch.	5-2
Table 5.1-2.	Accessibility evaluation summary at Winnebago Flats Campground.	5-2
Table 5.1-3.	Accessibility evaluation summary at Hozomeen Boat Launch.	5-3
Table 5.1-4.	Accessibility evaluation summary at Hozomeen Campground.	5-3
Table 5.1-5.	Accessibility evaluation summary at Hozomeen Lake Trailhead.	5-4
Table 5.1-6.	Accessibility evaluation summary at Ross Lake boat-in camps.	5-5
Table 5.1-7.	Accessibility evaluation summary at Ross Dam Trailhead.	5-6
Table 5.1-8.	Accessibility evaluation summary at East Bank Trailhead.	5-7
Table 5.1-9.	Inventory, condition, and accessibility evaluation summary at Skagit Tour Dock.	5-8
Table 5.1-10.	Inventory, condition, and accessibility evaluation summary at Diablo Dam parking area.	5-8
Table 5.1-11.	Inventory, condition, and accessibility evaluation summary at West Ferry Landing.	5-9
Table 5.1-12.	Inventory, condition, and accessibility evaluation summary at East Ferry Landing.	5-9
Table 5.1-13.	Inventory, condition, and accessibility evaluation summary at the ELC parking area.	5-10

Table 5.1-14. Accessibility evaluation summary at Diablo Overlook. 5-11
Table 5.1-15. Accessibility evaluation summary at Colonial Creek Campground. 5-12
Table 5.1-16. Accessibility evaluation summary at Colonial Creek Boat Launch and Fishing Pier. 5-13
Table 5.1-17. Accessibility evaluation summary at Diablo Lake boat-in camps. 5-14
Table 5.1-18. Accessibility evaluation summary at Thunder Knob Trailhead. 5-15
Table 5.1-19. Accessibility evaluation summary at Thunder Creek Trailhead. 5-16
Table 5.1-20. Diablo Lake to Ross Lake portage route features and services (east-to-west). 5-17
Table 5.1-21. Summary of the Diablo Lake to Ross Lake portage route accessibility evaluation. 5-18
Table 5.1-22. Inventory, condition, and accessibility evaluation summary at Ross Lodge Picnic Shelter. 5-19
Table 5.1-23. Inventory, condition, and accessibility evaluation summary at Gorge Lake Boat Launch. 5-20
Table 5.1-24. Accessibility evaluation summary at Gorge Lake Campground. 5-21
Table 5.1-25. Accessibility evaluation summary at Diablo Dam Trailhead. 5-21
Table 5.1-26. Accessibility evaluation summary at Sourdough Mountain Trailhead. 5-22
Table 5.1-27. Accessibility evaluation summary at Stetattle Creek Trailhead. 5-23
Table 5.1-28. Accessibility evaluation summary at Gorge Creek Overlook. 5-23
Table 5.1-29. Inventory, condition, and accessibility evaluation summary at Gorge Powerhouse parking area. 5-25
Table 5.1-30. Inventory, condition, and accessibility evaluation summary at Newhalem Townsite general recreation amenities. 5-26
Table 5.1-31. Accessibility evaluation summary at Goodell Creek Campground. 5-29
Table 5.1-32. Accessibility evaluation summary at Goodell Creek Boat Launch. 5-29
Table 5.1-33. Accessibility evaluation summary at Damnation Creek Boat-in Picnic Site. 5-30
Table 5.1-34. Accessibility evaluation summary at Copper Creek Boat Access Site. 5-31
Table 5.1-35. Accessibility evaluation summary at Marblemount Boat Launch. 5-31
Table 5.2-1. Summary of visitor survey days conducted by City Light (May-October 2022). 5-33
Table 5.2-2. Summary of visitor surveys received and comparison to target number of surveys. 5-34
Table 5.2-3. Visitor user type and age characteristics by resource area. 5-35
Table 5.2-4. Socio-demographic characteristics of visitors by resource area. 5-36
Table 5.2-5. Location of residence of overall visitors by survey season. 5-37
Table 5.2-6. Overall group composition and trip duration. 5-39
Table 5.2-7. Information sources visitors used to plan their trip. 5-40
Table 5.2-8. How possibility of crowds affected visitors' trip plans. 5-41
Table 5.2-9. Reason for visitors' trip to the study area. 5-41

Table 5.2-10. Sites visitors visited or planned to visit by resource area (responses). 5-44
Table 5.2-11. Primary activity and overall activity participation during visitors' current visit. 5-48
Table 5.2-12. Activities/services visitors had difficulties accessing or participating in. 5-50
Table 5.2-13. Reason visitors were unable to participate in an activity. 5-51
Table 5.2-14. Physical limitations and activities/services visitors had difficulties accessing or participating in. 5-52
Table 5.2-15. Overall preferred campsite within the mapped area. 5-53
Table 5.2-16. Amenity satisfaction of overall facility/reservoirs.[1,2] 5-54
Table 5.2-17. Interference with visitor enjoyment by another individual or group. 5-56
Table 5.2-18. Carrying capacity judgments and descriptions based on levels of perceived crowding (Shelby et al. 1989). 5-57
Table 5.2-19. General location crowding responses by resource area and season. 5-58
Table 5.2-20. Site-specific crowding responses by resource area and season. 5-60
Table 5.2-21. Hypothetically how visitors would respond if unable to recreate on or view the lakes or shoreline. 5-61
Table 5.3-1. Observed vehicles at Ross Dam Trailhead by season, day type and location. 5-63
Table 5.3-2. Observed vehicles at Colonial Creek Boat Launch by season and day type. 5-64
Table 5.3-3. Observed shoreline users and reservoir watercraft at Colonial Creek complex sites by season and day type. 5-65
Table 5.3-4. Observed vehicles at Thunder Knob Trailhead by season and day type. 5-67
Table 5.3-5. Observed vehicles at Thunder Creek Trailhead by season and day type. 5-68
Table 5.3-6. Observed vehicles at Diablo Dam parking area by season and day type. 5-69
Table 5.3-7. Observed vehicles at Skagit Tour Dock by season and day type. 5-70
Table 5.3-8. Observed vehicles at West Ferry Landing by season and day type. 5-71
Table 5.3-9. Observed vehicles at ELC parking area by season and day type. 5-73
Table 5.3-10. Observed shoreline users and reservoir watercraft at ELC parking area by season and day type. 5-74
Table 5.3-11. Observed vehicles at Gorge Lake Boat Launch by season and day type. 5-75
Table 5.3-12. Observed shoreline users and reservoir watercraft at Gorge Lake Boat Launch by season and day type. 5-76
Table 5.3-13. Observed vehicles at Diablo Dam Trailhead by season and day type. 5-77
Table 5.3-14. Observed vehicles at Sourdough Mountain Trailhead by season and day type. 5-78
Table 5.3-15. Observed vehicles at Gorge Creek Overlook by season and day type. 5-79
Table 5.3-16. Observed trail and overlook users at Gorge Creek Overlook by season and day type. 5-80
Table 5.3-17. Observed picnic site use at Ross Lodge Picnic Shelter by season and day type. 5-81

Table 5.3-18. Observed vehicles at Gorge Powerhouse parking area by season and day type. 5-81
Table 5.3-19. Observed vehicles at Newhalem Main Street parking area by season and day type. 5-83
Table 5.3-20. Observed picnic site use at Newhalem Main Street area by season and day type. 5-84
Table 5.3-21. Observed vehicles at SR 20 parking area by season and day type. 5-85
Table 5.3-22. Observed vehicles at Goodell Creek Boat Launch by season and day type. 5-86
Table 5.3-23. Observed picnic site use at Goodell Creek Boat Launch by season and day type. 5-87
Table 5.3-24. Observed shoreline users and river-based watercraft at Goodell Creek Boat Launch by season and day type. 5-87
Table 5.3-25. Observed vehicles at Marblemount Boat Launch by season and day type. 5-88
Table 5.3-26. Trail counter study locations. 5-90
Table 5.3-27. Summary of total monthly trail users at the 16 trail counter locations. 5-94
Table 5.4-1. Project recreation use estimate in Recreation Days by season and day type. 5-103
Table 5.4-2. Non-Project recreation use estimate in Recreation Days by season. 5-104
Table 5.5-1. Top main reason for visitors last visit to a National Park System unit. 5-106
Table 5.5-2. Activities visitors participated in during their last visit. 5-107
Table 5.5-3. Top Washington activities based on participation rates. 5-108
Table 5.5-4. Top North Cascades Region activities based on participation rates. 5-108
Table 5.5-5. Top 10 Washington recreation activity categories ranked with participation rates. 5-109
Table 5.5-6. Projected Project recreation use estimate in Recreation Days by 2050. 5-117
Table 5.5-7. Projected non-Project recreation use estimate in Recreation Days by 2050. 5-117
Table 5.5-8. Average projected peak season picnic site occupancy at Project and non-Project recreation facilities. 5-118
Table 5.5-9. Projected parking area occupancy at Project and non-Project recreation facilities. 5-119
Table 5.5-10. Primary Activity (Washington local residents). 5-121
Table 5.5-11. Primary activity survey responses for respondents with a regional focus. 5-122
Table 5.5-12. Primary Activity (Washington state-wide residents). 5-123

List of Attachments

Attachment A	Study Area Mapbook
Attachment B	Representative Photographs of Recreation Facilities Taken During Physical Inventory in September 2021
Attachment C	Summary of Observed Vehicles by Season, Day Type, Parking Area, and Vehicle Type

List of Acronyms and Abbreviations

ABA .....Architectural Barriers Act
ADA .....Americans with Disabilities Act
AQI .....air quality index
City Light .....Seattle City Light
CoSD.....City of Seattle datum
ELC .....Environmental Learning Center
FERC.....Federal Energy Regulatory Commission
ft .....feet/foot
GPS .....Global Positioning System
ISR .....Initial Study Report
LP .....licensing participant
NAVD 88 .....North American Vertical Datum 1988
NCI.....North Cascades Institute
NPS .....National Park Service
OHV .....off-highway vehicle
ORAR .....outdoor recreation access route
PAD.....Pre-Application Document
Project .....Skagit River Hydroelectric Project
PWR.....Pacific West Region
QA/QC .....quality assurance/quality control
RCO .....Recreation and Conservation Office
RD .....recreation days
RLNRA .....Ross Lake National Recreation Area
RSP .....Revised Study Plan
SPD .....Study Plan Determination
SR.....State Route
USFS .....U.S. Forest Service
USR.....Updated Study Report

This page intentionally left blank.

1.0 INTRODUCTION

The RA-01 Recreation Use and Facility Assessment (Recreation Assessment) is being conducted in support of the relicensing of the Skagit River Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) No. 553, as identified in the Revised Study Plan (RSP) submitted by Seattle City Light (City Light) on April 7, 2021 (City Light 2021). On June 9, 2021, City Light filed a "Notice of Certain Agreements on Study Plans for the Skagit Relicensing" (June 9, 2021 Notice)[1] that detailed additional modifications to the RSP agreed to between City Light and supporting licensing participants (LP) (which include the Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, National Marine Fisheries Service, National Park Service [NPS], U.S. Fish and Wildlife Service, Washington State Department of Ecology, and Washington Department of Fish and Wildlife). The June 9, 2021 Notice proposed no changes to the Recreation Assessment as described in the RSP.

In its July 16, 2021 Study Plan Determination (SPD), FERC approved the Recreation Assessment with modifications. Specifically, FERC recommended City Light modify the methods and study sites related to the trail accessibility evaluation and the visitor and observation survey portions of the study, including:

Trail accessibility evaluation SPD modifications:

- Evaluating the entire Diablo to Ross Lake portage route in lieu of assessing the accessibility of Ross Dam Trail.
- Examining the ability of trailhead signs to effectively communicate trail conditions (i.e., level of difficulty) to the public and note where no signage exists.

Visitor and observation survey SPD modifications:

- Adding Marble Creek Campground, Newhalem Creek Campground, and Canyon Creek Trailhead as visitor survey study sites.
- Removing observation counts at the East Bank Trailhead, Diablo Overlook, and Newhalem picnic sites.[2]
- Adding trail use counters on the East Bank Trail at the terminus near Hozomeen Campground and near Roland Point; calibrate counters for five 1-hour periods between Memorial Day and Labor Day; consult with the Nlaka'pamux Council, the Nlaka'pamux Coalition, and other interested LPs regarding the appropriate location of the counters to capture trail use in the vicinity of culturally sensitive areas.
- Following the block sampling protocol and sampling frequencies as recommended by the agencies but conducting observation counts every hour over a 4-hour period per survey day.
- Using three survey sampling areas (Ross Lake [including Canyon Creek Trailhead], Diablo and Gorge lakes, and the Skagit River downstream of Gorge Powerhouse), each area with a

[1] Referred to by FERC in its July 16, 2021 Study Plan Determination as the "updated RSP."

[2] NPS and the U.S. Forest Service (USFS) recommended removing the observation counts at these sites in their RSP comment letters.

target of 384 responses or 1,152 responses total, with at least 192 survey responses from the peak and off-peak seasons.

- Using the visitor survey instrument with a map proposed by NPS and U.S. Forest Service (USFS), with a modification to Question 4 for respondents to identify their preferred campgrounds.

City Light is implementing the Recreation Assessment as proposed in the RSP with the additional modifications included in the SPD.

On March 8, 2022, City Light filed its Initial Study Report (ISR). No requests for modifications to the Recreation Assessment were filed. FERC's August 8, 2022 Determination on Requests for Study Modifications required no modifications to the Recreation Assessment.

This study is complete and a report of the study efforts is being filed with FERC as part of City Light's Updated Study Report (USR).

2.0 STUDY GOALS AND OBJECTIVES

The goals of this study are to determine: (1) the condition, accessibility, and use impacts of study area recreation facilities; (2) the preferences, attitudes, and characteristics of the study area's recreation users (3) current study area recreation use and activities; and (4) future demand for study area recreation facilities and opportunities. The objectives for each of the goals is described below.

Goal 1 Objectives (Determine the Condition, Accessibility, and Impacts of Project Facilities)

- Determine the condition of the Project recreation facilities.
- Evaluate accessibility at select study area recreation facilities.
- Inventory select study area recreation facilities and trails and document recreational use and access impacts (e.g., erosion, user-created trails, trash/waste disposal, etc.).
- Evaluate the usable periods of the Gorge Lake Boat Launch ramp.

Goal 2 Objectives (Determine the Preferences, Attitudes, and Characteristics of the Study Area's Recreation Users)

- Describe recreation visitors and their trip characteristics, including seasonality and access routes, by recreation facility and type of user (anglers, boaters, campers, hikers, etc.).
- Describe user preferences and expectations at recreation facilities, including water surface elevation; level and quality of interpretation and posted information; and condition of recreation facilities.
- Identify any recreation issues such as safety, conflicts, and crowding.
- Describe recreation visitors' activities (including primary activity and all activities engaged in while visiting) at recreation facilities.
- Describe recreation visitors' socio-demographic characteristics.
- Describe recreation visitors' access experience and any potential barriers to participation in recreation activities.

Goal 3 Objectives (Current Study Area Recreation Use and Activities)

- Identify the amount, activity type, and spatial and temporal distribution of existing and desired recreation use within the study area and, where reasonable and possible, describe historical recreation use trends within this area.
- Identify the current facility capacity/occupancy of study area recreation facilities.
- Identify recreation opportunities within the study area that may have unmet demand.
- Identify potential constraints or barriers to recreation use.
- Assess the regional uniqueness and relative significance of the study area's primary recreation opportunities.

Goal 4 Objectives (Future Demand for Activities)

- Roughly estimate future recreation demand within the study area through the term of the new license (40 to 50 years).

3.0 STUDY AREA

The study area includes the lands and waters within and adjacent to the Project Boundary at Ross Lake, Diablo Lake, and Gorge Lake, the towns of Newhalem and Diablo, and the Skagit River from Newhalem Townsite downstream to Marblemount. Refer to the maps in Attachment A of this study report showing the study area and specific study sites.

The Project is unique given its location within the Ross Lake National Recreation Area (RLNRA) and North Cascades National Park. Because of this unique situation and the existing partnerships that City Light has with NPS and USFS in co-managing many of the recreation resources within and adjacent to the Project Boundary, City Light has included up to 50 additional study sites (depending upon the study element) in the study area at the request of NPS, USFS, and other LPs and per FERC's SPD. City Light does not consider these additional study sites (distinguished in the study site tables for each study element in Section 4.1 herein) to be Project recreation facilities. However, City Light has collected study information for these non-Project recreation facility study sites in this study to provide information on recreation use in the Project vicinity.

4.0 METHODS

This study consists of six elements, including:

(1) An inventory and evaluation of study area recreation facilities for condition, accessibility compliance, facility capacity, and/or use impacts, as well as an assessment of the usable periods of the Project's developed boat launch (i.e., Gorge Lake Boat Launch);

(2) Identifying recreation uses and visitor attitudes, beliefs, and preferences at study area recreation facilities;

(3) Estimating the current recreation use at study area recreation resource areas;

(4) Identifying future use and demand opportunities;

(5) A quality assurance/quality control (QA/QC) review and data entry of visitor and observation survey data; and

(6) Analyzing the data and preparing the report.

The methodology for each of these elements is described below.

4.1 Inventory and Evaluate Existing Recreation Facilities

This study element includes an inventory of the Project recreation facility study sites and evaluation of the condition of each site amenity (e.g., tables, restrooms, parking areas, other structures) at Project recreation facilities; whether each facility complies with current applicable accessibility guidelines; and an assessment of recreation access and use impacts at all Project recreation facilities and select non-Project recreation facilities. City Light evaluated the usable periods of the Gorge Lake Boat Launch ramp.

City Light inventoried and evaluated the study sites identified in Table 4.1-1 and displayed on the maps in Attachment A. Table 4.1-1 also identifies the specific types of evaluations that City Light conducted at each facility as not all the evaluations applied to each facility.

4.1.1 Inventory Recreation Facilities

City Light inventoried the number and type of recreation facilities at the recreation facilities listed in Table 4.1-1. For trail study sites in Table 4.1-1, City Light inventoried the facilities associated with the trailhead and not the trail, except where trail assessments are specifically indicated in Table 4.1-1. Photographs were taken as appropriate as either a representative photograph of similar facilities or of each one-of-a-kind facility. Facilities of interest included picnic sites, campsites, restrooms, parking areas/spaces, boat launches, and recreation signs. This inventory informs the site capacity for study area recreation facilities (e.g., parking capacity).

Table 4.1-1. Study area recreation facilities inventoried and evaluated for condition, accessibility compliance, and use impacts.

Resource Area	Land Management	Facility Type	Recreation Facility Name	Type of Evaluation				
				Inventory	Condition	Accessibility	Use Impact	Trail Accessibility
Ross Lake	Federal (NPS)	Non-Project	Hozomeen Campground			X	X	
	Federal (NPS)	Non-Project	Hozomeen Boat Launch			X	X	
	Federal (NPS)	Non-Project	Winnebago Flats Campground			X	X	
	Federal (NPS)	Non-Project	Winnebago Flats Boat Launch			X	X	
	Federal (NPS)	Non-Project	Hozomeen Lake Trailhead			X	X	
	Federal (NPS)	Non-Project	Ross Lake boat-in camps			X	X	
	Federal (NPS)	Non-Project	Ross Dam Trailhead			X	X	X
	Federal (NPS)	Non-Project	East Bank Trailhead				X	
	Federal (NPS)	Non-Project	Happy Panther Trail					X
Diablo Lake	Federal (NPS)	Project	Skagit Tour Dock	X	X	X	X	
	Federal (NPS)	Project	Diablo Dam parking area	X	X	X	X	
	Federal (NPS)	Project	West Ferry Landing	X	X	X	X	
	Federal (NPS)	Project	East Ferry Landing	X	X	X	X	
	Federal (NPS)	Project	North Cascades Environmental Learning Center (ELC) parking area	X			X	
	Federal (NPS)	N/A	Diablo Lake to Ross Lake Portage Route[1]			X		X
	Federal (NPS)	Non-Project	Diablo Overlook			X	X	
	Federal (NPS)	Non-Project	Colonial Creek Campground			X	X	
	Federal (NPS)	Non-Project	Colonial Creek Boat Launch and Fishing Pier			X	X	
	Federal (NPS)	Non-Project	Diablo Lake boat-in camps			X	X	
	Federal (NPS)	Non-Project	Thunder Knob Trail			X	X	X
	Federal (NPS)	Non-Project	Thunder Creek Trail[2]			X	X	X
	Federal (NPS)	Non-Project	Diablo Lake Trail			X	X	X
Gorge Lake	City Light	Project	Ross Lodge Picnic Shelter	X	X	X	X	
	Federal (NPS)	Non-Project	Sourdough Mountain Trail				X	

Resource Area	Land Management	Facility Type	Recreation Facility Name	Type of Evaluation				
				Inventory	Condition	Accessibility	Use Impact	Trail Accessibility
	Federal (NPS)	Non-Project	Stetattle Creek Trail				X	
	Federal (NPS)	Non-Project	Diablo Dam Trail			X	X	X
	Federal (NPS)	Non-Project	Gorge Lake Campground			X	X	
	City Light	Project	Gorge Lake Boat Launch	X	X	X	X	
	Federal (NPS)	Non-Project	Gorge Creek Overlook			X	X	X
Newhalem	Federal (NPS)	Project	Ladder Creek Falls Trail and Gardens	X	X			
	Federal (NPS)	Project	Trail of the Cedars	X	X			X
	City Light	Project	Gorge Powerhouse parking area	X	X	X	X	
	City Light	Project	Gorge Powerhouse Visitor Gallery	X				
	City Light	Project	Skagit Information Center	X				
	City Light	Project	Gorge Inn Museum	X				
	City Light	Project	Newhalem Picnic Sites	X	X	X	X	
	City Light	Project	Newhalem Main Street parking area	X	X	X	X	
	City Light	Project	Newhalem State Route (SR) 20 parking area	X	X	X	X	
	City Light	Project	Newhalem Interpretive Displays	X	X	X	X	
	City Light	Project	Newhalem Playground	X	X	X	X	
Skagit River	Federal (NPS)	Non-Project	Goodell Creek Campground			X	X	
	Federal (NPS)	Non-Project	Goodell Creek Boat Launch			X	X	
	Federal (NPS)	Non-Project	Damnation Creek Boat-in Picnic Site			X	X	
	Federal (NPS)	Non-Project	Copper Creek Boat Access Site			X	X	
	Federal (USFS)	Non-Project	Marblemount Boat Launch			X	X	

1 Per FERC's Study Plan Determination, FERC directed City Light to assess the Diablo Lake to Ross Lake portage route.
2 The study segment is the 1.6 mile segment from Colonial Creek Campground to the Fourth of July Trail junction, which parallels the Thunder Creek arm of Diablo Lake. Beyond this junction, the trail leads another 18 miles away from the Project/Ross Lake.

4.1.2 Facility Condition Assessment

City Light conducted a qualitative assessment of the condition of developed recreation facilities and signs at each of the study sites in Table 4.1-1. For trail study sites in Table 4.1-2, City Light assessed the condition of the facilities associated with the trailhead and not the trail. The assessment categories are poor, fair, good, and excellent condition. Table 4.1-2 identifies the evaluation criteria used for each recreation facility amenity.

Table 4.1-2. Facility condition evaluation categories and criteria.

Condition Rating and Description	Examples of Condition by Facility Type			
	Vehicle Parking (surfacing on vehicle parking areas)	**Recreation Site Amenities** (tables, boat ramps, docks, trails, etc.)	**Recreation Site Buildings** (public restrooms/ structures)	**Signs** (Project/recreation signs)
Poor (1) All or most facilities are in disrepair and need of immediate replacement; conditions create safety hazards and impair function; little evidence of recent maintenance.	Widespread areas of cracking; eroding edges; potholes; visible subgrade.	Splitting or rotten boards or planks; missing bolts or fasteners; overgrown or impassable trail tread; rutted or eroded trail surface.	Rot; leaks; sagging roofs; holes in exterior.	Signs do not exist; sign panels are bent/broken; posts or supports are broken; holes in panels.
Fair (2) Need for improved maintenance and repair in some areas; no major safety concerns; repairs should be made but are not needed immediately.	Limited areas of cracking; eroding edges; potholes; striping faded or lacking; curbs/wheel stops missing or damaged.	Loose bolts or boards; rusted or bent grills; dock boards loose; dock floatation or anchoring in disrepair; signs of vegetation encroaching; some trail tread erosion.	Surfaces need painting; roof shingles need replacement or repair; inoperable lock; door hinge in disrepair.	Sign panels faded; loose bolts or posts; some text not readily legible.
Good (3) All facilities in good condition and well maintained; no significant signs of disrepair or aging.	Surfacing still consistent and intact; striping visible but slightly faded; no cracking or potholes.	Materials clearly not new but fully operable (e.g., boards and planking secure; no signs of damage observed; clear trail tread; no vegetation encroachment).	Minor signs of weathering but in functional condition; facilities operable and only need minor maintenance.	Minor signs of weathering but fully intact, legible, and secure.
Excellent (4) All facilities are new, near new, or recently reconditioned and well maintained.	Newly surfaced or resurfaced with clear striping.	New materials; newly built or restored trail surface with clearly defined vegetation clearances.	Newly installed or reconditioned structure.	New sign panels and posts.

City Light identified the individual condition ratings for each site amenity within a facility, as well as an overall facility rating. City Light developed the overall facility rating by summing the total of each of the site amenities at each facility, adjusting for when a facility has limited features or lacks one or more of the types of facilities outlined in Table 4.1-3.

City Light categorized the overall facility condition using the rating scale and categories (which correlate with the general rehabilitation timeframes) set forth in Table 4.1-3. These general rehabilitation timeframes are not rigid and are intended to be guidelines. The purpose of these general rehabilitation timeframes is to understand where Project recreation facilities rank in terms of overall condition and rehabilitation priority.

Table 4.1-3. Overall facility condition evaluation categories, rating score, and general rehabilitation timeframes.

Overall Facility Condition Rating Category	Overall Facility Condition Evaluation Rating Score	General Rehabilitation Timeframe
Poor	1 to 3	Immediate
Fair	4 to 6	Within 5 Years
Good	7 to 10	5 to 10 Years
Excellent	11 to 13	More than 10 Years

4.1.3 Accessibility Compliance Assessment

City Light assessed the developed recreation facilities identified in Table 4.1-1 for consistency with current accessibility guidelines. For the recreation facilities located on City Light land and constructed using City Light funds, City Light used the 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design for public accommodations (U.S. Department of Justice 2010). For the recreation facilities located on federal lands, City Light used the 2015 Architectural Barriers Act (ABA) Standards (U.S. Access Board 2015).

For trail study sites in Table 4.1-1, City Light assessed the accessibility of the facilities associated with the trailhead and where they exist (and not the trail). See Section 4.1.4 for methods to qualitatively assess the accessibility potential for selected trails identified in Table 4.1-1. Per FERC's SPD, City Light included an assessment of whether trailheads or trails had a trail conditions sign that identified and rated the overall trail difficulty and constraining trail conditions.

City Light evaluated each facility against these above standards and then utilized a rating system that categorized the level of accessibility at each facility. City Light used the following three ratings: inaccessible, partially accessible, and fully accessible. City Light assigned a rating using the evaluation criteria in Table 4.1-4.

Table 4.1-4. Level of accessibility compliance rating system and categories.

Accessibility Rating System and Categories		
Inaccessible (0)	**Partially Accessible (1)**	**Accessible (2)**
Little or no consideration for accessibility. Clearly not in compliance with current ADA or ABA standards.	Some accessible facilities, but in disrepair or not up to current ADA or ABA standards (e.g., slopes too steep, docks inaccessible, etc.).	High quality of accessibility. Facilities appear fully consistent with current ADA or ABA standards.

4.1.4 Qualitative Trail Accessibility Assessment

City Light qualitatively assessed eight trails, including one Project trail (Trail of the Cedars) and seven non-Project trails (Ross Dam Trail, Happy Panther Trail, Thunder Knob Trail, Thunder Creek Trail, Diablo Lake Trail, Diablo Dam Trail, and Gorge Creek Overlook Trail), where additional information was needed to understand the potential to provide enhanced accessible trail access. In addition, in FERC's SPD, FERC recommended City Light assess the Diablo Lake to Ross Lake portage route. The portage route is not a developed trail, but rather consists of a variety of facilities and features that transport visitors from Diablo Lake to Ross Lake.

As such, City Light qualitatively assessed the eight developed recreation trails and the Diablo Lake to Ross Lake portage route to characterize the general opportunities and constraints to making future accessibility improvements. City Light assessed the running slope, cross slope, tread obstacles (e.g., rocks, roots), trail width, trail surface material and compaction, and connection to parking and trailhead facilities, among other connections, and summarized the overall constraints and barriers for each trail in Table 4.1-1. City Light also photographed representative conditions and notable constraints or barriers during the field assessments.

4.1.5 Recreation Use Impact Assessment

City Light assessed the recreation use impacts at each of the study sites identified in Table 4.1-1. For trail study sites in Table 4.1-1, City Light assessed the use impacts of the facilities associated with the trailhead only and not the trail. The recreation use impact at each facility is categorized as low, moderate, or high depending on the amount and dispersion of use impact evidence (Table 4.1-5). Evidence of use impact typically include the presence of litter, dumping, tree cutting, inadequate vegetation clearances around fire pits/rings, visible off-highway vehicle (OHV) use/tracks, trampled vegetation, erosion, human waste, toilet paper, etc.

Table 4.1-5. Recreation use impact assessment rating system and categories.

Use Impact Rating System and Categories		
Low (0)	**Moderate (1)**	**High (2)**
Few if any evidence of use impact is observed at each site.	Several signs/evidence of use impact but not extensive or widespread impacts.	Extensive evidence of use impact; widespread use with many impacts evident.

In some instances, selecting a single impact category may not be practical and as a result the impact level may span two categories (e.g., low-to-moderate or moderate-to-high). This broader categorization may be used when a facility has satellite areas where impact conditions vary significantly from most of the facility.

City Light will provide the impact assessment form data in Microsoft Excel form to LPs upon request.

4.1.6 Gorge Lake Boat Launch Ramp Assessment

City Light identified the constructed top and lower end of the Gorge Lake Boat Launch ramp to determine its functional water surface elevation vertical range. The Gorge Lake Boat Launch ramp is considered functional from the constructed top of the boat ramp down to 3 feet (ft) above the lower end of the constructed ramp.

City Light identified the usable periods of the Project's developed boat ramp at the Gorge Lake Boat Launch facility in 2022. City Light used the output from the OM-01 Operations Model Study (City Light 2023) to compare the daily median reservoir water surface elevation for the period of record to the functional water surface elevation range of the ramp to identify the periods of the recreation season (April through October) that the boat ramp is usable.

4.2 Identify Recreation Uses and Visitor Attitudes, Beliefs, and Preferences

City Light conducted observations and visitor surveys in 2022 to gather information to address the study goals, objectives, and issues at each of the study sites as outlined in the FERC-approved study plan. The study sites for this element of the study include both Project and non-Project recreation facilities.

City Light conducted the observation and visitor surveys directly at the study site's use areas where visitors are observed (i.e., parking areas, picnic areas, fishing piers, boat launch ramps, docks, shoreline access areas, etc.). City Light generally observed the overall use patterns at each site during each survey day. City Light also conducted visitor surveys and recorded observation use counts where City Light observed overflow use and use in areas immediately adjacent (i.e., within approximately 200 yards) to the formal study sites when City Light was not able to correlate the use area/uses to an adjacent non-study site facility or use (i.e., neighboring trailhead, parking area, campground, residence, etc.). Refer to the Attachment A for maps of the study sites.

4.2.1 Observation Survey

At the study sites listed in Table 4.2-1, City Light conducted a 4-hour block sampling protocol with a spot count every hour over the 4-hour period (approximately from 8 a.m. to 12 p.m. or 12 p.m. to 4 p.m.) during each visit to a study site. City Light surveyors sought out visitors and secured numerous visitor surveys during the time in between the spot counts during each visit. As discussed below in the Sampling Frequency section, City Light conducted a roving use survey using a stratified two-stage (geographic and temporal) probability sampling approach (Malvestuto 1996; Pollock et al. 1994).

During the hourly observation surveys, the City Light surveyors counted and recorded the following at each study site.

- Date;
- Time observation started and ended;
- Location/study site;
- General weather conditions (sunny, partly cloudy, cloudy, rain/snow);
- Observed vehicles (single vehicle);

- Observed vehicles with trailers;
- Observed trailers (no vehicle);
- Observed docked boats (as visible from the study site);
- Observed people;
- Observed types of shoreline recreation activities (as visible from the study site);
- Observed types of reservoir/water-based recreation activities/watercraft (if reservoir/water views exist; as visible from the study site); and
- Observed user conflicts or issues.

Observations were made and recorded by facility to include parking outside provided parking areas. This data was used to identify the types of recreation activities visitors participate in in the study area. In addition, this data was also used to calculate aspects of the study area recreation use estimates (see Section 4.3 of this study plan). In between the hourly spot counts, the surveyor administered on-site recreation visitor questionnaire surveys to randomly selected recreation visitors (see Section 4.2.1).

4.2.2 Visitor Survey

At the study sites listed in Table 4.2-2, City Light administered visitor surveys during each visit to a study site on each survey day. The visitor survey collected visitor perceptions, attitudes, and satisfaction levels on current resource conditions (e.g., recreation facilities, recreation use levels, and users' feedback on lake elevations relative to their recreation experience), visitors' zip codes, user characteristics, recreation activities, management concerns, and overall recreation experiences. Non-response bias was collected during visitor survey collection, whereby City Light's surveyor collected the following information from visitors who refused to complete the survey: reason, observed activity, gender, and age (if possible). For all survey efforts, the number of refusals were recorded. The visitor survey at the study area recreation facilities was administered as an on-site, in-person survey only. City Light did not utilize the mail-back windshield survey at study area recreation facilities. City Light numbered each survey in order to track on-site response rates. City Light adjusted the survey plan, as needed, during the off-peak season in order to meet the target number of on-site surveys due to lower than anticipated and sporadic recreational use during the off-peak season.

Table 4.2-1. Study areas and sites for the observation survey (use spot count).

Resource Area	Land Management	Facility Type	Project or Non-Project Facility	Recreation Facility/Study Site	Observation Survey Location	Comments
Ross Lake	Federal (NPS)	Day use	Non-Project	Hozomeen Boat Launch	Parking area	City Light did not conduct observation surveys at this study site due to Silver-Skagit Road closure in 2022 (no vehicle access to the area/facilities).
	Federal (NPS)	Day use	Non-Project	Winnebago Flats Boat Launch	Parking area	City Light did not conduct observation surveys at this study site due to Silver-Skagit Road closure in 2022 (no vehicle access to the area/facilities).
	Federal (NPS)	Day use	Non-Project	Ross Dam Trail	Trailhead parking area	
	Federal (NPS)	Day use	Project	Skagit Tour Dock	Parking area	
	Federal (NPS)	Day use	Project	West Ferry Landing	Parking area	
Diablo Lake	Federal (NPS)	Day use[1]	Project	North Cascades ELC / Diablo Lake Trailhead	Parking area Shoreline	Parking specific to Diablo Lake Trail does not exist (part of the ELC parking area)
	Federal (NPS)	Day use	Project	Diablo Dam Parking Area	Roadside parking area	
	Federal (NPS)	Day use	Non-Project	Colonial Creek Boat Launch and Fishing Pier	Parking area Dock Fishing pier	
	Federal (NPS)	Day use	Non-Project	Thunder Knob Trailhead	Trailhead parking area	Located along SR 20
	Federal (NPS)	Day use	Non-Project	Thunder Creek Trailhead	Trailhead parking area	Located within Colonial Creek Campground
Gorge Lake	City Light	Day use	Project	Ross Lodge Picnic Shelter	Picnic shelter	
	City Light	Day use	Project	Gorge Lake Boat Launch	Parking area	
	Federal (NPS)	Day use	Non-Project	Gorge Overlook	Parking area	
	Federal (NPS)	Day use	Non-Project	Sourdough Mountain Trailhead	Trailhead parking area	
	Federal (NPS)	Day use	Non-Project	Diablo Dam Trailhead	Trailhead parking area	
Newhalem	Federal (NPS)	Day use	Project	Newhalem Parking Areas	Main Street parking area SR 20 parking area	
	Federal (NPS)	Day use	Project	Gorge Powerhouse	Parking area	
Skagit River	Federal (NPS)	Day use	Non-Project	Goodell Creek Boat Launch	Parking area	
	Federal (USFS)	Day use	Non-Project	Marblemount Boat Launch	Parking area	

1 The North Cascades ELC also provides overnight programs.

Table 4.2-2. Survey areas, study sites, and specific locations for the visitor survey.

Visitor Survey Area	Resource Area	Land Management	Facility Type	Project or Non-Project Facility	Recreation Facility/Study Site	Specific Visitor Survey Locations	Target Number of Surveys	Comments
Ross Lake Survey Area	Ross Lake	Federal (NPS)	Overnight	Non-Project	Hozomeen Campground	Campsites	384 surveys	City Light did not conduct visitor surveys at these study sites due to Silver-Skagit Road closure in 2022 (no vehicle access to the area/facilities).
		Federal (NPS)	Day use	Non-Project	Hozomeen Boat Launch	Parking area Launch ramp/dock		
		Federal (NPS)	Overnight	Non-Project	Winnebago Flats Campground	Campsites		
		Federal (NPS)	Day use	Non-Project	Winnebago Flats Boat Launch	Parking area Launch ramp/dock		
		Federal (NPS)	Overnight	Non-Project	Ross Lake boat-in camps	Indirectly via reservoir access study sites		City Light increased visitor survey efforts at these sites in order to meet survey area targets despite absence of visitor surveys from Hozomeen/Winnebago Flats area.
		Federal (NPS)	Day use	Non-Project	Ross Dam Trailhead	Parking area Ross Lake Resort dock		
		Federal (NPS)	Day use	Non-Project	East Bank Trailhead	Parking area		
		Federal (USFS)	Day use	Non-Project	Canyon Creek Trailhead	Parking area		
		Federal (NPS)	Day use	Project	Ferry Landings	Parking area Docks		Located on Diablo Lake but the ferry primarily provides visitors access to Ross Lake
Diablo/Gorge Lake Survey Area	Diablo Lake	Federal (NPS)	Day use[1]	Project	North Cascades ELC / Diablo Lake Trailhead	Parking area	384 surveys	Parking for the Diablo Lake Trail is part of the ELC parking area
		Federal (NPS)	Day use	Project	Diablo Dam Parking Area	Roadside parking area		
		Federal (NPS)	Day use	Non-Project	Diablo Overlook	Parking area		
		Federal (NPS)	Overnight	Non-Project	Colonial Creek Campground	Campsites Shoreline		
		Federal (NPS)	Day use	Non-Project	Colonial Creek Boat Launch and Fishing Pier	Parking area Dock Fishing pier Shoreline		
		Federal (NPS)	Day use	Project	Skagit Tour Dock	Parking area		
	Gorge Lake	Federal (NPS)	Overnight	Non-Project	Gorge Lake Campground	Campsites		
		City Light	Day use	Project	Gorge Lake Boat Launch	Parking area Launch ramp/dock		
		Federal (NPS)	Day use	Non-Project	Gorge Creek Overlook	Parking area		
Newhalem/ Skagit River Survey Area	Newhalem	City Light	Day use	Project	Newhalem Parking Areas	Main Street parking area SR 20 parking area	384 surveys	
		Federal (NPS)	Day use	Project	Gorge Powerhouse	Parking area		Ladder Creek Falls Trail parking occurs at this site
	Skagit River	Federal (NPS)	Overnight	Non-Project	Newhalem Campground	Campsites		
		Federal (NPS)	Overnight	Non-Project	Goodell Creek Campground	Campsites		
		Federal (NPS)	Day use	Non-Project	Goodell Creek Boat Launch	Parking area		
		Federal (USFS)	Day use	Non-Project	Marblemount Boat Launch	Parking area		
		Federal (USFS)	Day use	Non-Project	Marble Creek Campground	Campsites		
						Total	**1,152 surveys**	

1 The North Cascades ELC also provides some overnight programs.

4.2.2.1 Types of Visitor Surveys

The on-site visitor survey was administered at all study sites where recreation visitors were readily visible and willing to participate. City Light only utilized the on-site visitor survey method (i.e., City Light did not utilize mail-back windshield surveys).

For the on-site survey, only members of a group who were 18 years or older were asked to complete a survey. City Light's recreation researchers trained surveyors on random selection techniques for choosing groups at a facility and participants within groups, introduction strategies, recording, and tracking refusals. Prior to administering the survey, City Light surveyors oriented visitors using a standardized, detailed map of the study area, including identifying the location of the visitor intercept. Upon completion of a survey by a respondent, the recreation researcher reviewed the survey for skipped or missed questions, and anomalous data or responses, in order to maximize the quality of the survey data and minimize anomalous data during data entry.

4.2.2.2 Visitor Survey Development

Survey topics addressed items such as visitors' perceptions of the following:

- Existing and desired recreation facilities;
- Whether reservoir water levels affected visitor's recreation experience;
- Satisfaction with shoreline access and opportunities;
- Comparison of Project recreation resource areas to other regional recreation areas that provide similar recreation opportunities;
- Personal safety;
- Crowding;
- Conflict;
- Constraints or barriers to participation that are potentially within City Light or agency control (e.g., lawlessness, trail conditions, campfire use, parking access and fees); and
- Ways to enhance their recreation experience.

City Light used the FERC-approved visitor survey instrument with a map as proposed by NPS and USFS with a modification to Question 4 for respondents to identify their preferred campgrounds (per FERC's recommendation in its SPD). Prior to survey implementation, the survey instrument was pre-tested in the field with recreation users. The pre-test included a total of 15 completed surveys to receive feedback on readability, length, and general understanding of survey content. No changes to the survey instrument were made based on the pre-test. City Light developed a study area map as part of the visitor survey instrument and in consultation with LPs. The map was used for specific questions on the visitor survey instrument and to assist respondents in orienting themselves and provide an understanding of the area and facility naming conventions.

This task involved logistical preparation including developing field work logistics and protocols; field crew training; selection of sampling dates; pre-testing field logistics and protocols; and revising schedules, logistics, or protocols as needed.

4.2.2.3 Sampling Approach and Data Collection

Target Number of Visitor Surveys

The overall survey area encompassed five resource areas, including Ross Lake, Diablo Lake, Gorge Lake, Newhalem, and the Skagit River. Within this overall study area, the recreation setting is distinctly divided between Ross Lake and the State Route (SR) 20 corridor. The primarily backcountry setting at Ross Lake is characterized by remote, boat-in/hike-in access and opportunities, very limited vehicle access, and limited recreational developments. In contrast, the frontcountry setting along the SR 20 corridor at Diablo Lake, Gorge Lake, Newhalem, and the Skagit River is characterized by more and higher levels of recreation development combined with improved vehicle and road access throughout. Diablo Lake and Gorge Lake are frontcountry settings focused on reservoirs whereas the Newhalem and Skagit River resource areas are a frontcountry setting focused on river-based uses. Based on these three distinct recreation settings (backcountry, reservoir frontcountry, and river-based frontcountry), City Light split the overall visitor survey study area into three separate survey areas: (1) Ross Lake (including Canyon Creek Trailhead); (2) Diablo and Gorge lakes; and (3) Skagit River downstream of Gorge Powerhouse (including Newhalem).

The target number of visitor surveys for each survey area was based on the estimated recreation use. The overall geographic area of the three survey areas roughly align with the RLNRA boundaries, where visitation has generally ranged from 700,000 to 1,000,000 visitors annually from 2010 to 2022. Exact recreation use estimates for the specific survey areas do not exist, but City Light has assumed the visitation to any survey area to be at least 200,000 visitors. Thus, using a 95 percent confidence interval with a sampling error no more than +/- 5 percent, City Light's target number of surveys for each survey area is 384 surveys (at a minimum) with at least 192 survey responses from the peak and off-peak seasons (1,152 surveys in total) (Salant and Dillman 1994). Since it was not apparent how varied the Project sample population was in its response to various questions, City Light used a more conservative sampling approach that utilizes a "50/50 split," which assumes the sample population is relatively varied (Salant and Dillman 1994). City Light secured the identified target number of surveys for each survey area and overall. City Light continuously monitored the survey returns throughout the survey season to ensure survey targets for each survey area and overall were met during the established study year. City Light increased the sampling frequency in the off-peak season to improve survey responses in order to meet targets due to lower-than-expected and sporadic recreational use during the off-peak season. City Light continued the survey effort throughout the established study survey season (discussed below), even after the target survey numbers had been met prior to the end of the survey season.

Sampling Frequency for Observation and Visitor Surveys

The sampling frequency for the observation and visitor surveys was divided into two categories: peak and off-peak seasons. The peak season for recreation use was the summer season (July 1 through Labor Day). The off-peak season included the shoulder seasons of spring (May and June) and fall (Tuesday after Labor Day through October). The closure of SR 20 from November through April limits visitor access to the area and associated recreation use during the winter months.

The sampling frequency for the peak season (18 survey days total at each site) was:

- Four randomly selected weekday days per month in July and August (separated by at least one week);
- Four randomly selected weekend days (Saturday or Sunday) per month in July and August (non-consecutive); and
- One holiday day (Saturday or Sunday) for each three-day holiday weekend (Independence Day and Labor Day holiday weekends) (two survey days total).

The sampling frequency for the off-peak season (17 survey days total at each site) was:

- Two randomly selected weekday days per month (separated by at least one week);
- Two randomly selected weekend days (Saturday or Sunday) per month (non-consecutive); and
- One pre-selected holiday day (Saturday or Sunday) for the three-day Memorial Day holiday weekend.

As noted above, the study plan required City Light to conduct a total of 17 observation and visitor survey days at each survey site during the off-peak season; however, City Light did not conduct the remaining two required days in October (one weekday and one weekend day) due to poor air quality from the wildfires in the vicinity of the Project/study area, including a two-week period when the NPS closed portions of the study area in and around Diablo Lake due to nearby fire activity. Inclement weather in the final week of October ended the smoke/wildfire issues, but heavy precipitation and cold temperatures precluded data collection the remainder of October. Despite missing these two survey days, City Light had already met the visitor survey targets for the off-peak season and had conducted additional visitor survey field days in May, June, and September as use levels and patterns were sporadic in the off-peak season, and City Light wanted to make additional efforts in order to meet the off-peak season survey targets.

City Light also conducted two days of preliminary testing to clarify any problems/confusion with the survey instrument and/or process.

To identify recreation visitor's attitudes, beliefs, and preferences at study area recreation resource areas, City Light conducted a roving use survey using a stratified two-stage (geographic and temporal) probability sampling approach (Malvestuto 1996; Pollock et al. 1994). During the survey, City Light's surveyors conducted a recreation visitor survey at all the study sites identified in Table 4.2-2. The survey sample was stratified by development/resource area, type of day (weekdays, non-holiday weekends, and holiday weekends), and time of day.

Timing of Sampling

City Light's surveyors conducted the surveys on each survey day at each site while roving between the sites during each four hour sampling block. The four hour sampling blocks alternated between the morning period and afternoon period throughout the survey season, which provided a range of visitation times and potential user groups over the course of the survey period. City Light utilized two survey teams (two staff per team) to conduct the surveys on each survey day. The final survey

team/staff approach was determined based on field testing and logistics prior to starting the study season.

4.2.2.4 Trail Use Counts

City Light installed and maintained a trail counter on each of the study area trails in Table 4.2-3 for the duration of the survey season (i.e., May through October). City Light located the counters in consultation with LPs. The exact location was determined during the installation of each trail counter. Once installed, City Light recorded the Global Positioning System (GPS) location of each trail counter and included the final locations on the study maps in Attachment A. City Light calibrated the counters following installation, routinely maintained/downloaded the data at each counter during the study season and removed the counters after the study season, except the East Bank Trail near Hozomeen Campground and the Hozomeen Lake Trail due to weather, site and access conditions.

Table 4.2-3. Trail counter study locations.

FERC Project Development	Resource Area	Land Management	Project or Non-Project Facility	Trail Counter Study Site
Ross	Ross Lake	Federal (NPS)	Non-Project	Ross Dam Trailhead
		Federal (NPS)	Non-Project	East Bank Trailhead (SR20)
		Federal (NPS)	Non-Project	East Bank Trail near Roland Point
		Federal (NPS)	Non-Project	Lightning Creek Trail
		Federal (NPS)	Non-Project	Desolation Peak Trail
		Federal (NPS)	Non-Project	East Bank Trail near Hozomeen Campground
		Federal (NPS)	Non-Project	Hozomeen Lake Trail
		Federal (NPS)	Non-Project	Little Beaver Trail
		Federal (NPS)	Non-Project	Big Beaver Trail
Diablo	Diablo Lake	Federal (NPS)	Non-Project	Thunder Knob Trail
		Federal (NPS)	Non-Project	Thunder Creek Trail
		Federal (NPS)	Non-Project	Sourdough Mountain Trail
		Federal (NPS)	Non-Project	Diablo Lake Trail
		Federal (NPS)	Non-Project	Diablo Dam Trail
Gorge	Newhalem	Federal (NPS)	Project	Ladder Creek Falls Trail
		Federal (NPS)	Project	Trail of the Cedars

4.3 Estimate Current Recreation Use at Recreation Resource Areas

This study element described use levels (i.e., occupancy) and observed activities at the recreation study sites in Table 4.2-4, where City Light collected visitor use observation data as part of this study. City Light provided a summary of recreation facility occupancy at parking areas (where

capacity was defined with marked spaces) and picnic areas and the types of observed recreation activities at recreation facilities.

First, City Light calculated the average existing use levels for several recreation parameters (e.g., people, vehicles, facility occupancy rates/percent of capacity) by season (peak and off-peak) and day type (i.e., weekend, weekday, holiday) during the survey season and described the occupancy levels at each study site listed in Table 4.2-4, if site capacity was defined.

Second, for each recreation facility or group of facilities in Table 4.2-4, City Light summarized the types of observed recreation activities during the survey season.

4.3.1 Recreation Use Estimate

To estimate the recreation use that occurs within the study area, City Light estimated the existing annual day and overnight visits for the recreation facilities and sites listed in Table 4.2-4 in recreation days (RD) by developing one use estimate specific to Project recreation facilities and a separate use estimate for non-Project recreation facilities. This division was necessary given the differing data collection methods for the data sources (i.e., Project recreation facilities versus non-Project recreation facilities). City Light estimated the Project recreation facilities' use based on visitor use data collected as part of this study (see Section 4.2.2) and incorporated additional daily visitor use data from operators of the North Cascades ELC, which provides visitor use programs and services at Project recreation facilities.

For the non-Project recreation facilities use estimate, City Light utilized a combination of visitor use data collected as part of this study (see Section 4.2.2) as well as existing NPS overnight and day use data, third party data (e.g., Ross Lake Resort), and USFS data (as available) (Table 4.2-5). Where available and provided by other parties, City Light summarized the use information from the non-Project recreation facilities, but because the data was not collected as part of this study's methods, City Light summarized the data consistent with the parameters of the Project use estimate, where possible. The data collection methods for non-Project recreation facilities and how the data is provided to City Light is beyond the control of City Light.

Table 4.2-4. Study area recreation facilities where use and occupancy will be estimated via study observation surveys and use counts.

Resource Area	Land Management	Facility Type	Project or Non-Project Facility	Project Recreation Facility	Use Estimate	Facility Occupancy
Ross Lake	Federal (NPS)	Day use	Non-Project	Hozomeen Boat Launch	X[1]	X[1] (parking area)
	Federal (NPS)	Day use	Non-Project	Winnebago Flats Boat Launch	X[1]	X[1] (parking area)
	Federal (NPS)	Day use	Non-Project	Ross Dam Trailhead	X	X (parking area)
	Federal (NPS)	Day use	Non-Project	East Bank Trailhead	X	X (parking area)
Diablo Lake	Federal (NPS)	Day use	Project	Skagit Tour Dock	X[2]	X (parking area)
	Federal (NPS)	Day use	Project	West Ferry Landing	X	X (parking area)
	Federal (NPS)	Day use[3]	Project	North Cascades ELC / Diablo Lake Trailhead	X	X (parking area)
	Federal (NPS)	Day use	Non-Project	Colonial Creek Boat Launch and Fishing Pier	X	X (parking area)
	Federal (NPS)	Day use	Non-Project	Diablo Overlook	X	X (parking area)
	Federal (NPS)	Day use	Project	Diablo Dam Parking Area	X	X (parking area)
Gorge Lake	City Light	Day use	Project	Ross Lodge Picnic Shelter	X	X (picnic site)
	City Light	Day use	Project	Gorge Lake Boat Launch	X	X (parking area)
	Federal (NPS)	Day use	Non-Project	Gorge Overlook	X	X (parking area)
Newhalem	Federal (NPS)	Day use	Project	Gorge Powerhouse / Ladder Creek Falls Trail and Gardens	X	X (parking area)
	Federal (NPS)	Day use	Project	Trail of the Cedars	X	Not applicable
	City Light	Day use	Project	Newhalem Parking Areas	X	X (parking area)
Skagit River	Federal (NPS)	Day use	Non-Project	Goodell Creek Boat Launch	X	X (parking area)
	Federal (USFS)	Day use	Non-Project	Marblemount Boat Launch	X	X (parking area)

1 City Light did not conduct observation surveys at these study sites due to road closure to the sites/area (Silver-Skagit Road) in 2022.
2 The use estimate is based on City Light's Skagit Tour records.
3 The North Cascades ELC also provides overnight programs.

Table 4.2-5. Study area recreation facilities where use data will be collected via non-study methods (as available).

Resource Area	Land Management	Facility Type	Project or Non-Project Facility	Recreation Facility	Use Data Source
Ross Lake	Federal (NPS)	Overnight	Non-Project	Hozomeen and Winnebago Flats Campgrounds, Boat-in Camps (19 sites)	NPS[1]
	Federal (NPS)	Overnight	Non-Project	Ross Lake Resort	Ross Lake Resort
Diablo Lake	Federal (NPS)	Day use	Project	Skagit Tour Dock	City Light
	Federal (NPS)	Day use	Project	Ferry Landings	City Light
	Federal (NPS)	Day use[2]	Project	North Cascades ELC	North Cascades Institute (NCI) (overnight/program use)
	Federal (NPS)	Overnight	Non-Project	Colonial Creek Campground	NPS
	Federal (NPS)	Overnight	Non-Project	Thunder Point, Hidden Cove, and Buster Brown Boat-in Camps	NPS
	Federal (NPS)	Day use	Non-Project	Diablo Overlook	NPS
	Federal (NPS)	Overnight	Non-Project	Gorge Campground	NPS
Newhalem	City Light	Day use	Project	Skagit Information Center	City Light

1 Due to a road closure (i.e., Silver-Skagit Road from Canada) preventing vehicle access to the sites/area, use at these sites was limited in 2022.
2 The North Cascades ELC also provides overnight programs.

4.4 Identify Future Use and Demand Opportunities

City Light identified the future use and demand opportunities from three perspectives: (1) assessing the existing unmet demand; (2) assessing future recreation demand; and (3) assessing the regional recreational uniqueness and significance of the Project. Each of these perspectives is described in detail below.

4.4.1 Existing Unmet Demand Assessment

Existing recreation use does not always represent the total existing recreation demand because there may be constraints that limit participation. While there are many potential constraints on recreation use (e.g., lack of free time, cost, geographic distance, lack of skills or equipment), a subset of participation constraints may be closely associated with site-specific management (e.g., limited access to lands or water, use limits or full occupancies at facilities, project operations that eliminate or diminish the quality of experiences and opportunities, or the lack of information about available recreation opportunities). To assess the general level of unmet demand for recreation opportunities within the study area, City Light performed the three tasks described below.

4.4.1.1 Assess Statewide and Regional Unmet Recreation Demand Information

City Light reviewed and summarized relevant information from the 2018-2022 Recreation and Conservation Plan for Washington State (Recreation and Conservation Office 2017), RLNRA General Management Plan (NPS 2012), and NPS Comprehensive Survey of the American Public (NPS 2001). The focus of this assessment was to identify possible recreation activities with substantial unmet demand with a qualitative discussion of participation constraints and whether these constraints are likely affected by Project operations.

4.4.1.2 Collect Unmet Recreation Demand Information

City Light collected additional unmet recreation demand information from study area visitors in City Light's visitor surveys.

4.4.1.3 Identify Potential Activities with High Unmet Demand

City Light identified potential activities with high unmet demand within and adjacent to the Project Boundary based on the review of unmet demand information derived from NPS, the visitor survey, monitoring data, and any other regional unmet demand sources (if any). Analysis also attempted to identify likely barriers or constraints on participation, and whether those are related to Project operations.

4.4.2 Future Recreation Demand Assessment

This element of the study provided information regarding the projected future recreation use within the study area over the estimated period of the new license. For this assessment, City Light assumed a new license term of 50 years. Obviously, projecting the future is a speculative activity, especially over a 50-year period. These projections, though, can be useful for general planning purposes to identify potential management issues that may occur in the future. This approach included four steps.

4.4.2.1 Review Existing Recreation Use Trends

Since past use often helps predict future use, City Light reviewed trends of recent study area recreation use where relevant and when readily available information was available.

4.4.2.2 Review Existing Population and Recreation Activity Participation Projections

City Light summarized existing information on existing and future population rates from the State of Washington Office of Financial Management Department of Finance website (https://www.ofm.wa.gov/washington-data-research) for the predominant counties where study area visitors originate from. The population growth rates were used to project the overall study area recreation use estimate over the term of a new license period (i.e., 40 to 50 years).

City Light also researched outdoor recreation activity projections from available sources, such as Outdoor Recreation Trends and Futures (Cordell 2012) and other appropriate sources on future projections (as available and applicable). The Cordell projection indices were used to project recreation facility occupancy at study area recreation facilities (refer to Table 4.2-4) over the term of the new license.

4.4.2.3 Review Reasonably Foreseeable Events that May Influence Future Use

Reasonably foreseeable events in the watershed may reasonably be expected to influence recreation use in the study area over the new license period. If an event is determined to be reasonably foreseeable, City Light made a qualitative assessment of its potential effect on future recreation use, if feasible.

4.4.2.4 Estimate Future Recreation Use over the New License Period

Based on historical trends, future growth projections, and likely foreseeable events in the watershed, City Light used professional judgment to estimate study area recreation use and facility utilization over the expected term of the new license. For this assessment, City Light assumed a license term of 50 years, though the projection term is limited by the term for each source of projection data. These estimates must be considered very speculative but provide a general indication of how recreation use is expected to change over the new license period.

For the recreation use estimate, City Light projected the use based on population growth rates where the majority of study area visitors reside as identified in the visitor survey element of the study (see Section 4.2.2).

For the recreation facility utilization projections (e.g., day use areas, boat launches, and trails), City Light relied on the activity participation indices in Outdoor Recreation Trends and Futures (Cordell 2012).

4.4.3 Regional Uniqueness and Significance Assessment

This component of the study assessed the regional uniqueness of the study area's primary recreation opportunities in three steps.

4.4.3.1 Review Results of Visitor Surveys

City Light reviewed the results of the visitor survey that address regional significance. In addition, City Light identified the primary activities and opportunities of visitors surveyed to help assess the overall regional significance in comparison to other regional recreation facilities and opportunities.

4.4.3.2 Identify Regional Recreation Opportunities

City Light identified the geographic draw of the study area's primary recreation opportunities identified during the review of the visitor survey results above. City Light assessed the geographic extent of visitors' origins and location of the alternative recreation resource areas where visitors participate in their primary recreation activities. City Light identified regional alternatives for comparable facilities or areas from sources such as guidebooks, online resources, state and national parks, USFS, and county or regional tourism sources.

4.4.3.3 Assess the Uniqueness and Significance of the Recreation Opportunities

City Light did not conduct the regional uniqueness assessment as described in the FERC-approved study plan. The assessment in the FERC approved study plan relied on a specific question in the visitor survey instrument that was not included in the NPS-proposed visitor survey instrument and the RSP. The omitted question had pre-set responses using a 5-point scale, with a rating of 1 meaning the reservoir or area provided an "extremely common" opportunity and a rating of 5 meaning the reservoir or area provided an "extremely unique" opportunity. Based on the average responses, City Light would have categorized the relative uniqueness of the study area using six categories, as shown in Table 4.4-1. However, City Light included a general discussion on the uniqueness of the Project and overall study area given its location within a national park and national recreation area, which are inherently unique with outstanding natural, cultural, and recreational resources.

Table 4.4-1. Regional uniqueness categories and rating system.

Regional Uniqueness Rating System and Categories					
1.0	**1.1 to 2.0**	**2.1 to 3.0**	**3.1 to 4.0**	**4.1 to 4.9**	**5.0**
Extremely Common	Common	Somewhat Common	Somewhat Unique	Unique	Extremely Unique

For the study area's most popular primary recreation activities, City Light identified if these recreation opportunities are of local, regional, or state significance. City Light determined the level of significance based on the county (United States) where visitors reside based on the following designations.

- Local Significance: visitors from counties where the Project resides (i.e., Skagit, Whatcom, and Snohomish counties).
- Regional Significance: visitors from the counties surrounding the counties where the Project resides, including San Juan, Island, Kitsap, King, Chelan, and Okanogan counties.
- State-Wide Significance: visitors from all other areas outside of the local and regional areas in Washington.

4.5 Data Analysis and Report Preparation

Following data collection, City Light entered the raw data into a statistical database program (i.e., IBM SPSS software) that allowed visitor survey responses to be analyzed. Survey responses were coded, edited, and entered for analysis. City Light subjected all visitor and observation survey data to QA/QC procedures including, but not limited to: (1) spot-checking visitor/observation surveys to be sure errors were not made during data entry; and (2) reviewing the visitor and observation survey databases for completeness/anomalous data. City Light conducted these QA/QC procedures both manually (by City Light staff) and electronically (using the statistical analysis program, which has the ability to sort through large quantities of data). If any datum seemed inconsistent during the QA/QC procedure, City Light investigated the problem by going back to the source questionnaire or data form. Values that were determined to be anomalous were removed from the database if the reason for the values could not be identified.

The survey responses provide a rich source of information about visitor use patterns, characteristics, preferences, and perceptions. Following data entry and comprehensive QA/QC procedures, City Light addressed the study objectives and issues through analysis of the responses to questionnaires and observation data. Descriptive statistics were employed to explain visitor responses to each of the survey questions, including number of responses and percentage of responses for each survey question as well as averages for select questions (e.g., scale-response questions, general trip characteristics, and some socio-demographic questions). Survey data was analyzed and reported by recreation resource area or grouping of proximate similar facilities (i.e., Ross Lake, Diablo Lake, Gorge Lake, Newhalem, and Skagit River areas). City Light coded or categorized the survey data to allow for the additional survey analyses (e.g., seasonality, primary recreation activity, type of site access). Within the analysis, City Light checked for non-response bias through demographics and visitor behavior variables. Observation use data addressed the types and frequency of use occurring within each recreation resource area. The raw data is available upon request to LPs in the statistical program format used (i.e., IBM SPSS software) and/or Microsoft Excel format.

5.0 RESULTS

5.1 Recreation Facility Inventory

This section summarizes the results from the physical inventory of the Recreation Assessment study sites conducted in September 2021 as described in Section 4.1. The results are organized by reservoir/resource area and divided into Project and non-Project recreation facility subsections.

This section provides results for data collected in 2021. Representative photographs of the facilities taken during the physical inventory are provided in Attachment B.

5.1.1 Ross Lake

City Light evaluated the recreation facilities at Ross Lake as shown in Table 4.1-1. Refer to Section 4.1.4 for the specific types of evaluations required at each study site.

In 2020 and 2021, vehicle access was not permitted to the Hozomeen and Winnebago Flats campgrounds and boat launches at Ross Lake due to Covid-related closures of the international border crossing. Vehicle access to the site occurs via Canada on the Silver-Skagit Road and the U.S.-Canadian border was closed to non-essential travel in 2020 and 2021. However, access to the facilities was still possible by trail and boat, but the recreational use at these facilities was minimal as a result.

5.1.1.1 Project Recreation Facilities

There are no Project recreation facility study sites in the Ross Lake study area.

5.1.1.2 Non-Project Recreation Facilities

All the study facilities at Ross Lake are non-Project recreation facilities operated and maintained by NPS. In general, the Recreation Assessment evaluation methods at these study sites included only the accessibility and/or use impact elements shown in Table 4.1-1.

Winnebago Flats Boat Launch

The Winnebago Flats Boat Launch facility consists of a concrete launch ramp, floating courtesy dock, gravel parking area, and information kiosk. Overall, the facility is “inaccessible” with few/limited accessible components, as detailed in Table 5.1-1. The recreation use impact evaluation for the facility was “low” without notable signs of use impacts.

Table 5.1-1. Accessibility evaluation summary at Winnebago Flats Boat Launch.

Site Amenity	Accessibility Rating	Comments
Launch ramp	N/A	Launch ramps are excluded from accessibility standards.
Courtesy dock	Accessible	The dock is designed to meet accessibility standards. When water levels drop, the slope of the gangway may fall outside the running slope standards.
Parking area	Inaccessible	The gravel parking area has a loose surface, no striping or accessible space markings, and no signage. The slopes generally fall within the guidelines.
Information kiosk	Inaccessible	The loose gravel surfacing of the access route and clear space do not meet the standards.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Winnebago Flats Campground

The Winnebago Flats Campground facility consists of campsites, two vault-restroom buildings, and an information kiosk. Overall, the facility is "inaccessible" with only the restroom buildings meeting the standards detailed in Table 5.1-2. The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-2. Accessibility evaluation summary at Winnebago Flats Campground.

Site Amenity	Accessibility Rating	Comments
Campsites	Inaccessible	Nearly all the campsite amenities (table, fire ring, tent pads, lockers, water hydrants) and the clear space, surfacing, and outdoor recreation access routes (ORAR) do not meet the standards. In general, the slopes at the campsites and throughout the overall site meet the standards.
Restrooms	Partially accessible	The restroom buildings are designed to accessible standards; however, the access routes do not meet the standards (i.e., loose, inconsistent, and grass surfacing).
Information kiosk	Inaccessible	The loose gravel surfacing of the access route and clear space do not meet the standards.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Hozomeen Boat Launch

The Hozomeen Boat Launch facility consists of a concrete launch ramp, floating courtesy dock, gravel parking area, restroom building, and information kiosk. Overall, the facility is "inaccessible" with few/limited accessible components, as detailed in Table 5.1-3. The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-3. Accessibility evaluation summary at Hozomeen Boat Launch.

Site Amenity	Accessibility Rating	Comments
Launch ramp	N/A	Launch ramps are excluded from accessibility standards.
Courtesy dock	Accessible	The dock is designed to meet accessibility standards. When water levels drop, the slope of the gangway may fall outside the running slope standards.
Parking area	Inaccessible	The gravel parking area has a loose surface, no striping or accessible space markings, no signage; and is overgrown with grass and weeds leading to an inconsistent/uneven surface.
Restroom	Partially accessible	The single unit restroom building is designed to accessible standards; however, the access route does not meet the standards (loose, inconsistent, and grassy surfacing).
Information kiosk	Inaccessible	The gravel surfacing for the access route and clear space do not meet the standards.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Hozomeen Campground

The Hozomeen Campground facility consists of 75 campsites, vault restroom buildings, and an information kiosk. Overall, the facility is "inaccessible" with only the restroom buildings meeting the standards detailed in Table 5.1-4. The recreation use impact evaluation for the facility was "low" without notable signs of use impacts. The predominant sign of use impact is the moderate to large areas of bare ground at campsites, but this condition is expected at a developed campground facility.

Table 5.1-4. Accessibility evaluation summary at Hozomeen Campground.

Site Amenity	Accessibility Rating	Comments
Campsites	Inaccessible	All the campsite amenities (i.e., tables, fire rings, tent pads, lockers, water hydrants, and parking spurs), clear space, surfacing, and ORARs generally do not meet the standards. Most campsites have substantial tread obstacles between campsite living space and the gravel parking spur, neither of which is clearly delineated.
Restrooms	Inaccessible	The restroom buildings are designed to accessible standards; however, the ORARs do not meet the standards (loose, inconsistent, and varied surfacing).
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Hozomeen Lake Trailhead

The Hozomeen Lake Trailhead is located in the Hozomeen Campground and provides trail access to the East Bank Trail and Hozomeen Lake Trail. The facility provides a small, unmarked gravel parking area and a single-panel information kiosk. City Light evaluated the trailhead for accessibility and use impacts (refer to Section 4.1.4).

Overall, the trailhead facility is "inaccessible" with few/limited accessible components, as detailed in Table 5.1-5. The recreation use impact evaluation for the facility was "low" without notable signs of use impacts. The trailhead does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Table 5.1-5. Accessibility evaluation summary at Hozomeen Lake Trailhead.

Site Amenity	Accessibility Rating	Comments
Parking area	Inaccessible	The gravel parking area does not meet the standards for surfacing (i.e., not firm/stable/compacted), slope, and signage/markings.
Information kiosk	Inaccessible	The kiosk does not meet the standards for the clear space and approach (i.e., surfacing is not firm/stable/compacted).
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Boat-in Camps

There are 19 boat-in access camps on Ross Lake, all managed and maintained by NPS. Amenities available at the boat-in camps include picnic tables, fire-rings, vault toilets, and bear-resistant food lockers. Additionally, 12 of the boat-in camps have floating docks. The sites without docks include Roland Point, Ten Mile Island, Dry Creek, Ponderosa, Lodgepole, Lightning Creek Stock Camp, and Boundary Bay. The results of the accessibility and use impact evaluations conducted at each of the 19 boat-in camps are summarized as a whole in Table 5.1-6. City Light visited and evaluated each of the 19 boat-in access campsites, however the results are summarized as a whole because the site amenities and terrain conditions related to the accessibility evaluations were consistent among all the campsites.

The campsite tables, fire rings, food lockers, tent pads, docks (where provided), and restroom buildings were similar in design. The general site terrain conditions detailed in Table 5.1-6 were consistent among all the campsites, including very similar access route and/or ORAR accessibility constraints such as pervasive tread obstacles, steep slopes (running and cross slopes), loose or stepped/tiered surfacing between the site amenities (i.e., dock to campsite living space, campsite living space to restroom).

The recreation use impact ratings at these boat-in camps was "low" across all campsites. City Light observed very few signs of use impact with infrequent signs of trash and tree cutting at campsites. The other predominant sign of use impact are moderate areas of bare ground at campsites, but this condition is expected at developed campsites. Further, most of the travel between satellite areas within the sites and to shoreline areas was generally confined to well-worn or delineated paths/routes. City Light did not observe excessive user-created trails at the boat-in camps.

Table 5.1-6. Accessibility evaluation summary at Ross Lake boat-in camps.

Site Amenity	Accessibility Rating	Comments
Campsites	Inaccessible	All the campsite amenities (i.e., table, fire ring, tent pads, lockers), clear space, and surfacing do not meet the standards. Many campsites are situated in steep terrain or in areas with substantial vertical distance between the boat dock access on the shoreline and where the campsite living space is situated.
Courtesy dock (where provided)	Accessible	The docks are designed to meet accessibility standards. When water levels drop, the slope of the gangway may fall outside the running slope standards.
Restrooms	Inaccessible	The restroom buildings are not designed to accessible standards.
Access Routes/ORARs	Inaccessible	The campsites have pervasive tread obstacles, steep slopes (running and cross slopes), loose or stepped/tiered surfacing between the elements at each site (dock to campsite living space, campsite living space to restroom).
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Ross Dam Trail and Trailhead

The 1 mile long Ross Dam Trail is located off SR 20 and provides access to Ross Lake, Dam, and Powerhouse, as well as the upper end of Diablo Lake at the East Ferry Landing. The trail descends from SR 20 approximately 700 vertical ft to the Ross Dam area. The trailhead facility consists of a paved/gravel parking area, restroom building, information kiosk, and trash facilities.

Trailhead

Overall, the trailhead facility is "inaccessible" with few/limited accessible components, as detailed in Table 5.1-7. The recreation use impact evaluation for the facility was "low" without notable signs of use impacts. The trailhead does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Table 5.1-7. Accessibility evaluation summary at Ross Dam Trailhead.

Site Amenity	Accessibility Rating	Comments
Parking area	Inaccessible	The paved portion of the parking area lacked marked spaces (faded/worn), signage, and the slopes (running and cross slopes) do not meet the standards. The gravel parking areas on the periphery of the lot lack striping, space markers (e.g., wheel-stops), and signage with some areas with tread obstacles between the gravel and paved portions of the lot inhibiting the access route to the other amenities on-site.
Restroom	Partially accessible	The vault restroom building is designed to accessible standards; however, the access route does not fully meet the standards (i.e., loose surfacing, debris on access route, and areas of slopes outside standards).
Information kiosk	Inaccessible	The kiosk is located approximately 50 ft from the parking area along and upslope of the trail surface with numerous rock/vertical obstacles impeding the access route and clear space/approach.
Trash receptacle	Inaccessible	The receptacle lacks accessible operable parts to access/use the openings/doors.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Trail

Overall, the Ross Dam Trail has a substantial change in elevation (approximately 700 vertical ft) from the trailhead along SR 20 to its terminus at Ross Dam. As such, the primary constraint to accessibility is the steep descent overall, which is markedly outside the running slope standards for trail accessibility. Additional constraints include generally rocky and inconsistent tread and surfacing, significant tread obstacles (4 to 8 inches high) including rocks and roots, and numerous areas with excessive cross slopes (5 to 10 percent). Overall, the steep vertical descent and the other constraints noted above are pervasive.

East Bank Trailhead

The East Bank Trailhead is located off SR 20 along the Ruby Creek arm of Ross Lake. The facility consists of a gravel parking area, restroom building, information kiosk, and trash facilities. City Light evaluated the trailhead for accessibility only (refer to Section 4.1.4).

Overall, the trailhead facility is "inaccessible" with few/limited accessible components, as detailed in Table 5.1-8. The recreation use impact evaluation for the facility was "low" without notable signs of use impacts. The trailhead does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Table 5.1-8. Accessibility evaluation summary at East Bank Trailhead.

Site Amenity	Accessibility Rating	Comments
Parking area	Inaccessible	The gravel parking area lacked designated accessible spaces, signage, and the slopes (running slopes) do not meet the standards as the lot slopes downhill from SR 20 towards the kiosk and trash facilities.
Restroom	Partially accessible	The vault restroom building is designed to accessible standards; however, the access route does not meet the standards (i.e., excessive running slope and loose gravel surfacing).
Information kiosk	Partially accessible	Portions of the kiosk meet standards including clear space; however, the access route to the kiosk from the parking area does not meet the standards due to the loose gravel surface and slopes from some portions of the parking area.
Trash receptacle	Inaccessible	The receptacle lacks accessible operable parts to access and use the openings/doors.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Happy Panther Trail

The 6.2 mile long Happy Panther Trail connects the East Bank Trailhead to the upstream side of Ross Dam and meanders through the forest between Ross Lake and SR 20. City Light conducted a qualitative trail accessibility assessment (refer to Section 4.1.4).

Overall, the trail width is narrow, ranging primarily between 18 and 24 inches wide with short segments as narrow as 12 inches wide. City Light observed substantial accessibility constraints at the start of the trail near Ross Dam, including steep running slopes, cross slope, tread obstacles (e.g., rocks, roots), and loose and rocky trail surface. Beyond the initial 300 to 500 ft, City Light observed constraints intermittently with steep running slopes between 50 and 250 ft in length, numerous drainage crossings with loose rocks/boulders resulting in uneven tread width, and trail segments with uneven and loose boulder/large gravel trail surface. The trail does not have trail conditions signs that describe the level of difficulty and trail conditions/accessibility constraints at either end of the trail.

5.1.2 Diablo Lake

City Light evaluated the recreation facilities at Diablo Lake as shown in Table 4.1-1. Refer to Section 4.1.4 for the specific types of evaluations required at each study site.

5.1.2.1 Project Recreation Facilities

In general, the study evaluation methods at these Project recreation facility study sites included an inventory, condition, accessibility, and use impact evaluation (Table 4.1-1).

Skagit Tour Dock

The Skagit Tour Dock is located on Diablo Lake near Diablo Dam. The facility consists of a parking area, staging area, and boat dock. City Light conducted an inventory as well as condition, accessibility, and use impact assessment at this facility (refer to Section 4.1.4).

Overall, the facility is "partially accessible" with some accessible amenities and is in "good" overall condition (Table 5.1-9). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-9. Inventory, condition, and accessibility evaluation summary at Skagit Tour Dock.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Parking	3 spaces (paved, striped); unmarked roadside (gravel, no markings)	Good	Inaccessible	Lacks requisite accessible signage and markings, width, and running slope.
Boat dock	24 ft by 48 ft dock with 40 ft gangway with handrail	Excellent	Accessible	All elements of the dock appear to meet the standards.
Staging area	24 ft by 48 ft shelter; 8 benches; 2 information boards	Good	Partially accessible	Access route and surfacing meets standards; bench seating and signage lack the requisite clearance/approach; and the benches are not accessible models.
Overall	**N/A**	**Good**	**Partially accessible**	

Diablo Dam Parking Area

The Diablo Dam Parking Area is located on the north side of Diablo Dam. The facility consists of a parking area and flush restrooms. City Light conducted an inventory as well as condition, accessibility, and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is "inaccessible" with few accessible amenities and is in "good" overall condition (Table 5.1-10). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-10. Inventory, condition, and accessibility evaluation summary at Diablo Dam parking area.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Parking	3 spaces (paved, marked)	Fair	Inaccessible	Lacks requisite accessible signage and markings, width, and running slope; pavement is cracked and striping is faded.
Restroom	4-unit flush restroom	Good	Inaccessible	The exterior access route meets the standards, but the interior lacks the appropriate stall clearances.
Overall	**N/A**	**Good**	**Inaccessible**	

West Ferry Landing

The West Ferry Landing is located on Diablo Lake along Diablo Dam Road, where City Light provides a ferry service between the West and East Ferry Landings. The facility consists of a parking area and boat dock. City Light conducted an inventory as well as condition, accessibility, and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is "partially accessible" with some accessible amenities and is in "good" overall condition (Table 5.1-11). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-11. Inventory, condition, and accessibility evaluation summary at West Ferry Landing.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Parking	32 spaces (paved, striped)	Good	Inaccessible	Lacks designated accessible spaces with requisite width and signage, markings, and access aisle.
Boat dock	24 ft by 48 ft dock with 40 ft gangway with handrail	Good	Partially accessible	The dock meets the standards, but the access route is inaccessible (concrete steps).
Signs	2 parking signs; 1 information board	Good	Inaccessible	Information board lacks requisite clear space/approach.
Overall	**N/A**	**Good**	**Inaccessible**	**A few accessible components, but the steps limit accessibility.**

East Ferry Landing

The East Ferry Landing is located at the upstream end of Diablo Lake and is accessible only by boat or trail. The facility consists of a boat dock. City Light conducted an inventory as well as condition, accessibility, and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is in "good" overall condition and is "partially accessible" with a few accessible amenities (Table 5.1-12). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-12. Inventory, condition, and accessibility evaluation summary at East Ferry Landing.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Boat dock	32 ft by 60 ft dock with 30 ft gangway with handrail	Good	Accessible	The dock meets the standards. At lower water levels, the slope of the gangway may exceed the requisite slopes. Facility will include a new accessible kayak dock with slips (not yet installed at time of evaluation).

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Signs	1 information board	Good	Inaccessible	Information board lacks requisite clear space/approach.
Overall	**N/A**	**Good**	**Partially accessible**	**Some accessible components.**

North Cascades Environmental Learning Center Parking Area

The ELC parking area is located at the end of Diablo Dam Road at the entrance to the ELC campus. City Light did not inventory or evaluate the ELC campus. Refer to Section 3.4.7 of the Pre-Application Document (PAD; City Light 2020) for a summary of the ELC campus facilities. The ELC parking area facility consists of two gravel parking areas, portable restrooms,[3] trash facilities, and information board. City Light conducted an inventory as well as condition, accessibility, and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is in "good" overall condition and is "partially accessible" with some accessible amenities (Table 5.1-13). The recreation use impact evaluation for the parking area was "low" without notable signs of use impacts. City Light also evaluated the use impact along the shoreline areas abutting the parking areas, which was also "low" without signs of use impacts.

Table 5.1-13. Inventory, condition, and accessibility evaluation summary at the ELC parking area.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Parking	2 unmarked gravel lots	Good	Inaccessible	The unmarked lots lack requisite striping, signage, and access aisle markings. There are two accessible parking signs, but the spaces do not fully comply with the standards and one space is blocked by a dumpster.
Restroom	2 portable units	Good	Accessible	The portable restroom buildings appear to meet accessible standards.
Trash	2 dumpsters	Good	Accessible	The dumpsters both have the requisite clear space/approach. The dumpsters are excluded from current accessible standards.
Signs	1 information board	Good	Inaccessible	Information board lacks requisite clear space/approach and access route (i.e., set back amid boulders and uneven terrain).
Overall	**N/A**	**Good**	**Partially accessible**	**Some accessible components.**

[3] City Light installed the portable restrooms in 2020 and 2021 due to the COVID-19 pandemic because the ELC facilities were closed, where existing restrooms are typically available for visitors to this area.

5.1.2.2 Non-Project Recreation Facilities

The study evaluation methods at the non-Project recreation facility study sites at Diablo Lake included only an accessibility and use impact evaluation, as shown in Table 4.1-1.

Diablo Overlook

The Diablo Overlook is located along SR 20 and provides parking, vault restrooms, picnic facilities, interpretive displays, and expansive views of Diablo Lake and the surrounding mountain peaks.

Overall, the facility is "partially accessible" with some accessible amenities (Table 5.1-14). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts as the site is a fully developed and hardened site with sanitation facilities, and paved parking and pathways.

Table 5.1-14. Accessibility evaluation summary at Diablo Overlook.

Site Amenity	Accessibility Rating	Comments
Parking area	Accessible	The parking area provides accessible parking spaces in the paved and marked parking lot including accessible parking signage/markings.
Restrooms	Accessible	The vault restroom buildings are designed to accessible standards with access routes from the accessible parking spaces and other site amenities (e.g., interpretive displays and picnic tables).
Interpretive displays	Partially accessible	The interpretive displays are dispersed throughout the overlook facility and connected via a paved pathway around the periphery of the facility. Many of the displays are accessible with clear space/slopes and connecting access routes. However, some of the displays are located along a steep access route exceeding the slopes and lacking requisite clear space at the displays.
Trash receptacles	Inaccessible	The receptacles lack accessible operable parts to access/use the openings/doors and the dumpster lacks the proper clear space approach.
Picnic tables	Partially accessible	Some of the tables are accessible models with proper clearances, but all the tables are free-standing/not anchored, and most are not situated in areas with appropriate access routes. Some of the tables are set amid loose gravel and the slopes do not meet the standards.
Pathways	Partially accessible	The site amenities beyond the parking area are accessed via a paved pathway which has some areas of upheaval and cracking as well as some cross and running slopes that do not meet the standards.
Overall	**Partially accessible**	**Some accessible components but not fully compliant.**

Colonial Creek Campground

Colonial Creek Campground is located on the Thunder Arm of Diablo Lake and is the only campground on Diablo Lake accessible by vehicle. The campground has two loops, including approximately 135 campsites, potable water, an information kiosk, RV dumping station, amphitheater, flush restroom buildings, and trash facilities.

Overall, the facility is "inaccessible" with very few amenities that meet the standards (Table 5.1-15). The recreation use impact evaluation for the facility was "moderate" due to the large areas of bare ground at campsites and satellite areas beyond the campsite living space.

Table 5.1-15. Accessibility evaluation summary at Colonial Creek Campground.

Site Amenity	Accessibility Rating	Comments
Campsites	Inaccessible	Nearly all the campsite amenities (table, fire ring, tent pads, lockers, water hydrants) and the clear space, surfacing, and ORAR connecting the parking spurs to the campsite living spaces do not meet the standards. Many campsites are situated upslope or downslope of the parking spurs with substantial vertical rise or drop to the campsite living spaces well beyond ORAR standards. Several campsites are designated as accessible, however the slopes, clearances, and ORARs connecting the parking and living space do not fully meet the standards.
Restrooms	Inaccessible	The restroom buildings do not fully comply with the accessible standards, primarily interior clearances and turning spaces; some of the access routes to the buildings do not meet the standards due to steep slopes, surfacing, rock/root tread obstacles, etc.
Trash receptacles	Inaccessible	The receptacles lack accessible operable parts to access/use the openings/doors, but the dumpsters generally have adequate clear space/approach (dumpster operable parts are excepted from standards).
Amphitheater	Inaccessible	The amphitheater access routes and seating are situated in downhill/sloped terrain and do not meet the slope, clear width, and clearance standards. Overall, the facility is in disrepair with organic material debris atop the access routes and pathways between and amid the seating.
Fish cleaning station	Inaccessible	The fish cleaning station does not have adequate clearances around the station and lacks an access route from the parking area.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Colonial Creek Boat Launch and Fishing Pier

The Colonial Creek Boat Launch facility provides the only public launch site for trailered boats on Diablo Lake. The facility consists of a concrete ramp, floating courtesy dock, parking area, and restroom buildings (shared with the campground). In addition, the facility includes a fishing pier and picnic site located adjacent to the launch ramp.

Overall, the facility is "partially accessible" with some accessible components (Table 5.1-16). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts as the site is a hardened, highly developed facility.

Table 5.1-16. Accessibility evaluation summary at Colonial Creek Boat Launch and Fishing Pier.

Site Amenity	Accessibility Rating	Comments
Launch ramp	N/A	Launch ramps are excluded from accessibility standards.
Courtesy dock	Accessible	The dock is designed to meet accessibility standards. When water levels drop, the slope of the gangway may fall outside the running slope standards.
Parking area	Partially accessible	The parking area includes two accessible parking spaces with accompanying signage/markings, but 3 spaces are required to meet the standards for 67 total spaces. The running slope at the accessible spaces exceeds the standards. The access route to the top/start of the ramp from the parking area does not meet the requisite standards.
Restrooms	Inaccessible	The restroom buildings do not fully comply with the accessible standards—primarily interior stall clearances and turning spaces; the running slope of the access route from the parking area to the building does not meet the standards.
Fish cleaning station	Inaccessible	The fish cleaning station lacks the requisite clearances around the station, access route from the parking area, and operable parts.
Trash receptacles	Partially accessible	The receptacles and dumpsters have adequate clear space/approaches, but the operable parts do not meet the standards on all the receptacles. Note that the dumpster operable parts are excluded from standards.
Picnic site	Accessible	The picnic table meets accessible standards and has the requisite access route. The table is not fixed/anchored, which may result in clearances around the table not being met if the table is moved. The site has adequate level living space to provide adequate clearances if anchored/fixed amid the space.
Fishing pier	Partially accessible	The pier meets all the applicable standards except for edge protection. The access route to the fishing pier from the parking area does not meet the requisite standards.
Overall	**Partially accessible**	**Some accessible components but not fully compliant.**

Boat-in Camps

There are three boat-in access campsites on Diablo Lake—all managed and maintained by NPS. Amenities available at the boat-in camps include picnic tables, fire-rings, vault toilets, bear-resistant food lockers, and floating docks. Overall, the three boat-in camps are "inaccessible" with only a few/limited accessible amenities. A summary of the accessibility evaluations at each boat-in campsite is provided in Table 5.1-17.

The recreation use impact ratings at the Diablo Lake boat-in camps was "moderate" for each of the three campsites, with several signs/evidence of use impact, but not extensive or widespread impacts. City Light observed some limited signs of trash and tree cutting, and each site had short, narrow, user-created trails leading to shoreline areas or satellite areas. The other predominant sign of use impact was the moderate areas of bare ground at campsites, but considering the facilities are developed campsites, this impact is inherent to the design and function.

Table 5.1-17. Accessibility evaluation summary at Diablo Lake boat-in camps.

Campsite	Site Amenity	Accessibility Rating	Comments
Thunder Point (3 sites)	Campsites	Inaccessible	The campsite amenities (table, fire ring, tent pads, lockers), clear space, and surfacing do not meet the standards. Two of the campsites are situated up a steep slope/trail (10-20 percent slopes).
	Courtesy dock	Accessible	The dock is designed to meet accessibility standards. When water levels drop, the slope of the gangway may fall outside the running slope standards.
	Restroom building	Partially accessible	The restroom building is designed to accessible standards, but the access routes and exterior clearances do not meet the standards.
	Overall	**Inaccessible**	**Few/limited accessible components overall.**
Hidden Cove (1 site)	Campsite	Inaccessible	The campsite amenities (table, fire ring, tent pads, lockers), clear space, and surfacing do not meet the standards. The site is situated in uneven, terrain with extensive obstacles (rocks, roots) and impediments to access routes between amenities and the transition from the dock to the campsite.
	Courtesy dock	Accessible	The dock is designed to meet accessibility standards. When water levels drop, the slope of the gangway may fall outside the running slope standards.
	Restroom building	Inaccessible	The restroom building, access route, clearances, and surfacing do not meet accessible standards.
	Overall	**Inaccessible**	**Few/limited accessible components overall.**
Buster Brown (3 sites)	Campsites	Inaccessible	The campsite amenities (table, fire ring, tent pads, lockers, water) at all three campsites, clear space, and surfacing do not meet the standards. Most of the campsites are situated in steep terrain with multiple tiered areas within each campsite. ORARs are very steep, narrow with tread obstacles and uneven surfacing.
	Courtesy dock	Accessible	The dock is designed to meet accessibility standards. When water levels drop, the slope of the gangway may fall outside the running slope standards.
	Restroom building	Partially accessible	The restroom building is designed to accessible standards, but the access routes, exterior clearances, and surfacing do not meet the standards.
	Overall	**Inaccessible**	**Few/limited accessible components overall.**

Thunder Knob Trail and Trailhead

The out-and-back, 1.8 mile long Thunder Knob Trail starts in the north loop of Colonial Creek Campground, ascends approximately 425 ft, and terminates at an overlook of Diablo Lake. The trailhead consists of a dirt-surfaced lot and single-panel information kiosk on the shoulder of SR 20 at the entrance to the north loop of Colonial Creek Campground. Trail users must walk along the Colonial Creek Campground circulation roads to access the start of the trail approximately 0.5 mile from the trailhead parking along SR 20.

Trailhead

Overall, the trailhead facility is "inaccessible" with few/limited accessible components (Table 5.1-18). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts. The trailhead does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Table 5.1-18. Accessibility evaluation summary at Thunder Knob Trailhead.

Site Amenity	Accessibility Rating	Comments
Parking area	Inaccessible	The SR 20 parking area has some running and cross slopes exceeding the standards and lacks designated spaces and accessible signage/markings.
Information kiosk	Inaccessible	The kiosk is located approximately 50 ft from the parking area several feet above the trail surface with numerous rock/vertical obstacles impeding the access route and clear space.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Trail

Overall, the Thunder Knob Trail ascends approximately 425 vertical ft from the trailhead to the terminus of the trail at the overlook of Diablo Lake. The initial 0.1 mile of the trail has been re-routed recently due to flooding and overall has extensive accessibility constraints. These include narrow tread width ranging from 24 to 36 inches wide; inconsistent/uneven surfacing with mostly loose, rocky, and uneven tread with small stretches of sandy/small gravel surfacing; extensive tread obstacles (i.e., large rocks); and a very narrow, temporary bridge crossing. Beyond this point, the trail widens (36 to 60 inches wide) with more consistent slopes and surfacing, much of which falls within or approaches accessible standards, but with numerous, intermittent segments (25 to 150 ft in length) with large tread obstacles and steep running slopes.

Thunder Creek Trail and Trailhead

The 19.6 mile long Thunder Creek Trail starts in the south loop of Colonial Campground and provides access to destinations and trail networks in North Cascades National Park and the Stephen Mather Wilderness Area. The trailhead consists of a paved parking area with marked spaces (18 single spaces with one accessible space) and a single-panel information kiosk. A restroom associated with the campground is located adjacent to the trailhead. For purposes of the Recreation Assessment, City Light is evaluating the initial 1.6 miles of the trail from Colonial Creek Campground to the junction with the Fourth of July Trail.

Trailhead

Overall, the trailhead facility is "accessible" with the parking area and information kiosk meeting the applicable standards (Table 5.1-19). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts. The trailhead does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Table 5.1-19. Accessibility evaluation summary at Thunder Creek Trailhead.

Site Amenity	Accessibility Rating	Comments
Parking area	Accessible	The paved parking area includes 1 accessible parking space (single vehicle with markings/signage) meeting the standard for 18 total spaces; access route provided to the information kiosk/start of the trail.
Information kiosk	Accessible	The kiosk includes an access route from the accessible parking space (adjacent to the kiosk/start of the trail) and clear space at the kiosk.
Overall	**Accessible**	**Facilities appear fully consistent with current ABA standards.**

Trail

Overall, the Thunder Creek Trail winds through the forest along Thunder Creek before crossing the creek (bridge) and connecting to the Fourth of July Trail. Overall, the trail ascends approximately 125 ft over the course of the 1.6 mile segment evaluated, with mostly rolling terrain with moderate grades/slopes (i.e., 3 to 8 percent), and several short, steep sections with excessive slopes (i.e., 10 to 15 percent). The first half of the evaluated trail section has modest tread widths between 36 and 48 inches, which narrows (24 to 36 inches) along much of the second half of the trail leading to the bridge, with increasing instances of encroaching vegetation and obstacles resulting in narrow tread widths. The most common accessibility constraints are significant tread obstacles (4 to 8 inches high) including rocks and roots and areas of excessive cross slope (5 to 10 percent). There are also several locations where the tread width is impacted by downslope erosion that reduces the tread width. Overall, despite the rolling terrain and nominal overall rise of the 1.6 mile long trail segment, the constraints noted above are pervasive.

Diablo Lake Trail

The 3.8 mile long Diablo Lake Trail starts at the ELC parking area and provides access to the upstream end of Diablo Lake and Ross Lake in the Ross Powerhouse and Ross Dam area. The trailhead parking area is part of the ELC parking areas (see Section 5.2.1.5). Since the trail does not have a stand-alone trailhead facility, City Light only conducted the qualitative trail accessibility assessment.

Overall, the Diablo Lake Trail ascends approximately 1,400 ft in the first 2.5 miles to a ridge that overlooks Diablo Lake before descending steeply in the final mile to the bridge over Diablo Lake that connects to Ross Powerhouse, as well as trails to Ross Lake/Dam. Overall, the steep running slope on the trail is the primary accessibility constraint, which is pervasive and substantial. Beyond the steep running slope, much of the start of the trail from the ELC parking area is on a varied, inconsistent trail surface with frequent sections with significant tread obstacles (3 to 12 inches high), including loose rocks and gravel, large, embedded rocks, and roots, most of which span the majority of (if not the entirety of) the tread width. Several narrow wooden bridge crossings are also found on the initial ascent to the ridgetop.

The tread width varies along the entirety of the trail from 18 inches in some locations to 24 to 36 inches for much of the trail. The descent from the ridgetop to the bridge over Diablo Lake has some of the steepest running slopes between 10 and 20 percent with the steepest sections in the final 0.5 mile segment. This portion of the trail also has numerous natural stepped trail surface sections and several major creek/drainage crossings consisting of large, loose rocks and boulders. Only the short, approximately 0.25 mile long segment along the ridge/outcrop (where excellent vistas exist) is in moderate terrain with lesser slopes, more consistent trail surfacing, and fewer tread obstacles.

Overall, the accessibility constraints on this trail are substantial and pervasive throughout the trail, primarily on the segments leading to/from the ELC and the bridge over Diablo Lake. The trailhead does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Diablo Lake to Ross Lake Portage Route

FERC recommended in its SPD that City Light assess the Diablo Lake to Ross Lake portage route. The portage route is not a Project facility, but rather utilizes a combination of Project and non-Project facilities and services to bring visitors between Diablo Lake and Ross Lake. The overall route is the same throughout, except at Diablo Lake where two alternatives for starting the route exist, including either: (1) the West Ferry Landing when visitors utilize City Light's ferry service; or (2) Colonial Creek Boat Launch when visitors paddle/motor across Diablo Lake. Both alternatives lead to the East Ferry Landing area, where from this point forward, there is a single route with alternative features or services provided to traverse the remainder of the route. The full portage route in order from the west (Diablo Lake) to the east (Ross Lake) includes the features and alternatives identified in Table 5.1-20.

Table 5.1-20. Diablo Lake to Ross Lake portage route features and services (east-to-west).

Step 1 (Diablo Lake)	Step 2 (Diablo Lake)	Step 3 (transition between lakes)	Step 4 (Ross Lake)
A-West Ferry Landing (ferry service) or B-Colonial Creek Boat Launch (paddle/motor)	A-East Ferry Landing or B-NPS Portage Dock	A-Ross Dam Haul Road (hike) or B-Ross Lake Resort shuttle (vehicle)	Ross Lake Resort Dock

Overall, the portage route is "inaccessible" with a few accessible amenities, but numerous limiting factors as detailed in Table 5.1-21.

Table 5.1-21. Summary of the Diablo Lake to Ross Lake portage route accessibility evaluation.

Portage Route Feature	Type of Facility	Accessibility Rating	Comments
1A-West Ferry Landing/City Light Ferry (Alice Ross IV)	Project	Partially accessible	The West Ferry Landing dock is accessible, but the parking area and access route (steps) to the boat dock do not meet the requisite standards. The current ferry boat (Cascadian) was built in 1973 and does not meet current accessible standards.
1B-Colonial Creek Boat Launch	Non-Project	Partially Accessible	The floating courtesy dock is designed to meet accessibility standards. When water levels drop, the slope of the gangway may fall outside the running slope standards. Notably, launch ramps are excluded from accessibility standards, but the access route to the top of the ramp from the parking area does not meet the requisite standards.
2A-East Ferry Landing	Project	Partially accessible	The transition from the ferry boat to the dock is accessible and the landing structure is accessible including the gangway to the start of the Ross Dam Haul Road.
2B-NPS Portage Dock	Non-Project	Inaccessible	The NPS portage dock is an alternative to the East Ferry Landing used by visitors not utilizing the City Light ferry service. The boat dock is inaccessible as the dock surface is uneven and the access route from the dock to the Ross Dam Haul Road utilizes steps and does not meet the standards. City Light will be installing a new accessible kayak dock with slips at the East Ferry Landing (planned for 2022), which would provide an alternative to the NPS portage dock.
3A-Ross Dam Haul Road	Project	Inaccessible	The Ross Dam Haul Road is used by visitors to hike/portage from the East Ferry Landing to Ross Lake near Ross Dam. The roadway is very steep in sections, including the immediate ramp from the East Ferry Landing.
3B-Ross Lake Resort Shuttle	Non-Project	Inaccessible	As an alternative to hiking/walking the Ross Dam Haul Road, visitors may hire (fee) the non-Project Ross Lake Resort to pick up visitors disembarking at the East Ferry Landing. Currently, the vehicle used to transport visitors (truck) does not provide accessible vehicle accommodations.
4-Ross Lake Resort dock	Non-Project	Inaccessible	The non-Project Ross Lake Resort dock at the end of the Ross Dam Haul Road is not an accessible design and the fluctuating reservoir levels make meeting accessible standards (i.e., access route slopes and surfacing) challenging at this location.
Overall		**Inaccessible**	**Only a few components meet accessible standards and overall, the portage route has numerous limiting factors.**

5.1.3 Gorge Lake

City Light evaluated the recreation facilities at Gorge Lake as shown in Table 4.1-1. Refer to Section 4.1.4 for the specific types of evaluations required at each study site.

5.1.3.1 Project Recreation Facilities

Ross Lodge Picnic Shelter

The Ross Lodge Picnic Shelter is located in the Hollywood section of the Diablo Townsite adjacent to Ross Lodge. The facility consists of roadside parking and a picnic shelter with picnic tables. City Light conducted an inventory as well as condition, accessibility, and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is "partially accessible" with some accessible amenities (Table 5.1-22). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-22. Inventory, condition, and accessibility evaluation summary at Ross Lodge Picnic Shelter.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Parking	Roadside parallel parking (paved, unmarked spaces)	Good	Inaccessible	Lacks requisite accessible signage, markings, width, and access aisle.
Picnic shelter	Open-sided wood shelter with concrete floor; 3 picnic tables	Good	Partially accessible	The shelter floor area meets the surfacing/slope standards, but the picnic tables are not accessible models. The access route (5 ft wide concrete path) meets the standards except for the transition from the parking area, which has a tread obstacle (4 inch vertical curb).
Overall	**N/A**	**Good**	**Partially accessible**	**N/A**

Gorge Lake Boat Launch

The Gorge Lake Boat Launch facility is located adjacent to Gorge Lake Campground. The facility consists of a single-lane concrete boat launch ramp, floating courtesy dock, gravel parking area, and an information kiosk. City Light conducted an inventory as well as condition, accessibility, and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is in "good" overall condition and is "inaccessible" with few/limited accessible components (Table 5.1-23). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-23. Inventory, condition, and accessibility evaluation summary at Gorge Lake Boat Launch.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Launch ramp	12 ft wide concrete ramp	Good	N/A	Launch ramps are excluded from accessibility standards.
Courtesy dock	8 ft by 20 ft dock; 20 ft long gangway with railings	Good	Partially accessible	The dock is designed to meet accessibility standards; however, at lower water levels, the slope of the gangway may fall outside the running slope standards; and eventually the dock is out of the water and non-functioning as was observed during this evaluation.
Parking area	Unmarked gravel lot	Good	Inaccessible	The gravel parking area has a firm/stable surface, but lacks designated accessible parking spaces (no striping, signage or access aisle).
Information kiosk	1 information board	Good	Inaccessible	The kiosk does not have the requisite clear space/approach.
Overall	**N/A**	**Good**	Inaccessible	Few/limited accessible components overall.

5.1.3.2 Non-Project Recreation Facilities

Gorge Lake Campground

The Gorge Lake Campground is located near the Diablo Townsite, just downstream of the mouth of Stetattle Creek. The facility consists of eight camp sites, and a two-unit vault restroom. Each campsite has a picnic table, fire ring, food locker, and vehicle parking spur. Water is not provided at this facility.

Overall, the facility is "inaccessible" with only the restroom buildings meeting the standards (Table 5.1-24). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-24. Accessibility evaluation summary at Gorge Lake Campground.

Site Amenity	Accessibility Rating	Comments
Campsites	Inaccessible	Nearly all the campsite amenities (table, fire ring, and lockers) did not meet the standards and/or clear space around the amenities. The campsites are densely packed into a small area creating spacing constraints within nearly all the sites, whereby the clear space and ORARs are restricted. While the site terrain is largely level throughout, the surfacing is varied and not firm/compact throughout (i.e., combination of small, loose gravel and pine needle debris). The vehicle parking spurs are not clearly defined and appear too narrow to meet the standards. Accessibility at this site could be achieved with minor improvements and possibly the reduction in total number of sites.
Restroom	Partially accessible	The restroom building is designed to accessible standards; however, the access route does not meet the standards due to varied and inconsistent surfacing (i.e., combination of loose gravel and grass).
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Diablo Dam Trail and Trailhead

The 0.5 mile long Diablo Dam Trail originates in the Reflector Bar section of the Diablo Townsite and was originally constructed to provide a means of reaching Diablo Dam if other access (i.e., road and helicopter) was unavailable. Currently, this trail appears to receive very little use and in recent years has been used mostly by NCI staff who lived in Diablo and worked at the ELC, or by City Light staff (City Light 2020). The trail does not have a formal trailhead and informal parking occurs along the road shoulder. A single, metal trail sign indicates the start of the trail off Diablo Street. City Light evaluated the trailhead for accessibility and use impacts and the trail for the qualitative trail accessibility assessment (refer to Section 4.1.4).

Overall, the informal trailhead parking area is "inaccessible" with no accessible components (Table 5.1-25). The recreation use impact evaluation for the informal roadside parking area was "low" without notable signs of use impacts. The start of the trail/roadside parking area is generally overgrown with vegetation and the initial 100 ft of trail is not clearly defined.

Table 5.1-25. Accessibility evaluation summary at Diablo Dam Trailhead.

Site Amenity	Accessibility Rating	Comments
Parking area	Inaccessible	The informal roadside parking is not defined, marked, or signed.
Overall	**Inaccessible**	**No accessible components.**

Overall, the Diablo Dam Trail ascends steeply approximately 350 vertical ft from the informal parking area to the terminus of the trail at the paved road leading to Diablo Dam. The primary accessibility constraints are the steep running slope of the trail that is continuous for the majority of the trail and the varied, inconsistent trail surface that is predominantly loose rock with significant tread obstacles (3 to 18 inches high). In addition, the trail tread width is narrow (12 to 24 inches) with prevalent excessive cross slopes combined with eroding tread width on the

downhill side of the trail. Overall, the accessibility constraints on this trail are substantial and pervasive throughout the trail. The trail does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Sourdough Mountain Trailhead

The Sourdough Mountain Trailhead is located on City Light property in the Hollywood section of the Diablo Townsite. The trail leads steeply away from the Project/Gorge Lake area to the Sourdough Mountain lookout and into North Cascades National Park. The informal trailhead facility consists of paved roadside parking, a single-panel information kiosk, and a trail marker. City Light evaluated the trailhead for accessibility and use impacts (refer to Section 4.1.4).

Overall, the trailhead facility is "inaccessible" with few/limited accessible components (Table 5.1-26). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts. The trail does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Table 5.1-26. Accessibility evaluation summary at Sourdough Mountain Trailhead.

Site Amenity	Accessibility Rating	Comments
Parking area	Inaccessible	The informal, unmarked roadside parking area is paved and mostly level, but lacks designated accessible spaces and signage/markings, and requires users to cross the street to access the start of the trail.
Information kiosk	Inaccessible	The kiosk is located approximately 75 ft from the parking area along the trail and does not meet the standards for the clear space (i.e., surfacing is not firm/stable/compacted) or the access route. The start of the trail is across a grass field without a discernable trail surface.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Stetattle Creek Trailhead

The Stetattle Creek Trailhead is located on City Light property in the Hollywood section of the Diablo Townsite at the mouth of Stetattle Creek. The trail leads away from the Project/Gorge Lake area along Stetattle Creek and north into North Cascades National Park. The informal trailhead facility consists of an unmarked gravel roadside parking area and a trail marker. City Light evaluated the trailhead for accessibility and use impacts (refer to Section 4.1.4).

Overall, the trailhead facility is "inaccessible" with few/limited accessible components (Table 5.1-27). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts. The trail does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Table 5.1-27. Accessibility evaluation summary at Stetattle Creek Trailhead.

Site Amenity	Accessibility Rating	Comments
Parking area	Inaccessible	The informal, unmarked roadside parking area is a gravel surface and mostly level, but lacks designated accessible spaces and signage/markings, and requires users to cross the street to access the start of the trail.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Gorge Creek Overlook

The Gorge Creek Overlook is located along SR 20 where Gorge Creek flows into Gorge Lake. The facility consists of two paved parking areas on either side of Gorge Creek, a vault restroom building, and an interpretive trail. The parking areas are connected via a bridge on SR 20 with protected pedestrian walkways, which allows visitors to view Gorge Creek Falls from either parking area. City Light conducted accessibility and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is "partially accessible" with some accessible amenities, namely the restroom building and the interpretive trail and displays (Table 5.1-28). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts as the site is a fully developed and hardened site with sanitation facilities. Some trash was observed in the parking area immediately outside the dumpster, but this appeared to be the result of wildlife interaction and not visitor behavior.

Table 5.1-28. Accessibility evaluation summary at Gorge Creek Overlook.

Site Amenity	Accessibility Rating	Comments
Parking area	Partially accessible	The main parking area provides 2 accessible parking spaces (24 total spaces) in the paved and striped parking lot including accessible parking signage/markings. The number of accessible spaces meets the requirement. The secondary RV and trailer parking area is located across the SR 20 bridge and lacks striped spaces and accessible parking signage/markings. An accessible route from the secondary parking area to the main parking area and other facilities does not exist.
Restrooms	Accessible	The vault restroom buildings are designed to accessible standards with associated access routes from the parking area.
Interpretive displays	Accessible	The interpretive displays are dispersed throughout the overlook trail and meet the standards. The displays are accessible with clear space/slopes and connecting access routes.
Trash receptacles	Partially accessible	The receptacles lack accessible access routes and operable parts; the dumpster has the proper clear space/approach (note: dumpster containers are exempt from the operable parts requirements).

Site Amenity	Accessibility Rating	Comments
Overlook trail	Partially accessible	The first half of the trail (approximately 1,200 ft) is paved asphalt and designed to accessible standards with a trail conditions sign at the start of the trail. The second half of the trail (approximately 1,800 ft) is gravel surfaced trail that loops back to the parking area, but does not meet trail accessibility standards (i.e., steep running slopes, areas of loose gravel surfacing, minimal tread width, lack of resting interval, root tread obstacles). However, the gravel trail segment does have a trail conditions sign at each end of the segment identifying the level of difficulty.
Overall	**Partially accessible**	**Some accessible components, but not fully compliant.**

Trail

As detailed in Table 5.1-28, the interpretive trail is divided into two distinct segments. The first 1,200 ft long segment is a paved asphalt trail designed to meet accessible standards, including accessible access to the interpretive displays along the route. While the trail is designed to accessible standards, there are several locations where trail conditions have changed since its initial construction that have resulted in short segments that do not meet the standards. These include two areas where tree root upheaval has created inconsistent surfacing with cross slopes beyond the 5 percent standard. In addition, one of these areas also has some drainage issues where trailside debris (i.e., loose rocks and dirt) has encroached on the tread width creating an uneven and loose trail surface.

The second 1,800 ft long segment is a narrower, gravel surface trail that loops back to the main parking/restroom area. This segment does not meet accessible standards due to steep running slopes, areas of loose gravel surfacing, a narrow tread width lacking resting intervals/passing spaces, and occasional tread obstacles (roots).

Overall, the trail provides an accessible interpretive trail opportunity for the initial segment of the trail with two inaccessible areas due to changing site conditions. The facility also provides an unpaved, inaccessible trail segment on the second half of the loop, but with trail conditions signs allowing visitors to determine if the trail is navigable based on the difficulty rating and noted conditions.

5.1.4 Newhalem

City Light evaluated the recreation facilities in Newhalem as shown in Table 4.1-1. Refer to Section 4.1.4 for the specific types of evaluations required at each study site. All the recreation study sites in Newhalem are Project facilities.

5.1.4.1 Project Recreation Facilities

Gorge Powerhouse Parking Area

The Gorge Powerhouse parking area is located at the east end of Newhalem along the Skagit River. The facility consists of a gravel parking area and interpretive displays. City Light conducted an inventory as well as condition, accessibility, and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is in "good" overall condition and is "inaccessible" with few/limited accessible amenities (Table 5.1-29). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-29. Inventory, condition, and accessibility evaluation summary at Gorge Powerhouse parking area.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Parking area	Gravel parking lot with wheel-stops	Good	Inaccessible	The gravel parking area has a firm/stable surface, but lacks designated accessible parking spaces (no striping, signage or access aisle). One of the spaces has an accessible sign, but the space does not meet the standards.
Interpretive displays	6 interpretive panels about the hydroelectric facilities	Good	Partially accessible	Some of the panels do not have the requisite clear space/approach; the panel heights and access route meet the standards.
Information kiosk	1-panel information board about the Skagit River Project	Good	Inaccessible	The kiosk does not have the requisite clear space/approach.
Overall	**N/A**	**Good**	Inaccessible	Few/limited accessible components overall

Gorge Powerhouse Visitor Gallery

The visitor gallery in Gorge Powerhouse is located on the upper floor of the Gorge Powerhouse. City Light inventoried the visitor gallery exhibits (refer to Section 4.1.4).

The visitor gallery sits above the Powerhouse floor with large glass windows that provide visitors with a view of the generators and other equipment on the generator floor below. Interpretive exhibits installed in 2016 provide information around four themes, including how hydroelectricity is generated, the history of the Project, Project operations, and environmental programs included in the current Project license.

Skagit Information Center

The Skagit Information Center is located on Main Street in Newhalem. City Light inventoried the visitor gallery exhibits (refer to Section 4.1.4). The facility consists of restrooms, a breezeway with map cases, a large room with interpretive exhibits on Project history and information on the natural and cultural resources of the North Cascades, and a retail store. The information desk in the center is staffed by employees from City Light, NPS, and NCI.

Gorge Inn Museum

The Gorge Inn Museum is located inside the Gorge Inn on the south end of Main Street in Newhalem. City Light inventoried the visitor gallery exhibits (refer to Section 4.1.4).

The Gorge Inn houses a small museum that presents a social history of the Upper Skagit River Valley and the Project, including Indian Tribe use of the area; Newhalem Townsite life over the years; and J.D. Ross, the long-time superintendent and "Father of City Light" who conceived of and drove the construction of the Project (City Light 2020).

Newhalem Townsite General Recreation Amenities

Beyond the site-specific recreation facilities described above, the Newhalem Townsite also provides a variety of other general recreational amenities dispersed throughout the townsite, including parking areas, picnic sites, interpretive displays, and a playground. City Light conducted an inventory as well as condition, accessibility, and use impact assessments of these additional recreation amenities (refer to Section 4.1.4).

Overall, the general recreation and interpretive amenities are in "good" condition overall and are "partially accessible" with some accessible amenities (Table 5.1-30). The recreation use impact evaluation for these general Newhalem Townsite amenities was "low" without notable signs of use impacts.

Table 5.1-30. Inventory, condition, and accessibility evaluation summary at Newhalem Townsite general recreation amenities.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Parking areas	Main Street Lot: Paved/striped lot with curbing; 24 parking marked spaces (3 accessible) SR 20 Lot: Gravel lot with wheel-stop; 30 marked parking spaces (2 accessible); overflow RV and trailer parking area (no striping); dumpsters; electric vehicle charging station	Good	Partially accessible	The Main Street paved parking area meets the requisite standards, except for the signage at the space near the Gorge Inn. The SR 20 gravel parking area appears to meet the standards including concrete surfacing at the accessible spaces, but the space markings are faded. The dumpsters meet the clear space and approach standards.
Picnic sites	17 picnic sites, each with a picnic table	Good	Partially accessible	Some of the picnic sites are connected to a parking area (namely SR 20 area) via an access route that meets accessible standards, but the rest do not. None of the tables are accessible models and nearly all lack the requisite clearance requirements.
Interpretive displays	Seven interpretive displays: The Iron Horse of the Skagit; Automobiles Come to the Skagit; The Meaning of Place; Newhalem Company Town; Spinning Waterwheel; Temple of Power; and Chinook Redd	Good	Partially accessible	Some of the displays have the requisite access routes, clear space, or panel heights at the displays. Some do not meet one or more of the access route, clear space, or panel height standards. Some displays have access routes across uneven, grass/lawn areas.

Site Amenities	Evaluations			Comments
	Inventory	Condition	Accessibility	
Playground	Multiple play structures and equipment; one accessible parking space with 5 ft wide concrete pathway	Good	Partially accessible	The play equipment area surfacing does not meet the standards. An access route (5 ft wide concrete pathway) from a designated accessible parking space provides access to the playground area and meets the access route standards, but the transition from the access route to the playground equipment does not meet the standards (i.e., curbing).
Overall	**N/A**	**Good**	**Partially accessible**	**Some accessible components.**

Ladder Creek Falls Trail and Gardens

The 0.3 mile long Ladder Creek Falls Trail is located adjacent to Gorge Powerhouse along Ladder Creek in Newhalem. A facility-specific trailhead does not exist and utilizes the Gorge Powerhouse parking area for parking (refer to Section 5.4.1.1). City Light conducted an inventory and condition evaluation of the amenities associated with the trail (i.e., interpretive panels, benches, and lighting) (refer to Section 4.1.4).

The Ladder Creek Falls Trail leads to Ladder Creek Falls, a dramatic series of waterfalls in a slot canyon, and winds along the creek and through a garden developed on the adjacent hillside. The trail includes four interpretive panels, three wooden benches, and colored lighting that illuminates the falls and surrounding features at night. All the facilities are in "good" condition. The trail does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

Trail of the Cedars

The 0.4 mile long Trail of the Cedars is located on the south side of Newhalem and the Skagit River. This interpretive trail provides pedestrian access from Newhalem to the Newhalem Creek Powerhouse and links with a NPS trail that leads to Newhalem Creek Campground. The Trail of the Cedars begins at the suspension bridge at the end of Main Street in Newhalem, crosses the Skagit River, and then meanders through the forest along the river. The facility does not have a designated trailhead; instead, visitors utilize the parking areas in Newhalem (refer to Section 5.4.1.5). City Light conducted an inventory, condition evaluation of the amenities associated with the trail (i.e., interpretive displays) and a trail accessibility evaluation (refer to Section 4.1.4).

The trail is a compacted, gravel surface trail ranging from 3 to 6 ft in width. A total of 28 interpretive displays are dispersed throughout the trail. The displays generally consist of synthetic panels with metal frames on metal posts unless affixed to a structure. The displays are either situated along the edge of the trail or at the Newhalem Creek Powerhouse building. The Newhalem Creek Powerhouse building serves as an interpretive feature at the midpoint of the trail with

windows allowing visitors to observe various powerhouse facilities. All the interpretive displays are in "good" condition.

Regarding the qualitative trail accessibility evaluation, the trail has few constraints, and the majority of the trail meets accessibility standards, including surfacing (compacted/firm and stable), clear tread width (mostly 48 to 60 inches wide with short segments 36 inches wide), cross slopes (5 percent or less), and running slopes (largely between 0 and 5 percent with short segments between 8 and 12 percent). However, several locations along the trail had notable constraints, including several steep running slope segments exceeding the 12 percent threshold, a short segment where the cross slope exceeded the 5 percent threshold, and one location where a tree uprooted, and the root-ball impeded the clear tread width. The running slope segments of note included a 60 ft long segment at the start of the trail between 19 and 22 percent slope, a 30 ft long segment in the first third of the trail with 12 to 14 percent slope, and 125 ft long segment in the middle of the trail with 12 to 14 percent slope. Overall, the trail is close to meeting the standards outside of a few notable constraints. The trail does not have a trail conditions sign that describes the level of difficulty, trail conditions, and general accessibility constraints or obstacles.

5.1.4.2 Non-Project Recreation Facilities

There are no non-Project recreation facility study sites in Newhalem.

5.1.5 Skagit River

City Light evaluated the recreation facilities in the Skagit River from Newhalem to Marblemount as shown in Table 4.1-1. Refer to Section 4.1.4 for the specific types of evaluations required at each study site.

5.1.6 Project Recreation Facilities

There are no Project recreation facilities in the Skagit River study area.

5.1.6.1 Non-Project Recreation Facilities

Goodell Creek Campground

The Goodell Creek Campground facility is located along the lower reaches of Goodell Creek on the north bank of the Skagit River just downstream from the mouth of the creek. The campground consists of 21 sites (19 standard sites and 2 group sites), a picnic shelter, potable water, vault restroom buildings, trash facilities, and an information kiosk. Each campsite includes a picnic table, fire ring, food locker, and vehicle parking spur. City Light conducted accessibility and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is "partially accessible" with some accessible elements including some aspects of the restroom buildings, picnic shelter, trash facilities, and information kiosk, but the campsites are generally inaccessible (Table 5.1-31). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-31. Accessibility evaluation summary at Goodell Creek Campground.

Site Amenity	Accessibility Rating	Comments
Campsites	Inaccessible	Nearly all the campsite amenities (table, fire ring, lockers, water hydrants) are not accessible models and most lack adequate clearances/clear space requirements. The campsite slopes and surfacing are varied and inconsistent with impediments to the requisite ORARs. The water hydrants lack the requisite clear space/approach and operable parts (i.e., not paddle-type levers).
Restrooms	Partially accessible	Some of the restroom buildings (2-unit models) are designed to accessible standards; however, the access routes have inconsistent surfacing and widths that do not meet the standards. The smaller, single-unit restrooms do not meet accessible standards.
Picnic shelter	Partially accessible	The picnic tables and pedestal grills are not accessible models and lack the requisite clearances/clear space. The access route to the shelter and the surfacing (concrete) at the shelter meet the standards.
Trash receptacles	Partially accessible	The receptacles and dumpsters have adequate clear space/approaches, but not all the receptacles' operable parts meet the standards. Dumpster operable parts are excluded from the standards.
Information kiosk	Accessible	The kiosk has the requisite access route and clear space off the main circulation road near the entrance to the campground.
Overall	**Partially accessible**	**Some accessible components.**

5.1.6.2 Goodell Creek Boat Launch

The Goodell Creek Boat Launch facility is located on the Skagit River adjacent to the Goodell Creek Campground. The site provides opportunities for cartop launching of non-motorized boats into the Skagit River. The facility consists of a dirt and gravel launch ramp, paved parking area, picnic sites, trash facilities, and information kiosk. City Light conducted accessibility and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is "inaccessible" with few/limited accessible components (Table 5.1-32). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-32. Accessibility evaluation summary at Goodell Creek Boat Launch.

Site Amenity	Accessibility Rating	Comments
Launch ramp	N/A	Note that the ramp itself is excluded from accessibility standards; however, access to the top/start of the boat launch ramp does meet accessible standards.
Parking area	Inaccessible	The parking area is paved but lacks striping and marked/signed accessible spaces. An additional paved, marked parking area (no accessible spaces) is available outside the immediate facility.
Picnic site	Inaccessible	The picnic tables are not accessible models and the site as currently oriented lacks the requisite clearances. The access route to the picnic tables meets the standards (i.e., width, surfacing and slopes).
Trash receptacles	Inaccessible	The receptacles do not meet the requisite clear space/approach and operable parts standards.

Site Amenity	Accessibility Rating	Comments
Information kiosk	Accessible	The kiosk has the requisite access route from the parking area and clear space at the kiosk.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Damnation Creek Boat-in Picnic Site

The Damnation Creek Boat-in Picnic Site is located on the Skagit River between the Goodell Creek Boat Launch and Copper Creek Boat Access Site. The site provides riverside opportunities for picnicking and is accessed primarily by boaters on the Skagit River. The facility consists of two picnic sites and a single-unit vault restroom building. City Light conducted accessibility and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is "inaccessible" with few/limited accessible components (Table 5.1-33). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts. The site appears to experience very low use with encroaching vegetation and few signs of regular use.

Table 5.1-33. Accessibility evaluation summary at Damnation Creek Boat-in Picnic Site.

Site Amenity	Accessibility Rating	Comments
Picnic site	Inaccessible	The two picnic tables are not accessible models and the site as currently oriented lacks the requisite clearances and access routes to the picnic tables.
Restroom	Partially accessible	The single-unit vault restroom building is designed to accessible standards; however, the access route does not meet the standards due to varied/uneven surfacing.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Copper Creek Boat Access Site

The Copper Creek Boat Access Site is located on the Skagit River downstream of the Goodell Creek Boat Launch and Damnation Creek Boat-in Picnic Site. The site provides opportunities for cartop launching for non-motorized boats into the Skagit River. The facility consists of a dirt and gravel launch ramp, gravel parking area, and a single-unit vault restroom building. City Light conducted accessibility and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is "inaccessible" with few/limited accessible components (Table 5.1-34). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-34. Accessibility evaluation summary at Copper Creek Boat Access Site.

Site Amenity	Accessibility Rating	Comments
Launch ramp	N/A	Note that the ramp itself is excluded from accessibility standards; however, access to the top/start of the boat launch ramp does meet accessible standards.
Parking area	Inaccessible	The gravel parking area lacks marked/signed accessible spaces.
Restroom	Partially accessible	The single-unit vault restroom building is designed to accessible standards; however, the access route does not meet the standards due to narrow width and uneven and varied surfacing (grass and concrete).
Overall	**Inaccessible**	**Few/limited accessible components overall.**

Marblemount Boat Launch

The Marblemount Boat Launch facility is located on the Skagit River, just upstream of the confluence with the Cascade River and about 12 miles downstream from Newhalem. The facility provides an unpaved boat launch, gravel parking area, a portable restroom building, and an information kiosk. City Light conducted accessibility and use impact assessments at this facility (refer to Section 4.1.4).

Overall, the facility is "inaccessible" with few/limited accessible components (Table 5.1-35). The recreation use impact evaluation for the facility was "low" without notable signs of use impacts.

Table 5.1-35. Accessibility evaluation summary at Marblemount Boat Launch.

Site Amenity	Accessibility Rating	Comments
Launch ramp	N/A	Note that the ramp itself is excluded from accessibility standards; however, access to the top/start of the boat launch ramp does meet accessible standards.
Parking area	Inaccessible	The gravel parking area has a single accessible sign, but the space is not designated, and the lot surfacing is not firm/stable.
Restroom	Inaccessible	The portable restroom building is not designed to accessible standards and the access route and door clearances/approach do not meet the standards.
Information kiosk	Inaccessible	The three-panel covered kiosk does not meet the requisite standards for the access route from the parking area and clear space at the kiosk.
Overall	**Inaccessible**	**Few/limited accessible components overall.**

5.1.7 Gorge Lake Boat Launch Ramp Assessment

Based on City Light's as-built drawings for the facility, the elevation of the constructed top of the Gorge Lake Boat Launch ramp is at 883 ft North American Vertical Datum 1988 (NAVD 88; approximately 876.5 City of Seattle datum [CoSD])[4] and the elevation for the constructed bottom is at 875 ft NAVD 88 (approximately 868.5 ft CoSD). The boat ramp is considered functional from the constructed top of the boat ramp down to 3 ft above the lower end of the constructed ramp. Based on these specifications, the boat ramp functional elevation range is 5 vertical ft from 883 ft down to 878 ft NAVD 88 (876.5 ft to 871.5 ft CoSD).

For the period of record from 1983 to 2021, the boat ramp is usable 66 percent of the year and 65 percent of the peak season (July and August), on average. During the peak season, the boat ramp is not usable 8.1 days in July and 11.5 days in August, on average. The Gorge Lake Boat Launch is located in a cove on the north side of Gorge Lake where gravel is deposited at the outlet to the boat launch cove, which impedes many large boats from using the launch, particularly when Gorge Lake levels are low. Below 878 ft NAVD 88 (approximately 871.5 ft CoSD), the launch ramp remains usable by non-motorized watercraft and other watercraft not requiring a trailer.

5.2 Visitor Attitudes, Beliefs, and Preferences

City Light conducted visitor and observation surveys in 2022 to gather information to address the study goals, objectives, and issues at each of the study sites. The study sites for this element of the study include both Project and non-Project recreation facilities.

5.2.1 Visitor Survey Response

Table 5.2-1 below summarizes the survey days, including the number of actual survey days, survey days required by the study plan, and the difference between the actual and required survey days.

Per the study plan, City Light was required to conduct visitor surveys on 35 total days at each survey site from May through October, including 17 survey days during the off-peak season (May-June, after Labor Day-October) and 18 survey days during the peak season (July-Labor Day). City Light conducted a total of 39 days of field data collection for the visitor surveys. This includes additional off-peak season survey days conducted in May, June, and September to meet the off-peak season surveys target due to the City Light study team's on-site experience and observed lower use throughout the study area during the off-peak season. In October, City Light was unable to conduct the final weekday and weekend survey days (1 each) due to pervasive poor air quality (as evidenced by high air quality index [AQI] levels) from wildfires in the Project vicinity, which also prompted NPS closures of recreation areas within the study area. Additionally, inclement weather at the end of October further prevented City Light from conducting the outstanding October survey days. However, since City Light conducted the additional off-peak season survey days in May, June and September, City Light still exceeded the required total survey days.

[4] As described in Section 2.3.1 of the RSP, the CoSD requires a conversion to NAVD 88 in order to be comparable with elevations measured and presented elsewhere in analyses and discussions surrounding Project relicensing. To convert to NAVD 88, 6.26 feet must be added to Ross Lake WSE in CoSD, 6.36 feet added to Diablo Lake WSE, and 6.51 feet added to WSE for Gorge Lake.

Table 5.2-1. Summary of visitor survey days conducted by City Light (May-October 2022).

Season	Month	Day Type	Survey Day Summary		Difference (Actual - Required)
			Actual	Required	
Off-Peak Season	May	Weekday	3	2	+1
		Weekend	3	2	+1
		Holiday	1	1	0
		Total	**7**	**5**	**+2**
	Jun	Weekday	3	2	+1
		Weekend	3	2	+1
		Holiday	0	0	0
		Total	**6**	**4**	**+2**
	Sep	Weekday	4	2	+2
		Weekend	2	2	0
		Holiday	0	0	0
		Total	**6**	**4**	**+2**
	Oct	Weekday	1	2	-1
		Weekend	1	2	-1
		Holiday	0	0	0
		Total	**2**	**4**	**-2**
Peak Season	Jul	Weekday	4	4	0
		Weekend	4	4	0
		Holiday	1	1	0
		Total	**9**	**9**	**0**
	Aug	Weekday	4	4	0
		Weekend	4	4	0
		Holiday	0	0	0
		Total	**8**	**8**	**0**
	Sep	Weekday	0	0	0
		Weekend	0	0	0
		Holiday	1	1	0
		Total	**1**	**1**	**0**
Total	Off-Peak	Weekday	11	8	+3
		Weekend	9	8	+1
		Holiday	1	1	0
		Total	**21**	**17**	**+4**
	Peak	Weekday	8	8	0
		Weekend	8	8	0
		Holiday	2	2	0
		Total	**18**	**18**	**0**
	Overall	Weekday	19	16	+3
		Weekend	17	16	+1
		Holiday	3	3	0
		Total	**39**	**35**	**+4**

Table 5.2-2 summarizes the number and distribution of completed surveys received by City Light during the entire study season (May-October). The study area was divided into three survey areas: (1) Ross Lake, (2) Diablo and Gorge lakes, and (3) the Skagit River from Gorge Powerhouse downstream to Marblemount, including Newhalem. Per the RSP, City Light was required to collect a minimum of 384 completed surveys from each survey area and 1,281 total surveys. City Light was further required to collect a minimum of 192 completed surveys, for each survey area, in both the off-peak and peak seasons. As detailed in Table 5.2-2, City Light met the study requirements for completed surveys overall, by survey area, and by season within each survey area. In all, City Light collected 1,351 completed visitor surveys, or 70 more surveys than required (117 percent of the total target number of surveys). City Light received a total of 212 survey refusals (14 percent of the visitors contacted), primarily due to the length of the survey (approximately 14 minutes to complete, on average). City Light conducted only in-person surveys with visitors and did not employ the windshield mail-back survey implementation method.

Table 5.2-2. Summary of visitor surveys received and comparison to target number of surveys.

Survey Area	Resource Area	Study Site	Completed Surveys		
			Off-Peak Season	Peak Season	Total
Ross Lake	Ross Lake	Canyon Creek Trailhead	24	46	70
		East Bank Trailhead	74	82	156
		Ross Dam Trailhead	82	81	163
		West Ferry Landing	15	40	55
		Subtotal	195	249	444
		% of Target	102%	130%	116%
Diablo/ Gorge Lakes	Diablo Lake	Colonial Creek Boat Launch/Fishing Pier	43	40	83
		Colonial Creek Campground	29	28	57
		Diablo Overlook	26	31	57
		Diablo Dam Parking Area	19	30	49
		Skagit Tour Dock	4	21	25
		ELC Parking Area	31	36	67
	Gorge Lake	Gorge Creek Overlook	36	30	66
		Gorge Lake Boat Launch	15	18	33
		Gorge Lake Campground	27	22	49
		Subtotal	230	256	486
		% of Target	120%	133%	127%
Skagit River	Newhalem	Gorge Powerhouse Parking Area	26	30	56
		Newhalem Parking Areas	38	51	89
	Skagit River	Newhalem Creek Campground	27	32	59
		Goodell Creek Boat Launch	23	19	42
		Goodell Creek Campground	25	31	56
		Marblemount Boat Launch	28	33	61
		Marble Creek Campground	27	31	58
		Subtotal	194	227	421
		% of Target	101%	118%	110%
Total		**Total**	**619**	**732**	**1,351**
		% of Target	**107%**	**127%**	**117%**

At the outset of the visitor survey field season, City Light had a goal of securing a minimum of 35 surveys at each study site. Overall, City Light secured at least 35 surveys at each study site except at Skagit Tour Dock (25 surveys) and Gorge Lake Boat Launch (33 surveys). Skagit Tours were not operating in 2022 due to the extensive SR 20 paving and construction projects; thus, the Skagit Tour Dock study site recreational use was unusually low. City Light observed only sporadic and nominal general recreational use (primarily sightseeing) at the site and not the typical large groups associated with Skagit Tours. At Gorge Lake Boat Launch, City Light observed infrequent and nominal recreational use throughout the entire study season, which limited City Light's ability to secure surveys.

5.2.2 Visitor Characteristics and Socio-Demographic Information

Overall, the majority of the survey respondents were overnight users (63 percent) compared to day users (37 percent) (Table 5.2-3). When comparing the resource areas, Ross Lake, Diablo Lake, Gorge Lake, and the Skagit River all had at least 57 percent of the respondents staying overnight. In comparison, the Newhalem resource area was closer to a 50/50 split between overnight and day-users.

Survey respondents were 43 years old on average and ranged from 18 to 85 years old. Generally, the age demographics were similar across all resource areas with average age ranging between 41 and 48 years old.

Table 5.2-3. Visitor user type and age characteristics by resource area.

Visitor Characteristic	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	%	n	%	n	%	n	%	n	%	n	%
USER TYPE												
Overnight	254	65%	237	60%	85	57%	76	52%	196	71%	848	63%
Day Use	135	35%	156	40%	63	43%	69	48%	80	29%	503	37%
AGE												
Average	42		41		42		48		44		43	
Std. Deviation	14.9		13.9		15.7		16.6		15.7		15.3	
Minimum	19		18		19		22		18		18	
Maximum	78		78		85		80		83		85	

The majority of survey respondents were male (53 percent), categorized themselves as white (81 percent) and non-Hispanic (90 percent), and English was their primary language (88 percent) (Table 5.2-4). These demographic characteristics were largely consistent across resource areas—gender (male) ranged from 51 to 55 percent; race (white) ranged from 77 to 85 percent, ethnicity (non-Hispanic) ranged from 83 to 93 percent; and primary language (English) ranged from 83 to 92 percent.

Table 5.2-4. Socio-demographic characteristics of visitors by resource area.

Socio-Demographics	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	%	n	%	n	%	n	%	n	%	n	%
GENDER												
Female	202	45%	152	45%	63	43%	61	42%	114	41%	592	44%
Male	232	52%	172	51%	75	51%	80	55%	151	55%	710	53%
Non-Binary	2	0%	1	0%	1	1%	2	1%	0	0%	6	0%
Declined	8	2%	13	4%	9	6%	2	1%	11	4%	43	3%
Total	**444**	**100%**	**338**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1,351**	**100%**
RACE												
American Indian/ Alaskan Native	1	0%	2	1%	0	0%	0	0%	2	1%	5	0%
Asian	44	10%	36	11%	13	9%	12	8%	26	9%	131	10%
Black/African-American	4	1%	5	1%	2	1%	2	1%	2	1%	15	1%
Native Hawaiian/ Other Pacific	1	0%	1	0%	5	3%	2	1%	5	2%	12	1%
White	373	84%	265	78%	114	77%	123	85%	224	81%	1,099	81%
Don't Know	1	0%	0	0%	0	0%	0	0%	0	0%	1	0%
Other	8	2%	14	4%	2	1%	4	3%	6	2%	34	3%
Declined	12	3%	15	4%	12	8%	2	1%	11	4%	52	4%
Total	**444**	**100%**	**338**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1,349**	**100%**
ETHNICITY												
Hispanic/Latino	22	5%	28	8%	12	8%	10	7%	14	5%	86	6%
Not Hispanic/ Latino	412	93%	295	87%	123	83%	133	92%	249	90%	1212	90%
Declined	10	2%	15	4%	13	9%	2	1%	13	5%	53	4%
Total	**444**	**100%**	**338**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1,351**	**100%**
PRIMARY LANGUAGE												
Arabic	1	0%	0	0%	0	0%	0	0%	0	0%	1	0%
English	393	89%	281	83%	128	86%	133	92%	251	91%	1,186	88%
French	2	0%	3	1%	0	0%	1	1%	1	0%	7	1%
German	3	1%	7	2%	0	0%	3	2%	1	0%	14	1%
Hindi	5	1%	4	1%	2	1%	0	0%	1	0%	12	1%
Japanese	0	0%	0	0%	1	1%	0	0%	1	0%	2	0%
Korean	0	0%	0	0%	0	0%	0	0%	1	0%	1	0%
Mandarin	7	2%	4	1%	2	1%	1	1%	3	1%	17	1%
Portuguese	2	0%	4	1%	0	0%	0	0%	0	0%	6	0%
Russian	4	1%	4	1%	1	1%	0	0%	1	0%	10	1%

Socio-Demographics	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	%	n	%	n	%	n	%	n	%	n	%
Spanish	5	1%	9	3%	1	1%	1	1%	1	0%	17	1%
Vietnamese	0	0%	0	0%	1	1%	1	1%	0	0%	2	0%
Other	14	3%	12	4%	4	3%	3	2%	6	2%	39	3%
Declined	8	2%	10	3%	8	5%	2	1%	9	3%	37	3%
Total	**444**	**100%**	**338**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1,351**	**100%**

The majority of survey respondents were from the United States (92 percent), specifically from Washington State (68 percent). Of the respondents from Washington State, most resided in King County (45 percent), Snohomish County (15 percent) and Skagit County (11 percent) (Table 5.2-5). There was little variability in these results between the resource areas.

Table 5.2-5. Location of residence of overall visitors by survey season.

Location of Residence	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	%	n	%	n	%	n	%	n	%	n	%
COUNTRY												
Australia	1	0%	1	0%	0	0%	0	0%	0	0%	2	0%
Belgium	2	0%	0	0%	0	0%	0	0%	0	0%	2	0%
Canada	9	2%	7	2%	2	1%	4	3%	6	2%	28	2%
France	1	0%	2	1%	0	0%	0	0%	0	0%	3	0%
Germany	3	1%	4	1%	0	0%	2	1%	1	0%	10	1%
Israel	2	0%	0	0%	0	0%	0	0%	0	0%	2	0%
Netherlands	0	0%	1	0%	0	0%	1	1%	0	0%	2	0%
United States	411	93%	304	90%	133	90%	133	92%	257	93%	1238	92%
Other	5	2%	2	1%	1	1%	3	1%	0	0%	11	3%
No Response	10	2%	17	5%	12	8%	2	1%	12	4%	53	4%
Total	**444**	**100%**	**338**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1351**	**100%**
U.S. STATE												
California	18	4%	12	4%	14	11%	14	11%	10	4%	68	5%
Colorado	8	2%	6	2%	1	1%	2	2%	1	0%	18	1%
Florida	6	1%	5	2%	3	2%	2	2%	5	2%	21	2%
Idaho	1	0%	0	0%	1	1%	1	1%	4	2%	7	1%
Illinois	6	1%	3	1%	3	2%	0	0%	3	1%	15	1%
Minnesota	7	2%	6	2%	0	0%	1	1%	4	2%	18	1%
New York	5	1%	2	1%	2	2%	0	0%	1	0%	10	1%
North Carolina	3	1%	5	2%	1	1%	3	2%	0	0%	12	1%

Location of Residence	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	%	n	%	n	%	n	%	n	%	n	%
Ohio	7	2%	2	1%	0	0%	1	1%	1	0%	11	1%
Oregon	12	3%	11	4%	4	3%	2	2%	16	6%	45	4%
Pennsylvania	2	0%	5	2%	2	2%	2	2%	1	0%	12	1%
Texas	7	2%	5	2%	4	3%	1	1%	2	1%	19	2%
Utah	4	1%	2	1%	1	1%	1	1%	3	1%	11	1%
Washington	273	66%	213	70%	82	62%	84	63%	186	72%	838	68%
Wisconsin	9	2%	2	1%	2	2%	2	2%	2	1%	17	1%
Other	43	12%	25	5%	13	7%	17	9%	18	8%	116	9%
Total	**411**	**100%**	**304**	**100%**	**133**	**100%**	**133**	**100%**	**257**	**100%**	**1238**	**100%**
WASHINGTON COUNTY												
Clark (WA)	5	2%	3	1%	1	1%	0	0%	3	2%	12	1%
Island (WA)	7	3%	7	3%	2	2%	4	5%	3	2%	23	3%
King (WA)	129	47%	105	49%	33	40%	33	39%	76	41%	376	45%
Okanogan (WA)	9	3%	3	1%	1	1%	3	4%	4	2%	20	2%
Pierce (WA)	4	1%	6	3%	3	4%	1	1%	5	3%	19	2%
Skagit (WA)	26	10%	18	8%	7	9%	11	13%	31	17%	93	11%
Snohomish (WA)	20	7%	37	17%	21	26%	15	18%	34	18%	127	15%
Spokane (WA)	5	2%	7	3%	0	0%	2	2%	4	2%	18	2%
Thurston (WA)	10	4%	3	1%	0	0%	0	0%	2	1%	15	2%
Whatcom (WA)	34	12%	9	4%	9	11%	5	6%	15	8%	72	9%
Other	24	9%	15	10%	5	6%	10	12%	9	4%	63	8%
Total	**273**	**100%**	**213**	**100%**	**82**	**100%**	**84**	**100%**	**186**	**100%**	**838**	**100%**

Survey respondents' average group size (traveling in the same vehicle) was 2.6 people and ranged from 1 to 25 people (Table 5.2-5). The average number of people in a group under 16 years of age was 0.3 people and ranged from 0 to 12 people (Table 5.2-5). There was little variation across the five resource areas for the overall average group size (2.4 to 2.8 people) and people under 16 years of age (0.2 to 0.4 people). Ross Lake, Diablo Lake, and Skagit River survey respondents had a higher variability of group sizes overall and higher maximum group sizes compared to the Gorge Lake and Newhalem resource areas.

Visitors were asked about the duration of their trip: when they first entered the entire study area and when they plan to leave the study area. The overall trip duration in the study area was 2.7 days for overnight visitors and 5.5 hours for day users (Table 5.2-6). When comparing resource areas, survey respondents staying overnight had slightly longer stays in the Ross Lake (2.9 days), Gorge Lake (2.8 days), and Newhalem (2.8 days) resource areas. Day use survey respondents in the Ross and Diablo Lake resource areas indicated slightly longer trips of approximately 6 hours compared to the other resource areas (4 to 5 hours).

Table 5.2-6. Overall group composition and trip duration.

Group Characteristics	Resource Area					Total
	Ross Lake	Diablo Lake	Gorge Lake	Newhalem	Skagit River	
GROUP SIZE (PER VEHICLE)						
Average	2.6	2.7	2.4	2.5	2.8	2.6
Std. Deviation	2.1	1.7	1.1	1.3	2.2	1.9
Minimum	1	1	1	1	1	1
Maximum	25	18	8	10	20	25
UNDER 16 YEARS OF AGE (PER VEHICLE)						
Average	0.3	0.3	0.2	0.3	0.4	0.3
Std. Deviation	1.0	0.8	0.7	0.8	0.8	0.9
Minimum	0	0	0	0	0	0
Maximum	12	5	6	4	4	12
TRIP DURATION (OVERNIGHT VISITORS [DAYS])						
Average	2.9	2.5	2.8	2.8	2.6	2.7
Std. Deviation	2.5	1.7	2.5	3.4	1.6	2.3
Minimum	1	1	1	1	1	1
Maximum	32	12	14	29	9	32
TRIP DURATION (DAY USE VISITORS [HOURS, hh:mm])						
Average	6:08	5:55	4:55	4:06	5:13	5:30
Std. Deviation	4:51	4:34	4:01	2:44	3:47	4:18
Minimum	0:15	0:20	0:25	0:20	0:15	0:15
Maximum	20:28	20:00	19:23	12:01	17:08	20:28

5.2.3 Visitor Trip Planning and Trip Motivation

Overall, visitors obtained information to plan their current trip via a federal/state website (22 percent), other websites (e.g., All Trails app, Washington Trails Association website, blogs, vlogs) (20 percent), and previous visits (19 percent) (Table 5.2-7). These information sources were generally consistent across resource areas. Additional information sources identified by survey respondents were word of mouth (11 percent), maps/brochures/pamphlets (10 percent), and social media (7 percent). All other sources of information accounted for less than 5 percent of source materials used.

Table 5.2-7. Information sources visitors used to plan their trip.

Information Sources	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	%	n	%	n	%	n	%	n	%	n	%
Federal/ State website	211	22%	170	23%	66	21%	61	20%	139	24%	647	22%
City, local, municipal website	5	1%	8	1%	2	1%	1	0%	5	1%	21	1%
City Light website	7	1%	4	1%	2	1%	2	1%	4	1%	19	1%
Other websites	214	22%	135	19%	65	20%	68	22%	111	19%	593	20%
Package tour companies	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
City Light mailers	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitor bureaus/centers	54	6%	27	4%	13	4%	11	4%	18	3%	123	4%
Maps, brochures, pamphlets	105	11%	68	9%	39	12%	25	8%	53	9%	290	10%
Previous visits	169	17%	130	18%	58	18%	68	22%	134	23%	559	19%
Word of mouth	106	11%	81	11%	31	10%	26	8%	63	11%	307	11%
Social media	48	5%	58	8%	26	8%	26	8%	32	5%	190	7%
Travel guides and tour books	35	4%	22	3%	13	4%	10	3%	18	3%	98	3%
Newspaper/ magazine article	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Radio/TV broadcasts	0	0%	2	0%	1	0%	1	0%	0	0%	4	0%
Other responses	16	2%	22	3%	3	1%	7	2%	6	1%	54	2%

Visitors were asked how the possibility of crowds affected their trip plans during the planning process for this visit. The possibility of crowds "did not affect plans" for the majority of survey respondents (60 percent) (Table 5.2-8). Some survey respondents visited during a "less crowded day of the week" (14 percent), "avoided crowded places" (10 percent) or visited at a "less crowded time of day" (10 percent). Respondent comments mentioned that visits required booking campsites early, visits often were based on campsite availability, visits to North Cascades National Park were with the expectation of fewer crowds, and visits were timed to occur during the off-peak season (i.e., less crowded time of year). There was little variability in average responses by resource area.

Table 5.2-8. How possibility of crowds affected visitors' trip plans.

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Crowding Response	n	%	n	%	n	%	n	%	n	%	n	%
Did Not Affect Plans	259	58%	201	59%	84	57%	97	67%	163	59%	804	60%
Avoided Crowded Places	55	12%	22	7%	15	10%	10	7%	37	13%	139	10%
Less Crowded Day of Week	66	15%	50	15%	19	13%	18	12%	41	15%	194	14%
Less Crowded Time of Day	35	8%	48	14%	18	12%	11	8%	17	6%	129	10%
Other	29	7%	17	5%	12	8%	9	6%	18	7%	85	6%
Total	**444**	**100%**	**338**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1,351**	**100%**

Visitors came to the study area for various reasons and were asked to provide their top three reasons for going on their current trip. The top three responses for each reason level are summarized below (Table 5.2-9).

- First Reason: to view mountains (19 percent), spend time with family/friends (18 percent), and recreate at Ross, Diablo, and Gorge lakes (18 percent).
- Second Reason: to view mountains (27 percent), spend time with family/friends (14 percent), and escape from an urban setting (12 percent).
- Third Reason: to view mountains (17 percent), escape from an urban setting (13 percent), and view lakes/reservoirs (12 percent).

Table 5.2-9. Reason for visitors' trip to the study area.

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Trip Reason	N	%	N	%	N	%	N	%	N	%	N	%
FIRST REASON												
Use a boat-in campsite	1	0%	2	1%	0	0%	0	0%	0	0%	3	0%
Escape from urban setting	56	13%	42	12%	29	20%	20	14%	46	17%	193	14%
Spend time with friends/family	71	16%	66	20%	22	15%	28	19%	57	21%	244	18%
Just passing through the area	22	5%	10	3%	6	4%	22	15%	7	3%	67	5%
Recreate in backcountry areas	40	9%	8	2%	5	3%	1	1%	9	3%	63	5%

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Trip Reason	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Recreate at Ross/Diablo/Gorge lakes	76	17%	93	28%	28	19%	18	12%	31	11%	246	18%
Recreate on the Skagit River	2	0%	0	0%	0	0%	0	0%	45	16%	47	3%
Find solitude	26	6%	13	4%	4	3%	5	3%	9	3%	57	4%
View the lakes/reservoirs	25	6%	19	6%	13	9%	5	3%	8	3%	70	5%
View mountains	91	20%	58	17%	30	20%	30	21%	41	15%	250	19%
View wildlife	19	4%	17	5%	5	3%	8	6%	10	4%	59	4%
Other	15	3%	10	3%	6	4%	8	6%	13	5%	52	4%
No response	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total	**444**	**100%**	**338**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1,351**	**100%**
SECOND REASON												
Use a boat-in campsite	0	0%	8	2%	0	0%	0	0%	0	0%	8	1%
Escape from urban setting	52	13%	37	9%	20	14%	19	13%	38	14%	166	12%
Spend time with friends/family	50	13%	72	18%	16	11%	16	11%	40	14%	194	14%
Just passing through the area	6	2%	2	1%	2	1%	8	6%	7	3%	25	2%
Recreate in backcountry areas	22	6%	8	2%	0	0%	5	3%	10	4%	45	3%
Recreate at Ross/Diablo/Gorge lakes	18	5%	39	10%	11	7%	4	3%	16	6%	88	7%
Recreate on the Skagit River	1	0%	1	0%	2	1%	0	0%	16	6%	20	1%
Find solitude	37	10%	29	7%	8	5%	8	6%	39	14%	121	9%
View the lakes/reservoirs	33	8%	53	13%	16	11%	18	12%	15	5%	135	10%
View mountains	113	29%	105	27%	52	35%	44	30%	56	20%	370	27%
View wildlife	34	9%	25	6%	17	11%	9	6%	21	8%	106	8%
Other	6	2%	5	1%	3	2%	4	3%	3	1%	21	2%
No response	17	4%	9	2%	1	1%	10	7%	15	5%	52	4%
Total	**389**	**100%**	**393**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1351**	**100%**
THIRD REASON												
Use a boat-in campsite	2	1%	9	2%	1	1%	0	0%	0	0%	12	1%
Escape from urban setting	61	16%	59	15%	16	11%	7	5%	33	12%	176	13%

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Trip Reason	N	%	N	%	N	%	N	%	N	%	N	%
Spend time with friends/family	42	11%	49	12%	19	13%	8	6%	33	12%	151	11%
Just passing through the area	7	2%	6	2%	7	5%	8	6%	3	1%	31	2%
Recreate in backcountry areas	34	9%	15	4%	3	2%	8	6%	15	5%	75	6%
Recreate at Ross/Diablo/Gorge lakes	32	8%	30	8%	9	6%	8	6%	18	7%	97	7%
Recreate on the Skagit River	2	1%	3	1%	1	1%	2	1%	17	6%	25	2%
Find solitude	40	10%	29	7%	26	18%	17	12%	26	9%	138	10%
View the lakes/reservoirs	40	10%	62	16%	22	15%	23	16%	19	7%	166	12%
View mountains	60	15%	70	18%	25	17%	27	19%	50	18%	232	17%
View wildlife	25	6%	28	7%	11	7%	10	7%	22	8%	96	7%
Other	15	4%	11	3%	1	1%	7	5%	15	5%	49	4%
No response	29	7%	22	6%	7	5%	20	14%	25	9%	103	8%
Total	**389**	**100%**	**393**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1351**	**100%**

When comparing the resource areas, the top three responses for their first (primary) reason are summarized below:

- Ross Lake: to view mountains (20 percent), recreate on Ross/Diablo/Gorge lakes (17 percent), and spend time with family/friends (16 percent).
- Diablo Lake: to recreate at Ross/Diablo/Gorge lakes (28 percent), spend time with family/friends (20 percent), and view mountains (17 percent).
- Gorge Lake: to escape from an urban setting (20 percent), view mountains (20 percent), and recreate on Ross/Diablo/Gorge lakes (19 percent).
- Newhalem: to view mountains (21 percent), spend time with family/friends (19 percent), and just passing through (15 percent).
- Skagit River: to spend time with family/friends (21 percent), escape from an urban setting (17 percent), and recreate on the Skagit River (16 percent).

5.2.4 Study Area Site Visitation

Visitors were asked to identify locations in the study area (using a map included with the survey instrument) where they had visited or planned to visit during their current trip. Table 5.2-10 summarizes visitors' responses to this visitation question. It is not possible to know if visitors actually visited all of these sites, particularly the sites that visitors had not yet visited but planned to visit.

Table 5.2-10. Sites visitors visited or planned to visit by resource area (responses).

Resource Area	Sites Visited by Resource Area	Ross Lake	Diablo Lake	Gorge Lake	Newhalem	Skagit River	Total
Ross Lake	Winnebago Flats Campground	0	0	0	0	0	0
	Winnebago Flats Boat Launch	1	1	0	0	0	2
	Hozomeen Campground	5	0	0	1	0	6
	Hozomeen Boat Launch	3	0	0	1	1	5
	Ross Lake Resort	51	12	5	3	6	77
	Ross Lake Overlook	52	50	31	31	31	195
	Ross Dam Trailhead	161	24	9	8	13	215
	East Bank Trailhead	158	7	2	4	7	178
	Canyon Creek Trailhead	65	1	0	2	2	70
	Ross Dam Trail	114	16	6	9	8	153
	East Bank Trail	109	8	3	4	6	130
	Happy Creek Trail	17	3	6	9	8	43
	Happy Panther Trail	14	9	2	3	6	34
	Devil's Dome Loop Trail	24	1	0	0	0	25
	PNW Scenic Trail	2	0	0	0	0	2
	Lightning Creek Trail	31	1	0	1	0	33
	Desolation Peak Trail	19	1	0	0	0	20
	Hozomeen Lake Trail	12	1	0	0	0	13
	Big Beaver Trail	29	10	2	3	1	45
	Little Beaver Trail	6	3	0	0	0	9
	Boat-in camps	22	6	0	1	0	29
	Day use boating	24	4	1	2	2	33
	Rainy Lake Picnic Area	34	21	11	7	9	82
	Washington Pass Overlook	51	34	15	10	13	123
	Blue Lake Trail	19	15	3	6	9	52
	Total	**1,023**	**228**	**96**	**105**	**122**	**1,574**
	% Within Resource Area	**59%**	**19%**	**18%**	**18%**	**14%**	**32%**

Resource Area	Sites Visited by Resource Area	Ross Lake	Diablo Lake	Gorge Lake	Newhalem	Skagit River	Total
Diablo Lake	Diablo Overlook	142	160	85	74	91	552
	Colonial Creek Campground	24	81	16	7	13	141
	Colonial Creek Boat Launch	16	73	10	8	23	130
	Diablo Dam Parking Area	16	57	15	17	11	116
	Skagit Tour Dock	1	23	1	0	0	25
	West Ferry Landing	26	7	1	5	2	41
	East Ferry Landing	13	3	1	1	2	20
	Environmental Learning Center	10	33	7	4	9	63
	Diablo Lake Trail	33	69	15	4	18	139
	Thunder Knob Trail	33	58	18	16	21	146
	Thunder Creek Trail	25	48	11	12	16	112
	Boat-in camps	0	10	0	1	1	12
	Day use boating	12	41	2	2	6	63
	Total	**351**	**663**	**182**	**151**	**213**	**1,560**
	% Within Resource Area	**20%**	**56%**	**34%**	**26%**	**24%**	**32%**
Gorge Lake	Gorge Lake Campground	8	7	46	3	1	65
	Gorge Lake Boat Launch	1	5	19	1	2	28
	Ross Lodge Picnic Shelter	0	0	2	0	0	2
	Diablo Dam Trail	3	0	1	0	1	5
	Sourdough Mountain Trail	11	5	6	2	6	30
	Stetattle Creek Trail	1	0	6	1	3	11
	Gorge Creek Overlook	69	72	74	41	34	290
	Day use boating	1	1	2	1	0	5
	Total	**94**	**90**	**156**	**49**	**47**	**436**
	% Within Resource Area	**5%**	**8%**	**29%**	**8%**	**5%**	**9%**
Newhalem	Gorge Powerhouse Parking Area	8	10	2	38	7	65
	Gorge Powerhouse Visitor Gallery	4	9	1	17	4	35
	Gorge Inn Museum[1]	0	0	0	2	1	3
	Skagit Information Center	21	16	7	55	7	106

Resource Area	Sites Visited by Resource Area	Ross Lake	Diablo Lake	Gorge Lake	Newhalem	Skagit River	Total
	Ladder Creek Falls Trail & Garden	19	19	10	49	21	118
	Trail of the Cedars	16	17	8	33	26	100
	Total	**68**	**71**	**28**	**194**	**66**	**427**
	% Within Resource Area	**11%**	**14%**	**14%**	**44%**	**25%**	**18%**
Skagit River	Newhalem Creek Campground	32	14	7	7	55	115
	North Cascades National Park Visitor Center	71	74	34	42	66	287
	River Loop Trail	12	12	7	15	28	74
	Goodell Creek Campground	6	4	2	2	46	60
	Goodell Creek Boat Launch	1	1	3	0	45	50
	Damnation Creek Boat-in Site	1	0	0	1	1	3
	Copper Creek Boat Access Site	2	1	1	0	8	12
	Marblemount Boat Launch	5	4	1	1	66	77
	Marble Creek Campground	5	1	0	0	44	50
	Mineral Park Campground	1	1	1	0	3	6
	Lookout Mountain Trail	2	1	0	0	13	16
	Hidden Lake Trail	3	5	0	0	7	15
	Total	**141**	**118**	**56**	**68**	**382**	**765**
	% Within Resource Area	**1%**	**2%**	**1%**	**1%**	**27%**	**6%**
Other Areas	North Cascades National Park North Unit	10	1	0	2	1	14
	North Cascades National Park South Unit	10	4	6	4	14	38
	Mt. Baker-Snoqualmie National Forest	8	6	4	7	20	45
	Okanogan-Wenatchee National Forest	29	10	7	9	7	62
	Lake Chelan NRA/Stehekin	1	0	0	0	1	2
	Total	**58**	**21**	**17**	**22**	**43**	**161**
	% Within Resource Area	**3%**	**2%**	**3%**	**4%**	**5%**	**3%**

1 The Gorge Inn Museum is only open to the public for the Damn Good Chicken Dinner events.

The highest number of responses for areas visited were Ross Lake sites (1,574 responses), Diablo Lake sites (1,560 responses), and Newhalem sites (903 responses). Gorge Lake sites (436 responses), Skagit River sites (289 responses), and other area sites (161 responses) received fewer responses overall. The number of sites visited does not correlate to duration at sites nor is the list of sites comprehensive within each resource area. The principal sites visited, or locations respondents planned to visit by resource area are as follows:

- Ross Lake: vehicle-accessed sites in the vicinity of SR 20 at the lower end of the lake, including Ross Dam Trail and Trailhead (368 combined responses), East Bank Trail and Trailhead (308 combined responses), and Ross Overlook (195 responses).
- Diablo Lake: Diablo Overlook (552 responses) and the sites in/around the Colonial Creek Campground complex (529 combined responses), including Colonial Creek Campground, Colonial Creek Boat Launch, Thunder Knob Trail, and Thunder Creek Trail.
- Gorge Lake: Gorge Creek Overlook (290 responses).
- Newhalem: North Cascades National Park Visitor Center (287 responses), Ladder Creek Falls Trail and Gardens (118 responses), and Newhalem Creek Campground (115 responses).
- Skagit River: Marblemount Boat Launch (77 responses), Goodell Creek Campground (60 responses), and Goodell Creek Boat Launch and Marble Creek Campground (50 responses each).

5.2.5 Activity Participation

The top primary activity of survey respondents overall and at each of the resource areas was day hiking at 42 percent, ranging between 30 and 47 percent(Table 5.2-11). Rounding out the top three primary activities were developed car camping (12 percent) and driving for pleasure (9 percent). Between resource areas, day hiking was a slightly more common top primary activity for survey respondents at the Ross Lake, Diablo Lake, and Newhalem resource areas (ranging from 42 to 47 percent of respondents). Further, day hiking was clearly the top primary activity at all resource areas, except in the Skagit River resource area, where only 30 percent of respondents indicated day hiking was their primary activity. The top three primary activities at each resource area were:

- Ross Lake: day hiking (47 percent), backpacking (15 percent), and driving for pleasure (6 percent).
- Diablo Lake: day hiking (42 percent), developed car camping (11 percent), and non-motorized boating/viewing lakes (9 percent each).
- Gorge Lake: day hiking (39 percent), developed car camping (14 percent), and driving for pleasure (14 percent).
- Newhalem: day hiking (46 percent), driving for pleasure (24 percent), and viewing lakes (6 percent).
- Skagit River: day hiking (30 percent), developed car camping (27 percent), river boating (16 percent).

Table 5.2-11 also summarizes all the activities survey respondents participated in during their current trip to the study area. The activities with the highest participation rates were day hiking (77 percent), viewing lakes (60 percent), viewing wildlife (48 percent), driving for pleasure (47 percent), photography (44 percent), developed car camping (34 percent), and picnicking (31 percent).

Table 5.2-11. Primary activity and overall activity participation during visitors' current visit.

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Activity	n	%	n	%	n	%	n	%	n	%	n	%
PRIMARY ACTIVITY												
Day hiking	210	47%	143	42%	58	39%	67	46%	84	30%	562	42%
Backpacking	68	15%	6	2%	3	2%	1	1%	4	1%	82	6%
Bicycling	8	2%	2	1%	4	3%	3	2%	2	1%	19	1%
Developed car camping	18	4%	38	11%	20	14%	7	5%	75	27%	158	12%
Dispersed car camping	0	0%	0	0%	0	0%	0	0%	0	0%	N/A	N/A
Backcountry camping	18	4%	2	1%	1	1%	0	0%	1	0%	22	2%
Boat-in camping	13	3%	10	3%	0	0%	1	1%	0	0%	24	2%
Picnicking	4	1%	7	2%	5	3%	2	1%	7	3%	25	2%
Fishing	13	3%	9	3%	8	5%	1	1%	19	7%	50	4%
Motorized boating	5	1%	3	1%	0	0%	0	0%	0	0%	8	1%
Non-motorized boating	9	2%	30	9%	4	3%	3	2%	4	1%	50	4%
River boating	2	0%	1	0%	0	0%	0	0%	43	16%	46	3%
Viewing wildlife	2	0%	4	1%	3	2%	0	0%	6	2%	15	1%
Viewing lakes	19	4%	31	9%	7	5%	9	6%	4	1%	70	5%
Viewing mountains	0	0%	3	1%	4	3%	0	0%	0	0%	7	1%
Driving for pleasure	26	6%	25	7%	21	14%	35	24%	12	4%	119	9%
Climbing	4	1%	2	1%	1	1%	5	3%	2	1%	14	1%
Swimming	2	0%	6	2%	4	3%	0	0%	4	1%	16	1%
Photography	6	1%	8	2%	3	2%	4	3%	6	2%	27	2%
Horseback riding	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Education/interpretation	1	0%	0	0%	0	0%	2	1%	0	0%	3	0%
Other	16	4%	8	2%	2	1%	5	3%	3	1%	34	3%
Total	**444**	**100%**	**338**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1,351**	**100%**
ALL ACTIVITIES PARTICIPATED IN[1] [% of total respondents for each resource area]												
Day hiking	359	81%	265	78%	120	81%	109	75%	191	69%	1,044	77%
Backpacking	111	25%	23	7%	10	7%	7	5%	14	5%	165	12%
Bicycling	16	4%	15	4%	9	6%	8	6%	18	7%	66	5%
Developed car camping	80	18%	106	31%	66	45%	29	20%	173	63%	454	34%
Dispersed car camping	29	7%	19	6%	8	5%	5	3%	7	3%	68	5%
Backcountry camping	79	18%	14	4%	6	4%	1	1%	6	2%	106	8%
Boat-in camping	36	8%	20	6%	1	1%	0	0%	0	0%	57	4%

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Activity	n	%	n	%	n	%	n	%	n	%	n	%
Picnicking	122	27%	116	34%	58	39%	39	27%	88	32%	423	31%
Fishing	46	10%	37	11%	20	14%	4	3%	41	15%	148	11%
Motorized boating	36	8%	8	2%	4	3%	4	3%	4	1%	56	4%
Non-motorized boating	42	9%	78	23%	16	11%	10	7%	30	11%	176	13%
River boating	6	1%	9	3%	4	3%	2	1%	68	25%	89	7%
Viewing wildlife	218	49%	172	51%	67	45%	61	42%	134	49%	652	48%
Viewing lakes	276	62%	239	71%	98	66%	85	59%	119	43%	817	60%
Viewing mountains	71	16%	54	16%	28	19%	16	11%	27	10%	196	15%
Driving for pleasure	182	41%	174	51%	85	57%	88	61%	102	37%	631	47%
Climbing	17	4%	10	3%	4	3%	8	6%	10	4%	49	4%
Swimming	113	25%	77	23%	41	28%	17	12%	81	29%	329	24%
Photography	198	45%	167	49%	66	45%	63	43%	106	38%	600	44%
Horseback riding	0	0%	0	0%	0	0%	0	0%	1	0%	1	0%
Education/interpretation	16	4%	21	6%	22	14%	25	17%	19	7%	103	8%
Other	17	4%	13	4%	4	3%	2	1%	5	2%	41	3%
Total	**2,070**	**N/A**	**1,637**	**N/A**	**737**	**N/A**	**583**	**N/A**	**1,244**	**N/A**	**6,271**	**N/A**

1 Note most visitors selected more than one activity participated in during their trip.

5.2.6 Barriers to Activity Participation

Thirty percent of visitors encountered barriers and were unable to participate in activities that they wanted to access on their visit. The most common activities or services that visitors had difficulty accessing were hiking (29 percent), camping (9 percent), non-motorized boating (kayaking/canoeing) (8 percent), and backcountry trips (8 percent) (Table 5.2-12). Hiking and camping were the two most common activities or services visitors experienced difficulty accessing; these were also the most common primary activities visitors participated in. Between resource areas, there were several additional activities that visitors had difficulty accessing or participating beyond the four overall study area activities mentioned above. Respondents identified the following activities/services as difficult to access:

- Ross Lake: SR 20 pass/area access (10 percent).
- Diablo Lake: tours/interpretation[5] (10 percent).
- Gorge Lake: fishing (8 percent) and swimming (8 percent).
- Newhalem: store/food/supplies[6] (12 percent) and motorized boating (9 percent).
- Skagit River: fishing (10 percent).

5 City Light did not operate Skagit Tours in 2022 due to the highway repaving and construction projects, and ELC interpretive programming was also limited in 2022.

6 The Newhalem General Store had limited hours of operation in 2022.

Table 5.2-12. Activities/services visitors had difficulties accessing or participating in.

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Activity	n	%	n	%	n	%	n	%	n	%	n	%
Respondents Who Stated They Were Unable to Participate in an Activity	132	30%	104	31%	53	36%	35	24%	85	31%	409	30%
ACTIVITIES VISITORS WERE UNABLE TO PARTICIPATE IN												
Backpacking/backcountry trip	12	9%	8	8%	5	10%	2	6%	6	7%	33	8%
Bicycling	3	2%	2	2%	2	4%	0	0%	2	2%	9	2%
Boat rentals	2	2%	0	0%	0	0%	0	0%	2	2%	4	1%
Boat-in camping	1	1%	1	1%	1	2%	1	3%	1	1%	5	1%
Boating (motorized)	6	5%	4	4%	3	6%	3	9%	5	6%	21	5%
Boating (non-motorized)	11	9%	8	8%	3	6%	3	9%	11	13%	36	9%
Camping	15	12%	8	8%	10	20%	1	3%	1	1%	35	9%
Canyoneering	2	2%	0	0%	0	0%	0	0%	0	0%	2	0%
Climbing	3	2%	2	2%	1	2%	0	0%	1	1%	7	2%
Driving for pleasure	0	0%	0	0%	0	0%	0	0%	2	2%	2	0%
Equestrian activities	1	1%	0	0%	3	6%	0	0%	0	0%	4	1%
Ferry service	1	1%	3	3%	0	0%	0	0%	0	0%	4	1%
Fishing	7	5%	6	6%	4	8%	1	3%	9	10%	27	7%
Hiking (general)	36	28%	36	35%	9	18%	13	39%	27	31%	121	30%
Hiking on ADA trails	0	0%	0	0%	0	0%	1	3%	0	0%	1	0%
Hunting	0	0%	0	0%	0	0%	0	0%	1	1%	1	0%
Tours/interpretation	5	4%	10	10%	1	2%	0	0%	3	3%	19	5%
Photography	0	0%	1	1%	0	0%	0	0%	0	0%	1	0%
River boating	1	1%	1	1%	2	4%	0	0%	1	1%	5	1%
Ross Lake Resort lodging	0	0%	0	0%	1	2%	1	3%	0	0%	2	0%
Ross Powerhouse area access	0	0%	1	1%	0	0%	0	0%	0	0%	1	0%
Shoreline/beach use	0	0%	2	2%	0	0%	0	0%	0	0%	2	0%
SR 20 pass access	13	10%	3	3%	2	4%	2	6%	4	5%	24	6%
Store/food/supplies	1	1%	0	0%	0	0%	4	12%	2	2%	7	2%
Swimming	4	3%	4	4%	4	8%	0	0%	4	5%	16	4%
Other	5	4%	4	4%	0	0%	1	3%	5	6%	15	4%
Total	**129**	**100%**	**104**	**100%**	**51**	**100%**	**33**	**100%**	**87**	**100%**	**404**	**100%**

The top two reasons visitors were unable to participate in an activity accounted for 41 percent of all responses and included bad weather (22 percent) and not having enough time (19 percent) (Table 5.2-13). The next grouping of reasons, all with less than 10 percent of responses, included safety concerns (9 percent), closures (8 percent), lack of information (6 percent), and crowds (6 percent). These top two reasons were consistent across resource areas. Additional reasons with a 10 percent or greater response are listed by resource area as follows:

- Ross Lake: safety concerns (10 percent).
- Diablo Lake: closures (11 percent) and safety concerns (10 percent).
- Gorge Lake: inability to get campground reservations (14 percent).
- Newhalem: closures (12 percent).
- Skagit River: safety concerns (10 percent).

Table 5.2-13. Reason visitors were unable to participate in an activity.

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Activity	n	%	n	%	n	%	n	%	n	%	n	%
Rules did not allow	8	4%	4	3%	3	5%	0	0%	5	5%	20	4%
Closure	13	7%	15	11%	4	6%	5	12%	6	6%	43	8%
Not enough time	34	19%	28	21%	10	15%	9	21%	18	17%	99	19%
Safety concerns	18	10%	13	10%	5	8%	2	5%	11	10%	49	9%
Lack of information	13	7%	9	7%	1	2%	3	7%	7	6%	33	6%
Too crowded	12	7%	10	7%	5	8%	1	2%	2	2%	30	6%
Couldn't get reservation	9	5%	6	4%	9	14%	2	5%	3	3%	29	5%
Difficult access	13	7%	6	4%	1	2%	2	5%	2	2%	24	5%
No access	7	4%	3	2%	2	3%	1	2%	6	6%	19	4%
Poor facility conditions	0	0%	3	2%	1	2%	2	5%	1	1%	7	1%
Damaged from overuse	1	1%	0	0%	0	0%	0	0%	0	0%	1	0%
No facility/service	5	3%	3	2%	2	3%	3	7%	8	7%	21	4%
Bad weather	36	20%	26	19%	15	23%	10	23%	29	27%	116	22%
Wildfire/natural hazard	2	1%	2	1%	1	2%	1	2%	2	2%	8	2%
Other	7	4%	6	4%	7	11%	2	5%	8	7%	30	6%
Total	**178**	**100%**	**134**	**100%**	**66**	**100%**	**43**	**100%**	**108**	**100%**	**529**	**100%**

Visitors were also asked if they or someone in their group had a physical limitation that made it difficult to access or participate in activities or services. Eight percent (104 respondents) reported a physical limitation that made it difficult to access or participate in activities or services (Table 5.2-14). The majority of reasons visitors indicated (84 respondents) their physical limitation was due to mobility (i.e., difficult in accessing facilities, services, or programs even with walking aid

and/or wheelchairs). Comments related to the mobility limitations were primarily about the difficulty of the hikes/walks due to the distance and/or elevation of area hiking options. Specific activities are itemized in Table 5.2-14.

Table 5.2-14. Physical limitations and activities/services visitors had difficulties accessing or participating in.

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Activity	n	%	n	%	n	%	n	%	n	%	n	%
Respondents with a Physical Limitation in their Group	27	2%	28	3%	13	1%	13	1%	23	2%	104	8%
TYPE OF LIMITATION												
Hearing	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visual	1	4%	0	0%	0	0%	0	0%	0	0%	1	1%
Mobility	20	74%	22	79%	12	92%	10	77%	20	87%	84	81%
Other	6	22%	6	21%	1	8%	3	23%	3	13%	19	18%
Total	**27**	**100%**	**28**	**100%**	**13**	**100%**	**13**	**100%**	**23**	**100%**	**104**	**100%**

Visitors were asked if they stayed at a campground in the study area. Overall, 69 percent of respondents stayed at a campground in the study area (Table 5.2-15). Among those respondents, there was notable variation between resource areas with the highest percentage of respondents in the Skagit River (93 percent) and Gorge Lake (85 percent) resource areas staying at campgrounds in the study area, Newhalem respondents (62 percent) mostly staying outside the study area, and Diablo Lake respondents mostly split between staying at campgrounds within (54 percent) and outside (46 percent) the study area.

Of the respondents staying overnight within the study area, the majority (87 percent) indicated they were staying at their preferred campground with some indicating their preferred site was full (6 percent). When examining the results by resource area, at least 86 percent of each area's respondents indicated they were at their preferred campground, except for Gorge Lake respondents (72 percent of respondents) who had the highest percentage indicating their preferred site was full (18 percent). It is possible that these survey respondents were staying in the Gorge Lake area because campgrounds at other areas were full (Gorge Lake only has one small campground [Gorge Lake Campground]).

Table 5.2-15. Overall preferred campsite within the mapped area.

Activity	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	%	n	%	n	%	n	%	n	%	n	%
CAMPSITE LOCATION												
Campsite within the study area	175	69%	127	54%	72	85%	29	38%	183	93%	586	69%
Campsite outside the study area	79	31%	110	46%	13	15%	47	62%	13	7%	262	31%
Total	**254**	**100%**	**237**	**100%**	**85**	**100%**	**76**	**100%**	**196**	**100%**	**848**	**100%**
SITE PREFERENCE												
Staying at preferred site	150	86%	119	94%	52	72%	26	90%	162	89%	509	87%
Preferred site was full	14	8%	4	3%	13	18%	2	7%	5	3%	38	6%
Not applicable/unsure	11	6%	4	3%	7	10%	1	3%	16	9%	39	7%
Total	**175**	**100%**	**127**	**100%**	**72**	**100%**	**29**	**100%**	**183**	**100%**	**586**	**100%**

5.2.7 Amenity Satisfaction

Visitors reported their level of satisfaction with the amenities they used during their current visit at the recreation facility and reservoir they were intercepted at. The satisfaction results are based on a 5-point scale where 1 equals "very dissatisfied," 3 equals "neither satisfied nor dissatisfied" and 5 equals "very satisfied"; the higher the number the higher the satisfaction (Table 5.2-16). At resource areas or reservoirs where facilities do not exist, there are no corresponding results (e.g., because there is no playground at Ross Lake, there is no satisfaction rating for a playground within the Ross Lake resource area). Visitors were asked about their satisfaction with types of amenities (e.g., drive-in campsite, boat-in campsite, restroom, parking area) at the facility they were intercepted at as well as the broader resource area (i.e., Ross Lake, Diablo Lake, Gorge Lake, Newhalem Townsite, and the Skagit River). In a few instances, a specific amenity was identified on the survey instrument which was not within their intercepted facility or resource area (e.g., North Cascades National Park Visitor Center and the ELC), however, the results are clearly linked to the specific amenity/facility and therefore were included.

Only one amenity (potable water faucet) was rated below 4.0 (i.e., below "satisfied"). All the other amenities were rated 4.0 ("satisfied") or higher ("very satisfied" [5]) (Table 5.2-16). Respondents rated all four access amenities (i.e., trails, roads within the facility, signage to the facility, signage within the facility) 4.4 or higher, on average. Respondents also rated all site conditions highly, on average, at 4.6 or higher. A summary of notable lower amenity satisfaction ratings for each resource area is as follows:

- Ross Lake: potable water faucet (3.5 rating) and ELC (3.9 rating).
- Diablo Lake: none of the amenities were rated lower than 4.0; lowest rated amenity was the boat ramp (4.0 rating).

- Gorge Lake: potable water faucet (2.9 rating) and privacy screening between campsites (3.9 rating).
- Newhalem: none of the amenities were rated lower than 4.0, on average; lowest rated amenity was the ELC (4.0 rating).
- Skagit River: potable water faucets (3.8 rating) and restrooms (3.9 rating).

The few dissatisfaction comments regarding the ELC from respondents were related to the difficulty locating the facility and that the facility was closed/not open to the public (Newhalem respondents); or due to the limited educational programming for adults rather than children-focused programming (Ross Lake respondents).

Dissatisfaction comments regarding the potable water faucets at Diablo Lake were operational issues (e.g., did not turn off, not functional/operating), did not exist at the site, the need for more faucets, and poor location placement. Visitors surveyed at Ross Lake, Gorge Lake, and Skagit River noted the lack of potable water faucets, especially at the trailheads at Ross Lake.

Dissatisfaction comments regarding the restrooms from visitors surveyed in the Skagit River resource area were related to a lack of maintenance/cleaning.

Table 5.2-16. Amenity satisfaction of overall facility/reservoirs.[1,2]

Amenity / Condition	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	Avg.	n	Avg.	n	Avg.	n	Avg.	n	Avg.	n	Avg.
FACILITY AMENITIES												
Drive-in campsite	89	4.4	117	4.5	78	4.4	N/A	N/A	184	4.6	468	4.5
Boat-in/hike-in campsite	48	4.6	22	4.5	N/A	N/A	N/A	N/A	7	5.0	77	4.6
Privacy screening between campsites	114	4.3	122	4.1	72	3.6	28	4.2	173	4.4	509	4.2
Picnic sites	119	4.3	140	4.5	69	4.6	50	4.6	122	4.3	500	4.4
Restrooms	358	4.1	276	4.2	128	4.0	123	4.4	231	3.9	1,116	4.1
Potable water faucet	112	3.5	114	4.2	44	2.9	48	4.6	132	3.8	450	3.8
Trash receptacles	218	4.2	201	4.5	95	4.5	87	4.6	199	4.3	800	4.4
Vehicle parking	408	4.3	319	4.4	140	4.5	132	4.4	230	4.5	1,229	4.4
Boat ramp parking	N/A	N/A	58	4.3	25	4.5	N/A	N/A	67	4.3	150	4.3
Boat ramp	N/A	N/A	60	4.0	28	4.4	N/A	N/A	67	4.1	155	4.1
Boat dock	20	4.5	49	4.5	27	4.7	N/A	N/A	7	4.7	103	4.6
Ferry dock	49	4.6	12	4.5	N/A	N/A	N/A	N/A	N/A	N/A	61	4.6
Tour dock	13	4.4	23	4.6	N/A	N/A	N/A	N/A	N/A	N/A	36	4.5
North Cascades National Park Visitor Center	141	4.5	101	4.6	55	4.3	73	4.5	89	4.6	459	4.5

Amenity / Condition	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	Avg.	n	Avg.	n	Avg.	n	Avg.	n	Avg.	n	Avg.
Environmental Learning Center	17	3.9	17	4.4	11	4.6	8	4.0	9	4.7	62	4.3
Playground equipment	N/A	N/A	N/A	N/A	9	4.1	11	4.5	9	4.8	29	4.5
ACCESS AMENITIES												
Trails	281	4.5	181	4.6	97	4.6	76	4.6	129	4.7	764	4.6
Roads within the facility	408	4.3	325	4.4	140	4.4	136	4.4	267	4.4	1,276	4.4
Signage to the facility	413	4.3	325	4.4	138	4.4	133	4.4	262	4.3	1,271	4.4
Signage within the facility	409	4.4	315	4.5	136	4.4	133	4.4	262	4.4	1,255	4.4
CONDITIONS												
Water quality	239	4.8	248	4.9	99	4.6	64	4.9	175	4.8	825	4.8
Reservoir water level	207	4.5	251	4.6	94	4.4	40	4.8	87	4.7	679	4.6
River flow	187	4.6	169	4.6	86	4.5	72	4.8	198	4.6	712	4.6

1 1=very dissatisfied; 5=very satisfied.
2 N/A = amenity does not exist at the resource area.

5.2.8 User Conflicts

Eight percent of survey respondents (107 respondents) indicated the actions or behavior of other groups or individuals interfered with their enjoyment on their current trip. The majority of interference responses were related to campers (32 percent) and vehicles (25 percent), and were due to proximity (28 percent), loudness (28 percent), and a variety of other reasons (44 percent) (Table 5.2-17). The primary interference responses for the different resource areas include:

- Ross Lake: the majority of responses were related to vehicles (29 percent), campers (18 percent), and other reasons (29 percent).
- Diablo Lake: the majority of responses were related to campers (41 percent).
- Gorge Lake: the majority of responses were related to vehicles (38 percent).
- Newhalem: the majority of responses were related to vehicles (30 percent), campers (20 percent), and dog walkers (20 percent).
- Skagit River: the majority of responses were related to campers (58 percent).

Table 5.2-17. Interference with visitor enjoyment by another individual or group.

Enjoyment Interference	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	%	n	%	n	%	n	%	n	%	n	%
USER GROUP/PERSONS												
Bicyclists	1	4%	0	0%	0	0%	0	0%	0	0%	1	1%
Campers	5	18%	12	41%	4	19%	2	20%	11	58%	34	32%
Dog behavior	2	7%	0	0%	1	5%	2	20%	0	0%	5	5%
Hikers	3	11%	2	7%	4	19%	1	10%	1	5%	11	10%
Motorcycles	0	0%	0	0%	0	0%	1	10%	0	0%	1	1%
Large crowds	1	4%	1	3%	0	0%	0	0%	0	0%	2	2%
Non-motorized boaters	0	0%	2	7%	0	0%	0	0%	0	0%	2	2%
Shoreline users	0	0%	1	3%	0	0%	0	0%	0	0%	1	1%
Vehicles	8	29%	5	17%	8	38%	3	30%	3	16%	27	25%
Target shooters	0	0%	0	0%	0	0%	0	0%	1	5%	1	1%
Vehicles/Campers	0	0%	1	3%	0	0%	0	0%	0	0%	1	1%
Other	8	29%	5	17%	4	19%	1	10%	3	16%	21	20%
Total	**28**	**100%**	**29**	**100%**	**21**	**100%**	**10**	**100%**	**19**	**100%**	**107**	**100%**
REASONS												
Proximity	8	27%	9	27%	9	32%	5	50%	4	18%	35	28%
Loudness	4	13%	11	33%	10	36%	2	20%	8	36%	35	28%
Other	18	60%	13	39%	9	32%	3	30%	10	45%	53	44%
Total	**30**	**100%**	**33**	**100%**	**28**	**100%**	**10**	**100%**	**22**	**100%**	**123**	**100%**

5.2.9 Crowding

Visitors were asked how crowded they felt that day while recreating at the recreation facility/reservoir. They were asked to select their level of crowding on a 9-point scale as follows:

1	2	3	4	5	6	7	8	9
Not at all crowded		Slightly Crowded		Moderately Crowded			Extremely Crowded	

City Light has summarized the crowding data for each resource area by off-peak and peak seasons. Consistent with current crowding research (Vaske and Shelby 2008), City Light has also analyzed the crowding results using the two most common reporting methods: (1) percent of respondents reporting any crowding (i.e., 3-9 on the scale) and (2) the scale average.

Using the percent reporting any crowding (i.e., 3-9 on the scale), City Light categorized the level of crowding according to the five distinct categories of carrying capacity judgments based on the 9-point crowding scale (Shelby et al. 1989): suppressed crowding, low normal, high normal, over

capacity, and greatly over capacity (Table 5.2-18). These five categories were established based on the percentage of visitors reporting any level of crowding (scale points 3 through 9) and were categorized below for the comparative analysis of crowding by resource area and season. Table 5.2-18 details the five categories of carrying capacity judgments (Shelby et al. 1989).

Table 5.2-18. Carrying capacity judgments and descriptions based on levels of perceived crowding (Shelby et al. 1989).

Percent Feeling Crowded	Capacity Judgment	Capacity Judgment Description
0 to 35	Suppressed	Crowding is likely limited by management, situational factors, or natural factors may offer unique low-density experiences.
36 to 50	Low normal	Access, displacement, or crowding problems are not likely to exist at this time. Similar to the above category, may offer unique low-density experiences.
51 to 65	High normal	These locations or activities probably have not exceeded carrying capacity but may be tending in that direction. Should be studied if increased use is expected, allowing management to anticipate problems.
66 to 80	Over-capacity	These locations or activities are generally known to have overuse problems, and they are likely to be operating at more than their capacity. Studies and management necessary to preserve experiences.
81 to 100	Greatly over-capacity	It is generally necessary to manage for high-density recreation. A crowding problem has typically been identified.

Further, this study report summarizes survey respondent crowding results for the general types of recreation sites or areas (i.e., parking areas, trails, campgrounds, boat-in camps, shoreline fishing, and boat fishing) per the FERC-approved survey instrument. These summaries provide a broader, more general understanding of crowding at these types of facilities within each resource area. In addition, City Light summarized the crowding results specific to the survey site (study site) that visitors were intercepted at, which provides site-specific assessment of crowding.

5.2.9.1 General Location Crowding

Table 5.2-19 summarizes the perceived crowding responses by resource area for parking areas, developed campgrounds, boat-in camps, trails, boating or fishing from a boat, and fishing from the shoreline.

Parking Areas

For the off-peak season, perceived crowding at the parking areas was mostly in the suppressed crowding category, except at Ross Lake in the high normal category (52 percent).

For the peak season, perceived crowding varied, as follows.

- Low normal: Gorge Lake resource area (42 percent).
- High normal: Newhalem and Skagit River resource areas (51 percent each).
- Over-capacity: Ross Lake (76 percent) and Diablo Lake (69 percent) resource areas.

Table 5.2-19. General location crowding responses by resource area and season.

Location	Resource Area	Off-Peak Season			Peak Season		
		n	% Reporting Crowding	Average	n	% Reporting Crowding	Average
Parking Areas	Ross Lake	98	52%	3.1	186	76%	4.9
	Diablo Lake	53	35%	2.7	127	69%	4.4
	Gorge Lake	21	27%	2.2	28	42%	3.3
	Newhalem	20	32%	2.3	40	51%	3.3
	Skagit River	31	27%	2.4	68	51%	3.6
Developed Campgrounds	Ross Lake	N/A	N/A	N/A	N/A	N/A	N/A
	Diablo Lake	31	48%	3.0	46	73%	4.4
	Gorge Lake	14	35%	2.5	22	59%	4.4
	Newhalem	N/A	N/A	N/A	N/A	N/A	N/A
	Skagit River	26	32%	2.3	47	45%	3.0
Boat-in Camps	Ross Lake	2	25%	2.6	5	45%	2.8
	Diablo Lake	2	33%	2.8	3	38%	3.1
	Gorge Lake	N/A	N/A	N/A	N/A	N/A	N/A
	Newhalem	N/A	N/A	N/A	N/A	N/A	N/A
	Skagit River	N/A	N/A	N/A	N/A	N/A	N/A
Trail	Ross Lake	21	19%	1.8	70	43%	2.8
	Diablo Lake	29	33%	2.2	40	42%	2.9
	Gorge Lake	8	15%	1.6	20	40%	2.7
	Newhalem	7	19%	1.9	12	34%	2.3
	Skagit River	18	32%	2.4	27	44%	2.9
Boating or Fishing from a Boat	Ross Lake	1	17%	1.0	2	11%	1.4
	Diablo Lake	1	7%	1.3	9	36%	2.9
	Gorge Lake	0	0%	0.0	1	25%	1.5
	Newhalem	N/A	N/A	N/A	N/A	N/A	N/A
	Skagit River	2	13%	1.7	7	32%	2.0
Fishing from the Shoreline	Ross Lake	2	33%	1.8	2	13%	2.1
	Diablo Lake	3	20%	1.9	3	33%	3.0
	Gorge Lake	0	0%	1.2	1	20%	1.6
	Newhalem	0	0%	1.0	0	0%	0.0
	Skagit River	1	7%	1.6	1	11%	1.7

Developed Campgrounds

During the off-peak season, perceived crowding at the developed campgrounds varied as follows:

- Suppressed crowding: Gorge Lake (35 percent) and Skagit River (32 percent) resource areas.
- Low normal: Diablo Lake resource area (48 percent).
- High normal: Newhalem resource area (54 percent).

During the peak season, perceived crowding at the developed campgrounds was higher overall than the off-peak season, as follows.

- Low normal: Skagit River resource area (45 percent).
- High normal: Newhalem (63 percent) and Gorge Lake (59 percent) resource areas.
- Over-capacity: Diablo Lake (73 percent) resource areas.

It should be noted that developed campgrounds do exist in the Ross Lake resource area, but only at the northern end (i.e., Hozomeen), which was inaccessible by vehicle in 2022 due to closure of the Silver-Skagit Road from Canada. Therefore, the developed campgrounds at Hozomeen received low use in 2022 and City Light did not conduct visitor surveys there.

Boat-in Camps

Boat-in camps only exist in the Ross Lake and Diablo Lake resource areas. During the off-peak season, perceived crowding at the boat-in camps at Ross and Diablo lakes was in the suppressed crowding category.

During the peak season, perceived crowding at the boat-in camps was higher than the off-peak season with both in the low normal crowding category.

Trails

During the off-peak season, perceived crowding on the trails in all resource areas was in the suppressed crowding category. During the peak season, perceived crowding was in the low normal category at all resource areas (40-44 percent), except in Newhalem (suppressed crowding category; 34 percent).

Boating or Fishing from a Boat

During the off-peak season, perceived crowding while boating or fishing from a boat was in the suppressed crowding category at all resource areas. During the peak season, perceived crowding was in the suppressed crowding category at all resource areas, except at Diablo Lake (low normal; 36 percent).

Fishing from the Shoreline

During off-peak and peak seasons, perceived crowding while shoreline fishing was in the suppressed crowding category at all resource areas.

5.2.9.2 Site-Specific Crowding

Respondents were also asked how crowded they felt while recreating at the site-specific place they received the survey. In general, the site-specific perceived crowding during the off-peak season was predominantly in the suppressed crowding category, except for four sites in the low normal category including Ross Dam Trailhead (46 percent), Colonial Creek Campground (38 percent), ELC Parking Area (45 percent), and Gorge Lake Boat Launch (47 percent). See Table 5.2-20.

During the peak season, perceived crowding levels were more varied across resource areas and sites. At the Ross Lake sites, perceived crowding was in the suppressed crowding category at Canyon Creek Trailhead (26 percent), high normal at the East Bank Trailhead (65 percent), and greatly over-capacity at Ross Dam Trailhead (85 percent).

At the Diablo Lake sites, perceived crowding was split between low normal at Diablo Dam Parking Area (43 percent), West Ferry Landing (45 percent), and Colonial Creek Campground (50 percent) and high normal at Skagit Tour Dock (57 percent), Colonial Creek Boat Launch (60 percent), Diablo Overlook (61 percent), and ELC Parking Area (61 percent).

At the Gorge Lake sites, perceived crowding was on the low end of the scale with suppressed crowding at Gorge Lake Boat Launch (33 percent) and Gorge Creek Overlook (27 percent), and low normal at Gorge Lake Campground (45 percent).

At the Newhalem parking areas, the larger main Newhalem Parking Area was in the suppressed crowding category (22 percent) and the smaller Gorge Powerhouse Parking Area (co-located with Ladder Creek Falls Trailhead) was in the low normal category (37 percent).

At the Skagit River sites, most were in the suppressed crowding category (27 percent or less), except Newhalem Creek Campground (low normal; 43 percent) and Goodell Creek Boat Launch (over-capacity; 67 percent).

Table 5.2-20. Site-specific crowding responses by resource area and season.

Resource Area	Study Site (Location Surveyed)	Site-Specific Crowding Data					
		Off-Peak Season			Peak Season		
		n	% Reporting Crowding	Scale Average	n	% Reporting Crowding	Scale Average
Ross Lake	Ross Dam Trailhead	38	46%	2.9	69	85%	5.1
	East Bank Trailhead	22	30%	2.4	53	65%	3.8
	Canyon Creek Trailhead	4	17%	1.7	12	26%	2.3
Diablo Lake	Diablo Overlook	9	35%	2.3	19	61%	3.5
	Colonial Creek Campground	11	38%	2.4	14	50%	3.1
	Colonial Creek Boat Launch	7	16%	1.9	24	60%	3.8
	Diablo Dam Parking Area	6	32%	2.7	13	43%	2.8
	Skagit Tour Dock	1	25%	3.3	12	57%	3.5
	West Ferry Landing	1	7%	1.9	18	45%	2.8
	ELC Parking Area	14	45%	3.2	22	61%	3.6

Resource Area	Study Site (Location Surveyed)	Site-Specific Crowding Data					
		Off-Peak Season			Peak Season		
		n	% Reporting Crowding	Scale Average	n	% Reporting Crowding	Scale Average
Gorge Lake	Gorge Lake Campground	5	19%	2.1	10	45%	3.2
	Gorge Lake Boat Launch	7	47%	2.6	6	33%	2.8
	Gorge Creek Overlook	6	17%	1.7	8	27%	2.4
Newhalem	Gorge Powerhouse Parking Area	6	23%	2.0	11	37%	2.7
	Newhalem Parking Areas	3	18%	1.8	5	22%	2.6
Skagit River	Newhalem Creek Campground	2	25%	2.6	6	43%	3.1
	Goodell Creek Campground	0	0%	1.8	4	27%	2.6
	Goodell Creek Boat Launch	1	13%	1.3	2	67%	2.8
	Marblemount Boat Launch	0	0%	1.4	2	20%	2.1
	Marble Creek Campground	3	20%	2.0	3	21%	2.5

5.2.10 Hypothetical Condition Responses

Visitors were asked what their action would have been if they had been unable to view or recreate on Ross, Diablo, and Gorge lakes or along the shoreline (including campsites). The majority of visitors stated they would have continued their current trip to the area if they knew they were unable to recreate on the lakes (33 percent) or view the lakes/shoreline (37 percent) (Table 5.2-21). Only 2 percent of visitors for both questions stated they would cancel their plans. The results at the different resource areas were very similar to the overall results.

Table 5.2-21. Hypothetically how visitors would respond if unable to recreate on or view the lakes or shoreline.

Activity	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
	n	%	n	%	n	%	n	%	n	%	n	%
UNABLE TO RECREATE ON LAKES OR SHORELINE												
Continued	116	30%	139	35%	49	33%	59	41%	89	32%	452	33%
Rescheduled	55	14%	57	15%	20	14%	8	6%	22	8%	162	12%
Changed Locations	95	24%	91	23%	30	20%	18	12%	48	17%	282	21%
Canceled	6	2%	8	2%	4	3%	2	1%	2	1%	22	2%
None of these	117	30%	98	25%	45	30%	58	40%	115	42%	433	32%
Total	**389**	**100%**	**393**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1351**	**100%**
UNABLE TO VIEW LAKES OR SHORELINE												
Continued	139	36%	144	37%	61	41%	61	42%	96	35%	501	37%
Rescheduled	46	12%	52	13%	19	13%	12	8%	21	8%	150	11%
Changed Locations	74	19%	81	21%	31	21%	15	10%	36	13%	237	18%

	Resource Area										Total	
	Ross Lake		Diablo Lake		Gorge Lake		Newhalem		Skagit River			
Activity	n	%	n	%	n	%	n	%	n	%	n	%
Canceled	8	2%	16	4%	3	2%	3	2%	2	1%	32	2%
None of these	122	31%	100	25%	34	23%	54	37%	121	44%	431	32%
Total	**389**	**100%**	**393**	**100%**	**148**	**100%**	**145**	**100%**	**276**	**100%**	**1351**	**100%**

5.3 Observed Recreation Use

City Light conducted observation surveys directly at use areas of select study sites where visitors were observed, primarily vehicle parking areas, picnic areas, and shoreline areas. City Light observed the overall use patterns at each site during each survey day. At the study sites listed in Table 4.2-1, City Light conducted a 4-hour block sampling protocol with a spot count every hour over the 4-hour period during each visit to a study site. During the hourly observation surveys, City Light recorded observed vehicles by type (single vehicle, vehicle with trailer, trailer only, RV/camper); picnic sites occupied with picnickers; shoreline users; docked/beached boats; reservoir boats; and the types of observed shoreline and reservoir recreation activities. City Light recorded observations to include any instances of vehicles parked outside of designated parking areas. City Light calculated the occupancy levels (i.e., percent of capacity) where picnic sites exist and at parking areas with marked spaces. Many of the parking areas in the study area do not have marked spaces; at those areas, visitors park in varying patterns and locations which did not allow for an occupancy calculation.

In 2022, City Light completed field data collection for the observation surveys, which included 18 observation days during the peak season (July through Labor Day 2022) and 15 observation days during the off-peak season (May-June, post-Labor Day through October 2022). The study plan required City Light to conduct a total of 17 observation days during the off-peak season; however, City Light did not conduct the final two observation days in October (one weekday and one weekend day) due to poor air quality from the wildfires in the vicinity of the Project/study area, including a two week period when the NPS closed portions of the study area in and around Diablo Lake due to nearby fire activity. Inclement weather in the final week of October ended the smoke/wildfire issues, but heavy precipitation and cold temperatures precluded data collection the remainder of October.

5.3.1 Ross Lake

5.3.1.1 Ross Dam Trailhead (Non-Project Facility [NPS])

Vehicle Observations

For the majority of the survey season, parking at Ross Dam Trailhead occurred in the main, designated parking area with unmarked spaces off SR 20.[7] Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. Overflow parking occurs

[7] In October 2022, NPS completed a resurfacing and striping project at the Ross Dam Trailhead main parking area. The parking area now contains approximately 35 marked parking spaces.

outside the main parking area in undesignated areas primarily along the shoulder on both sides of SR 20. Table 5.3-1 summarizes the vehicle observations at this site.

Table 5.3-1. Observed vehicles at Ross Dam Trailhead by season, day type and location.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas (SR 20)	Total Vehicles	Main Parking Area	Overflow Parking Areas (SR 20)
Ross Dam Trailhead (unmarked spaces)	Off-Peak	**Overall**	**60**	**23.2**	**22.3**	**0.9**	**74**	**61**	**13**
		Weekday	28	17.4	16.9	0.5	41	41	4
		Weekend	28	29.5	28.0	1.5	74	61	13
		Holiday	4	19.8	19.8	0.0	29	29	0
	Peak	**Overall**	**72**	**65.8**	**59.3**	**6.5**	**114**	**86**	**30**
		Weekday	32	54.0	51.9	2.0	71	65	8
		Weekend	32	77.2	66.0	11.2	114	86	30
		Holiday	8	67.9	62.1	5.8	94	76	27

During the off-peak season, City Light observed 23 vehicles on average (maximum of 74 vehicles) within the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 13 vehicles). The highest number of vehicles was observed on weekend days with an average of 30 vehicles total primarily within the main parking area.

During the peak season, City Light observed 66 vehicles on average (maximum of 114 vehicles) within the main parking area. In the overflow areas, City Light observed 7 vehicles on average (maximum of 30 vehicles). The highest number of vehicles was observed on weekend days with 77 vehicles on average with 66 vehicles in the main parking area and 11 vehicles in overflow areas.

The majority of observed vehicles were single vehicles (97 percent) with the occasional vehicle with a trailer (2 percent) and RV/camper (1 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

Per the study methods, City Light did not conduct shoreline and reservoir observations at this site. The reservoir shoreline and water surface are not visible from this study site.

5.3.2 Diablo Lake

5.3.2.1 Colonial Creek Boat Launch (Non-Project Facility [NPS])

Vehicle Observations

Parking at Colonial Creek Boat Launch occurs in a large main, designated (marked spaces) parking area for 35 single spaces and 32 vehicles with trailer spaces. An undesignated (unmarked spaces) parking area in the interior of the main parking area was often utilized for parking outside the marked spaces, which was recorded as part of the main parking area vehicle counts. In 2022, the NPS completed a boat launch parking area resurfacing project, which included a new parking space layout in the main designated parking area with a parking capacity of 117 marked spaces (as compared to the old layout with 67 marked spaces). City Light used the new parking capacity (117 spaces) for calculating the occupancy levels in this report.

Overflow parking occurs outside the main parking area's marked spaces primarily along the circulation road and entrance road immediately off SR 20. Overflow onto SR 20 was recorded by City Light as part of the Thunder Knob Trailhead parking observations. This site has fewer total observation survey days (i.e., counts) due to several weeks of construction projects during the peak season resulting in two fewer weekday observational survey days. Table 5.3-2 summarizes the vehicle observations at this site.

Table 5.3-2. Observed vehicles at Colonial Creek Boat Launch by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas	Total Vehicles	Main Parking Area	Overflow Parking Areas
Colonial Creek Boat Launch (117 spaces)	Off-Peak	**Overall**	**60**	**19.6**	**19.6 (17%)**	**0.1**	**70**	**70 (60%)**	**2**
		Weekday	28	15.4	15.3 (13%)	0.1	44	44 (38%)	2
		Weekend	28	23.8	23.8 (20%)	0.0	70	70 (60%)	1
		Holiday	4	20.5	20.5 (18%)	0.0	36	36 (31%)	0
	Peak	**Overall**	**64**	**65.9**	**65.0 (56%)**	**0.8**	**119**	**119 (102%)**	**10**
		Weekday	24	48.0	47.6 (41%)	0.4	75	75 (64%)	7
		Weekend	32	73.6	73.4 (63%)	0.2	119	119 (102%)	3
		Holiday	8	88.5	84.0 (72%)	4.5	116	106 (91%)	10

During the off-peak season, City Light observed 20 vehicles on average (maximum of 70 vehicles) within the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 2 vehicles). The highest number of vehicles was observed on weekend days with an average of 24 vehicles all within the main parking area. Main parking area off-peak season occupancy levels (117 marked spaces) averaged 17 percent (20 vehicles) overall and 20 percent (24 vehicles) on weekend days (highest occupancy day type) with a maximum occupancy of 60 percent (70 vehicles) on weekend days.

During the peak season, City Light observed 66 vehicles on average (maximum of 119 vehicles) within the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 10 vehicles). The highest number of vehicles was observed on weekend days with an average of 74 vehicles mostly within the main parking area. Main parking area peak season occupancy levels (117 marked spaces) averaged 56 percent (65 vehicles) overall and 72 percent (84 vehicles) on holiday days (highest occupancy day type) with a maximum occupancy of 102 percent (119 vehicles) on weekend days.

The majority of observed vehicles were single vehicles (91 percent) with some vehicles with a trailer (5 percent), trailers only (2 percent), and RV/campers (2 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir Water Surface Observations

City Light recorded observed shoreline and reservoir use along the entire Colonial Creek complex shoreline, including at the Colonial Creek Boat Launch and the north and south loops of Colonial Creek Campground. Table 5.3-3 summarizes the shoreline users and reservoir watercraft observed at each site and combined for all areas.

Table 5.3-3. Observed shoreline users and reservoir watercraft at Colonial Creek complex sites by season and day type.

Study Site	Season	Day Type	n	Shoreline Users		Reservoir Watercraft	
				Average	Maximum	Average	Maximum
Colonial Creek Boat Launch	Off-Peak	**Overall**	**60**	**4.5**	**22**	**1.4**	**10**
		Weekday	28	4.2	21	1.3	7
		Weekend	28	4.8	22	1.5	10
		Holiday	4	4.8	9	0.8	3
	Peak	**Overall**	**64**	**36.7**	**128**	**7.2**	**24**
		Weekday	24	20.7	53	5.0	13
		Weekend	32	47.6	128	8.5	24
		Holiday	8	40.8	66	8.8	19

Study Site	Season	Day Type	n	Shoreline Users		Reservoir Watercraft	
				Average	Maximum	Average	Maximum
Colonial Creek Campground, North Loop	Off-Peak	**Overall**	**60**	**10.9**	**64**	**0.7**	**10**
		Weekday	28	7.0	32	1.0	10
		Weekend	28	15.4	64	0.4	4
		Holiday	4	5.8	10	0.0	0
	Peak	**Overall**	**72**	**46.3**	**248**	**4.4**	**33**
		Weekday	32	23.7	76	2.4	14
		Weekend	32	65.1	248	6.0	33
		Holiday	8	61.3	103	5.6	12
Colonial Creek Campground, South Loop	Off-Peak	**Overall**	**60**	**1.6**	**17**	**0.1**	**2**
		Weekday	28	0.9	8	0.1	1
		Weekend	28	2.4	17	0.1	2
		Holiday	4	1.0	4	0.0	0
	Peak	**Overall**	**64**	**10.1**	**34**	**1.7**	**7**
		Weekday	24	6.3	21	1.3	4
		Weekend	32	14.0	34	2.1	7
		Holiday	8	6.3	9	1.3	3
Colonial Creek Complex (All Areas)	Off-Peak	**Overall**	**60**	**16.9**	**77**	**2.1**	**13**
		Weekday	28	13.2	48	2.3	13
		Weekend	28	21.8	77	2.1	12
		Holiday	4	11.5	19	0.8	3
	Peak	**Overall**	**72**	**87.8**	**393**	**12.3**	**61**
		Weekday	32	43.9	122	7.1	17
		Weekend	32	126.7	393	16.6	61
		Holiday	8	108.3	176	15.6	26

During the off-peak season, City Light observed an average of 17 shoreline users (maximum of 77 users) and 2 reservoir watercraft (maximum of 13 watercraft). Most (65 percent) of the observed shoreline use occurred along the north loop of Colonial Creek Campground near the SR 20 bridge. The most frequently observed activities were sightseeing (26 percent of the counts), picnicking (22 percent), and swimming (17 percent). The most frequently observed reservoir activity was non-motorized boating (25 percent of the counts).

During the peak season, City Light observed an average of 88 shoreline users (maximum of 393 users) and 12 reservoir watercraft (maximum of 61 watercraft). Roughly half (53 percent) of the observed shoreline use again occurred along the north loop of Colonial Creek Campground near the SR 20 bridge. The most frequently observed activities were sightseeing (62 percent of the counts), picnicking (57 percent), and swimming (57 percent). The most frequently observed reservoir activities were non-motorized boating (83 percent of the counts) followed by motorized boating (12 percent) and boat fishing (12 percent).

5.3.2.2 Thunder Knob Trailhead (Non-Project Facility [NPS])

Vehicle Observations

Parking at Thunder Knob Trailhead occurs in a main, designated parking area (unmarked spaces) immediately off SR 20. Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. Overflow parking occurs frequently outside the main parking area along the shoulder on both sides of SR 20. Table 5.3-4 summarizes the vehicle observations at this site.

Table 5.3-4. Observed vehicles at Thunder Knob Trailhead by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas (SR 20)	Total Vehicles	Main Parking Area	Overflow Parking Areas (SR 20)
Thunder Knob Trailhead (unmarked spaces)	Off-Peak	**Overall**	**60**	**18.5**	**12.2**	**6.3**	**53**	**28**	**33**
		Weekday	28	14.0	9.9	4.1	48	28	29
		Weekend	28	21.5	14.0	7.5	53	26	33
		Holiday	4	28.5	15.0	13.5	48	20	28
	Peak	**Overall**	**72**	**52.7**	**18.4**	**34.3**	**151**	**42**	**128**
		Weekday	32	31.5	16.8	14.6	57	42	51
		Weekend	32	69.4	19.6	49.8	151	33	128
		Holiday	8	70.4	19.6	50.8	107	20	87

During the off-peak season, City Light observed 19 vehicles on average (maximum of 53 vehicles) with most vehicles within the main parking area (12 vehicles) compared to the overflow areas (6 vehicles). In the overflow areas, City Light observed 6 vehicles on average (maximum of 33 vehicles). The highest number of vehicles was observed on holiday days (29 vehicles on average) although the maximum occurred on a weekend day (53 vehicles).

During the peak season, City Light observed 53 vehicles on average (maximum of 151 vehicles) in overflow areas (along SR 20). In the overflow areas along SR 20, City Light observed 34 vehicles on average (maximum of 128 vehicles). The highest number of vehicles was observed on weekend and holiday days with an average of 70 vehicles and a maximum of 151 vehicles (on a weekend day).

The majority of observed vehicles were single vehicles (95 percent) with occasional RV/campers (3 percent) and vehicles with a trailer (1 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods. City Light conducted shoreline and reservoir observations as part of the Colonial Creek Boat Launch and Campground observations.

5.3.2.3 Thunder Creek Trailhead (Non-Project Facility [NPS])

Vehicle Observations

Parking at Thunder Creek Trailhead occurs in a paved, designated parking area with marked spaces for 18 single vehicles. Overflow parking occurs outside the main parking area along the campground circulation road that passes by the trailhead. This site has fewer total counts due to seasonal NPS closures in May and October, and several weeks of construction projects during the peak season. Table 5.3-5 summarizes the vehicle observations at this site.

Table 5.3-5. Observed vehicles at Thunder Creek Trailhead by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas	Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas
Thunder Creek Trailhead (18 spaces)	Off-Peak	**Overall**	**44**	**8.1**	**8.0 (44%)**	**0.2**	**22**	**20 (111%)**	**2**
		Weekday	20	6.0	5.9 (33%)	0.1	12	12 (67%)	2
		Weekend	20	10.8	10.5 (58%)	0.3	22	20 (111%)	2
		Holiday	4	5.8	5.8 (32%)	0.0	10	10 (56%)	0
	Peak	**Overall**	**64**	**13.5**	**13.4 (75%)**	**0.1**	**20**	**20 (111%)**	**1**
		Weekday	24	11.0	11.0 (61%)	0.0	17	17 (94%)	0
		Weekend	32	14.7	14.6 (81%)	0.1	20	20 (111%)	1
		Holiday	8	16.3	16.1 (90%)	0.1	17	17 (94%)	1

During the off-peak season, City Light observed 8 vehicles on average (maximum of 22 vehicles) within the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 2 vehicles). The highest number of vehicles was observed on weekend days with an average of 11 vehicles within the main parking area. Main parking area off-peak season occupancy levels (20 marked spaces) averaged 44 percent (8 vehicles) overall and 58 percent (11 vehicles) on weekend days (highest occupancy day type) with a maximum occupancy of 111 percent (20 vehicles) on a weekend day.

During the peak season, City Light observed 14 vehicles on average (maximum of 20 vehicles) within the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 1 vehicle). The highest number of vehicles was observed on holiday days with an average of 16 vehicles within the main parking area. Main parking area peak season occupancy levels (20 marked spaces) averaged 75 percent (13 vehicles) overall and 90 percent (16 vehicles) on holiday days (highest occupancy day type) with a maximum occupancy of 111 percent (20 vehicles) on a weekend day.

The majority of observed vehicles were single vehicles (99 percent) with occasional RV/campers (1 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.2.4 Diablo Dam Parking Area (Project Facility [City Light])

Vehicle Observations

Parking at Diablo Dam parking area occurs in a paved, designated parking area with unmarked spaces along the shoreline side of Diablo Dam Road. Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. Overflow parking occurs in a gravel pullout adjacent to the restroom building and along the shoulder of Diablo Dam Road. Table 5.3-6 summarizes the vehicle observations at this site.

Table 5.3-6. Observed vehicles at Diablo Dam parking area by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas	Total Vehicles	Main Parking Area	Overflow Parking Areas
Diablo Dam Parking Area (unmarked spaces)	Off-Peak	**Overall**	**60**	1.9	1.1	0.8	11	5	7
		Weekday	28	0.6	0.4	0.1	6	5	2
		Weekend	28	2.5	1.5	1.0	9	5	7
		Holiday	4	7.5	3.5	4.0	11	4	7
	Peak	**Overall**	**72**	2.5	1.1	1.4	15	7	12
		Weekday	32	1.5	0.9	0.6	5	3	3
		Weekend	32	2.3	0.9	1.5	8	5	5
		Holiday	8	7.5	2.8	4.8	15	7	12

During the off-peak season, City Light observed 2 vehicles on average (maximum of 11 vehicles) split between the main parking area and overflow areas. In the overflow areas, City Light observed less than 1 vehicle on average with a maximum of 7 vehicles. The highest number of vehicles was observed on holiday days with an average of 8 vehicles split between the main parking area and overflow areas.

During the peak season, City Light observed 3 vehicles on average (maximum of 15 vehicles) split between the main parking area and overflow areas. In the overflow areas, City Light observed 1 vehicle on average (maximum of 12 vehicles). The highest number of vehicles was observed on holiday days with an average of 8 vehicles with most of the vehicles in overflow areas (5 vehicles). The majority of observed vehicles were single vehicles (92 percent) with occasional RV/campers (1 percent) and vehicles with a trailer (1 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.2.5 Skagit Tour Dock (Project facility [City Light])

Vehicle Observations

Parking at Skagit Tour Dock occurs in a small paved, designated parking spur with unmarked spaces adjacent to the tour dock. Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. Overflow parking occurs along both shoulders of Diablo Dam Road outside the main parking area. City Light was not operating Skagit Tours in 2022 through the Skagit Tour Dock due to the SR 20 construction and paving projects. However, the site was still open to the public for general recreational use. Table 5.3-7 summarizes the vehicle observations at this site.

Table 5.3-7. Observed vehicles at Skagit Tour Dock by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas	Total Vehicles	Main Parking Area	Overflow Parking Areas
Skagit Tour Dock (unmarked spaces)	Off-Peak	**Overall**	**60**	**0.5**	**0.4**	**0.1**	**7**	**5**	**2**
		Weekday	28	0.6	0.4	0.2	7	5	2
		Weekend	28	0.4	0.3	0.1	4	4	1
		Holiday	4	0.8	0.8	0.0	2	2	0
	Peak	**Overall**	**72**	**1.1**	**0.7**	**0.4**	**14**	**6**	**9**
		Weekday	32	0.6	0.3	0.3	3	2	3
		Weekend	32	0.6	0.5	0.1	4	2	2
		Holiday	8	4.8	2.6	2.1	14	6	9

During the off-peak season, City Light observed less than 1 vehicle on average (maximum of 7 vehicles) within the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 2 vehicles). The highest number of vehicles was observed on holiday days with an average of less than 1 vehicle between the main parking area and overflow areas.

During the peak season, City Light observed 1 vehicles on average (maximum of 14 vehicles) in overflow parking areas. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 9 vehicles). The highest number of vehicles was observed on holiday days with an average of 5 vehicles split between the main parking area and overflow areas. Nearly all of observed vehicles were single vehicles (99 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.2.6 West Ferry Landing (Project Facility [City Light])

Vehicle Observations

Parking at the West Ferry Landing occurs in a large paved, designated parking area with marked spaces for 32 single vehicles along the shoreline side of Diablo Dam Road. Overflow parking occurs outside the main parking area along both shoulders of Diablo Dam Road. Table 5.3-8 summarizes the vehicle observations at this site.

Table 5.3-8. Observed vehicles at West Ferry Landing by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas	Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas
West Ferry Landing (32 spaces)	Off-Peak	**Overall**	**60**	**19.0**	**10.4 (32%)**	**8.6**	**46**	**28 (88%)**	**28**
		Weekday	28	17.3	10.0 (31%)	7.3	34	19 (59%)	18
		Weekend	28	22.9	11.8 (37%)	11.1	46	28 (88%)	28
		Holiday	4	3.8	3.5 (11%)	0.3	5	5 (16%)	1
	Peak	**Overall**	**72**	**40.4**	**20.2 (63%)**	**20.2**	**57**	**34 (106%)**	**36**
		Weekday	32	37.8	20.4 (64%)	17.4	56	34 (106%)	35
		Weekend	32	42.2	20.3 (64%)	21.8	54	24 (75%)	33
		Holiday	8	43.8	18.6 (58%)	25.1	57	21 (66%)	36

During the off-peak season, City Light observed 19 vehicles on average (maximum of 46 vehicles) distributed among the main parking area and overflow areas. In the overflow areas, City Light observed 9 vehicles on average (maximum of 28 vehicles). The highest number of vehicles was observed on weekend days with 23 vehicles on average (maximum of 46 vehicles). Main parking area off-peak season occupancy levels (32 marked spaces) averaged 32 percent (10 vehicles) overall and 37 percent (12 vehicles) on weekend days (highest occupancy day type) with a maximum occupancy of 88 percent (28 vehicles) on a weekend day.

During the peak season, City Light observed 40 vehicles on average (maximum of 57 vehicles) split evenly between the main and overflow areas. In the overflow areas, City Light observed 20 vehicles on average (maximum of 36 vehicles). The highest number of vehicles was observed on holiday days with an average of 44 vehicles (maximum of 57 vehicles). Main parking area peak season occupancy levels (32 marked spaces) averaged 63 percent (20 vehicles) overall and 64 percent (20 vehicles) on weekday and weekend days (highest occupancy day type) with a maximum occupancy of 106 percent (34 vehicles) on weekdays.

The majority of observed vehicles were single vehicles (95 percent) with trailer only (2 percent) and RV/campers (1 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.2.7 ELC Parking Area (Project Facility [City Light])

Vehicle Observations

Parking at the public ELC Parking Area occurs in a gravel, designated parking area with unmarked spaces along the shoreline side of Diablo Dam Road. Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. Overflow parking occurs along the shoulders of Diablo Dam Road leading up to and adjacent to the main parking area. The following summary excludes the small parking area adjacent to the public ELC Parking Area where the North Cascades Institute parks its own vehicles. Table 5.3-9 summarizes the vehicle observations at this site.

Table 5.3-9. Observed vehicles at ELC parking area by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas	Total Vehicles	Main Parking Area	Overflow Parking Areas
ELC Parking Area (unmarked spaces)	Off-Peak	**Overall**	**60**	**21.0**	**20.0**	**1.0**	**57**	**48**	**10**
		Weekday	28	14.3	14.3	0.0	30	30	0
		Weekend	28	24.6	23.4	1.1	57	48	10
		Holiday	4	42.5	36.3	6.3	50	40	10
	Peak	**Overall**	**72**	**36.1**	**31.0**	**5.1**	**86**	**50**	**43**
		Weekday	32	25.4	25.1	0.3	41	40	1
		Weekend	32	42.3	35.0	7.3	76	48	43
		Holiday	8	54.0	38.4	15.6	86	50	38

During the off-peak season, City Light observed 21 vehicles on average (maximum of 57 vehicles) within the main parking area. In the overflow areas, City Light observed 1 vehicle on average (maximum of 10 vehicles). The highest number of vehicles was observed on holiday days with an average of 43 vehicles within the main parking area.

During the peak season, City Light observed 36 vehicles on average (maximum of 86 vehicles) split between the main parking area and overflow areas. In the overflow areas, City Light observed 5 vehicles on average (maximum of 43 vehicles). The highest number of vehicles was observed on holiday days with an average of 54 vehicles including 16 vehicles in overflow areas.

The majority of observed vehicles were single vehicles (94 percent) with occasional trailers only (3 percent), RV/campers (1 percent), and vehicles with a trailer (1 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light recorded observed shoreline and reservoir use along the ELC parking area shoreline but excluding the ELC campus shoreline. Table 5.3-10 summarizes the shoreline users and reservoir watercraft observed at this site.

Table 5.3-10. Observed shoreline users and reservoir watercraft at ELC parking area by season and day type.

Study Site	Season	Day Type	n	Shoreline Users		Reservoir Watercraft	
				Average	Maximum	Average	Maximum
ELC Parking Area	Off-Peak	**Overall**	**60**	**7.2**	**69**	**0.5**	**6**
		Weekday	28	1.3	14	0.4	4
		Weekend	28	9.6	69	0.7	6
		Holiday	4	30.8	50	0.0	0
	Peak	**Overall**	**72**	**23.2**	**131**	**1.3**	**12**
		Weekday	32	10.7	35	0.7	12
		Weekend	32	33.8	131	2.0	8
		Holiday	8	31.1	86	1.1	4

During the off-peak season, City Light observed an average of 7 shoreline users (maximum of 69 users) and less than 1 reservoir watercraft (maximum of 6 watercraft). The most frequently observed activities were sightseeing (30 percent of the counts), picnicking (18 percent), and swimming (12 percent). The most frequently observed reservoir activities were non-motorized boating (15 percent of the counts) followed by motorized boating (2 percent) and boat fishing (2 percent).

During the peak season, City Light observed an average of 23 shoreline users (maximum of 131 users) and 1 reservoir watercraft (maximum of 12 watercraft). The most frequently observed shoreline activities were sightseeing (64 percent of the counts), picnicking (60 percent), and swimming (50 percent). The most frequently observed reservoir activities were non-motorized boating (46 percent of the counts) followed by motorized boating (10 percent).

5.3.3 Gorge Lake

5.3.3.1 Gorge Lake Boat Launch (Project Facility [City Light])

Vehicle Observations

Parking at the Gorge Lake Boat Launch occurs in a gravel, designated parking area with unmarked spaces. Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. Occasional overflow parking occurs outside the main parking area along the entrance to the site. Table 5.3-11 summarizes the vehicle observations at this site.

Table 5.3-11. Observed vehicles at Gorge Lake Boat Launch by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas	Total Vehicles	Main Parking Area	Overflow Parking Areas
Gorge Lake Boat Launch (unmarked spaces)	Off-Peak	**Overall**	**60**	**0.6**	**0.5**	**0.1**	**7**	**7**	**3**
		Weekday	28	0.5	0.5	0.0	7	7	0
		Weekend	28	0.6	0.5	0.1	3	2	3
		Holiday	4	0.3	0.3	0.0	1	1	0
	Peak	**Overall**	**72**	**0.6**	**0.5**	**0.1**	**11**	**6**	**5**
		Weekday	32	0.6	0.5	0.0	2	2	1
		Weekend	32	0.8	0.7	0.2	11	6	5
		Holiday	8	0.1	0.1	0.0	1	1	0

During the off-peak season, City Light observed 1 vehicle on average (maximum of 7 vehicles) within the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 3 vehicles). The highest number of vehicles was observed on weekend days with an average of less than 1 vehicle within the main parking area.

During the peak season, City Light observed less than 1 vehicle on average (maximum of 11 vehicles) within the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 5 vehicles). The highest number of vehicles was observed on weekend days with an average of less than 1 vehicle within the main parking area.

The majority of observed vehicles were single vehicles (70 percent) followed by vehicles with a trailer (15 percent) and RV/campers (9 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light recorded observed shoreline and reservoir use along the boat launch shoreline. Table 5.3-12 summarizes the shoreline users and reservoir watercraft observed at this site.

Table 5.3-12. Observed shoreline users and reservoir watercraft at Gorge Lake Boat Launch by season and day type.

Study Site	Season	Day Type	n	Shoreline Users		Reservoir Watercraft	
				Average	Maximum	Average	Maximum
Gorge Lake Boat Launch	Off-Peak	**Overall**	**60**	0.4	6	0.1	1
		Weekday	28	0.3	3	0.1	1
		Weekend	28	0.5	6	<0.1	1
		Holiday	4	0.5	2	0.0	0
	Peak	**Overall**	**72**	2.0	81	0.1	2
		Weekday	32	0.6	4	0.1	1
		Weekend	32	3.8	81[1]	0.1	2
		Holiday	8	0.5	2	0.0	0

1 The maximum observed shoreline users (81 users) was uncharacteristically high for this site and occurred when a large tour group with multiple vans and 4 buses made a brief stop at the facility. The next highest shoreline user count was 8 users.

During the off-peak season, City Light observed minimal shoreline use with an average of less than one shoreline users (maximum of six users) and less than one reservoir watercraft (maximum of one watercraft). The most frequently observed activities were sightseeing (3 percent of the counts), picnicking (3 percent), and shoreline fishing (2 percent). Non-motorized boating (1 percent of the counts) was the only reservoir activity observed.

During the peak season, City Light observed an average of two shoreline users (maximum of two users) and less than one reservoir watercraft (maximum of two watercraft). The most frequently observed shoreline activities were sightseeing (64 percent of the counts), picnicking (60 percent), and swimming (50 percent). The most frequently observed reservoir activity was non-motorized boating (15 percent of the counts).

5.3.3.2 Diablo Dam Trailhead (Non-Project Facility [NPS])

Vehicle Observations

Parking at the Diablo Dam Trailhead occurs in the Reflector Bar area of the Diablo Townsite in a dirt, undesignated (unmarked spaces) parking area along the roadside. Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. City Light did not observe overflow parking during the study season. This site has fewer total observation survey days due to extended closure of the area while the residences in Reflector Bar were demolished and the area was rehabilitated. Table 5.3-13 summarizes the vehicle observations at this site.

Table 5.3-13. Observed vehicles at Diablo Dam Trailhead by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas	Total Vehicles	Main Parking Area	Overflow Parking Areas
Diablo Dam Trailhead (unmarked spaces)	Off-Peak	**Overall**	**36**	**0.1**	**0.1**	**0.0**	**1**	**1**	**0**
		Weekday	16	0.1	0.1	0.0	1	1	0
		Weekend	16	0.1	0.1	0.0	1	1	0
		Holiday	4	0.0	0.0	0.0	0	0	0
	Peak	**Overall**	**16**	**0.1**	**0.1**	**0.0**	**1**	**1**	**0**
		Weekday	8	0.1	0.1	0.0	1	1	0
		Weekend	4	0.0	0.0	0.0	0	0	0
		Holiday	4	0.0	0.0	0.0	0	0	0

During the off-peak and peak season, City Light rarely observed vehicles with less than 1 vehicle on average (maximum of 1 vehicle). The majority of observed vehicles were single vehicles (75 percent) followed by other vehicles (25 percent) that may have been associated with the Reflector Bar construction work. Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.3.3 Sourdough Mountain Trailhead (Non-Project Facility [NPS])

Vehicle Observations

Parking at the Sourdough Mountain Trailhead occurs in the Hollywood area of the Diablo Townsite in a gravel, designated parking area with unmarked spaces along the shoreline side of the road. Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. Overflow parking was observed along the road on either side of the main parking area. Table 5.3-14 summarizes the vehicle observations at this site.

Table 5.3-14. Observed vehicles at Sourdough Mountain Trailhead by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas	Total Vehicles	Main Parking Area	Overflow Parking Areas
Sourdough Mountain Trailhead (unmarked spaces)	Off-Peak	**Overall**	**60**	**4.5**	**4.3**	**0.2**	**18**	**16**	**2**
		Weekday	28	3.6	3.6	0.0	9	9	0
		Weekend	28	5.5	5.2	0.4	18	16	2
		Holiday	4	3.5	3.5	0.0	5	5	0
	Peak	**Overall**	**72**	**13.9**	**11.6**	**2.4**	**40**	**33**	**17**
		Weekday	32	8.1	7.3	0.8	39	30	9
		Weekend	32	17.8	14.2	3.6	37	29	17
		Holiday	8	22.0	18.5	3.5	40	33	7

During the off-peak season, City Light observed 5 vehicles on average (maximum of 18 vehicles) in the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 2 vehicles). The highest number of vehicles was observed on weekend days with an average of 6 vehicles (maximum of 18 vehicles) within the main parking area.

During the peak season, City Light observed 14 vehicles on average (maximum of 40 vehicles) within the main parking area and the overflow areas. In the overflow areas, City Light observed 2 vehicles on average (maximum of 17 vehicles). The highest number of vehicles was observed on holiday days with an average of 22 vehicles within the main parking area.

The majority of observed vehicles were single vehicles (96 percent) with occasional RV/campers (4 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.3.4 Gorge Creek Overlook (Non-Project Facility [NPS])

Vehicle Observations

Parking at the Gorge Creek Overlook occurs in two paved parking areas—one for single vehicles with 24 marked spaces (main parking area) and one for overflow and larger vehicles with unmarked spaces (overflow parking area). Overflow parking outside of these two areas was not observed during the study season as the shoulder of SR 20 does not allow for parking. Table 5.3-15 summarizes the vehicle observations at this site.

Table 5.3-15. Observed vehicles at Gorge Creek Overlook by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas	Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas
Gorge Creek Over-look (24 spaces)	Off-Peak	**Overall**	**60**	**11.4**	**8.1 (34%)**	**3.4**	**42**	**24 (100%)**	**23**
		Weekday	28	6.2	5.0 (21%)	1.2	17	15 (63%)	8
		Weekend	28	14.0	9.7 (40%)	4.4	42	21 (88%)	23
		Holiday	4	30.0	18.3 (76%)	11.8	39	24 (100%)	16
	Peak	**Overall**	**72**	**13.9**	**10.8 (45%)**	**3.1**	**34**	**24 (100%)**	**13**
		Weekday	32	10.5	8.5 (35%)	2.0	21	17 (71%)	6
		Weekend	32	17.0	12.7 (53%)	4.3	34	24 (100%)	13
		Holiday	8	13.6	11.1 (46%)	2.5	29	24 (100%)	5

During the off-peak season, City Light observed 11 vehicles on average (maximum of 42 vehicles) distributed among the main parking area and overflow area. In the overflow/RV area, City Light observed 3 vehicles on average (maximum of 23 vehicles). The highest number of vehicles was observed on holiday days with 33 vehicles on average (maximum of 39 vehicles). Main parking area off-peak season occupancy levels (24 marked spaces) averaged 34 percent (8 vehicles) overall and 76 percent (18 vehicles) on holiday days (highest occupancy day type) with a maximum occupancy of 100 percent (24 vehicles) on holiday days.

During the peak season, City Light observed 14 vehicles on average (maximum of 34 vehicles) distributed among the main parking area and overflow area. In the RV/overflow area, City Light observed 3 vehicles on average (maximum of 13 vehicles). The highest number of vehicles was observed on weekend days with an average of 17 vehicles (maximum of 34 vehicles). Main parking area peak season occupancy levels (24 marked spaces) averaged 45 percent (11 vehicles) overall and 53 percent (13 vehicles) on weekend days (highest occupancy day type) with a maximum occupancy of 100 percent (24 vehicles) on weekend and holiday days.

The majority of observed vehicles were single vehicles (91 percent) followed by RV/campers (4 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods. However, observations of the overlook trail users on the loop trail and users viewing Gorge Creek Falls from the pedestrian overlook on the SR 20 bridge were recorded. Table 5.3-16 summarizes the observed shoreline use (loop trail and pedestrian overlook).

Table 5.3-16. Observed trail and overlook users at Gorge Creek Overlook by season and day type.

Study Site	Season	Day Type	n	Overlook Trail Users		Bridge Overlook Users	
				Average	Maximum	Average	Maximum
Gorge Creek Overlook	Off-Peak	**Overall**	**60**	**10.1**	**72**	**8.3**	**29**
		Weekday	28	3.9	24	5.8	23
		Weekend	28	11.3	36	8.9	23
		Holiday	4	44.8	72	21.3	29
	Peak	**Overall**	**72**	**13.6**	**50**	**12.0**	**37**
		Weekday	32	7.6	20	8.9	22
		Weekend	32	19.9	50	15.3	37
		Holiday	8	8.9	18	9.5	24

During the off-peak season, City Light observed 10 trail users on average (maximum of 72 users) and 8 overlook users (maximum of 29 users). The highest number of users were observed on holiday days with 45 trail users and 21 overlook users, on average.

During the peak season, City Light observed 14 trail users on average (maximum of 50 users) and 12 overlook users (maximum of 37 users). The highest number of users were observed on weekend days with 20 trail users and 15 overlook users, on average.

5.3.3.5 Ross Lodge Picnic Shelter (Project Facility [City Light])

Vehicle Observations

City Light did not conduct vehicle observations at this site per the study methods.

Picnic Site Observations

The Ross Lodge Picnic Shelter includes three picnic sites, where City Light recorded observed picnic site use (Table 5.3-17).

During the off-peak season, City Light did not observe any use at the picnic sites. During the peak season, City Light rarely observed picnic site use with an average of less than one site occupied (3 percent occupancy) and less than one picnicker (maximum of 14 picnickers).

Table 5.3-17. Observed picnic site use at Ross Lodge Picnic Shelter by season and day type.

Study Site	Season	Day Type	n	Sites Occupied		Site Occupancy (%)		Picnickers	
				Average	Maximum	Average	Maximum	Average	Maximum
Ross Lodge Picnic Shelter (3 sites)	Off-Peak	**Overall**	**60**	**0.0**	**0**	**0%**	**0%**	**0.0**	**0**
		Weekday	28	0.0	0	0%	0%	0.0	0
		Weekend	28	0.0	0	0%	0%	0.0	0
		Holiday	4	0.0	0	0%	0%	0.0	0
	Peak	**Overall**	**72**	**0.1**	**3**	**3%**	**100%**	**0.3**	**14**
		Weekday	32	0.0	0	0%	0%	0.0	0
		Weekend	32	0.2	3	6%	100%	0.7	14
		Holiday	8	0.0	0	0%	0%	0.0	0

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.4 Newhalem

5.3.4.1 Gorge Powerhouse Parking Area (Project Facility [City Light])

Vehicle Observations

Parking at the Gorge Powerhouse Parking Area occurs in two designated parking areas (main parking areas) with unmarked spaces, including a gravel lot and roadside parallel parking pullouts. Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. Overflow parking occurs outside of these two areas along the shoulders of Ladder Creek Lane. This site also provides parking for the adjacent Ladder Creek Falls Trail and Garden. Table 5.3-18 summarizes the vehicle observations at this site.

Table 5.3-18. Observed vehicles at Gorge Powerhouse parking area by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas	Total Vehicles	Main Parking Area	Overflow Parking Areas
Gorge Power-house Parking Area (unmarked spaces)	Off-Peak	**Overall**	**60**	**3.3**	**2.4**	**0.9**	**12**	**12**	**4**
		Weekday	28	3.0	1.8	1.2	9	7	4
		Weekend	28	3.3	2.6	0.7	12	12	3
		Holiday	4	5.0	5.0	0.0	9	9	0
	Peak	**Overall**	**72**	**5.0**	**3.7**	**1.3**	**17**	**16**	**6**
		Weekday	32	3.2	2.1	1.1	8	6	4
		Weekend	32	6.9	5.1	1.8	15	12	6
		Holiday	8	4.5	4.1	0.4	17	16	2

During the off-peak season, City Light observed 3 vehicles on average (maximum of 12 vehicles) in the main parking areas. In the overflow areas, City Light observed 1 vehicle on average (maximum of 4 vehicles). The highest number of vehicles was observed on holiday days on average (5 vehicles) and a weekend day when the maximum number of vehicles was observed (12 vehicles).

During the peak season, City Light observed 5 vehicles on average (maximum of 17 vehicles) in the main parking areas. In the overflow areas, City Light observed 1 vehicle on average (maximum of 6 vehicles). The highest number of vehicles was observed on weekend days on average (7 vehicles) and holiday days when the maximum number of vehicles was observed (17 vehicles).

The majority of observed vehicles were single vehicles (96 percent) followed by RV/campers (2 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.4.2 Main Street Parking Area (Project Facility [City Light])

Vehicle Observations

Parking along Newhalem Main Street occurs in a paved, designated parking area with marked spaces for 24 single vehicles, including 3 accessible spaces. Overflow parking occurs outside of the designated main parking area along the gravel road between the general store and the Gorge Inn, and along the edges of Silk Stocking Road. Table 5.3-19 summarizes the vehicle observations at this site. The SR 20 Parking Area (detailed after this site) provides additional parking for the Newhalem Main Street visitor sites and services.

Table 5.3-19. Observed vehicles at Newhalem Main Street parking area by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas	Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas
Newhalem Main Street Parking Area (24 spaces)	Off-Peak	Overall	**60**	**8.1**	**7.7 (32%)**	**0.4**	**15**	**15 (63%)**	**9**
		Weekday	28	9.2	8.8 (37%)	0.4	15	15 (63%)	2
		Weekend	28	6.7	6.2 (26%)	0.5	14	14 (58%)	9
		Holiday	4	10.3	10.0 (42%)	0.3	15	15 (63%)	1
	Peak	Overall	**72**	**11.3**	**10.5 (44%)**	**0.8**	**32**	**22 (92%)**	**10**
		Weekday	32	11.1	10.6 (44%)	0.6	23	22 (92%)	5
		Weekend	32	11.9	10.8 (45%)	1.2	32	22 (92%)	10
		Holiday	8	9.8	9.1 (38%)	0.6	27	22 (92%)	5

During the off-peak season, City Light observed 8 vehicles on average (maximum of 15 vehicles) in the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 9 vehicles). The highest number of vehicles was observed on holiday days with an average of 5 vehicles (maximum of 15 vehicles). Main parking area (24 marked spaces) occupancy levels averaged 32 percent (8 vehicles) overall and 42 percent (10 vehicles) on holiday days (highest occupancy day type) with a maximum of 63 percent (15 vehicles) on weekdays and holiday days.

During the peak season, City Light observed 11 vehicles on average (maximum of 32 vehicles) in the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 10 vehicles). The highest number of vehicles was observed on weekend days with an average of 12 vehicles (maximum of 32 vehicles). Main parking area (24 marked spaces) occupancy levels averaged 44 percent (11 vehicles) overall and 45 percent (11 vehicles) on weekends (highest occupancy day type) with a maximum occupancy of 92 percent (22 vehicles) on all day types.

The majority of observed vehicles were single vehicles (94 percent) followed by RV/campers (2 percent). City Light vehicles often use these parking spaces and were included in the capacity count when they occupied a space. Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are 17 picnic sites dispersed throughout the Newhalem Townsite. Table 5.3-20 summarizes the observed picnic site use.

Table 5.3-20. Observed picnic site use at Newhalem Main Street area by season and day type.

Study Site	Season	Day Type	n	Sites Occupied		Site Occupancy (%)		Total Picnickers	
				Average	Maximum	Average	Maximum	Average	Maximum
Newhalem Main Street (17 sites)	Off-Peak	**Overall**	**60**	0.9	6	**5%**	35%	2.1	18
		Weekday	28	0.8	4	5%	24%	2.0	16
		Weekend	28	1.1	6	6%	35%	2.4	18
		Holiday	4	0.0	0	0%	0%	0.0	0
	Peak	**Overall**	**72**	1.5	7	9%	41%	3.9	22
		Weekday	32	1.1	7	6%	41%	2.6	17
		Weekend	32	2.2	6	13%	35%	6.0	22
		Holiday	8	0.4	3	2%	18%	0.9	7

During the off-peak season, City Light observed occasional picnic site use with an average of one site occupied or 5 percent occupancy (maximum of six sites occupied or 35 percent occupancy) accompanied by an average of two picnickers (maximum of 18 picnickers).

During the peak season, City Light observed slightly higher picnic site use with an average of two sites occupied or 9 percent occupancy (maximum of seven sites occupied or 41 percent occupancy) accompanied by an average of four picnickers (maximum of 22 picnickers). The highest average and maximum observed picnic use occurred on weekend days in both the off-peak and peak seasons.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.4.3 SR 20 Parking Area (Project Facility [City Light])

Vehicle Observations

Parking at the SR 20 parking area occurs in a gravel, designated parking area with a separate area for single vehicles and larger vehicles (i.e., vehicles with a trailer, RV/campers). Neither area has marked spaces, but there are general areas for parking with some wheel stops designating several single spaces adjacent to picnic sites. Due to the lack of marked spaces, City Light was not able to calculate the occupancy levels at this parking area. The single vehicle parking section is categorized as the main parking area and the larger vehicle area is categorized as the overflow parking area in this section. City Light did not observe general overflow parking outside of this expansive gravel parking area. Table 5.3-21 summarizes the vehicle observations at this site.

Table 5.3-21. Observed vehicles at SR 20 parking area by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area (single vehicles)	Overflow Parking Area (larger vehicles)	Total Vehicles	Main Parking Area (single vehicles)	Overflow Parking Area (larger vehicles)
SR 20 Parking Area (unmarked spaces)	Off-Peak	**Overall**	**60**	**5.7**	**3.5**	**2.2**	**30**	**15**	**19**
		Weekday	28	5.0	3.2	1.9	14	8	6
		Weekend	28	6.2	3.8	2.5	30	15	19
		Holiday	4	6.3	3.8	2.5	8	5	3
	Peak	**Overall**	**72**	**10.7**	**5.5**	**5.2**	**67**	**20**	**58**
		Weekday	32	6.8	5.2	1.6	18	11	8
		Weekend	32	16.2	6.5	9.7	67	20	58
		Holiday	8	3.9	2.1	1.8	10	8	5

During the off-peak season, City Light observed 6 vehicles on average (maximum of 30 vehicles) with slightly higher numbers in the main parking area (single vehicles) compared to the overflow area (larger vehicle area). In the overflow area (larger vehicle area), City Light observed 2 vehicles on average (maximum of 19 vehicles). The highest number of vehicles was observed on average on holiday days (6 vehicles) and a weekend day for maximum levels (30 vehicles).

During the peak season, City Light observed 11 vehicles on average (maximum of 67 vehicles) split evenly between the main and overflow areas. In the overflow area (larger vehicle area), City Light observed 5 vehicles on average (maximum of 58 vehicles). The highest number of vehicles was observed on weekend days with an average of 16 vehicles (maximum of 67 vehicles).

The majority of observed vehicles were single vehicles (74 percent), RV/campers (12 percent), and vehicles with a trailer (11 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

The picnic sites at this location are included in the Main Street Parking Area section above.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and reservoir observations at this site per the study methods.

5.3.5 Skagit River

5.3.5.1 Goodell Creek Boat Launch (Non-Project Facility [NPS])

Vehicle Observations

Parking at the Goodell Creek Boat Launch occurs in a paved, designated parking area with marked spaces for 12 single vehicles. Overflow parking occurs along the entrance road on both shoulders. Table 5.3-22 summarizes the vehicle observations at this site.

Table 5.3-22. Observed vehicles at Goodell Creek Boat Launch by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas	Total Vehicles	Main Parking Area (occupancy)	Overflow Parking Areas
Goodell Creek Boat Launch (12 spaces)	Off-Peak	**Overall**	**60**	**1.7**	**1.2 (10%)**	**0.4**	**17**	**13 (108%)**	**4**
		Weekday	28	1.8	1.3 (11%)	0.5	17	13 (108%)	4
		Weekend	28	1.6	1.1 (9%)	0.4	4	4 (33%)	2
		Holiday	4	1.3	1.3 (11%)	0.0	2	2 (17%)	0
	Peak	**Overall**	**72**	**7.9**	**4.7 (40%)**	**3.3**	**36**	**12 (100%)**	**26**
		Weekday	32	2.3	2.0 (17%)	0.4	11	10 (83%)	3
		Weekend	32	14.2	7.5 (63%)	6.7	36	12 (100%)	26
		Holiday	8	5.3	4.1 (34%)	1.1	14	11 (92%)	3

During the off-peak season, City Light observed 2 vehicles on average (maximum of 17 vehicles) in the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 4 vehicles). The highest number of vehicles was observed on weekdays with 2 vehicles on average (maximum of 17 vehicles). Main parking area (12 marked spaces) occupancy levels averaged 10 percent (1 vehicle) overall and 11 percent (1 vehicle) on weekdays and holidays (highest occupancy day type) with a maximum of 108 percent (13 vehicles) on weekdays.

During the peak season, City Light observed 8 vehicles on average (maximum of 36 vehicles) distributed among the main parking area and overflow areas. In the overflow areas, City Light observed 3 vehicles on average (maximum of 26 vehicles). The highest number of vehicles was observed on weekend days with an average of 14 vehicles (maximum of 36 vehicles). Main parking area (12 marked spaces) occupancy levels averaged 40 percent (5 vehicles) overall and 63 percent (8 vehicles) on weekends (highest occupancy day type) with a maximum of 100 percent (12 vehicles) on weekends.

The majority of observed vehicles were single vehicles (79 percent) followed by vehicles with a trailer (14 percent) and RV/campers (3 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

The boat launch has two picnic sites along the shoreline adjacent to the cartop launch ramp. Table 5.3-23 summarizes the observed picnic site use.

Table 5.3-23. Observed picnic site use at Goodell Creek Boat Launch by season and day type.

Study Site	Season	Day Type	n	Sites Occupied		Site Occupancy (%)		People	
				Average	Maximum	Average	Maximum	Average	Maximum
Goodell Creek Boat Launch (2 sites)	Off-Peak	**Overall**	**60**	0.2	1	11%	50%	0.4	3
		Weekday	28	0.2	1	9%	50%	0.3	2
		Weekend	28	0.2	1	11%	50%	0.5	3
		Holiday	4	0.5	1	25%	50%	1.0	2
	Peak	**Overall**	**72**	0.5	2	23%	100%	1.0	6
		Weekday	32	0.2	1	9%	50%	0.5	4
		Weekend	32	0.7	2	36%	100%	1.6	6
		Holiday	8	0.6	1	31%	50%	1.0	3

During the off-peak season, City Light observed picnic site use with an average of less than one site occupied (11 percent occupancy) and less than one picnicker (maximum of 3 picnickers). The picnic site occupancy was never above 50 percent occupancy.

During the peak season, City Light observed slightly higher picnic site use with an average of one site occupied (23 percent occupancy) and one picnicker (maximum of six picnickers). The picnic site occupancy was at 100 percent occupancy (three sites occupied) occasionally during the peak season.

Shoreline and Reservoir User Observations

City Light recorded observed shoreline users and river-based watercraft as visible from the boat launch site (Table 5.3-24).

Table 5.3-24. Observed shoreline users and river-based watercraft at Goodell Creek Boat Launch by season and day type.

Study Site	Season	Day Type	n	Shoreline Users		Reservoir Watercraft	
				Average	Maximum	Average	Maximum
Goodell Creek Boat Launch	Off-Peak	**Overall**	**60**	0.9	11	0.3	5
		Weekday	28	0.5	3	0.1	2
		Weekend	28	0.9	11	0.2	3
		Holiday	4	3.0	8	2.0	5
	Peak	**Overall**	**72**	5.8	74[1]	2.6	13
		Weekday	32	2.7	30	1.3	11
		Weekend	32	9.0	74	3.8	13
		Holiday	8	5.4	27	2.9	13

1 The maximum observed shoreline users (74 users) was more than double the next highest user count at this site (33 users) and occurred when multiple commercial rafting companies plus a separate large-organized tour group were on site at the same time (36 total vehicles).

During the off-peak season, City Light observed occasional shoreline use with an average of one shoreline users (maximum of five users) and less than one watercraft (maximum of five watercraft). The most frequently observed activities were boat launching (24 percent of the counts), picnicking (10 percent), and shoreline fishing (6 percent). City Light did not observe any river-based watercraft during the off-peak season.

During the peak season, City Light observed an average of six shoreline users (maximum of 74 users) and 3 watercraft (maximum of 13 watercraft). The most frequently observed shoreline activities were boat launching (40 percent of the counts), picnicking (20 percent), and swimming (12 percent). The most frequently observed river-based watercraft activity was non-motorized river boating (12 percent of the counts).

5.3.5.2 Marblemount Boat Launch (Non-Project Facility [USFS])

Vehicle Observations

Parking at the Marblemount Boat Launch occurs in a gravel, designated parking area with unmarked spaces including general parking areas for single vehicles (exterior/edges) and vehicles with a trailer (interior). Overflow parking occurs along the entrance road. Table 5.3-25 summarizes the vehicle observations at this site.

Table 5.3-25. Observed vehicles at Marblemount Boat Launch by season and day type.

Study Site	Season	Day Type	n	Average No. of Vehicles			Maximum No. of Vehicles		
				Total Vehicles	Main Parking Area	Overflow Parking Areas	Total Vehicles	Main Parking Area	Overflow Parking Areas
Marble-mount Boat Launch (unmarked spaces)	Off-Peak	Overall	**60**	**4.0**	**3.9**	**0.1**	**18**	**18**	**2**
		Weekday	28	2.5	2.4	0.1	6	6	2
		Weekend	28	5.0	5.0	0.0	18	18	1
		Holiday	4	6.8	6.8	0.0	13	13	0
	Peak	Overall	**72**	**10.9**	**10.4**	**0.5**	**29**	**26**	**11**
		Weekday	32	5.4	5.3	0.1	15	15	3
		Weekend	32	14.8	13.7	1.1	29	26	11
		Holiday	8	17.3	17.3	0.0	26	26	0

During the off-peak season, City Light observed 4 vehicles on average (maximum of 18 vehicles) in the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 2 vehicles). The highest number of vehicles was observed on holiday days with 7 vehicles on average and a maximum of 18 vehicles on a weekend day.

During the peak season, City Light observed 11 vehicles on average (maximum of 29 vehicles) primarily in the main parking area. In the overflow areas, City Light observed less than 1 vehicle on average (maximum of 11 vehicles). The highest number of vehicles was observed on holiday days with an average of 17 vehicles and a maximum of 29 vehicles on a weekend day.

The majority of observed vehicles were single vehicles (72 percent) and vehicles with a trailer (20 percent). Refer to Attachment C for a detailed summary of observed vehicles by season, day type, and vehicle type.

Picnic Site Observations

There are no picnic sites at this site.

Shoreline and Reservoir User Observations

City Light did not conduct shoreline and river-based watercraft observations at this site per the study methods.

5.3.6 Trail Use Counts

City Light installed and maintained trail counters on the study area trails in 16 locations identified in Table 5.3-26 for the duration of the survey season (i.e., May through October). City Light consulted with LPs, including NPS, Indian Tribes, and Canadian First Nations to identify the final locations for each of the trail counters, as detailed in Table 5.4-1 and shown in the maps in Attachment A. The exact location was determined in the field during the installation of each trail counter.

Table 5.3-26. Trail counter study locations.

Trail	Counter Location	GPS Coordinates		Data Period		Adjustment Factors		Notes[2]
		Latitude	Longitude	Start[1]	End	Calibration	Use Pattern	
Ross Lake (Non-Project Trails [NPS])								
Hozomeen Lake Trail	Near junction with East Bank Trail	48.954013	-121.047661	05/01/22	TBD	1.192	Divide by 2 (primarily out-back trail)	City Light has not been able to visit these counters since August 2022 due to weather and wildfire/AQI conditions; attempted access to remove the counter in November but reservoir conditions/snow prevented access.
East Bank Trail	At Hozomeen Lake Trailhead	48.984458	-121.065747	05/01/22	TBD	1.002	Divide by 2 (primarily out-back trail)	
	Near Lighting Creek Trail junction	48.875099	-121.018854	05/01/22	10/31/22	0.977	Divide by 2 (primarily out-back trail)	City Light unable to calibrate counter in October due to NPS trail closure and wildfire/AQI concerns.
	Near Roland Point/Roland Creek	48.772566	-121.024095	05/01/22	10/31/22	1.001	Divide by 2 (primarily out-back trail)	
	At Ruby Creek	48.709676	-120.977717	05/01/22	10/31/22	0.964	Divide by 2 (primarily out-back trail)	
Desolation Peak Trail	Near Ross Lake shoreline	48.896616	-121.045663	05/01/22	10/31/22	0.879	Divide by 2 (primarily out-back trail)	
Little Beaver Trail	Near Little Beaver boat-in camps	48.916742	-121.073995	05/01/22	8/10/22	0.933	Divide by 2 (primarily out-back trail)	City Light was not able to calibrate the counter after August 10, 2022 due to weather/wildfire conditions and NPS trail closure.
Big Beaver Trail	West of the bridge over Big Beaver Creek	48.776105	-121.066490	05/01/22	10/31/22	1.153	Divide by 2 (primarily out-back trail)	

Trail	Counter Location	GPS Coordinates		Data Period		Adjustment Factors		Notes[2]
		Latitude	Longitude	Start[1]	End	Calibration	Use Pattern	
Ross Dam Trail	Near trailhead	48.727937	-121.063744	05/01/22	10/31/22	1.070	Divide by 2 (primarily out-back trail)	
Diablo Lake (Non-Project Trails [NPS])								
Thunder Knob Trail	Near trailhead	48.692563	-121.103664	06/25/22	10/31/22	1.002	Divide by 2 (primarily out-back trail)	Trail closed by NPS until June 25, 2022 due to flood/debris flow damage.
Thunder Creek Trail	Near trailhead	48.680569	-121.083832	05/01/22	10/31/22	1.056	Divide by 2 (primarily out-back trail)	
Diablo Lake Trail	Near trailhead beyond ELC campus	48.719444	-121.111984	05/01/22	10/31/22	1.067	Divide by 2 (primarily out-back trail)	
Gorge Lake (Non-Project Trails [NPS])								
Diablo Dam Trail	Near trailhead in Diablo Townsite (Reflector Bar)	48.713522	-121.139345	05/01/22	10/31/22	1.001	Divide by 2 (primarily out-back trail)	
Sourdough Mountain Trail	Near trailhead in Diablo Townsite	48.717924	-121.144219	05/01/22	10/31/22	1.011	Divide by 2 (primarily out-back trail)	

Trail	Counter Location	GPS Coordinates		Data Period		Adjustment Factors		Notes[2]
		Latitude	Longitude	Start[1]	End	Calibration	Use Pattern	
Newhalem (Project Trails [City Light])								
Ladder Creek Falls Trail	Near trailhead before bridge over Ladder Creek	48.675609	-121.239458	05/01/22	10/31/22	1.192	Divide by 2 (primarily out-back trail)	
Trail of the Cedars	Along shoreline side of trail near bridge across Skagit River	48.671134	-121.247785	05/01/22	10/31/22	1.089	None (loop trail)	

1 City Light installed all the trail counters the last week of April 2022, except Thunder Knob Trail due to the NPS trail closure until June 25, 2022.

2 City Light was unable to access all the trail counters in mid- to late October 2022 (originally planned for October 13-14, 2022) due to unsafe field conditions related to the smoke from wildfires in the vicinity (high AQI) and NPS trail/area closures in mid-October and then inclement weather in the final week of October.

City Light calibrated the counters monthly following installation and routinely maintained/ downloaded the data at each counter during the study season. However, City Light was unable to calibrate three trail counters at the upper end of Ross Lake (i.e., Hozomeen Trail, East Bank Trail at Hozomeen Campground, and Little Beaver Trail) in September due to trail closures (Little Beaver Trail) and pervasive smoke/air quality conditions due to wildfires (Hozomeen Trail and East Bank Trail at Hozomeen Campground).

City Light intended to calibrate and maintain the 16 trail counters during the second week of October (one month following the September calibration); however, City Light was unable to access the trail counters in the field due in part to NPS trail closures at Ross Lake, but primarily due to the continued pervasive smoke/air quality conditions from the wildfires throughout the study area. City Light removed the trail counters in November following the end of the study season in October with two exceptions—Hozomeen Trail and East Bank Trail at Hozomeen Campground. At these two counter locations the weather, presence of snow, and reservoir water level conditions in the Hozomeen area prevented access to them. As such, the study report only includes data for these two sites through August 10, 2022 (the last calibration and maintenance visit).[8]

General recreation use in the Hozomeen area was low in 2022 because the only vehicle access to the area (from the Silver-Skagit Road in Canada) was closed due to extensive damage and washouts from the November 2021 flood event in the Project vicinity. During removal of the Little Beaver Trail counter in November 2022, City Light determined the counter had malfunctioned and had not recorded use for the period from August 11, 2022 through October 31, 2022 (i.e., following the previous calibration visit). However, for the majority of this time period, the Little Beaver Trail was closed by the NPS due to the Chilliwack Fire (approximately September 6 through late October 2022 when regular precipitation occurred).

For all the trail counters, City Light applied a calibration or adjustment factor based on the accuracy of the trail counters compared to the visual counts during calibration. In addition, since nearly all the trails are out-and-back trails, City Light divided the recorded counts by two to accurately reflect the actual trail use/users, which is consistent with how the NPS has adjusted NPS trail counter data on trails in the RLNRA.

Table 5.3-27 summarizes the total daily counts at each of the 16 trail counters throughout the study area. Overall, the 16 trails accounted for approximately 117,000 users in May through October 2022 with approximately 86,000 users or 74 percent of all trail use occurring at four trails -- Ross Dam Trail, Ladder Creek Falls Trail, Thunder Knob Trail, and Trail of the Cedars (ranging between 19,000 and 25,000 users at each trail). The next tier of trail use ranged between 7,000 and 11,000 users and included Thunder Creek Trail and the Diablo Lake Trail – both at Diablo Lake. In general, the higher use trails were located along the SR 20 corridor with direct vehicle access to the trailheads. The lower use trails were generally the more remote trails in the Ross Lake area that lack direct vehicle access and require hike-in or boat-in access. The following subsections summarize the trail counts by resource area.

[8] City Light will retrieve these trail counters in Spring 2023 when access permits.

Table 5.3-27. Summary of total monthly trail users at the 16 trail counter locations.

Resource Area	Trail	Total Daily Users						Total
		May	Jun	Jul	Aug	Sep	Oct	
Ross Lake	Hozomeen Lake Trail[1]	8	69	171	45	no data	no data	**293**
	East Bank Trail at Hozomeen[1]	13	78	126	32	no data	no data	**249**
	Little Beaver Trail[2]	5	44	102	45	no data	no data	**196**
	Desolation Peak Trail	23	154	494	356	116	10	**1,153**
	East Bank Trail at Lightning Creek	36	292	577	439	180	12	**1,536**
	East Bank Trail at Roland Point	53	187	388	209	102	36	**975**
	East Bank Trail at Ruby Creek	212	582	789	543	591	82	**2,799**
	Big Beaver Trail	80	179	476	409	117	45	**1,306**
	Ross Dam Trail	2,118	4,178	7,420	5,408	3,851	1,333	**24,308**
Diablo Lake	Thunder Knob Trail[3]	no data	1,211	8,555	6,183	4,145	664	**20,758**
	Thunder Creek Trail	1,025	2,819	3,663	1,870	1,518	232	**11,127**
	Diablo Lake Trail	1,122	1,093	1,846	1,989	1,328	398	**7,776**
Gorge Lake	Sourdough Mountain Trail	234	425	740	957	603	177	**3,136**
	Diablo Dam Trail	94	90	51	34	27	28	**324**
Newhalem	Ladder Creek Falls Trail	1,572	4,436	6,566	4,687	3,098	1,323	**21,682**
	Trail of the Cedars	1,633	3,519	5,977	4,239	2,935	1,088	**19,391**
Total (16 trails)		**8,228**	**19,356**	**37,941**	**27,445**	**18,611**	**5,428**	**117,009**

1 City Light was unable to calibrate/download the trail counters in the Hozomeen area in September and October due to air quality concerns and trail closures in the northern Ross Lake area. City Light was also unable to remove/download these counters in November due to difficult access conditions, low water levels, and snow on the ground in the vicinity.

2 City Light was unable to calibrate/download the trail counter on the Little Beaver Trail in September and October due to trail closures combined with air quality concerns due to wildfires. Upon removal, City Light learned the counter malfunctioned and the last date of trail use data was August 10, 2022, though there was an NPS trail closure on this trail for the majority of this time period (September 6 – late October).

3 The Thunder Knob Trail was closed by the NPS due to flooding and debris impacting the initial portion of the trail. City Light installed the counter on June 25, 2022 once the NPS notified City Light the trail was re-routed and open for the season.

5.3.6.1 Ross Lake

City Light installed five trail counters in the northern of Ross Lake area, including on the Hozomeen Lake Trail, East Bank Trail at Hozomeen, Little Beaver Trail, Desolation Peak Trail, and East Bank Trail at Lightning Creek. In 2022, trail use followed a bell-shaped curve with the lowest use in May and October and with the highest use in the June through September time period, peaking in July (Figure 5.3-1). The majority of the trail use occurred at the East Bank Trail at Lightning Creek and Desolation Peak Trail peaking at 577 and 494 users in July, respectively. The East Bank Trail at Lightning Creek counter had the highest recorded users of all trail counters in the study season (May through October). In general, trail use counts were substantially lower at the remaining three trail counters in the upper Ross Lake area with less than 100 total monthly

users, except in July when all three counters recorded between 102 and 171 monthly users. As noted above, the Little Beaver Trail was closed by the NPS starting in early September and lasting through late October. The trail counters in the Hozomeen area recorded nearly double the users in July compared to June and August. Importantly, however, the Hozomeen area was not accessible by vehicle during the survey season due to the closure of the Silver-Skagit Road in Canada, which provides the only road access to the area. As a result, trail use at the Hozomeen area trail counters, particularly Hozomeen Lake Trail and East Bank Trail near Hozomeen Campground, likely experienced lower use than during a typical recreation season with vehicle access. Trail use recorded at these two counter locations as part of this study were related to any hike-in and boat-in users.

City Light installed four trail counters in the southern Ross Lake area, including on the Big Beaver Trail, East Bank Trail near Roland Point and Roland Creek, East Bank Trail at Ruby Creek (near the East Bank Trailhead), and Ross Dam Trail. In 2022, trail use followed a bell-shaped curve with the lowest use in the off-peak season months of May and October and the highest use in the June through September, peaking in July (Figure 5.3-2). Trail use was significantly higher at Ross Dam Trail (trailhead along SR 20) ranging from 1,333 total users in October to a maximum of 7,420 total monthly users in July. During the peak season, total monthly users ranged from 5,408 users in September to a maximum of 7,420 users in July. The other trail counter near SR 20 (East Bank Trail at Ruby Creek) recorded the second highest monthly use ranging from 82 users in October to a maximum of 789 users in July. The remaining two counter locations on lower Ross Lake (Big Beaver Trail and East Bank Trail at Roland Point) are more remote and distant from SR 20 than the other two counters. As such, the recorded monthly use was lower and generally similar in levels, peaking in July at 476 users (Big Beaver Trail).

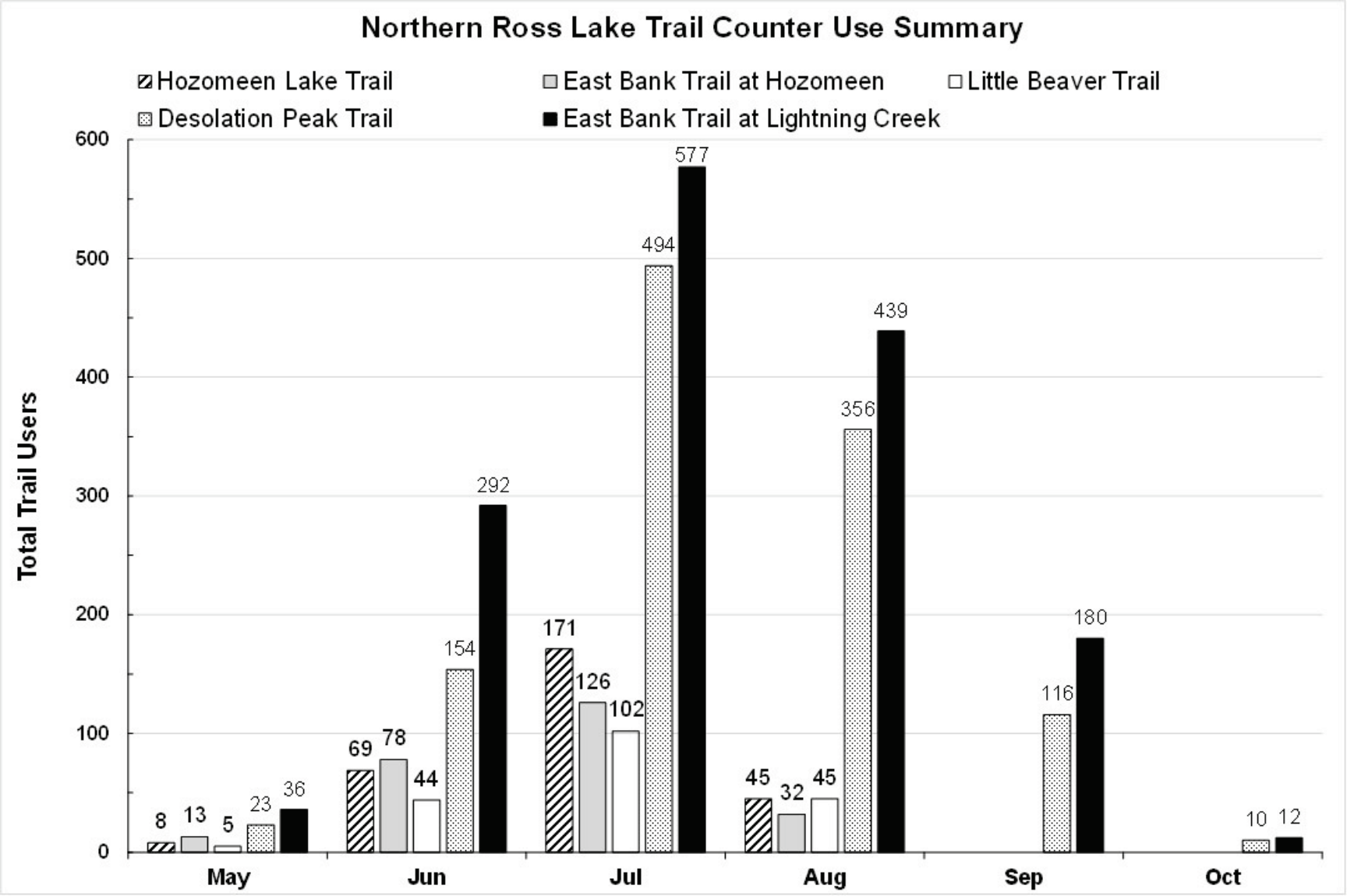


Figure 5.3-1. Summary of trail users at the northern Ross Lake trail counter locations (non-Project trails).

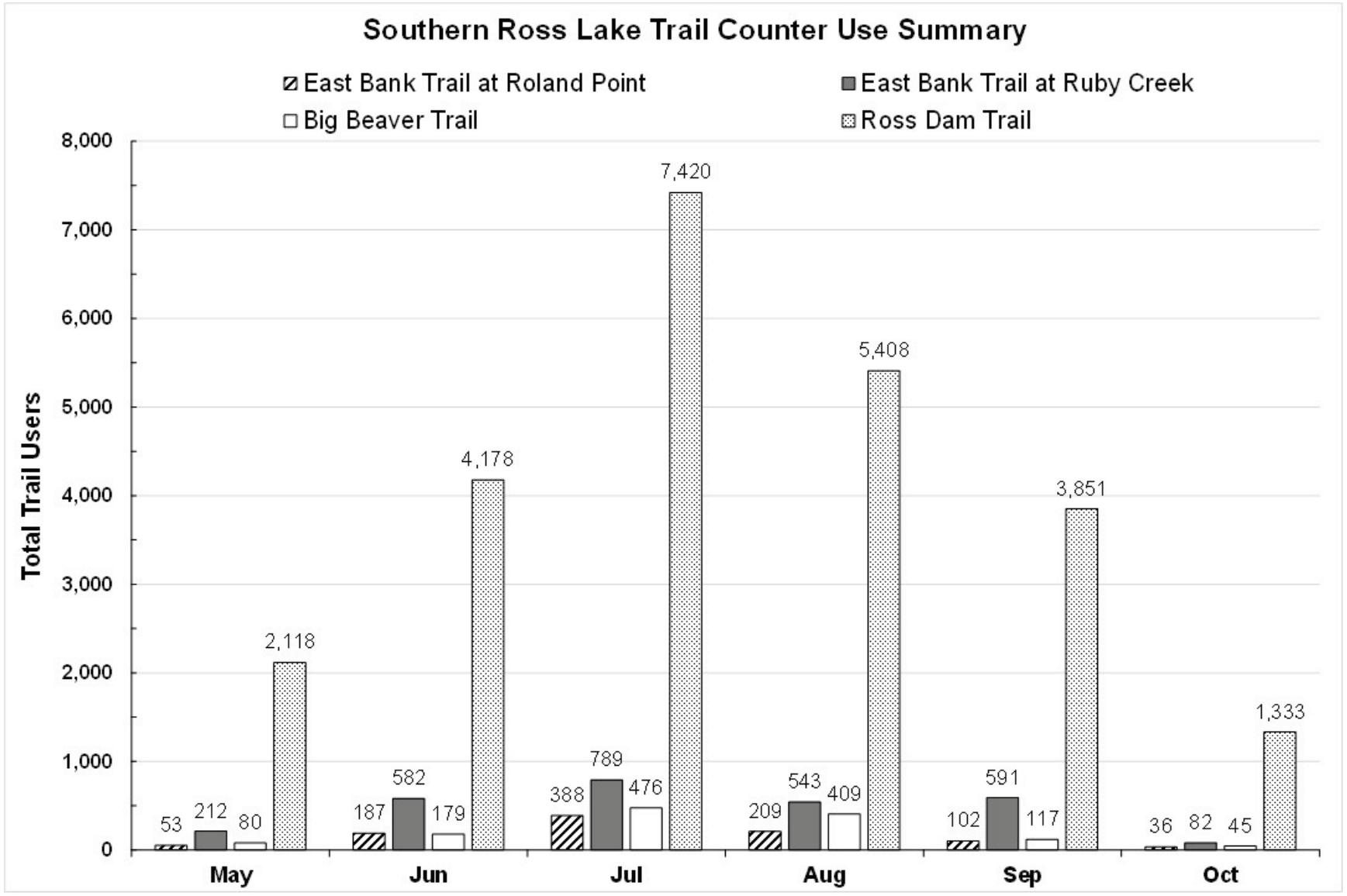


Figure 5.3-2. Summary of trail users at the southern Ross Lake trail counter locations (non-Project trails).

5.3.6.2 Diablo Lake

City Light installed three trail counters at Diablo Lake: (1) Thunder Knob Trail, (2) Thunder Creek Trail adjacent to the Colonial Creek complex, and (3) Diablo Lake Trail near the ELC.

Similar to the Ross Lake counters, the trail use at these locations followed a bell-shaped curve with the lowest use in the off-peak season months of May and October and the highest use in the July through September time period, peaking in July (Figure 5.3-3). Trail user numbers were significantly higher at Thunder Knob Trail ranging from 664 total users in October to a maximum of 8,555 total monthly users in July followed by 6,183 users in August and 4,145 users in September. The Thunder Knob Trail did not open until late June (counter was installed for the final five days of June), yet the users totaled 1,211 during that short period.

The monthly users on the Thunder Creek Trail were roughly 30 to 40 percent of the levels recorded on the Thunder Knob Trail with users peaking in July (3,663 users). The monthly users on the Diablo Lake Trail ranged between 1,122 and 1,989 users from May through September before dropping off in October to 398 users.

5.3.6.3 Gorge Lake

City Light installed two trail counters at Gorge Lake in the Diablo Townsite: (1) Diablo Dam Trail (Reflector Bar area) and (2) Sourdough Mountain Trail (Hollywood area).

The trail use at the Sourdough Mountain Trail counter location generally followed a bell-shaped curve with the lowest use in the off-peak season months of May and October and the highest use in the July through September, peaking in July (Figure 5.3-4). The monthly users on the Diablo Dam Trail were substantially lower, peaking in May (94 users) and steadily declining throughout the season to less than 30 users by September/October. Access to the Diablo Dam Trailhead was restricted for much of the season due to the construction work on the Reflector Bar side of Diablo Townsite (removal of residences).

5.3.6.4 Newhalem

City Light installed two trail counters in Newhalem: (1) Ladder Creek Falls Trail and (2) Trail of the Cedars.

Both trail counters recorded similar levels of trail use throughout the study season (May through October) and following a bell-shaped curve. The Ladder Creek Falls Trail showed slightly higher monthly trail use. In the lower use months of May and October, the number of monthly trail users was between 1,088 and 1,633 users. In comparison, the number of monthly users in the remaining months were never lower than 2,935 users and peaked in July at 6,566 users for Ladder Creek Falls Trail and 5,977 users for the Trail of the Cedars (Figure 5.3-5).

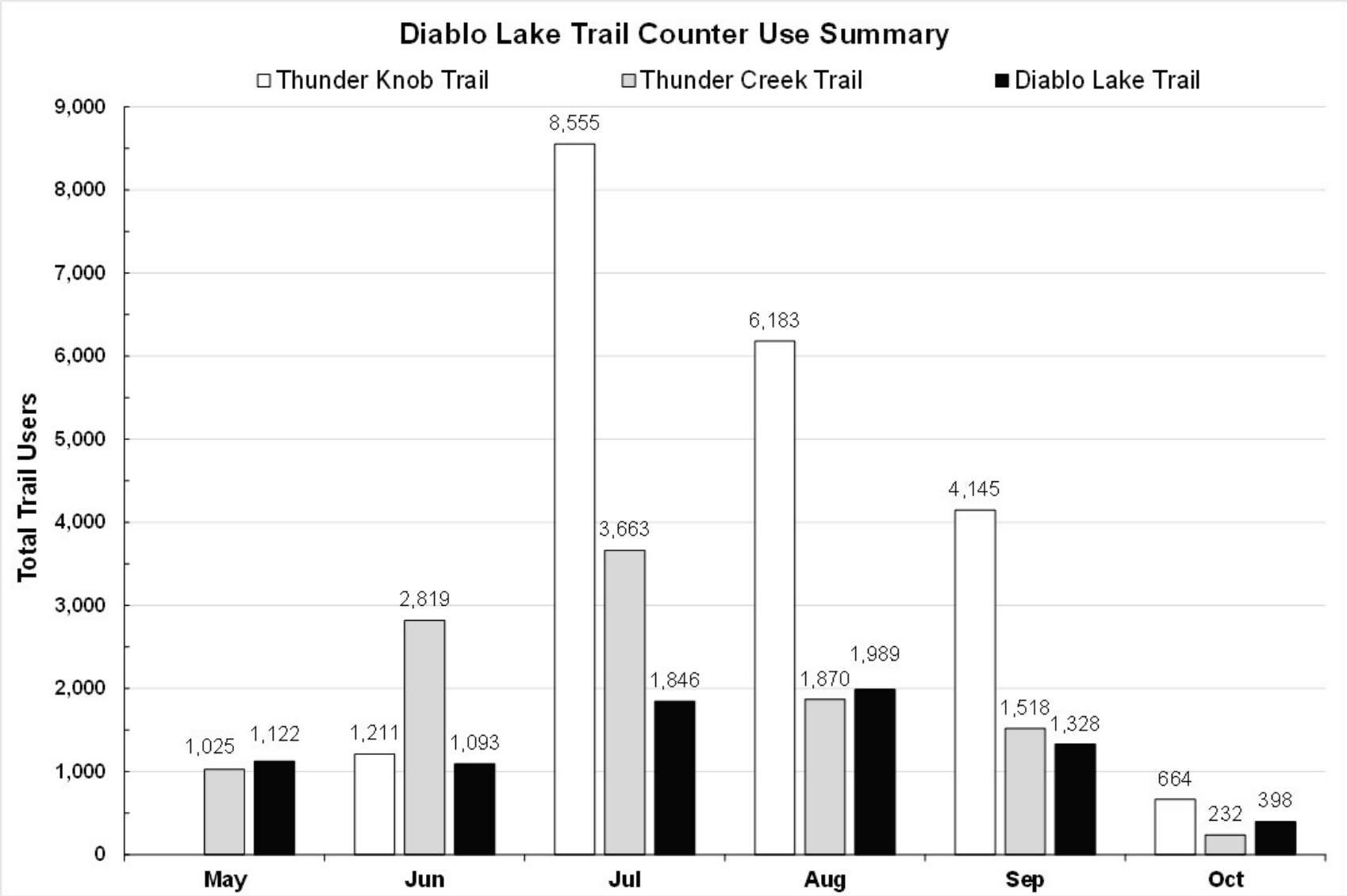


Figure 5.3-3. Summary of trail users at Diablo Lake trail counter locations (non-Project trails). Note: Thunder Knob Trail data began on June 25, 2022 once NPS opened the trail.

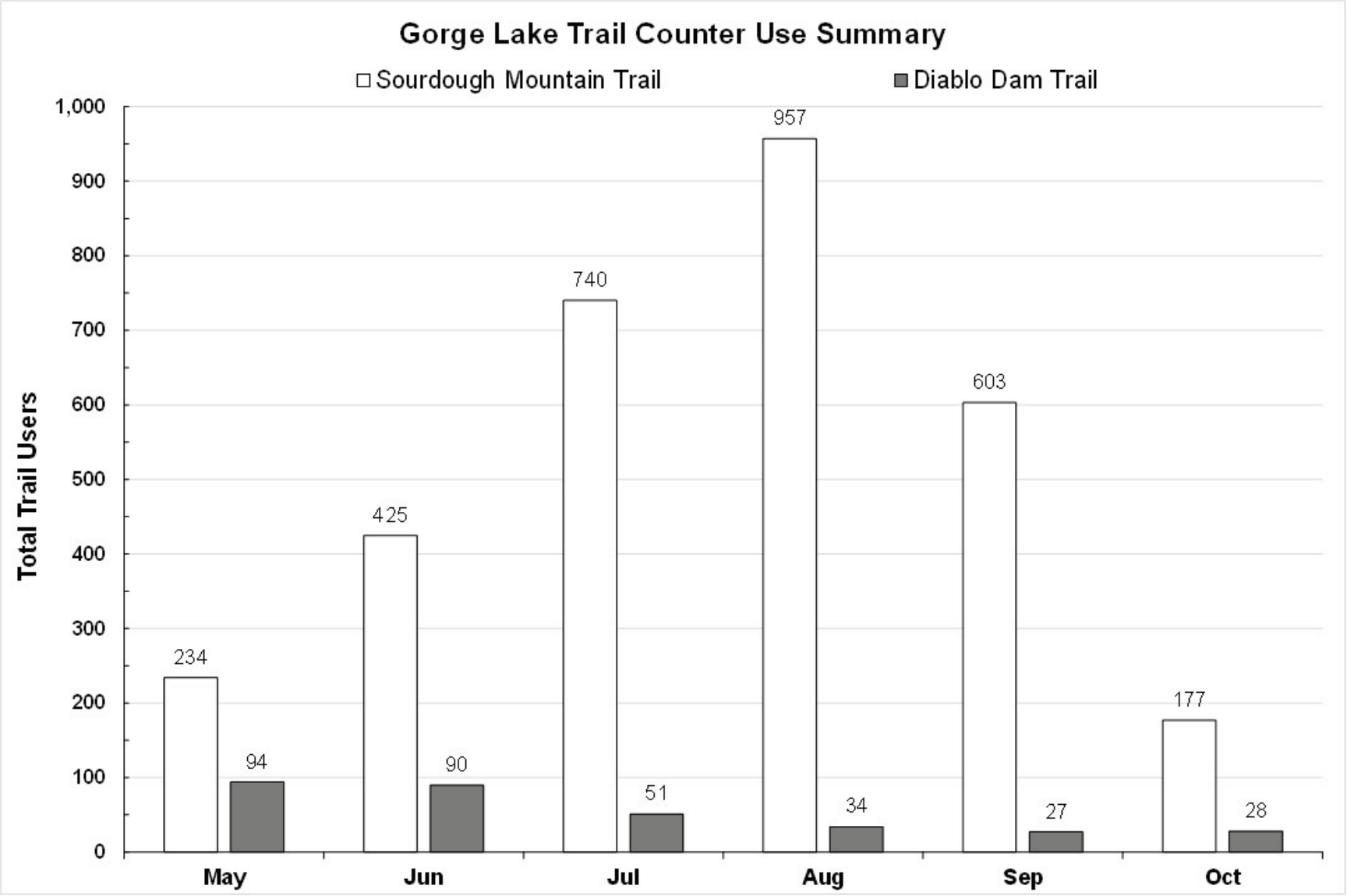


Figure 5.3-4. Summary of trail users at Gorge Lake trail counter locations (non-Project trails).

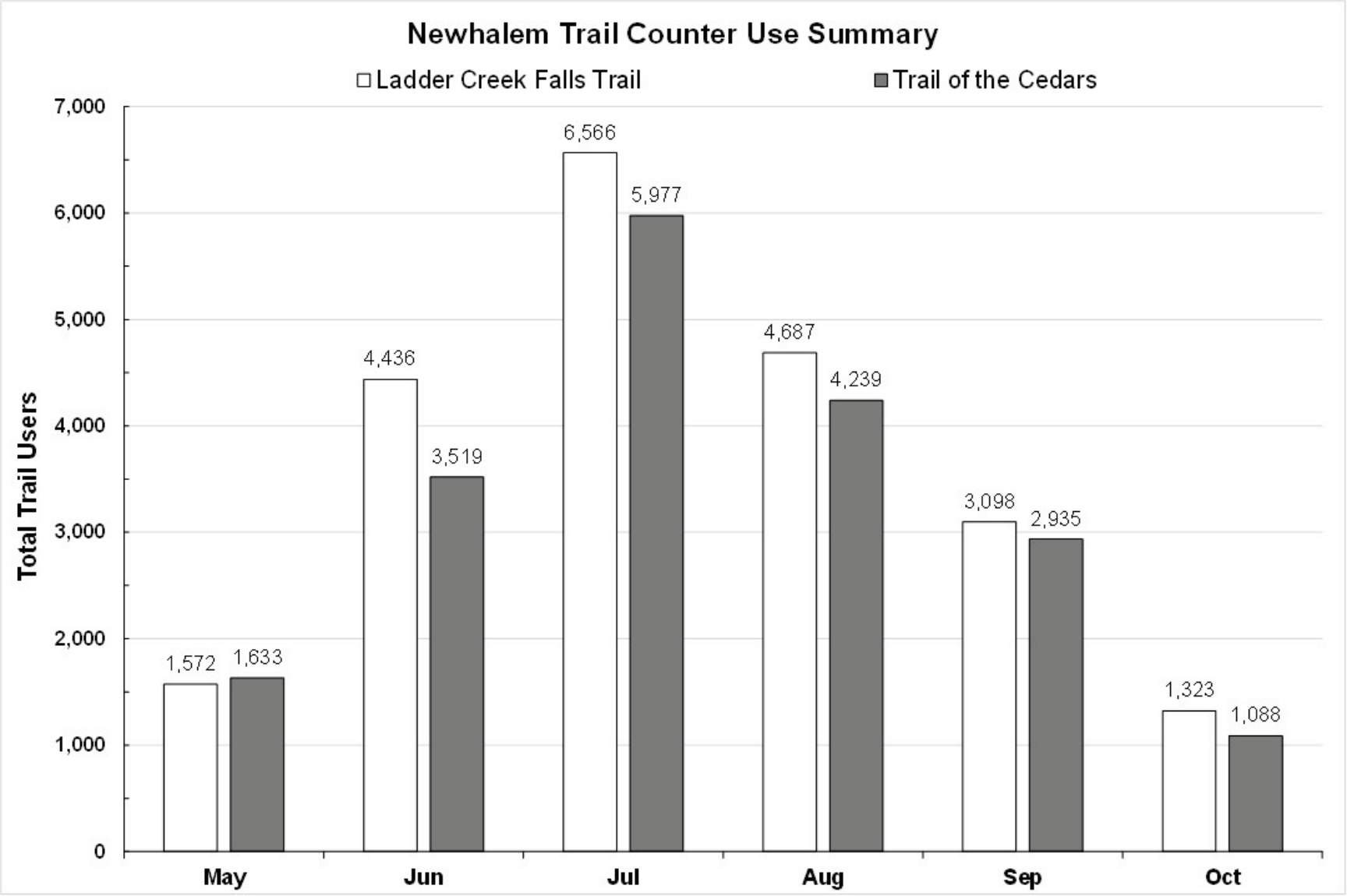


Figure 5.3-5. Summary of trail users at Newhalem trail counter locations (Project trails).

5.4 Recreation Use Estimates

To assess the recreation use that occurs within the study area, City Light estimated the existing annual day use and overnight visits for the study sites listed in Tables 4.2-4 and 4.2-5 in recreation days (RD)[9] by developing one use estimate specific to Project recreation facilities and a separate use estimate for non-Project recreation facilities. This division was necessary given the distinct data collection methods for the data sources (i.e., Project recreation facilities versus non-Project recreation facilities).

5.4.1 Project Use Estimate

City Light estimated Project recreation use based on visitor use data collected as part of this study (average group size from the visitor surveys and average observed vehicles from the observation surveys) and incorporated additional daily visitor use data from NCI for the ELC, which provides visitor use programs and services at Project recreation facilities. City Light did not operate the Skagit Tours in 2022 due to the highway construction projects, but rather provided informational and educational services to visitors who utilized the ferry service between the West and East Ferry Landings on Diablo Lake, and at other contact points. As such, there is no use summary for Skagit Tours.

The Project recreation use estimate by season and day type is presented in Table 5.4-1. There are no Project recreation facilities at the Ross Lake or Skagit River resource areas so there is no estimate of Project use. The only Project overnight use occurs as part of the ELC programs.

For the study season (May-October), the estimated Project use totaled 83,800 RDs with most of the use occurring at Diablo Lake (53,500 RDs or 64 percent of the total Project use) and Newhalem (29,500 RDs or 35 percent of the total Project use). Peak season use (56,200 RDs or 67 percent of total Project use) was nearly double the off-peak season (27,600 RDs or 33 percent of total Project use). Most peak season use occurs at Diablo and Gorge lakes. As noted above, day use is the primary recreation use type, accounting for 95 percent of the total Project use. Given the nature of recreation use in the study area, whereby visitors are often moving from one recreation site to the next and visitors' vehicles may have been counted at multiple study sites in the same general area, it is very likely this estimate of Project use is overcounting visitation and is a conservative estimate of Project recreation use.

[9] A Recreation Day, as defined by FERC, equals a visit to an area for recreation purposes for any portion of a 24 hour period.

Table 5.4-1. Project recreation use estimate in Recreation Days by season and day type.

Resource Area	Day Type	Project Use Estimate in Recreation Days (RDs)								
		Overall (May-Oct)			Peak Season			Off-Peak Season		
		Overnight	Day Use	Total	Overnight	Day Use	Total	Overnight	Day Use	Total
Ross Lake	**Overall**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Weekday	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Weekend	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Holiday	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Diablo Lake	**Overall**	**1,800**	**51,700**	**53,500**	**500**	**35,100**	**35,600**	**1,300**	**16,600**	**17,900**
	Weekday	1,000	29,300	30,300	300	19,900	20,200	700	9,400	10,100
	Weekend	600	18,400	19,000	200	12,000	12,200	400	6,400	6,800
	Holiday	140	4,000	4,140	40	3,300	3,340	100	700	800
Gorge Lake	**Overall**	**N/A**	**800**	**800**	**N/A**	**500**	**500**	**N/A**	**300**	**300**
	Weekday	N/A	500	500	N/A	300	300	N/A	200	200
	Weekend	N/A	300	300	N/A	200	200	N/A	100	100
	Holiday	N/A	20	20	N/A	10	10	N/A	10	10
Newhalem	**Overall**	**N/A**	**29,500**	**29,500**	**N/A**	**20,100**	**20,100**	**N/A**	**9,400**	**9,400**
	Weekday	N/A	19,000	19,000	N/A	12,300	12,300	N/A	6,700	6,700
	Weekend	N/A	9,600	9,600	N/A	7,100	7,100	N/A	2,500	2,500
	Holiday	N/A	900	900	N/A	700	700	N/A	200	200
Skagit River	**Overall**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Weekday	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Weekend	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Holiday	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**Overall**	**1,800**	**82,000**	**83,800**	**500**	**55,700**	**56,200**	**1,300**	**26,300**	**27,600**
	Weekday	1,000	48,800	49,800	300	32,500	32,800	700	16,300	17,000
	Weekend	600	28,300	28,900	200	19,300	19,500	400	9,000	9,400
	Holiday	140	4,920	5,060	40	4,010	4,050	100	910	1,010

5.4.2 Non-Project Use Estimate

For the non-Project recreation facilities use estimate, City Light reviewed a variety of visitor use data sources, as available, including some collected as part of this study, but mostly existing NPS overnight and day use data, USFS overnight data, and third-party data (e.g., Ross Lake Resort). Where available and provided by other parties, City Light considered the use information from the non-Project recreation facilities; however, unlike the data collected via surveys as part of this study, most of this data are not provided on a daily basis and is primarily summarized on a monthly basis.

Given the inconsistency between the non-Project recreation use data and the daily Project recreation use data (almost entirely from this Recreation Assessment), City Light determined it was not feasible to synthesize all the varying use data sources into a coherent non-Project recreation use estimate including being able to distribute the use by the same resource areas as the Project use estimate. Instead, City Light has provided a summary of the key non-Project recreation use data sources to provide a general understanding of the level of non-Project recreation use in the study area. In particular, City Light has summarized RLNRA visitation data from NPS (NPS 2023), which is the most comprehensive non-Project recreation use data source for the overall study area. Note that the RLNRA visitation numbers below encompass Ross Lake (including backcountry use), Diablo Lake, Gorge Lake, and Skagit River facilities.

In addition, City Light summarized the non-Project recreation use estimate for two recreation sites located outside the RLNRA on lands managed by the USFS. This estimate includes the Marblemount area on the lower end of the study area located just downstream of RLNRA on federal lands managed by USFS and consists of day use associated with the USFS Marblemount Boat Launch (using spot count data from this Recreation Assessment) and overnight use associated with the USFS Marble Creek Campground (using campground data provided by the USFS).

Table 5.4-2 represents RLNRA (NPS) and Marblemount area (USFS non-Project use estimates by season for the study season (May through October). Note that RLNRA use levels are also reported below in Section 5.5.2 but for the full calendar year (January through December) as part of the recreation use trend summaries.

Table 5.4-2. Non-Project recreation use estimate in Recreation Days by season.

	Overall (May-Oct)			Peak Season			Off-Peak Season[1]		
Use Area	Overnight	Day Use	Total	Overnight	Day Use	Total	Overnight	Day Use	Total
RLNRA (NPS)[2]	119,952	823,031	**942,983**	72,744	361,524	**434,268**	57,490	451,226	**508,715**
Marblemount Area (USFS)[3]	5,586	6,176	**11,762**	5,586	4,242	**9,828**	0	1,934	**1,934**
Total	125,538	829,207	**954,745**	78,330	365,766	**444,096**	57,490	453,160	**510,649**

1 Off-peak season use in this table for RLNRA includes use at the start of September through Labor Day (5 days) because the NPS data is summarized by month and does not allow splitting out this 5-day period. The Project recreation use estimate includes the 5 days in September through Labor Day in the peak season category.
2 Preliminary data per NPS Stats website (https://irma.nps.gov/STATS) (NPS 2023).
3 The Marblemount area includes the Marblemount Boat Launch and Marble Creek Campground use.

For the study season (May-October), the non-Project use estimate totaled 954,745 RDs with most of the use occurring in RLNRA (942,983 RDs) compared to the USFS sites (11,762 RDs). Peak season use (444,096 RDs) was slightly less than off-peak season use (510,649 RDs). Day use accounted for the vast majority of use (greater than 80 percent) overall and for the peak and off-peak seasons.

5.5 Future Use and Demand Assessments

5.5.1 Existing Unmet Demand Assessment

City Light identified future use and demand opportunities from three perspectives: (1) assessing the existing unmet demand; (2) assessing future recreation demand; and (3) assessing the regional recreational uniqueness and significance of the Project. Each of these perspectives is described in detail below.

Existing recreation use does not always represent the total existing recreation demand as there may be constraints that limit participation. While there are many potential constraints on recreation use (e.g., lack of free time, cost, geographic distance, lack of skills or equipment), a subset of participation constraints may be closely associated with site-specific management (e.g., limited access to lands or water, use limits or full occupancies at facilities, Project operations that eliminate or diminish the quality of experiences and opportunities, or the lack of information about available recreation opportunities). City Light performed three tasks to assess the general level of unmet demand for recreation opportunities within the study area: (1) assess statewide and regional unmet recreation demand information, (2) collect unmet recreation demand information, and (3) identify potential activities with high unmet demand.

5.5.1.1 Statewide and Regional Unmet Recreation Demand Information

City Light reviewed and summarized relevant information from the following three documents—NPS Comprehensive Survey of the American Public, 2018-2022 Recreation and Conservation Plan for Washington State, and the RLNRA General Management Plan. The focus of this assessment was to identify possible recreation activities with substantial unmet demand with a qualitative discussion of participation constraints and whether these constraints are likely affected by Project operations.

NPS Comprehensive Survey of the American Public (NPS 2001)

NPS conducted a comprehensive study to understand the relationship of the American people to the nation's system of national parks, historical and cultural sites, and national monuments. This report investigated people's interest and attitudes toward the NPS and National Park System. The survey included questions related to frequency of visits to NPS sites, associations with NPS, trip reasons not to visit, reasons of last visit, activities participated in, entrance and service fees, and information sources.

The Project is located within the Pacific West Region (PWR) (which includes Washington, Oregon, Idaho, California, Nevada, and Hawaii), which City Light used to compare with the study data. The National and PWR reasons for their visit and activities participated is similar to those of the Recreation Assessment visitor survey. PWR respondents stated sightseeing (38 percent) as their main reason for making visits to NPS sites, followed by vacation with guests, family,

company, and relatives (15 percent) (Table 5.5-1). As detailed in Section 5.2.3, the Recreation Assessment visitor survey identified the primary reasons for visitors coming to the study area was to view mountains (19 percent), spend time with family/friends (18 percent), to recreate at Ross, Diablo, and Gorge lakes (18 percent), and to escape an urban setting (14 percent).

Table 5.5-1. Top main reason for visitors last visit to a National Park System unit.

Main Reason	National	Pacific West Region
Go sightseeing	40%	38%
Vacation with guests, family, company, relatives	16%	15%
View exhibits, park information, educational sites	6%	4%
Go day hiking	6%	8%
Go just because it's there, proximity	6%	7%
Camping	5%	7%
Visit to a cultural or historical site	5%	5%
Play sports, recreation, exercise, walk dog	4%	5%
Go fishing	2%	1%
Viewing wildlife	2%	2%

Source: NPS 2001.

The top three primary activities identified in the Recreation Assessment visitor survey (Section 5.2.3) were hiking (42 percent), developed car camping (12 percent), and driving for pleasure (9 percent). The NPS Comprehensive Survey collected all activities visitors participated in on their most recent visit, which City Light also collected as part of the Recreation Assessment visitor survey. As detailed in Section 5.2.3, the study results are comparable to the PWR's most popular activity (sightseeing, 81 percent) include viewing wildlife (10 percent), viewing lakes (13 percent), and viewing waterfalls (3 percent).

Recreation Assessment study data indicated that 77 percent of respondents participated in day hiking, which is higher than the PWR day hiking participation rate of 58 percent. Study respondent participation rates for picnicking were 31 percent, which was lower than the PWR rate of 45 percent. For camping activities, the study participation rates were 34 percent for developed car camping and 8 percent for backcountry camping, which are similar to the PWR NPS campground (33 percent) and overnight backpacking (13 percent) participation rates. For educational and interpretive tours, the study participation rates were 8 percent compared to 25 percent for the NPS PWR participation rates.

The study area survey results (Section 5.2.3) included several activities that the NPS comprehensive survey did not include which affects the participation numbers. Study area visitors also participated in swimming (24 percent), flatwater non-motorized boating (13 percent), fishing (11 percent), river boating (7 percent), bicycling (5 percent), flatwater motorized boating (4 percent), and climbing (4 percent).

Table 5.5-2. Activities visitors participated in during their last visit.

Activities	National	Pacific West Region
Go sightseeing	84%	81%
Go day hiking	47%	58%
Go picnicking	41 %	45%
Camps at a NPS campground	22%	33%
Attend a demonstration or performance	20%	18%
Take a ranger-led interpretive historical tour	17%	11%
Take a ranger-led interpretive nature tour	12%	14%
Go overnight backpacking	8%	13%

Source: NPS 2001.

2018-2022 Recreation and Conservation Plan for Washington State

The purpose of the Recreation and Conservation Office Plan (RCO 2017) was to assess the demand for outdoor recreation in the State of Washington. It reviews the participation rates of outdoor activities, the number of user days/frequency, location of activities, satisfaction with public facilities and outdoor recreation opportunities, and future demand. The resident survey report breaks out activity participation rates and top 10 activities for overall participation per category by a variety of socio-demographic parameters (e.g., gender, race/ethnicity, age, education, income, mean user days, region, and region satisfaction) and region (e.g., The Coast, Peninsulas, Seattle-King, The Islands, North Cascades, Southwest, South Central, Columbia Plateau, Northeast, and The Palouse). The Project is located within the North Cascades Region, so Washington State and North Cascades Region data were compared to the study area data.

The majority of respondents (74 percent) to the Washington assessment of outdoor recreation demand were satisfied or highly satisfied with the public facilities and opportunities for the outdoor recreation activities they participated in within the last 12 months (RCO 2017).

The top activities for Washington residents based on participation rate includes land and water-based activities (Table 5.5-3 and Table 5.5-4). Walking in a park or trail setting is the most common outdoor recreation activity in Washington (84 percent) and the North Cascades Region (88 percent). Day-hiking was a highly participated in activity in Washington (53 percent) and the North Cascades Region (58 percent). These results align with the study area survey results with survey respondents participating in day hiking (77 percent) and backpacking (12 percent) overall (Section 5.2.3).

Table 5.5-3. Top Washington activities based on participation rates.

Rank	Activity	Activity Category	%
1	Walking – park or trail setting	Walking	84%
2	Visiting rivers or streams	Nature activities	66%
3	Visiting a beach or tide pools	Nature activities	60%
4	Attending an outdoor concert or event (e.g., farmer's market, fairs, sporting events)	Leisure activities at a park	58%
5	Gather or collect things in a nature setting (e.g., rocks, shells, plants)	Nature activities	54%
6	Day-hiking	Hiking	53%
7	Sightseeing – scenic or wilderness area	Sightseeing	51%
8	Wildlife or nature viewing	Nature activities	50%
9	Swimming/wading at a beach - freshwater	Swimming	50%
10	Driving or motorcycling for pleasure (paved surface)	Sightseeing	46%
11	Park - playing	Leisure activities at a park	46%
12	Park – picnicking, BBQ, or cookout	Leisure activities at a park	43%

Source: RCO 2017.

Table 5.5-4. Top North Cascades Region activities based on participation rates.

Rank	Activity	Activity Category	%
1	Walking – park or trail setting	Walking	88%
2	Visiting rivers or streams	Nature activities	70%
3	Visiting a beach or tide pools	Nature activities	66%
4	Attending an outdoor concert or event (e.g., farmer's market, fairs, sporting events)	Leisure activities at a park	60%
5	Day-hiking	Hiking	58%
6	Swimming/wading at a beach - freshwater	Swimming	55%
7	Gather or collect things in a nature setting (e.g., rocks, shells, plants)	Nature activities	55%
8	Sightseeing – scenic or wilderness area	Sightseeing	53%
9	Park - playing	Leisure activities at a park	50%
10	Wildlife or nature viewing	Nature activities	46%

Source: RCO 2017.

Visiting rivers or streams and visiting a beach or tide pools were among the top 10 outdoor recreation activities in Washington (66 percent and 60 percent, respectively) and in the North Cascades Region (70 percent and 66 percent, respectively) (Table 5.5-3 and Table 5.5-4). Swimming or wading at a beach with freshwater was also listed among the top participated activities in Washington (50 percent) and the North Cascades Region (55 percent) (Table 5.5-3 and Table 5.5-4). Study area survey respondents participated in viewing lakes (60 percent), viewing mountains (15 percent), and swimming (24 percent) among their activities within the study area (Section 5.2.3).

Sightseeing scenic or wilderness areas, and wildlife or nature viewing were among the top 10 outdoor recreation activities in Washington (51 percent and 50 percent, respectively) and the North Cascades Region (53 percent and 46 percent, respectively) (Table 5.5-3 and Table 5.5-4). In addition to viewing lakes (60 percent) and viewing mountains (15 percent), study area survey respondents also participated in viewing wildlife (48 percent) (Section 5.2.3).

The Washington State demand assessment notes 32 percent of residents indicated there are outdoor recreation activities they do not do now but might like to pursue in the future (e.g., walking, hiking, fishing, and camping) (RCO 2017). The Project vicinity provides fishing opportunities in the Project reservoirs and Skagit River, as well as several different types of non-Project camping opportunities. Seven percent of survey respondents stated they participated in fishing (4 percent for primary activity) during their visit, and 51 percent of survey respondents participated in camping activities (developed car camping [34 percent], backcountry camping [8 percent], dispersed car camping [5 percent], and boat-in camping [4 percent]) (Section 5.2.3).

The top activity category for Washington residents based on participation rate has an 82 percent participation in walking for adults without children and 88 percent with children. Both these categories increased in participation from the previous State of Washington Assessment of Outdoor Recreation Demand Report conducted in 2012 (RCO 2017). As noted above, several of the activities in Table 5.5-5 are provided and participated in within the Project vicinity. An increasing activity of boating or paddling in freshwater for adults without children (45 percent) and with children (56 percent) for Washington residents is significantly higher than the study's respondents who participated in non-motorized boating (13 percent), motorized boating (4 percent), and river boating (7 percent) (Section 5.2.3).

Table 5.5-5. Top 10 Washington recreation activity categories ranked with participation rates.

	Adults without Children			Adults with Children		
Rank	Activity	Participation Rate	Change from 2012	Activity	Participation Rate	Change from 2012
1	Walking	82%	Increased	Walking	88%	Increased
2	Sightseeing	54%	No change	Leisure in parks	73%	Not asked in 2012
3	Nature activities	53%	Decreased	Swimming	62%	Increased
4	Day hiking	51%	No change	Nature activities	57%	No change
5	Boating or paddling in freshwater	45%	Increased	Boating or paddling in freshwater	56%	Increased
6	Swimming	45%	Increased	Day hiking	56%	No change
7	Leisure in parks	32%	Not asked in 2012	Bicycling	34%	No change
8	Bicycling	27%	Decreased	Running	34%	No change
9	Fishing in freshwater	24%	No change	Camping	29%	Decreased
10	Target shooting	19%	No change	Fishing in freshwater	28%	No change

Source: RCO 2017.

The only activity listed that cannot be adequately provided within much of the Project vicinity is target shooting. This is due to the activity being prohibited by NPS federal regulations; however, a hunting permit can legally be issued to hunt within a national park. Target shooting is possible on USFS lands unless a specific area has been closed. The Okanogan-Wenatchee National Forest provides several locations for target shooting but none are within the Project vicinity. Mt. Baker-Snoqualmie National Forest has no noted restrictions.

RLNRA General Management Plan (NPS 2012)

The public use and recreation visitor opportunities and issues in RLNRA are identified in the NPS RLNRA General Management Plan, which also includes goals of interpretive and educational programs, addresses the types and levels of recreational uses, and provides a spectrum of opportunities for visitors (NPS 2012). The management of wilderness and backcountry areas within the General Management Plan focuses on providing visitors with opportunities for solitude and connections with the natural world. Within the Ross Lake survey area, visitors reported to City Light in visitor surveys that to escape an urban setting (13 percent), to recreate in the backcountry (9 percent), and to find solitude (6 percent) as their first/primary reason for their trips (Section 5.2.3).

Unmet Recreation Demand Information

City Light collected unmet recreation demand information from study area visitors in the visitor survey. Visitors were asked if and what activities they wanted to do on their trip that they were not able to do, and for what reason. Visitor survey respondents were unable to participate in their desired activity due to bad weather (22 percent) and not enough time (19 percent) (Section 5.2.3). The categorized activities visitors had difficulties accessing or participating in included hiking (29 percent), camping (9 percent), kayaking/canoeing (8 percent), and backpacking/backcountry trip (8 percent) (Section 5.2.3).

Bad weather and a lack of time are not related to Project operations and outside City Light, NPS, and USFS control. The study area experiences heavy snowfall resulting in SR 20 closures, delayed openings and access to higher elevation areas, and snowpack that can last on some trails into the peak season or even year-round. In recent years and including 2022, smoke from nearby wildfires has resulted in poor air quality conditions. Wildfires and poor air quality have resulted in NPS closures to trails, backcountry uses/areas, and even larger recreation areas along SR 20.

Visitors were asked if anyone in their group has a physical condition or personal limitation that made it difficult to access or participate in activities or services within the study area. Eight percent of visitors had difficulty accessing or participating in activities, with 81 percent of those being related to mobility (i.e., difficult in accessing facilities, services, or programs even with walking aid and/or wheelchairs) (Section 5.2.3). As discussed in Section 5.1, the study area recreation facilities were assessed to determine whether each facility complies with current applicable accessibility guidelines. Overall, the Project and non-Project recreation facilities do not meet current accessibility standards. Some facilities have elements that meet accessibility standards, but overall few facilities approach full accessibility. Several trail opportunities nearly met the standards, including Gorge Creek Overlook Trail (non-Project use) and Trail of the Cedars (Project use).

5.5.1.2 Potential Activities with High Unmet Demand

Based on the above analysis, City Light did not identify any potential activities with high unmet demand within and adjacent to the Project Boundary. The top activities regionally and statewide are generally all provided at or near the Project or in the study area, except for target shooting and organized outdoor events (e.g., farmer's market, fairs, sporting events). These types of activities are either not permitted at the Project/in the study area (i.e., target shooting) or not applicable to the setting (i.e., farmer's market, fairs, sporting events, and other organized events). Further, while some of Recreation Assessment survey respondents identified several activities where a barrier prevented their participation, the reasons were largely due to weather conditions and a lack of time to participate in them. Neither of these reasons are related to Project operations.

5.5.2 Future Recreation Demand Assessment

This section provides information regarding projected future recreation use within the study area over the estimated period of the new license. The study plan required assessing future recreation demand assuming a 50-year license, which would generally equate to assessing future demand through 2070 or 2075. However, the available relevant projection data was limited to 2050 for population projections (a 25-year timeframe) and 2060 for recreation activity participation growth rates (a 35-year timeframe). Due to these limitations, this section utilizes these shorter projection timeframes. Importantly, projecting the future is a speculative activity, especially over these timeframes, yet these projections can be useful for general planning purposes to identify potential management issues that may occur in the future. This assessment included four elements.

5.5.2.1 Review Existing Recreation Use Trends

Since past use often correlates with future use, City Light reviewed trends of recent study area recreation use, which is summarized below. The primary sources of past study area use data included NPS, NCI, Ross Lake Resort, and City Light. City Light did not summarize fishing license sales or boating vessel registrations as these activities were not common primary activities for the visitor survey respondents in the study area. City Light has summarized the notable recreation use/visitation data over the past 10 years (where possible) from readily available sources.

RLNRA Visitation Data (NPS)

Figure 5.4-1 summarizes the number of annual visits to the RLNRA (NPS 2023). Over the past 10 years (2013-2022), annual visits to the RLNRA have increased by 34 percent. For the 10-year period, the RLNRA averaged 860,706 visits with the lowest number of visits in 2014 (710,612 visits) and highest number in 2019 (1,088,528 visits).

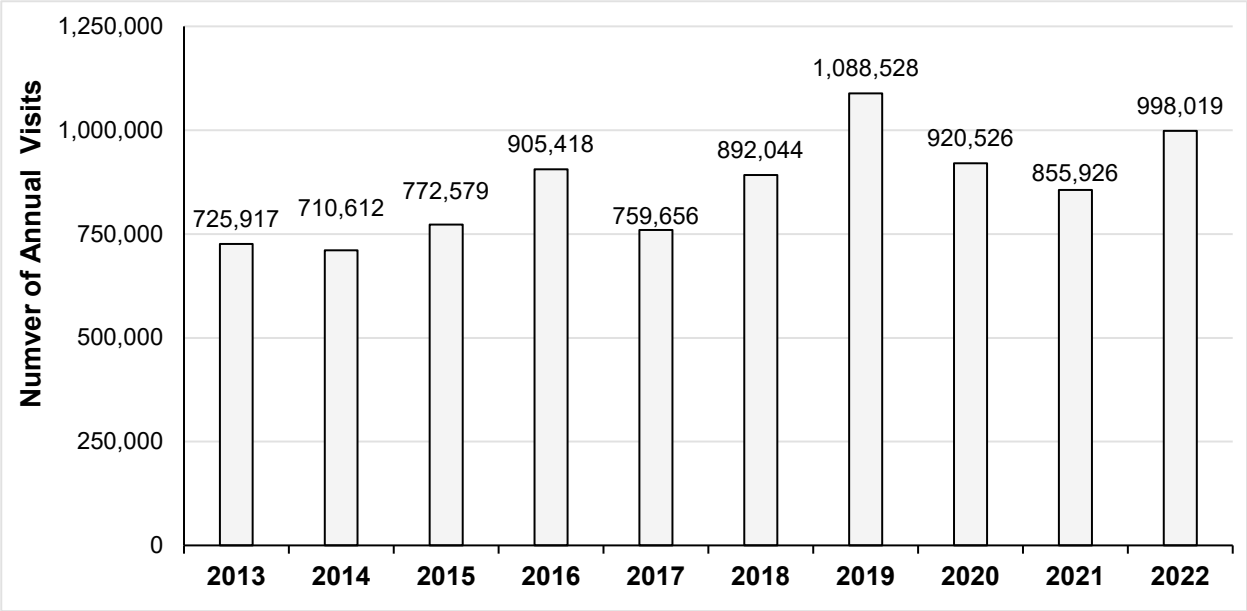


Figure 5.4-1. Number of annual visits to the RLNRA, 2013-2022.

Figure 5.4-2 summarizes the number of overnight visits to the RLNRA (NPS 2023). Overnight visits to the RLNRA have increased by 69 percent since 2013, though the trend has been variable with dips in recreation use in 2015 and again in 2019 and a notable single year increase (24 percent) from 2021 to 2022. Overnight visits were relatively similar from 2013 through 2017 and 2019 ranging between 63,579 and 78,023 visits. In contrast, overnight visits spiked in 2018 (97,945 visits), 2021 (98,303 visits), and 2022 (121,412 visits) (NPS 2023).

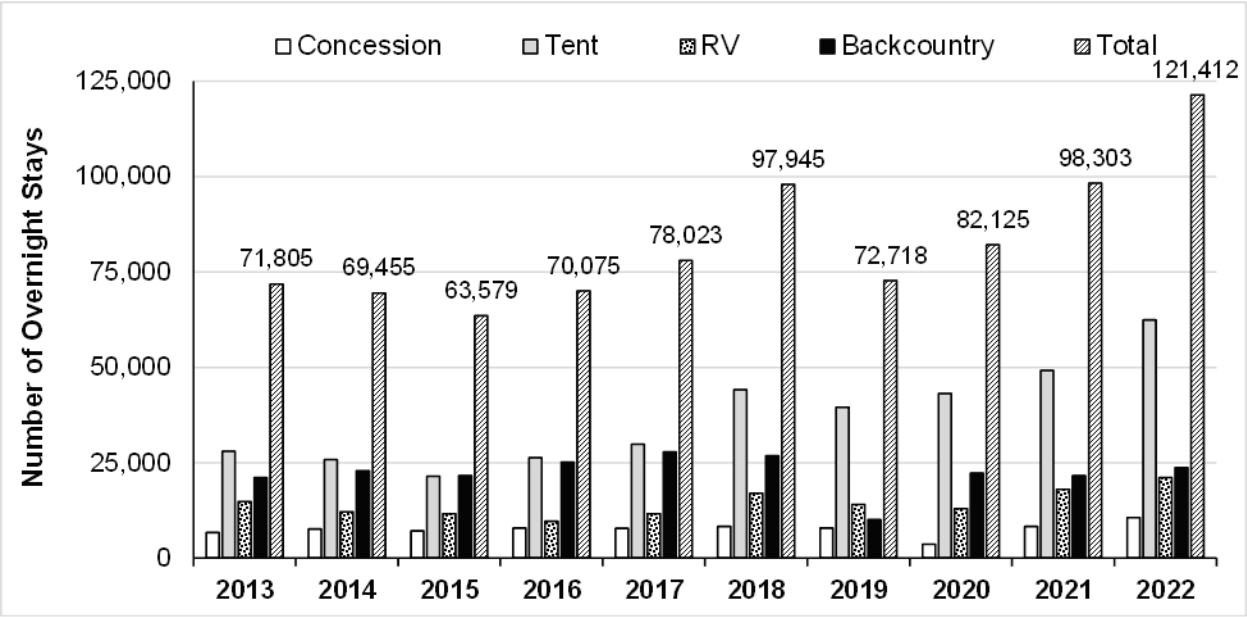


Figure 5.4-2. Number of annual overnight visits to the RLNRA, 2013-2022.

Figure 5.4-3 summarizes the number of annual overnight visits to the NPS Colonial Creek Campground (NPS 2023). Overnight visits to Colonial Creek Campground, the largest campground in the RLNRA, have increased 208 percent since 2013, though the trends are also varied with dips in total use in 2015, 2017, and 2019-2020. For the first five years (2013-2017), the trend slightly decreased from 20,973 visits in 2013 to 15,243 visits in 2017. In contrast, the most recent five years (2018-2022) show higher levels of visitation and an increasing trend from 30,597 visits in 2018 up to 43,635 visits in 2022.

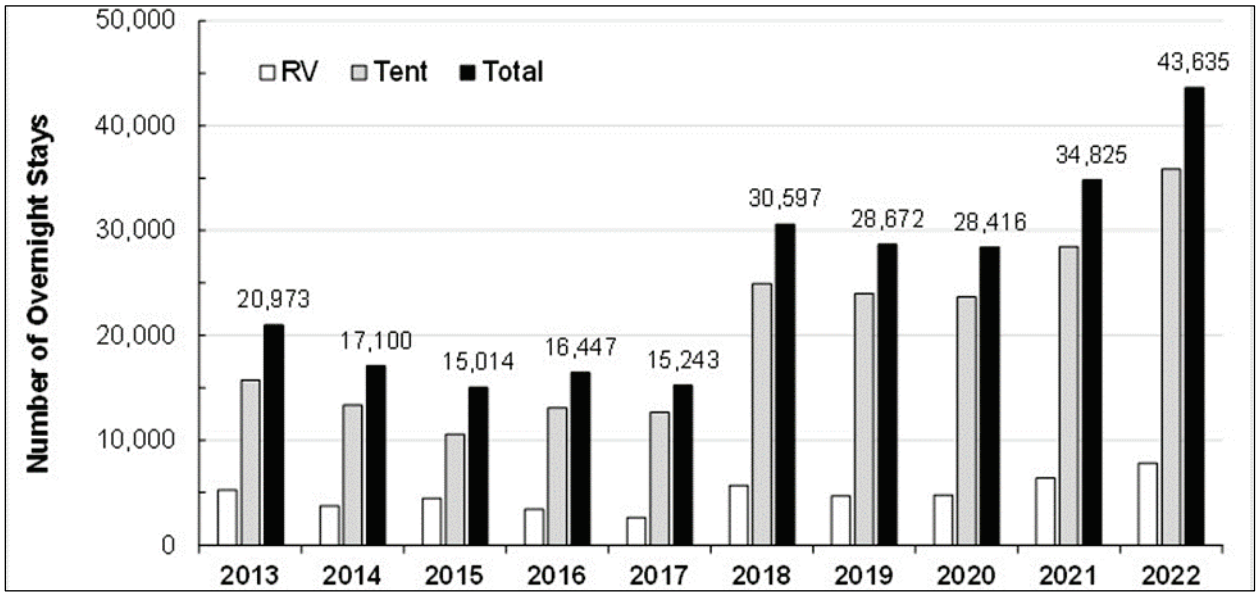


Figure 5.4-3. Number of annual overnight visits to Colonial Creek Campground, 2013-2022.

City Light Tours

Figure 5.4-4 summarizes the number of participants in City Light tours from 2013 through 2019 (City Light 2022). City Light did not include the participant data from 2020 through 2022 as City Light significantly altered the tours due to the COVID pandemic in 2020 and 2021 and did not operate the tours due to the SR 20 repaving and construction projects in 2022.

From 2013 to 2019, there is an overall increasing trend in City Light tour participation despite a drop in 2015 when the tour season was interrupted by the Goodell Wildfire. From 2013 through 2015, participation was less than half of the participation levels from 2016 through 2019 when participation peaked at 4,966 participants in 2018. Notably, the substantial increase in participation from 2016 through 2019 compared to 2013 through 2015 is due to an increase in overall tour capacity during those years. City Light began providing multiple tours per day in 2016 compared to once per day prior to 2016.

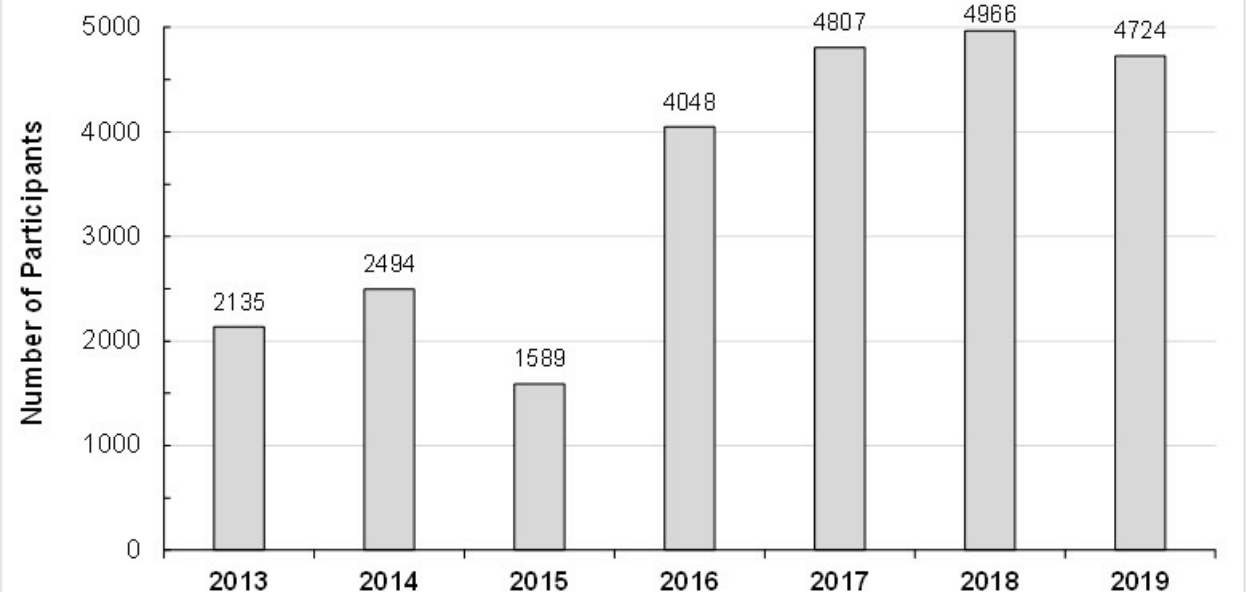


Figure 5.4-4. Number of participants on City Light tours, 2013-2019.

ELC Programs (NCI)

Figure 5.4-5 summarizes the number of annual participants to the ELC programs (NCI 2018). Like the City Light tours, the ELC programs were substantially limited due to the COVID pandemic in 2020 and 2021. In 2022, ELC programs were limited due to wildfires/air quality issues, staffing issues, and late season inclement weather. From 2014 to 2019 (pre-COVID pandemic), the annual number of participants shows an increasing trend ranging from 8,597 to 11,657 participants. This 6-year period included a peak in 2018 (12,265 participants) and the lowest participation in 2015 (6,861 participants).

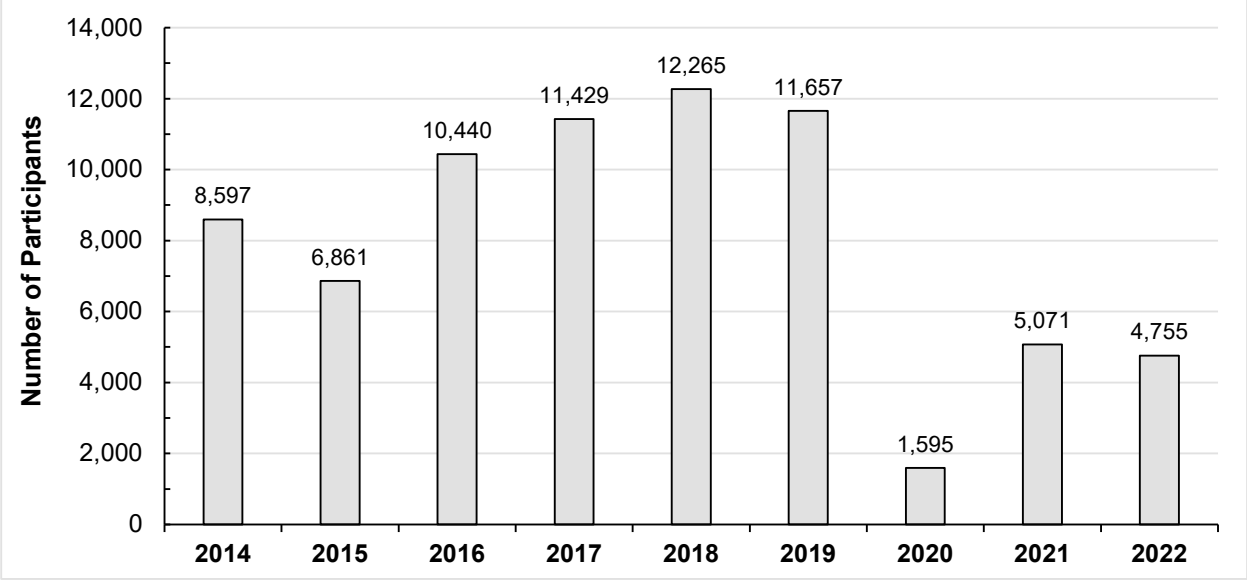


Figure 5.4-5. Number of participants at Environmental Learning Center programs, 2013-2022.

Ross Lake Resort (Private)

Figure 5.4-6 summarizes the number of overnight stays at the privately owned Ross Lake Resort from 2013 through 2022 (Ross Lake Resort 2022). From 2013 to 2022, the number of overnight stays increased by 10 percent from 6,757 to 7,421 stays. However, over this 10-year period, the number of overnight stays has fluctuated with dips in overnight stays in 2015-2016 and again in 2020-2021 (during COVID pandemic restrictions). The peak number of overnight stays occurred in 2018 with 8,328 stays.

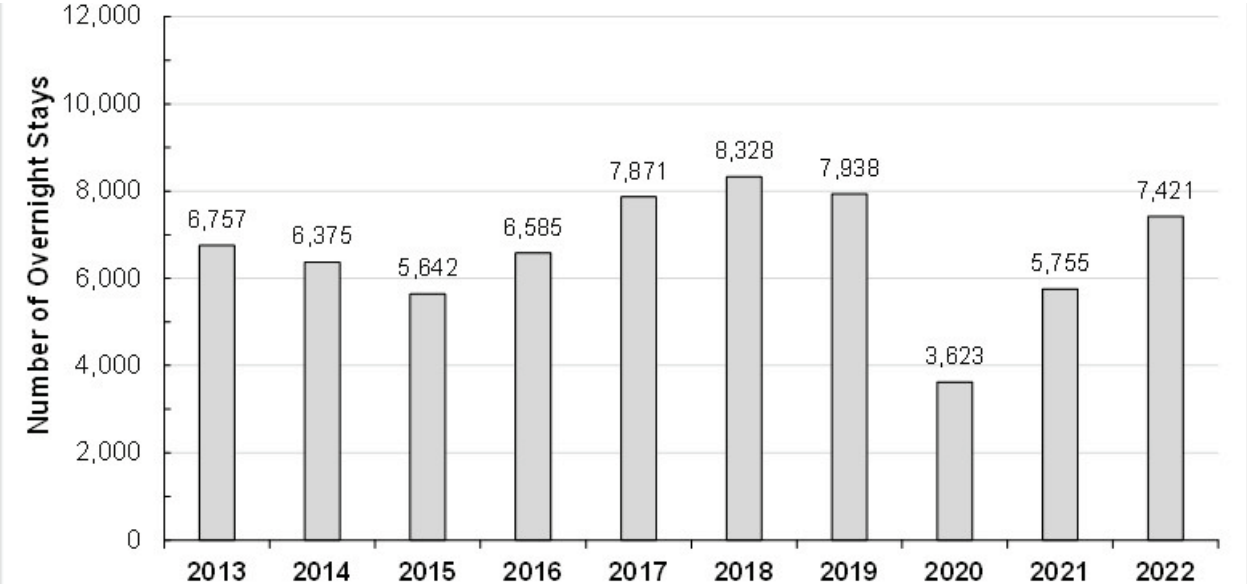


Figure 5.4-6. Number of overnight stays at Ross Lake Resort, 2013-2022.

Marble Creek Campground (USFS)

Figure 5.4-7 summarizes the number of sites occupied and total campers at the USFS Marble Creek Campground along Cascade Creek at the southern end of the study area in the Mt. Baker-Snoqualmie National Forest. City Light has summarized the campground data starting in 2020 as this coincides with when the campground was added to the online registration system (previously it was on a first-come, first-serve basis). The campground use data has ranged between approximately 4,700 and 5,600 campers each year. The number of sites occupied has ranged between approximately 1,250 and 1,700 sites over the three-year period. Overall, camping use increased in 2022 compared to 2020 and 2021.

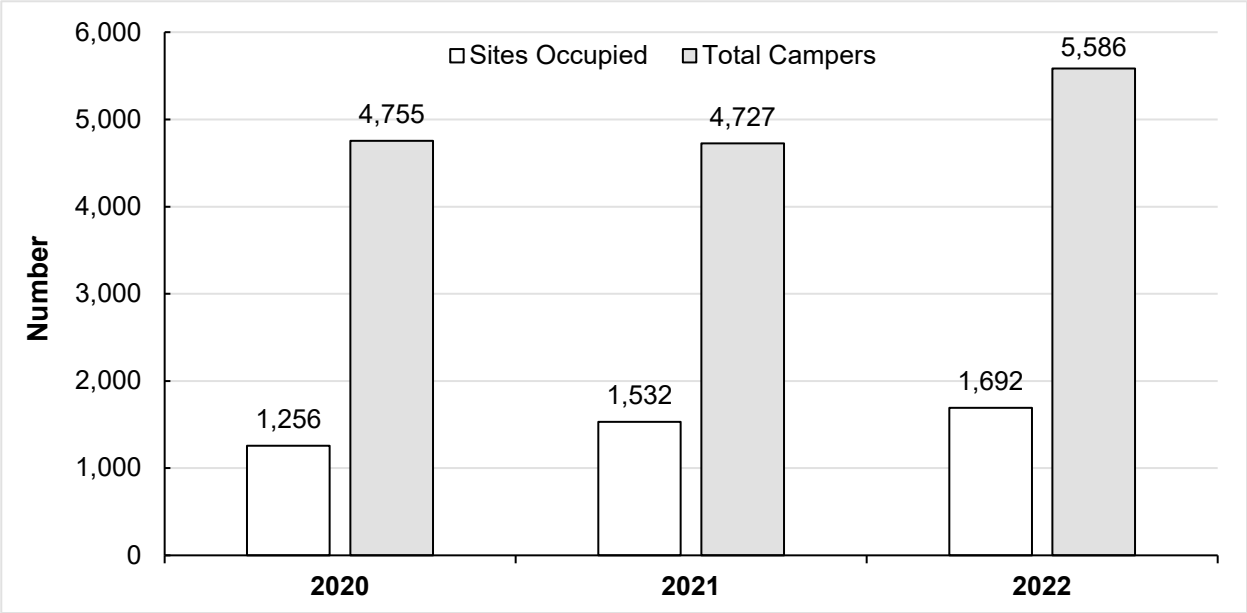


Figure 5.4-7. Number of sites occupied and campers at Marble Creek Campground, 2020-2022.

5.5.2.2 Estimate Future Recreation Use over the New License Period

In this section, City Light estimated study area Project and non-Project recreation use and facility utilization/occupancy levels.

Recreation Use Estimate Projections

To estimate the projected future recreation use levels, City Light used population growth rates for the top 10 counties where survey respondents resided, which includes nine counties in Washington and one county in Oregon. These growth rates were blended and weighted to then project the recreation use estimates (Project and non-Project) developed in Section 5.4.1. For representative purposes, these projections focus on the overall recreation use estimates.

City Light used the population growth rates for the Washington counties from the State of Washington Office of Financial Management Department of Finance website (https://www.ofm.wa.gov/washington-data-research) and for Oregon counties from the Oregon Department of Administrative Services website (https://www.oregon.gov/das/OEA/Pages/forecastdemographic.aspx).

The Project and non-Project recreation use estimates are projected to increase by approximately 27 percent by 2050. This equates to an overall Project use estimate of approximately 107,000 RDs and non-Project use estimate of approximately 1,573,000 RDs (Tables 5.5-6 and 5.5-7).

Table 5.5-6. Projected Project recreation use estimate in Recreation Days by 2050.

Resource Area	Day Type	2022 Overall Use Estimate	Projected[1] Use in Recreation Days		
			2030	2040	2050
Ross Lake[2]	**Overall**	**N/A**	**N/A**	**N/A**	**N/A**
	Weekday	N/A	N/A	N/A	N/A
	Weekend	N/A	N/A	N/A	N/A
	Holiday	N/A	N/A	N/A	N/A
Diablo Lake	**Overall**	**53,500**	**58,400**	**63,900**	**68,300**
	Weekday	30,300	33,000	36,200	38,600
	Weekend	19,000	20,800	22,700	24,300
	Holiday	4,140	4,600	5,000	5,400
Gorge Lake	**Overall**	**800**	**1,222**	**1,224**	**1,226**
	Weekday	500	700	700	700
	Weekend	300	500	500	500
	Holiday	20	22	24	26
Newhalem	**Overall**	**29,500**	**32,400**	**35,400**	**37,800**
	Weekday	19,000	20,700	22,700	24,300
	Weekend	9,600	10,600	11,500	12,300
	Holiday	900	1,100	1,200	1,200
Skagit River[2]	**Overall**	**N/A**	**N/A**	**N/A**	**N/A**
	Weekday	N/A	N/A	N/A	N/A
	Weekend	N/A	N/A	N/A	N/A
	Holiday	N/A	N/A	N/A	N/A
Total	**Overall**	**83,800**	**92,022**	**100,524**	**107,326**
	Weekday	49,800	54,400	59,600	63,600
	Weekend	28,900	31,900	34,700	37,100
	Holiday	5,060	5,722	6,224	6,626

1 Weighted population growth rates are 1.09 for 2030, 1.19 for 2040, and 1.27 for 2050.
2 No Project recreation facilities in the Ross Lake and Skagit River study resource areas.

Table 5.5-7. Projected non-Project recreation use estimate in Recreation Days by 2050.

Resource Area	Day Type[1]	2022 Overall Use Estimate	Projected[2] Use in Recreation Days		
			2030	2040	2050
RLNRA	N/A	942,983	1,027,851	1,223,143	1,553,392
Marblemount Area[3]	N/A	11,762	12,821	15,256	19,376
Total	**N/A**	**954,745**	**1,040,672**	**1,238,400**	**1,572,768**

1 Non-Project use data from NPS is provided on a monthly basis and not by day/day type.
2 Weighted population growth rates = 1.09 for 2030, 1.19 for 2040, and 1.27 for 2050.
3 Marblemount area includes Marblemount Boat Launch and Marble Creek Campground.

Facility Occupancy Projections

City Light utilized outdoor recreation activity projections from the Outdoor Recreation Trends and Futures publication (Cordell 2012) to project recreation facility occupancy at study area recreation facilities out to 2060. Where defined parking areas with marked spaces and picnic sites exist at study sites, City Light described the occupancy levels (i.e., percent of capacity) in Section 5.3. As noted in that section, many of the parking areas in the study area do not have marked parking spaces, and visitors park in varying patterns and locations; this does not allow for occupancy calculation. As such, the study sites with existing and future parking area occupancy assessments are limited. This section focuses on the peak season since average facility occupancy levels are higher compared to the off-peak season.

In 2022, picnic site occupancy levels were low, particularly for the Project picnic sites, and as a result the projected average occupancy levels by 2060 also remain low at 4.5 and 14.2 percent overall during the peak season at Ross Lodge Picnic Shelter and in Newhalem, respectively (Table 5.5-8). The highest use on weekend days is not projected to exceed 21 percent by 2060.

The picnic site occupancy levels at the lone non-Project picnic site (Goodell Creek Boat Launch) were higher than the Project picnic sites. However, average occupancy levels in 2060 are not expected to exceed 40 percent overall and 58 percent on weekend days.

Table 5.5-8. Average projected peak season picnic site occupancy at Project and non-Project recreation facilities.

Project/ Non-Project	Facility	Type of Day	2022 Occupancy	Average Occupancy Projections			
				2030	2040	2050	2060
Project	Ross Lodge Picnic Shelter (3 sites)	**Overall**	**2.8**	**3.5**	**4.2**	**4.2**	**4.5**
		Weekday	0.0	0.0	0.0	0.0	0.0
		Weekend	6.3	8.0	9.3	9.4	10.1
		Holiday	0.0	0.0	0.0	0.0	0.0
	Newhalem Parking Areas (17 sites)	**Overall**	**8.8**	**11.3**	**13.2**	**13.3**	**14.2**
		Weekday	6.4	8.2	9.6	9.7	10.4
		Weekend	12.9	16.4	19.2	19.3	20.7
		Holiday	2.2	2.8	3.3	3.3	3.5
Non-Project	Goodell Creek Boat Launch (2 sites)	**Overall**	**23.6**	**30.1**	**35.3**	**35.5**	**38.1**
		Weekday	9.4	12.0	14.0	14.1	15.1
		Weekend	35.9	45.9	53.7	54.0	58.0
		Holiday	31.3	39.9	46.7	46.9	50.4

There are two Project parking areas with marked parking spaces – West Ferry Landing (32 marked spaces) and Newhalem Main Street (24 marked spaces). The 2022 occupancy levels were higher at the West Ferry Landing at 63 percent overall and 64 percent on weekends/holidays (Table 5.5-9). By 2060, the average occupancy levels are projected to exceed full capacity at 108 percent overall and 109 percent on weekends/holidays. At the Newhalem Main Street parking area, average occupancy levels are projected to reach 76 percent overall and 78 percent on weekend days, well below full capacity. The West Ferry Landing is a longer-term parking area as it provides

visitors access to the ferry service which often transports visitors to the Ross Lake area for extended trips (i.e., multiple days). In contrast, the Newhalem Main Street parking area is generally a short-term parking location, whereby visitors are stopping to gather information or use as a rest stop. Therefore, there is a much higher rate of vehicle turnover at the Newhalem location versus the West Ferry Landing.

Table 5.5-9. Projected parking area occupancy at Project and non-Project recreation facilities.

Project / Non-Project	Facility	Day Type	2022 Occupancy	Average Occupancy Projections			
				2030	2040	2050	2060
Project	West Ferry Landing (32 spaces)	**Overall**	**63%**	**80%**	**88%**	**97%**	**108%**
		Weekday	64%	81%	89%	98%	109%
		Weekend	64%	81%	89%	98%	109%
		Holiday	58%	74%	81%	90%	100%
	Newhalem Main Street Parking Area (24 spaces)	**Overall**	**44%**	**56%**	**62%**	**69%**	**76%**
		Weekday	44%	57%	63%	69%	77%
		Weekend	45%	58%	64%	70%	78%
		Holiday	38%	49%	54%	60%	66%
Non-Project	Colonial Creek Boat Launch (117 spaces)	**Overall**	**56%**	**70%**	**77%**	**84%**	**92%**
		Weekday	41%	51%	56%	61%	67%
		Weekend	79%	79%	86%	94%	103%
		Holiday	90%	90%	99%	108%	118%
	Thunder Creek Trailhead (20 spaces)	**Overall**	**67%**	**85%**	**94%**	**101%**	**110%**
		Weekday	55%	69%	77%	82%	90%
		Weekend	73%	92%	102%	110%	120%
		Holiday	81%	102%	113%	121%	132%
	Gorge Creek Overlook (main parking area; 24 spaces)	**Overall**	**45%**	**58%**	**64%**	**70%**	**77%**
		Weekday	35%	46%	50%	55%	61%
		Weekend	53%	68%	75%	83%	91%
		Holiday	46%	60%	66%	72%	80%

There are three non-Project study sites with designated parking areas with marked spaces, including Colonial Creek Boat Launch (117 marked spaces), Thunder Creek Trailhead (20 marked spaces), and Gorge Creek Overlook main parking area (24 marked spaces). Only the Thunder Creek Trailhead parking area is projected to exceed full capacity overall (110 percent) by 2060 (Table 5.5-9). The Thunder Creek Trailhead parking area is below capacity (overall and across all day types) in 2022, but is projected to exceed average capacity overall by 2050, on holiday days by 2030, and weekend days by 2040. Colonial Creek Boat Launch parking area is projected to near full capacity (92 percent) by 2060 and is anticipated to exceed average capacity on holidays by 2050 and weekend days by 2060. Gorge Creek Overlook's main parking area (24 marked spaces) is not projected to exceed average capacity overall or on any day type by 2060. Both the Colonial

Creek Boat Launch and Thunder Creek Trailhead parking areas have limited/restricted parking options outside the designated parking area (i.e., designated overflow parking does not exist). In comparison at Gorge Creek Overlook, a secondary overflow parking area exists across the SR 20 bridge, which provides an area for additional parking and relieves pressure on the main parking area.

5.5.2.3 Review Reasonably Foreseeable Events that May Influence Future Use

Prior to projecting Project recreation use, City Light evaluated any potential reasonably foreseeable events in the watershed that may be expected to influence recreation use in the watershed over the license period. City Light is not aware of any definitive reasonably foreseeable events that City Light would be able to qualitatively assess for potential effect on future recreation use.

5.5.3 Regional Uniqueness and Significance Assessment

This study element consists of two assessments – a uniqueness assessment and a significance assessment. City Light was not able to conduct a uniqueness assessment as it requires analyzing the visitor responses to a typical uniqueness survey question that asks visitors to rate the relative uniqueness of the project reservoir or resource area they visited via pre-set responses using a 5-point scale (1 = "extremely common" opportunity and 5 = "extremely unique" opportunity). The FERC-approved survey instrument as requested by NPS did not include this survey question.

However, uniqueness is implied because the Project is located within the boundary of a national park/national recreation area, which can only be designated by Congress and identifies areas so-designated as possessing outstanding resources (e.g., natural, cultural, recreational) (U.S. Department of the Interior [USDOI] 2023). Further, RLNRA is one of only 40 national recreation areas in the U.S. (USDOI 2023).

Regarding the significance assessment, City Light utilized the study area's most popular, primary recreation activities as determined in the visitor surveys and identified if these recreation opportunities are of local, regional, or state significance. City Light determined the level of significance based on the Washington county where visitors resided based on the following designations.

- Local Significance: visitors from counties where the Project resides (i.e., Skagit County, Whatcom County, Snohomish County).
- Regional Significance: visitors from the counties surrounding the counties where the Project is located, including San Juan County, Island County, Kitsap County, King County, Chelan County, and Okanogan County.
- State-Wide Significance: visitors from all other areas outside of the local and regional areas in Washington.

The local residents use the recreation facilities to participate in the primary activities of hiking (26 percent), developed car camping (17 percent), driving for pleasure (14 percent), and fishing (11 percent) (Table 5.5-10). Fishing was most popular in Skagit County (15 percent) and Snohomish County (13 percent). Whatcom County residents preferred backpacking over the other counties

(10 percent) and Snohomish County had the most local residents that preferred viewing lakes/reservoirs (9 percent).

Table 5.5-10. Primary Activity (Washington local residents).

	Local Washington Counties							
	Skagit		Snohomish		Whatcom		Total	
Primary Activity	n	%	n	%	n	%	n	%
Backcountry Camping	1	1%	0	0%	2	3%	3	1%
Backpacking	4	4%	3	2%	7	10%	14	5%
Bicycling	1	1%	1	1%	2	3%	4	1%
Boat-in Camping	1	1%	0	0%	0	0%	1	0%
Climbing	1	1%	0	0%	2	3%	3	1%
Developed Car Camping	16	17%	22	17%	13	18%	51	17%
Driving for pleasure	12	13%	20	16%	8	11%	40	14%
Environmental Education	1	1%	0	0%	0	0%	1	0%
Fishing	14	15%	16	13%	3	4%	33	11%
Flatwater Motorized Boating	0	0%	2	2%	1	1%	3	1%
Flatwater Nonmotorized Boating	0	0%	3	2%	2	3%	5	2%
Hiking	22	24%	29	23%	24	33%	75	26%
Historic/Interpretive Tours	0	0%	0	0%	0	0%	0	0%
Photography	2	2%	1	1%	1	1%	4	1%
Picnicking	3	3%	5	4%	0	0%	8	3%
River Boating	4	4%	6	5%	3	4%	13	4%
Swimming	0	0%	4	3%	0	0%	4	1%
Viewing Lakes/Reservoirs	3	3%	11	9%	1	1%	15	5%
Viewing Waterfalls	1	1%	1	1%	0	0%	2	1%
Viewing Wildlife	3	3%	2	2%	0	0%	5	2%
Other	4	4%	1	1%	3	4%	8	3%
Total	**93**	**100%**	**127**	**100%**	**72**	**100%**	**292**	**100%**

The regional significance is determined by visitors from the surrounding counties where the Project is located (San Juan County, Island County, Kitsap County, King County, Chelan County, and Okanogan County). The regional residents use the recreation facilities to participate in hiking (35 percent), developed car camping (16 percent), backpacking (7 percent), and driving for pleasure (7 percent) (Table 5.5-11).

Table 5.5-11. Primary activity survey responses for respondents with a regional focus.

	Regional Washington Counties													
	San Juan		Island		Kitsap		King		Chelan		Okanogan		Total	
Primary Activity	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Backcountry Camping	0	0%	0	0%	0	0%	7	2%	0	0%	0	0%	7	2%
Backpacking	0	0%	0	0%	0	0%	30	8%	1	10%	2	10%	33	7%
Bicycling	0	0%	0	0%	0	0%	9	2%	0	0%	0	0%	9	2%
Boat-in Camping	0	0%	1	4%	0	0%	11	3%	0	0%	0	0%	12	3%
Climbing	0	0%	0	0%	0	0%	4	1%	1	10%	0	0%	5	1%
Developed Car Camping	1	33%	5	22%	1	8%	62	16%	1	10%	0	0%	70	16%
Driving for Pleasure	0	0%	2	9%	4	33%	21	6%	0	0%	4	20%	31	7%
Environmental Education	0	0%	0	0%	0	0%	1	0%	0	0%	0	0%	1	0%
Fishing	0	0%	0	0%	1	8%	8	2%	0	0%	0	0%	9	2%
Flatwater Motorized Boating	0	0%	0	0%	0	0%	5	1%	0	0%	0	0%	5	1%
Flatwater Nonmotorized Boating	0	0%	3	13%	1	8%	22	6%	2	20%	1	5%	29	7%
Hiking	2	67%	10	43%	3	25%	129	34%	4	40%	6	30%	154	35%
Historic/Interpretive Tours	0	0%	0	0%	0	0%	1	0%	0	0%	0	0%	1	0%
Photography	0	0%	0	0%	1	8%	6	2%	0	0%	0	0%	7	2%
Picnicking	0	0%	0	0%	0	0%	7	2%	0	0%	4	20%	11	2%
River Boating	0	0%	0	0%	0	0%	15	4%	0	0%	2	10%	17	4%
Swimming	0	0%	0	0%	0	0%	9	2%	0	0%	0	0%	9	2%
Viewing Lakes/Reservoirs	0	0%	1	4%	1	8%	20	5%	1	10%	0	0%	23	5%
Viewing Waterfalls	0	0%	0	0%	0	0%	1	0%	0	0%	0	0%	1	0%
Viewing Wildlife	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Other	0	0%	1	4%	0	0%	8	2%	0	0%	1	5%	10	2%
Total	**3**	**100%**	**23**	**100%**	**12**	**100%**	**376**	**100%**	**10**	**100%**	**20**	**100%**	**444**	**100%**

State-wide significance is determined by visitors from all other counties outside of the local and regional counties in Washington. The state-wide residents use the recreation facilities to participate in hiking (41 percent), developed car camping (12 percent), driving for pleasure (10 percent), and backpacking (7 percent) (Table 5.5-12). The assessment suggests that the farther a Washington resident resides from the study area, the less likely they are to participate in developed car camping and more likely to participate in hiking. All Washington residents enjoy driving for pleasure fairly equally. The majority of Washington residents who fish in the study area are local. There are slightly more regional and state-wide Washington residents participating in backpacking and boat-in camping as their primary activity than local residents.

Table 5.5-12. Primary Activity (Washington state-wide residents).

	Local		Regional		State-Wide	
	Total		Total		Total	
Primary Activity	n	%	n	%	n	%
Backcountry Camping	3	1%	7	2%	2	2%
Backpacking	14	5%	33	7%	7	7%
Bicycling	4	1%	9	2%	2	2%
Boat-in Camping	1	0%	12	3%	5	5%
Climbing	3	1%	5	1%	1	1%
Developed Car Camping	51	17%	70	16%	12	12%
Driving for Pleasure	40	14%	31	7%	10	10%
Environmental Education	1	0%	1	0%	0	0%
Fishing	33	11%	9	2%	2	2%
Flatwater Motorized Boating	3	1%	5	1%	0	0%
Flatwater Nonmotorized Boating	5	2%	29	7%	5	5%
Hiking	75	26%	154	35%	42	41%
Historic/Interpretive Tours	0	0%	1	0%	0	0%
Photography	4	1%	7	2%	2	2%
Picnicking	8	3%	11	2%	2	2%
River Boating	13	4%	17	4%	2	2%
Swimming	4	1%	9	2%	0	0%
Viewing Lakes/Reservoirs	15	5%	23	5%	4	4%
Viewing Waterfalls	2	1%	1	0%	1	1%
Viewing Wildlife	5	2%	0	0%	2	2%
Other	8	3%	10	2%	1	1%
Total	**292**	**100%**	**444**	**100%**	**102**	**100%**

6.0 DISCUSSION AND FINDINGS

This study is complete and has met the goals and objectives stated in Section 2.0. The Recreation Assessment results fall into two categories or assessments: (1) physical assessment or adequacy of the recreation facilities and (2) social or visitor use assessment. This section summarizes the key findings related to these two assessments.

6.1 Adequacy of Recreation Facilities

City Light evaluated the adequacy of the Project and select non-Project recreation facilities for condition, compliance with current applicable accessibility guidelines (ADA or ABA), recreation use impacts, and trail accessibility. In addition, City Light evaluated the usable periods of the Gorge Lake Boat Launch ramp. The notable findings are below and detailed results by resource area are presented in Section 5.1 of this report.

6.1.1 Facility Conditions, Accessibility Compliance and Use Impacts

For the Project recreation facilities, all were in good condition with only a few select elements or amenities that were in fair condition. The Project recreation facilities are generally inaccessible (i.e., ADA and ABA) with only select or limited accessible features; none of the Project recreation facilities fully met accessibility standards. Overall, the facilities (including trailheads) showed little to no signs of noticeable use impacts.

A condition assessment of non-Project recreation facilities was not within the scope of the Recreation Assessment. The non-Project recreation facilities are generally inaccessible, though some facilities have select or limited accessible features. The Ross Lake recreation facilities are predominantly hike-in/boat-in and do not meet accessibility standards outside of very limited elements (i.e., boat docks) and a few restrooms. The Gorge Creek Overlook has some features that met or were originally designed to meet accessibility standards including the restroom building and the paved portion of the interpretive trail. Overall, most of the non-Project facilities showed little to no signs of noticeable use impacts with the exception of the largest developed campground (Colonial Creek Campground) and some of the boat-in camps that have moderate to large areas of bare ground from the heavy use.

6.1.2 Trail Accessibility

Of the two Project trails, only the Trail of the Cedars approaches meeting the current accessibility standards with the primary constraints due to changing trail conditions over time (i.e., root upheaval and cross slopes). Changing site conditions in short segments of the trail have caused these segments to not comply with current accessibility standards despite likely meeting the standards at the time of design and initial construction. The Ladder Creek Falls Trail is aligned in steep terrain with numerous constraints to accessibility, including stairs that are necessary to navigate the terrain in many locations. Neither of the Project trails has a trail conditions sign.

For the non-Project trails, most do not meet accessibility standards due to pervasive constraints (e.g., rocky/loose tread, tread obstacles, steep running and cross slopes, narrow trail widths). Only the Gorge Creek Overlook Trail is close to meeting the current accessibility standards with very limited constraints due to changing trail conditions over time (i.e., root upheaval/cross slopes). These conditions have caused short segments to not comply with current accessibility standards

despite likely meeting the standards at the time of design and initial construction. Only the Gorge Creek Overlook Trail has a trail conditions sign detailing the surfacing, obstacles, slope and general difficulty of the trail segments. The Thunder Creek Trailhead parking area and information kiosk meet current accessibility standards (ABA), though the Thunder Creek Trail does not.

Overall, both Project and non-Project recreational trails are generally constructed in rugged, steep, and rocky terrain where meeting accessibility standards is very difficult and would require extensive engineering, which would substantially alter the existing physical environment and change the setting of these trails in predominantly natural environments. The couple exceptions are Trail of the Cedars (Project) and Gorge Creek Overlook Trail (non-Project), as noted above.

6.1.3 Gorge Lake Boat Launch Ramp Usable Periods

At Gorge Lake, the Gorge Lake Boat Launch ramp (Project facility) has a minimum usable elevation of 878 ft NAVD88 (871.5 ft CoSD). During the peak season (July and August), the boat ramp is usable 65 percent of the time, on average. The Gorge Lake Boat Launch is located in a cove on the north side of Gorge Lake where gravel deposition in the secondary delta area results in very shallow water depths at the outlet to the boat launch cove; this condition precludes many large boats from using the launch to reach the lake, particularly when Gorge Lake levels are low (City Light 2023). As such, the boat launch is generally only usable by small, motorized boats and non-motorized watercraft.

6.2 Visitor Use Assessment

City Light conducted visitor surveys at both Project and non-Project recreation facilities to gather wide-ranging information to address the study goals and objectives, including general trip and visitor characteristics, visitor activities and preferences, user conflict and crowding, and potential barriers to participation in recreation activities. Below is a summary of the notable findings related to some of the key visitor use parameters, including activity participation/barriers, user conflict and crowding, facility satisfaction, and unmet demand.

6.2.1 Trip Reasons and Recreation Activity Participation

Visitors (respondents) came to the study area for a variety of reasons but the most common first or primary reason for visiting the study area included to view mountains, spend time with family/friends, and recreate at Ross/Diablo/Gorge lakes. The most common second and third reasons were led again by viewing mountains and spending time with family/friends, but also included escaping from an urban setting and viewing lakes/reservoirs.

The top primary activity of survey respondents overall (and at each of the resource areas) was day hiking at 42 percent of overall respondents and followed distantly by developed car camping (12 percent) and driving for pleasure (9 percent). Day hiking was a slightly more common top primary activity for survey respondents at the Ross Lake, Diablo Lake, and Newhalem resource areas.

6.2.2 Barriers and Limitations to Activity Participation

Thirty percent of survey respondents indicated they were unable to participate in some recreation activities, including the respondents' primary activity (day hiking) and to a lesser degree camping, non-motorized boating, and backcountry trips. However, their reasons were largely not linked to

Project operations or management, but instead included inclement weather, lack of time, and NPS site/trail closures. Some respondents also noted that barriers to accessing various activities were present, including difficult/rugged trail access, though that barrier is inherent to much of the rough, rocky terrain and remote backcountry setting, particularly in the Ross Lake and Diablo Lake resource areas.

Visitors were also asked if they or someone in their group had a physical limitation that made it difficult to access or participate in activities or services. Eight percent (104 respondents) reported a physical limitation with the majority of them indicating a mobility limitation (i.e., difficulty in accessing facilities, services, or programs even with walking aid and/or wheelchairs). Comments related to the mobility limitations were primarily about the difficulty of the hikes/walks due to the distance, elevation, and rugged terrain of the trail hiking opportunities.

6.2.3 User Conflict and Crowding

Issues of user conflict were explored with visitors in the study area. The survey results indicate that few visitors experienced negative interactions (8 percent of all respondents), most of which were related to loud camping and vehicle use in the proximity of survey respondents.

Survey respondents indicated that they did not experience high levels of crowding at Project recreation facilities. During the off-peak season, most Project recreation facilities had low levels of crowding (suppressed crowding; 0-35 percent reporting crowding) with a few facilities with low normal crowding (36-50 percent reporting crowding). During the peak season, crowding was split between suppressed crowding, low normal, and high normal crowding (50-65 percent reporting crowding), but none of the facilities were over-capacity (66-80 percent) or greatly over-capacity (81-100 percent) from a perceived crowding standpoint. The perceived crowding results from survey respondents were consistent with City Light's observations of vehicles/parking areas and picnic sites. At most Project recreation facilities, parking areas and picnic sites were not at full capacity, on average, and experienced only occasional overflow parking or parking beyond site capacity. The exceptions are the ELC parking area and West Ferry Landing, where parking demand was near or exceeding capacity, on average, with notable overflow parking occurring at both sites.

At non-Project recreation facilities (mostly NPS RLNRA facilities), perceived crowding was higher than at Project recreation facilities. During the off-peak season, the Ross Lake and Diablo Lake facilities were split between low normal (36-50 percent) and high normal (66-80 percent) crowding, whereas the Gorge Lake and Skagit River facilities were all in the suppressed crowding (0-35 percent) category. In contrast, during the peak season, most of the Ross Lake and Diablo Lake facilities were in the high normal crowding (65-80 percent) with one facility in the greatly over-capacity category (Ross Dam Trailhead; 85 percent). The Gorge Lake and Skagit River facilities reported lower levels of perceived crowding in the low normal and suppressed crowding categories. Similar to the Project recreation facilities, the perceived crowding results from survey respondents were consistent with City Light's observations of vehicles/parking areas and shoreline areas. City Light often observed vehicles in overflow areas at the parking areas at Ross Lake (Ross Dam Trailhead) and Diablo Lake (Colonial Creek Boat Launch and Thunder Knob Trailhead), correlated with increases in shoreline users in the Colonial Creek Campground north and south loops, particularly during the peak season. In general, picnic site usage at both Project and non-Project recreation facilities was low and not nearing capacity.

6.2.4 Facility Satisfaction

Survey respondents were satisfied with the amenities at both Project and non-Project recreation facilities. Only one amenity (potable water faucets) at Ross Lake, Gorge Lake and Skagit River non-Project facilities was rated below 4.0 on the 5-point satisfaction scale where 1 equals "very dissatisfied" and 5 equals "very satisfied." All the other amenities were rated 4.0 or higher overall (i.e., "satisfied" or "very satisfied"). Facility amenities, access amenities (roads/signage), and site conditions (water quality, water level, and river flow) were all rated in the satisfied range.

6.2.5 Unmet Demand

The recreational activities in high demand state-wide and regionally (day hiking/walking, sightseeing, camping, nature activities, flat-water motorized and non-motorized boating, fishing) largely align with the opportunities that exist in the study area at Project facilities and reservoirs and non-Project recreation facilities. In general, the participation rates are similar overall for the key state-wide/regional activities and study area activities, including hiking, sightseeing, and developed camping activities.

6.3 Recreation Use Levels and Trends

City Light conducted observation surveys at both Project and non-Project recreation facilities and researched existing recreation demand/use information sources to characterize use levels and trends. Below, City Light has summarized the notable findings related to overall use levels, facility occupancy, and trends in the study area.

Recreation use in the study area is anticipated to increase over the term of the new license. The 2022 Project use estimate totaled 83,800 RDs with most of the use occurring at Diablo Lake (64 percent of the use) and Newhalem (35 percent of the use). The non-Project use estimate totaled approximately 949,000 RDs with most of the use occurring at RLNRA (99 percent of the use). The Project and non-Project recreation use estimates are anticipated to increase approximately 27 percent by 2050 based on population projections of the predominant counties of residence of survey respondents. This equates to an overall Project use estimate of approximately 107,000 RDs and a non-Project use estimate of approximately 1,573,000 RDs. In addition, future occupancy levels at many of the Project and non-Project recreation facility parking areas with marked spaces in the study area are anticipated to near or exceed capacity over the term of the new license. Daily or seasonal occupancy data for the non-Project NPS campgrounds in the study area are not available at the time of this report to assess projected occupancy.

While the above use estimate and occupancy projections are speculative, recent trends of recreational use in the study area support the anticipated growth into the future. In particular, RLNRA visitation over the past 10 years (2013-2022) has increased by 34 percent, which is further supported by RLNRA overnight visits, which have increased by 37 percent over the same time period. Recent trends in visitation at Colonial Creek Campground (the largest NPS campground in the RLNRA) at Diablo Lake show even larger increases in use since 2012 by 208 percent.

Estimates of study area recreation use (mainly RLNRA visitation data) have shown an increase over the past decade, which is consistent with other regional activity projections and population growth for the primary counties of residence of the majority of study area visitors. However, use over the past decade has also displayed some variability on a year-to-year basis where an annual

increase is followed by subsequent annual decreases. While the overall trend is increasing, the increase has been inconsistent over the past decade. Over the next 40 to 50 years, most of the population estimates and primary activity participation indices show growth potential, but the study area may very well be susceptible to similar annual variability in growth and subsequent downturn as there is no indication in the past decade of that trend subsiding.

7.0 VARIANCES FROM FERC-APPROVED STUDY PLAN AND PROPOSED MODIFICATIONS

There were five variances from the FERC-approved study plan for the Recreation Assessment. Notwithstanding these variances, the study objectives were met as detailed for each variance below.

First, the study plan required City Light to conduct a total of 17 visitor and observation survey days during the off-peak season, including two weekdays and two weekend days per month. However, City Light did not conduct the last two survey days in October 2022 (1 weekday and 1 weekend day) due to poor air quality from the wildfires in the vicinity of the Project/study area followed by extended precipitation/inclement weather through the remainder of October. This variance did not affect the results of the study for several reasons. City Light had already met the visitor survey targets for the off-peak season and had conducted additional visitor survey field days in May, June, and September as use levels and patterns were sporadic in the off-peak season and City Light wanted to make additional efforts in order to meet the off-peak season survey targets. Further, it is likely that the smoke/poor air quality conditions followed by inclement weather at the end of October impacted visitation to the study area and the data collected would not have captured typical use levels. Despite this variance, City Light met the study objectives by meeting the completed survey targets and the overall number of survey days within the respective study seasons (peak and off-peak).

Second, City Light did not conduct visitor and observation surveys at the non-Project, NPS Hozomeen area study sites (Winnebago Flats Campground, Winnebago Flats Campground, Hozomeen Boat Launch, and Hozomeen Campground) at the northern portion of Ross Lake because the Silver-Skagit Road from Canada, which provides the only vehicle access to the area, was closed due to extensive flood damage in November 2021, thereby greatly reducing anticipated use of the area. City Light consulted with NPS from February through June 2022 on the status of the Silver-Skagit Road. By June 2022, it became apparent the road would not open during the study season at which time City Light and NPS jointly concluded that studying the Hozomeen area sites was unnecessary. To address the subsequent reduced number of survey study sites in the Ross Lake survey area, City Light increased survey efforts at the remaining Ross Lake study sites near Ross Dam (i.e., Ross Dam Trailhead, East Bank Trailhead, and Canyon Creek Trailhead) to meet the survey area targets for the study season. As of March 2023, the Silver-Skagit Road remains closed. Despite this variance, City Light met the study objectives through increased visitor survey efforts at the lower Ross Lake study sites, which provided ample feedback from visitors recreating on Ross Lake (i.e., still met the survey targets for the overall Ross Lake survey area). Further, in 2021, City Light completed a physical inventory of the Hozomeen area facilities, which provided information on the condition, accessibility, and use impacts at those sites.

Third, City Light calibrated the 16 trail counters monthly following installation in late May 2022 and routinely maintained/downloaded the data at each counter during the study season. However, City Light was unable to calibrate three trail counters at the northern end of Ross Lake (Hozomeen Lake Trail, East Bank Trail at Hozomeen, and Little Beaver Trail) in September due to trail closures (Little Beaver Trail) and pervasive smoke/air quality conditions from wildfires (Hozomeen Lake Trail and East Bank Trail at Hozomeen Campground). City Light intended to calibrate and maintain the 16 trail counters during the second week of October (one month

following the September calibration); however, City Light was unable to access the trail counters in the field due in part because of NPS trail closures at Ross Lake, but primarily due to the continued pervasive smoke/air quality conditions from the wildfires in the study area. City Light then removed all the trail counters in November following the end of the study season in October with two exceptions—Hozomeen Lake Trail and East Bank Trail at Hozomeen Campground. At these two counter locations, the weather, presence of snow, and reservoir water level conditions made it difficult to access the two trail counters to remove and subsequently download the data. As such, the study report only includes data for these two sites through August 10, 2022 (when the last calibration and maintenance visit occurred). Despite this variance, City Light met the study objectives, and the trail counter data included in this report for these two sites likely includes the peak trail use as nearly all of the other trail counter locations including the other Ross Lake trail counters showed peak use in July (see Section 5.3.6.1). Further, City Light will supplement this report with this information once it becomes available.

Fourth, as required by the FERC-approved study plan, City Light developed a non-Project recreation use estimate in Section 5.4.2. However, the use data sources identified in the FERC-approved study plan (see Table 4.2-5) that were provided to City Light by the respective entity were summarized differently (monthly or seasonal summaries) compared to the Project use data collected as part of this study (daily summaries). This difference made calculating the non-Project use estimate challenging without making many assumptions in an attempt to be consistent with the Project use estimation methods. Consequently, City Light developed the non-Project use estimate utilizing primarily the NPS' RLNRA monthly visitation data provided on the NPS Stats website (NPS 2023) along with some USFS and study data for the area outside RLNRA in the study area (i.e., the Marblemount Boat Launch and Marble Creek Campground). This approach provided the best estimation of non-Project recreation use in the study area. Despite this variance, City Light met the study objectives as the alternative method City Light used to estimate non-Project recreation use was the best-available option that did not require numerous assumptions/adjustments to varying use data provided to City Light.

Fifth, City Light did not complete the regional uniqueness assessment per the FERC-approved study plan because this assessment relies on a specific question in the visitor survey instrument that City Light initially proposed as part of the Proposed Study Plan but was not included in the NPS-proposed visitor survey instrument, which FERC approved in the RSP. As such, with the omission of the regional uniqueness question, City Light was unable to complete this assessment as described in the RSP. However, City Light included a general discussion on the uniqueness of the Project and overall study area given its location within a national park and national recreation area, which are inherently unique with outstanding natural, cultural, and recreational resources. Despite this variance, City Light met the study objectives by providing a general uniqueness discussion, which addresses the overall uniqueness of the Project/study area recreational opportunities.

8.0 REFERENCES

Cordell, K. H. 2012. Outdoor recreation trends and futures: a technical document supporting the Forest Service 2010 RPA assessment. U.S. Department of Agriculture, Forest Service, Southern Research Station. Asheville, North Carolina.

Malvestuto, S.P. 1996. Sampling the recreational creel fisheries techniques (Chapter 20), 2nd edition. American Fisheries Society. Bethesda, Maryland.

National Park Service (NPS). 2001. The National Park Service Comprehensive Survey of the American Public. Technical Report. NPS Social Science Program. June 2001.

_____. 2012. Ross Lake National Recreation Area General Management Plan. Pacific West Region. Seattle, Washington. July 2012.

_____. 2023. National Park Service Visitor Use Statistics. Natural Resource Stewardship and Science. [Online] URL: https://irma.nps.gov/STATS/Reports/Park/ROLA. Accessed January 20, 2023Accessed January 20, 2023.

North Cascades Institute (NCI). 2018. Annual summary of North Cascades Institute environmental programming. November 2018.

Pollock, K. H., C. M. Jones, and T. L. Brown. 1994. Angler survey methods and their applications in fisheries management (Chapter 11). American Fisheries Society. Bethesda, Maryland.

Recreation and Conservation Office (RCO). 2017. State Recreation and Conservation Plan, 2018-2022. [Online] URL: https://www.rco.wa.gov/StateRecPlans/. Accessed November 6, 2022.

Salant, P. and D.A. Dillman. 1994. How to conduct your own survey. John Wiley and Sons, Inc. Hoboken, New Jersey.

Seattle City Light (City Light). 2020. Pre-Application Document (PAD) for the Skagit River Hydroelectric Project, FERC Project No. 553. April 2020.

_____. 2021. Revised Study Plan (RSP) for the Skagit River Hydroelectric Project, FERC Project No. 553. April 2021.

_____. 2022. Summary of City Light tour participation. October 2022.

_____. 2023. OM-01 Operations Model Summary Study Report for the Skagit River Hydroelectric Project, FERC Project No. 553. Prepared by HDR Engineering, Inc. March 2023.

Shelby, B., J.J. Vaske, and T.A. Heberlein. 1989. Comparative Analysis of Crowding in Multiple Locations: Results from Fifteen Years of Research. Leisure Sciences, Volume 11, pp. 269-291.

United States Access Board (USAB). 2015. Architectural Barriers Act (ABA) standards (2015). Washington, D.C.

United States Department of the Interior (USDOI). 2023. America's Public Lands Explained. [Online] URL: https://www.doi.gov/blog/americas-public-lands-explained. Accessed January 19, 2023.

United States Department of Justice (USDOJ). 2010. 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design. Washington, D.C. September 15, 2010.

Vaske, J. and L. Shelby. 2008. Crowding as a Descriptive Indicator and an Evaluative Standard: Results of 30 years of Research. Colorado State University. Fort Collins, Colorado.

This page intentionally left blank.

RECREATION USE AND FACILITY ASSESSMENT

ATTACHMENT A

STUDY AREA MAPBOOK

RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- National Recreation Area (NPS)
- Trail (NPS, non-Project)
- Recreation Facility (NPS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

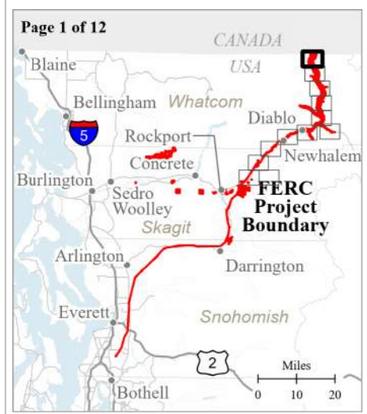
[I] Inventory, Condition, Accessibility, and Use Impact Evaluations

[S] Visitor and Observation Surveys

[A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet



Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Ross Lake
International Creek
Canada
128
Winnebago Flats Boat Launch [I] [S]
Winnebago Flats Campground [I] [S]
Hozomeen Boat Launch [I] [S]
127
Hozomeen Lake Trailhead [I]
East Bank Trail at Hozomeen counter
Hozomeen Campground [I] [S]
Hozomeen Creek
ROSS LAKE NATL. REC. AREA
NORTH CASCADES NATIONAL PARK - NORTH UNIT
126
Silver Creek Dock & Boat-In Campsites [I]
Silver Creek
125
Hozomeen Lake
Hozomeen Lake Trail counter
East Bank Trail

Document Path: \\Wat-fileconsiderations\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7.2_Working\1_mxd\1_MXD_SkgFieldStudy\USR\Recreation\USR_Recreation.aprx

Hozomeen Lake Trail counter

Hozomeen Lake

Ridley Lake

Hozomeen Creek

East Bank Trail

124

123

122

121

120

ROSS LAKE NATL. REC. AREA

NORTH CASCADES NATIONAL PARK - NORTH UNIT

Ross Lake

Boundary Bay Boat-In Campsites [I]

Little Beaver Trail

Little Beaver Creek

Little Beaver Trail counter

Little Beaver Dock & Boat-In Campsites [I]

Arctic Creek

Desolation Peak Trail

Document Path: \\Wal-filsrv1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7-2_Working\1_mxd\1_MXD_SkgtFieldStudy\USR\Recreation\USR_Recreation.aprx

RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- National Recreation Area (NPS)
- Trail (NPS, non-Project)
- Recreation Facility (NPS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

[I] Inventory, Condition, Accessibility, and Use Impact Evaluations

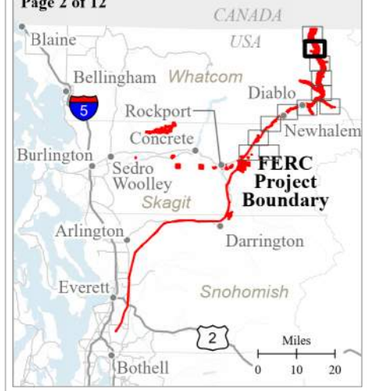
[S] Visitor and Observation Surveys

[A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet

Page 2 of 12



Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Desolation Peak Trail counter

119

Cat Island Dock & Boat-In Campsites [I]

East Bank Trail

East Bank Trail at Lightning Creek Trail counter

Lightning Creek Dock & Boat-In Campsites [I]

118

Lightning Creek Trail

Lightning Creek

Noname Creek

ROSS LAKE NATL. REC. AREA

Ross Lake

NORTH CASCADES NATIONAL PARK - NORTH UNIT

Lodgepole Boat-In Campsites [I]

117

Ponderosa Boat-In Campsites [I]

Dry Creek Boat-In Campsites [I]

Dry Creek

Skymo Creek

116

Ten-Mile Island Boat-In Campsites [I]

RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

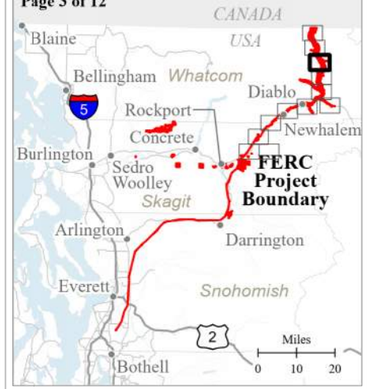
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- National Recreation Area (NPS)
- U.S. Forest Service
- Trail (NPS, non-Project)
- Recreation Facility (NPS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

- [I] Inventory, Condition, Accessibility, and Use Impact Evaluations
- [S] Visitor and Observation Surveys
- [A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet



Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Document Path: \\Wal-flsrv1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7-2_Working\1_mxd\1_MXD_Skgt\FieldStudy\USR\Recreation\USR_Recreation.aprx

NORTH CASCADES NATIONAL PARK - NORTH UNIT

ROSS LAKE NATL. REC. AREA

115

114

113

112

Ross Lake

Devil's Junction Dock & Boat-In Campsites [I]

Devils Trail

Devils Trail

Devils Dome Spur Trail

Devils Creek

Rainbow Point Dock & Boat-In Campsites [I]

May Creek

OKANOGAN-WENATCHEE NATIONAL FOREST

Big Beaver Trail

Big Beaver Creek

East Bank Trail

RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

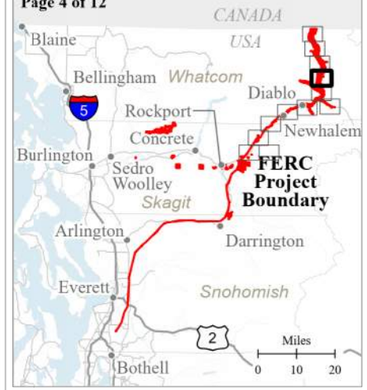
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- National Recreation Area (NPS)
- U.S. Forest Service
- Trail (NPS, non-Project)
- Recreation Facility (NPS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

- [I] Inventory, Condition, Accessibility, and Use Impact Evaluations
- [S] Visitor and Observation Surveys
- [A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet



Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Document Path: \\Wal-filsrv1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7.2_Working\1_mxd\1_MXD_SkgtFieldStudy\USR\Recreation\USR_Recreation.aprx

Big Beaver Trail counter

Big Beaver Creek

Big Beaver Dock & Boat-In Campsites [I]

111

May Creek Dock & Boat-In Campsites [I]

Spencer's Dock & Boat-In Campsites [I]

East Bank Trail at Roland Point counter

McMillan Dock & Boat-In Campsites [I]

110

East Bank Trail

OKANOGAN-WENATCHEE NATIONAL FOREST

Ross Lake

Roland Point Boat-In Campsites [I]

Roland Creek

Big Beaver Creek

ROSS LAKE NATL. REC. AREA

Pierce Creek

109

Cougar Island Dock & Boat-In Campsites [I]

NORTH CASCADES NATIONAL PARK - NORTH UNIT

Sourdough Trail

108

Ross Lake Resort

Big Beaver Trail

Green Point Dock & Boat-In Campsites [I]

Riprap Creek

107

Ross Lake Resort Visitor Dock [I] [S]

106

Little Jack

Happy Panther Trail

Diablo Lake

Document Path: \\Wat-fileprv1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\Z2_Working\1_mxd\1_MXD_SkagitFieldStudy\USRRecreation\USR_Recreation.aprx

RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

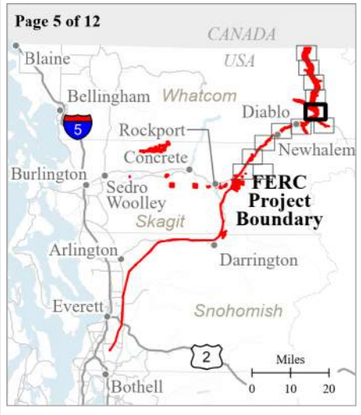
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- National Recreation Area (NPS)
- U.S. Forest Service
- Trail (NPS, non-Project)
- Recreation Facility (NPS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

- [I] Inventory, Condition, Accessibility, and Use Impact Evaluations
- [S] Visitor and Observation Surveys
- [A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet



Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Green Point Dock & Boat-In Campsites [I]

107

Ross Lake

Happy-Panther Trail

Happy Creek

Ross Lake Overlook

Little Jack

Stone Tree Creek

Berry Creek

Lillian Creek

ROSS LAKE NATL. REC. AREA

East Bank Trail at Ruby Creek counter

East Bank Trail [I] [S]

Crater Creek

OKANOGAN-WENATCHEE NATIONAL FOREST

Canyon Creek Trailhead [S]

East Bank Trail

Ruby Creek

Horsetail Creek

Panther Creek/Fourth of July Trail

Panther Creek

NORTH CASCADES NATIONAL PARK - SOUTH UNIT

Stillwell Creek

Beebe Creek

Document Path: \\Wal-fserv1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7-2_Working\1_mxd\1_MXD_SkgtFieldStudy\USR\Recreation\USR_Recreation.aprx

RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- National Recreation Area (NPS)
- U.S. Forest Service
- Trail (NPS, non-Project)
- Recreation Facility (NPS/non-Project)
- Recreation Facility (USFS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

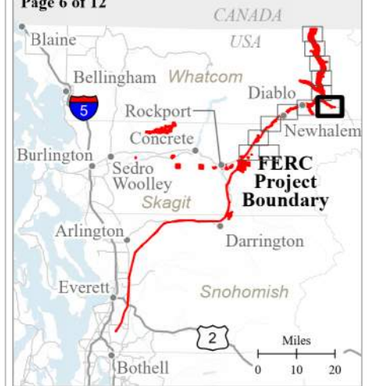
[I] Inventory, Condition, Accessibility, and Use Impact Evaluations

[S] Visitor and Observation Surveys

[A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet



Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- National Recreation Area (NPS)
- Seattle City Light
- Trail (NPS, non-Project)
- Recreation Facility (NPS/non-Project)
- Recreation Facility (Project/FERC Approved)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

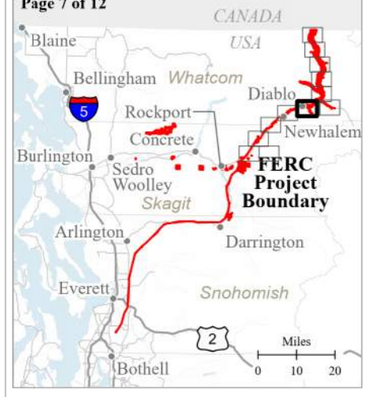
[I] Inventory, Condition, Accessibility, and Use Impact Evaluations

[S] Visitor and Observation Surveys

[A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet

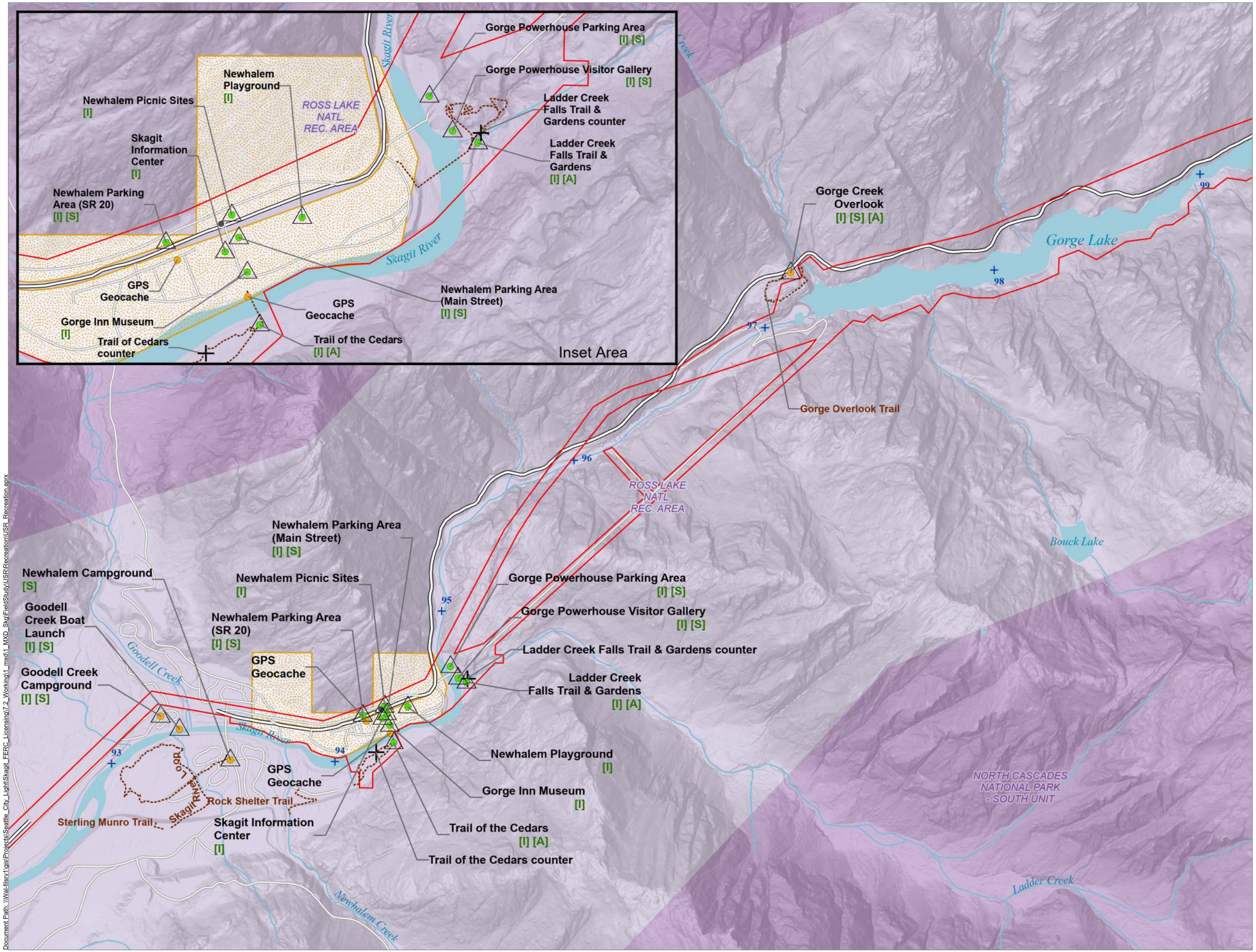


Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Document Path: \\Wa-fliscr1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7.2_Working\1_mxd\1_MXD_Ska\Field\Study\USR\Recreation\USR_Recreation.aprx



RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

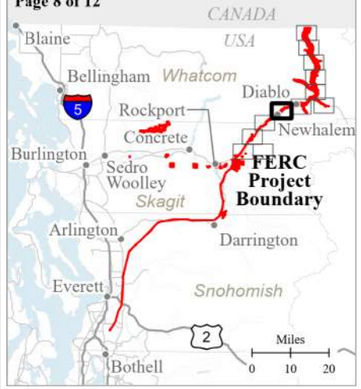
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- National Recreation Area (NPS)
- Seattle City Light
- Trail (NPS, non-Project)
- Recreation Facility (NPS/non-Project)
- Recreation Facility (Project/FERC Approved)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

- **[I]** Inventory, Condition, Accessibility, and Use Impact Evaluations
- **[S]** Visitor and Observation Surveys
- **[A]** Trail Accessibility Evaluations

N

0 1,000 2,000 Feet

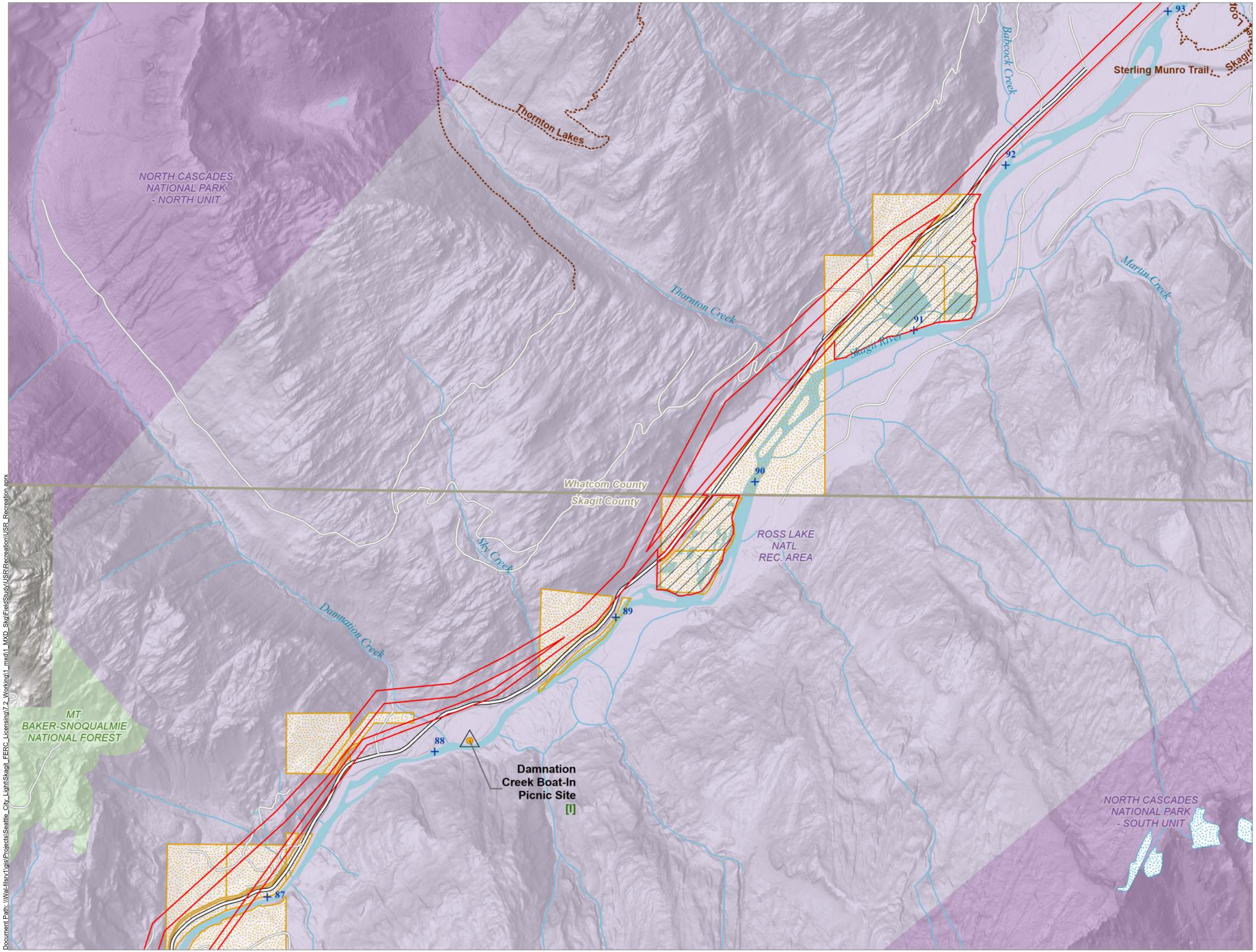


Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Document Path: \\Wal-filsrv1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7-2_Working\1_mxd\1_MXD_SkgtFieldStudy\USR\Recreation\USR_Recreation.aprx



RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- National Recreation Area (NPS)
- U.S. Forest Service
- Seattle City Light
- Trail (NPS, non-Project)
- Recreation Facility (NPS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

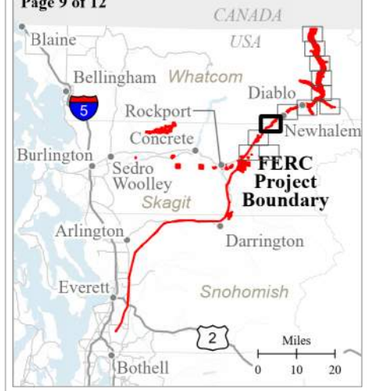
[I] Inventory, Condition, Accessibility, and Use Impact Evaluations

[S] Visitor and Observation Surveys

[A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet

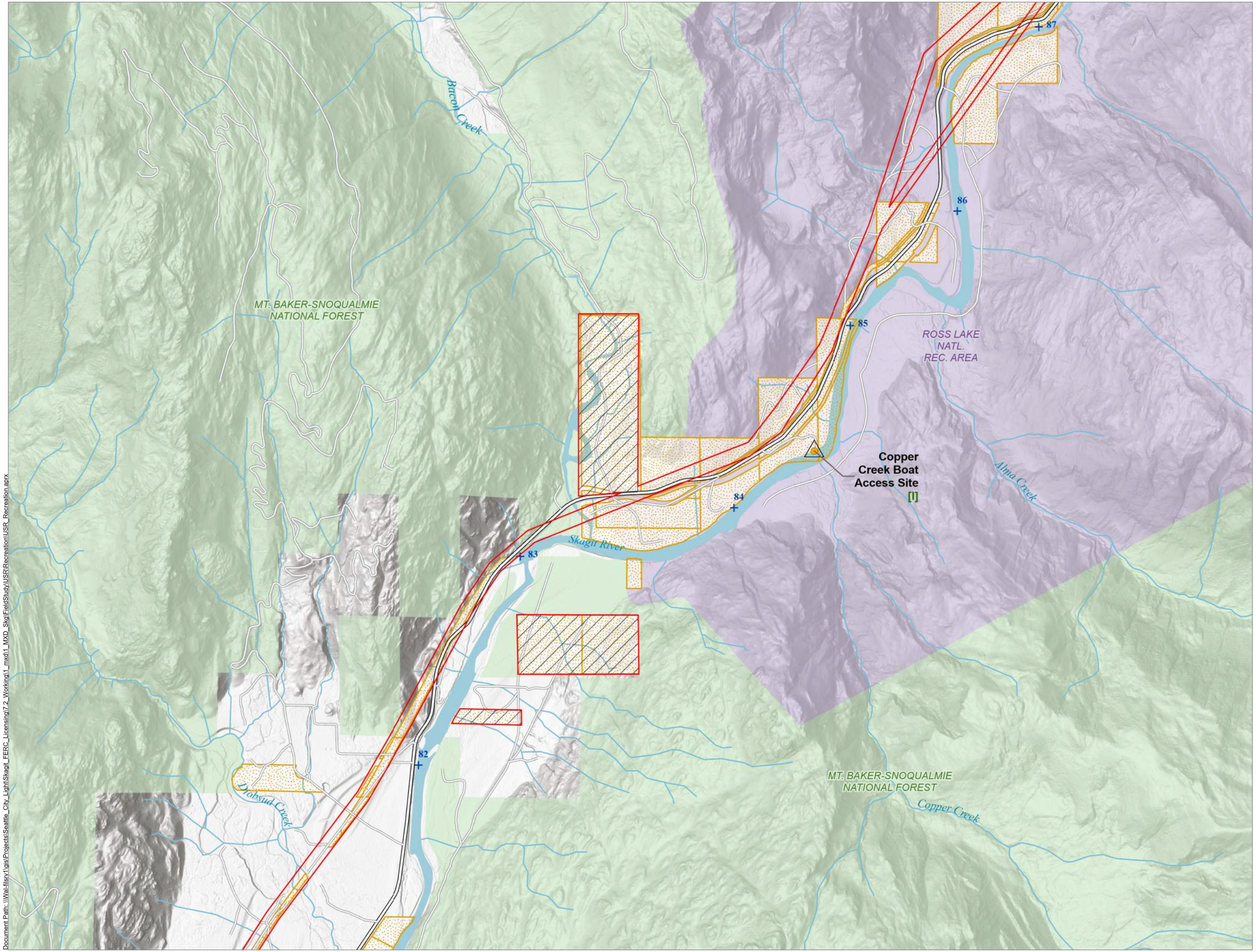


Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Document Path: \\Wal-filsrv1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7.2_Working\1_mxd\1_MXD_SkgtFieldStudy\USR\Recreation\USR_Recreation.aprx



RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

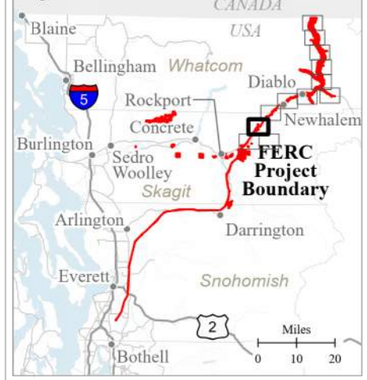
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Recreation Area (NPS)
- U.S. Forest Service
- Seattle City Light
- Recreation Facility (NPS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

- **[I]** Inventory, Condition, Accessibility, and Use Impact Evaluations
- **[S]** Visitor and Observation Surveys
- **[A]** Trail Accessibility Evaluations

N

0 1,000 2,000 Feet



Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Document Path: \\Wat-fileyr1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7.2_Working\1_mxd\1_MXD_SkgtFieldStudy\USR\Recreation\USR_Recreation.aprx

RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- U.S. Forest Service
- Seattle City Light
- Recreation Facility (USFS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

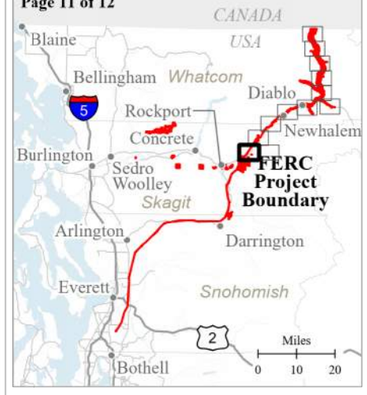
[I] Inventory, Condition, Accessibility, and Use Impact Evaluations

[S] Visitor and Observation Surveys

[A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet

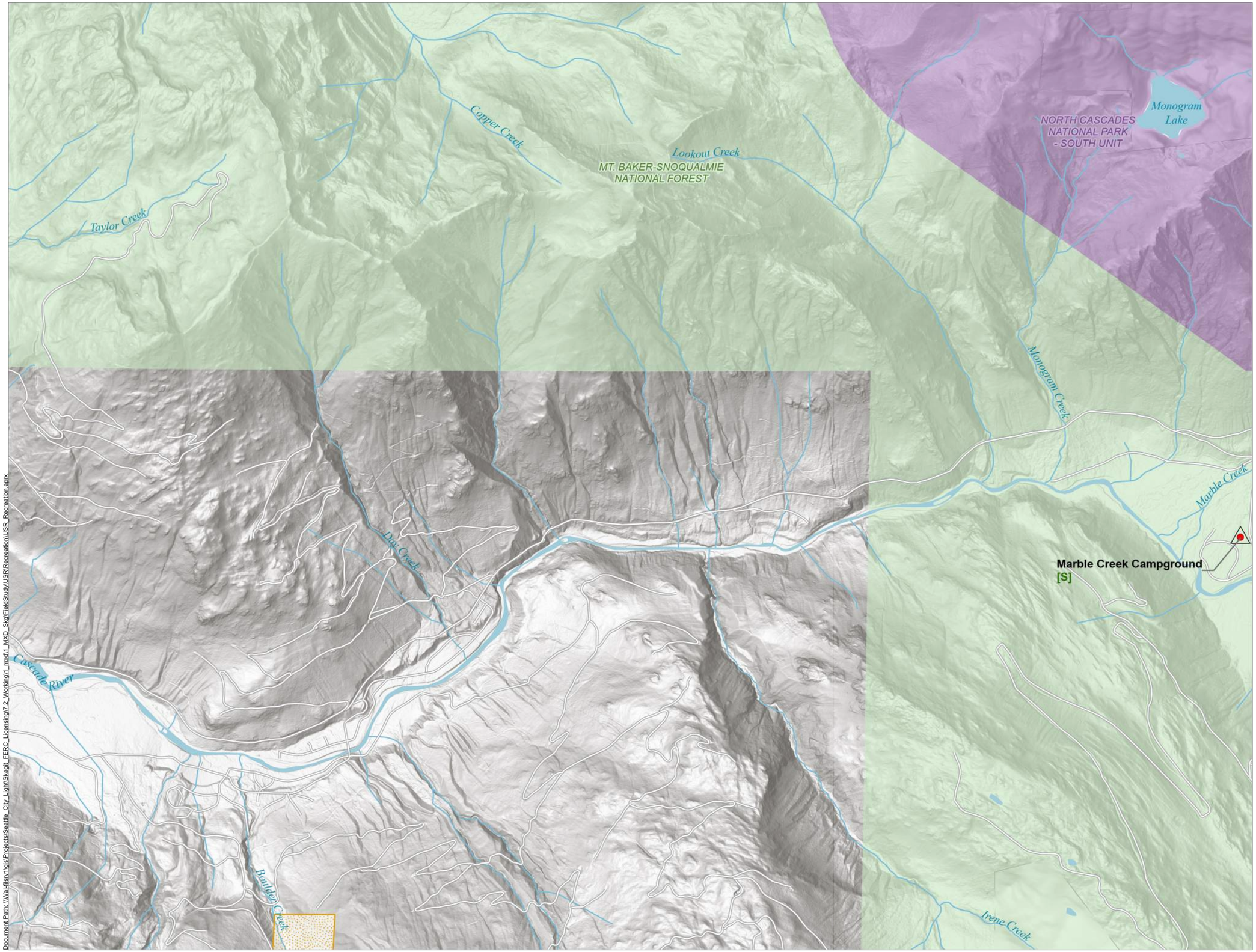


Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Document Path: \\Wa1flsrv1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7-2_Working\1_mxd\1_MXD_SkgFieldStudy\USRRecreation\USR_Recreation.aprx



RA-01 RECREATION USE AND FACILITY ASSESSMENT STUDY SITES

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park Service
- U.S. Forest Service
- Seattle City Light
- Recreation Facility (USFS/non-Project)
- RA-01 Study Sites
- Trail counter

Specific RA-01 Study Elements (see study for details)

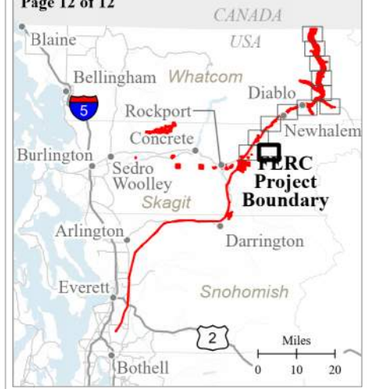
[I] Inventory, Condition, Accessibility, and Use Impact Evaluations

[S] Visitor and Observation Surveys

[A] Trail Accessibility Evaluations

N

0 1,000 2,000 Feet



Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 12/13/2022 by HDR for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Source: Recreation Sites, Campsites - Seattle City Light. Campsites, Trails - NPS.

Document Path: \\Wal-fserv1\gis\Projects\Seattle_City_Light\Skagit_FERC_Licensing\7.2_Working\1_mxd\1_MXD_SkgtFieldStudy\USR\Recreation\USR_Recreation.aprx

RECREATION USE AND FACILITY ASSESSMENT

ATTACHMENT B

REPRESENTATIVE PHOTOGRAPHS OF RECREATION FACILITIES TAKEN DURING PHYSICAL INVENTORY IN SEPTEMBER 2021

List of Figures

Figure No.	Description	Page No.
Figure B-1.	Photographs of Winnebago Flats Boat Launch [taken 09/15/21].	3
Figure B-2.	Photographs of Winnebago Flats Campground [taken 09/15/21].	4
Figure B-3.	Photographs of Hozomeen Boat Launch [taken 09/15/21].	5
Figure B-4.	Photographs of Hozomeen Campground [taken 09/15/21].	6
Figure B-5.	Photographs of Hozomeen Lake Trailhead [taken 09/15/21].	7
Figure B-6.	Representative photographs of Ross Lake boat-in campsites [taken 09/15/21].	8
Figure B-7.	Representative photographs of Ross Lake boat-in campsites (continued) [taken 09/15/21 and 09/16/21].	9
Figure B-8.	Photographs of Ross Dam Trailhead [taken 09/15/21].	10
Figure B-9.	Photographs of East Bank Trailhead [taken 09/16/21].	11
Figure B-10.	Photographs of the Happy Panther Trail [taken 09/16/21].	12
Figure B-11.	Photographs of Skagit Tour Dock [taken 09/14/21].	13
Figure B-12.	Photographs of Diablo Dam Parking Area [taken 09/14/21].	14
Figure B-13.	Photographs of West Ferry Landing [taken 09/14/21].	15
Figure B-14.	Photographs of East Ferry Landing [taken 09/14/21].	16
Figure B-15.	Photographs of North Cascades ELC parking area [taken 09/14/21].	17
Figure B-16.	Photographs of Diablo Overlook parking, picnic, and restroom facilities [taken 09/14/21].	18
Figure B-17.	Photographs of Diablo Overlook interpretive signage [taken 09/14/21].	19
Figure B-18.	Photographs of Colonial Creek Campground [taken 09/14/21].	20
Figure B-19.	Photographs of Colonial Creek Boat Launch [taken 09/14/21].	21
Figure B-20.	Photographs of Colonial Creek Fishing Pier [taken 09/14/21].	22
Figure B-21.	Photographs of Diablo Lake boat-in campsite (Thunder Point) [taken 09/14/21].	23
Figure B-22.	Photographs of Diablo Lake boat-in campsite (Hidden Cove) [taken 09/14/21].	24
Figure B-23.	Photographs of Diablo Lake boat-in campsite (Buster Brown) [taken 09/14/21].	25
Figure B-24.	Photographs of Thunder Knob Trailhead [taken 09/15/21].	26
Figure B-25.	Photographs of Thunder Knob Trail [taken 09/16/21].	27
Figure B-26.	Photographs of Thunder Creek Trailhead [taken 09/16/21].	28
Figure B-27.	Photographs of Thunder Creek Trail [taken 09/16/21].	29
Figure B-28.	Photographs of Diablo Lake Trail [taken 09/18/21].	30
Figure B-29.	Photographs of Ross Lodge Picnic Shelter [taken 09/14/21].	31
Figure B-30.	Photographs of Gorge Lake Boat Launch [taken 09/16/21].	32
Figure B-31.	Photographs of Gorge Lake Campground [taken 09/16/21].	33

Figure B-32. Photographs of Diablo Dam Trail [taken 09/14/21]. 34
Figure B-33. Photographs of Sourdough Mountain (upper) and Stetattle Creek (lower) Trailheads [taken 09/14/21]. 35
Figure B-34. Photographs of Gorge Creek Overlook [taken 09/14/21]. 36
Figure B-35. Photographs of Gorge Creek Overlook Trail [taken 09/18/21]. 37
Figure B-36. Photographs of Gorge Powerhouse Parking Area [taken 09/13/21]. 38
Figure B-37. Photographs of Gorge Powerhouse Visitor Gallery [taken 09/13/21]. 39
Figure B-38. Photographs of Gorge Powerhouse Visitor Gallery [taken 09/13/21]. 40
Figure B-39. Photographs of Skagit Information Center [taken 09/13/21]. 41
Figure B-40. Photographs of Gorge Inn Museum exhibits [taken 09/13/21]. 42
Figure B-41. Photographs of Gorge Inn Museum [taken 09/13/21]. 43
Figure B-42. Photographs of Newhalem townsite Main Street (upper) and SR 20 (lower) parking areas [taken 09/13/21]. 44
Figure B-43. Photographs of Newhalem townsite picnic sites and playground [taken 09/13/21]. 45
Figure B-44. Photographs of Newhalem townsite interpretive displays [taken 09/13/21]. 46
Figure B-45. Photographs of Ladder Creek Falls Trail and Garden [taken 09/18/21]. 47
Figure B-46. Photographs of Trail of the Cedars trail conditions [taken 09/18/21]. 48
Figure B-47. Photographs of Trail of the Cedars interpretive displays [taken 09/18/21]. 49
Figure B-48. Photographs of Trail of the Cedars interpretive displays [taken 09/18/21]. 50
Figure B-49. Photographs of Trail of the Cedars interpretive displays (Newhalem Creek Powerhouse) [taken 09/18/21]. 51
Figure B-50. Photographs of Goodell Creek Campground [taken 09/13/21]. 52
Figure B-51. Photographs of Goodell Creek Boat Launch [taken 09/13/21]. 53
Figure B-52. Photographs of Damnation Creek Boat-in Picnic Site [taken 09/13/21]. 54
Figure B-53. Photographs of Copper Creek Boat Access Site [taken 09/13/21]. 55
Figure B-54. Photographs of Marblemount Boat Launch [taken 09/13/21]. 56



Note: Hozomeen Boat Launch sign in this photograph was placed on the Winnebago Flats Boat Launch kiosk in error.

Figure B-1. Photographs of Winnebago Flats Boat Launch [taken 09/15/21].



Figure B-2. Photographs of Winnebago Flats Campground [taken 09/15/21].



Figure B-3. Photographs of Hozomeen Boat Launch [taken 09/15/21].



Figure B-4. Photographs of Hozomeen Campground [taken 09/15/21].





Figure B-5. Photographs of Hozomeen Lake Trailhead [taken 09/15/21].



Cat Island



Silver Creek



Lodgepole



Little Beaver

Figure B-6. Representative photographs of Ross Lake boat-in campsites [taken 09/15/21].



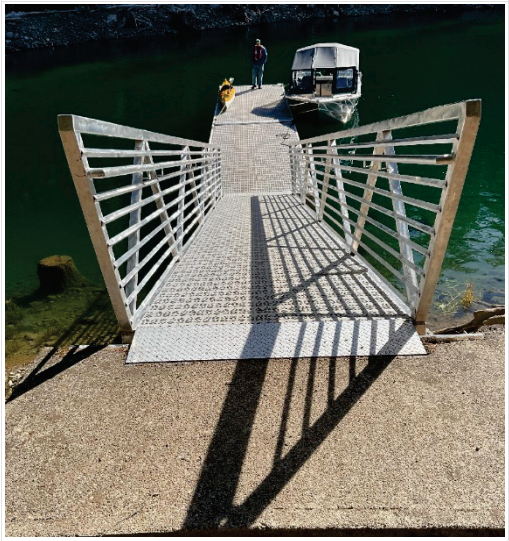
Lodgepole



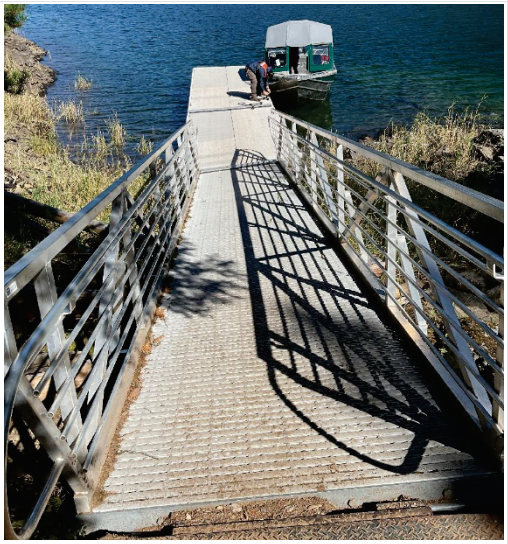
Ponderosa



Roland Point



Rainbow Point



Cougar Island



Silver Creek

Figure B-7. Representative photographs of Ross Lake boat-in campsites (continued) [taken 09/15/21 and 09/16/21].



Figure B-8. Photographs of Ross Dam Trailhead [taken 09/15/21].



Figure B-9. Photographs of East Bank Trailhead [taken 09/16/21].



Figure B-10. Photographs of the Happy Panther Trail [taken 09/16/21].



Figure B-11. Photographs of Skagit Tour Dock [taken 09/14/21].



Figure B-12. Photographs of Diablo Dam Parking Area [taken 09/14/21].

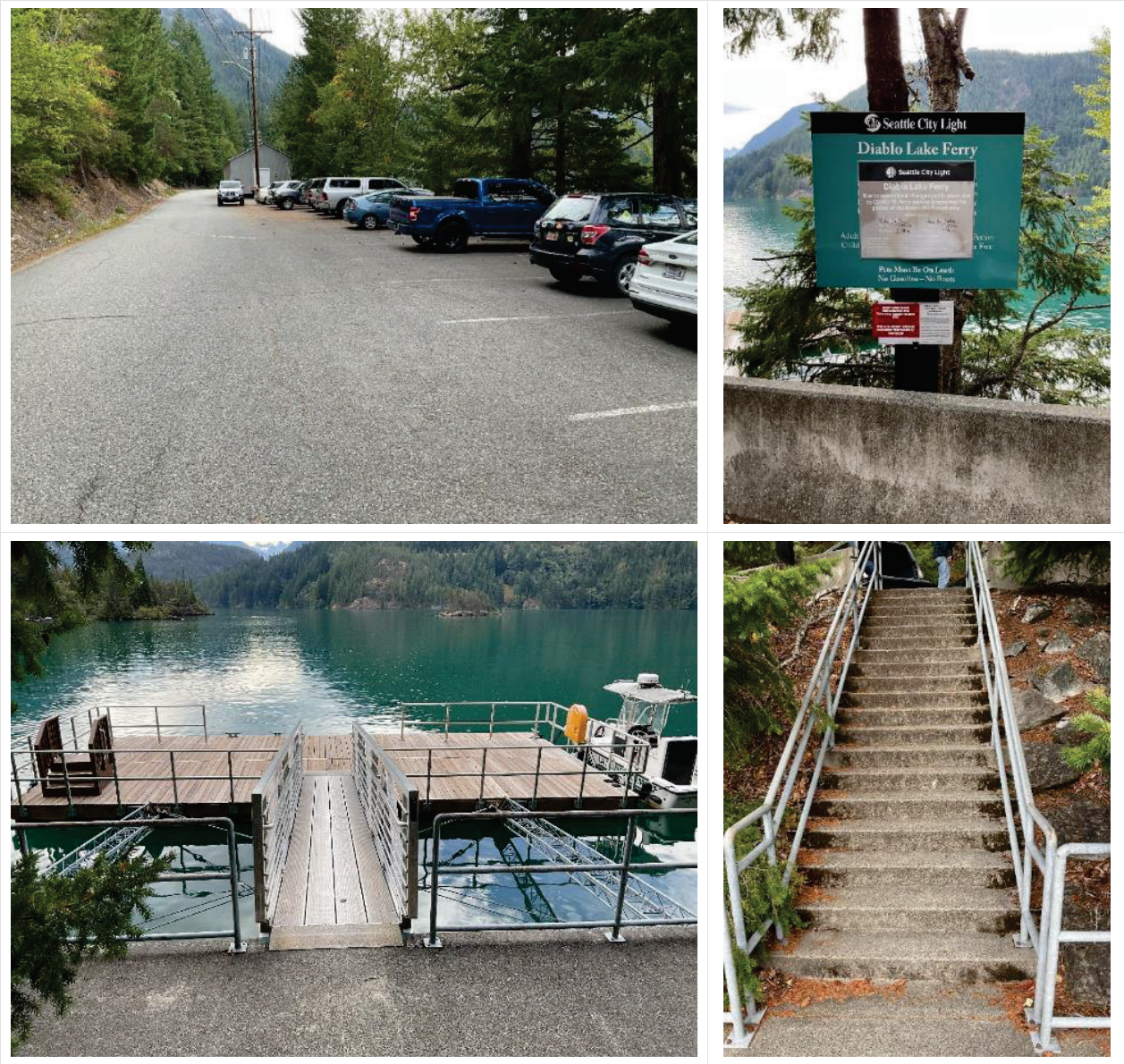


Figure B-13. Photographs of West Ferry Landing [taken 09/14/21].



Figure B-14. Photographs of East Ferry Landing [taken 09/14/21].

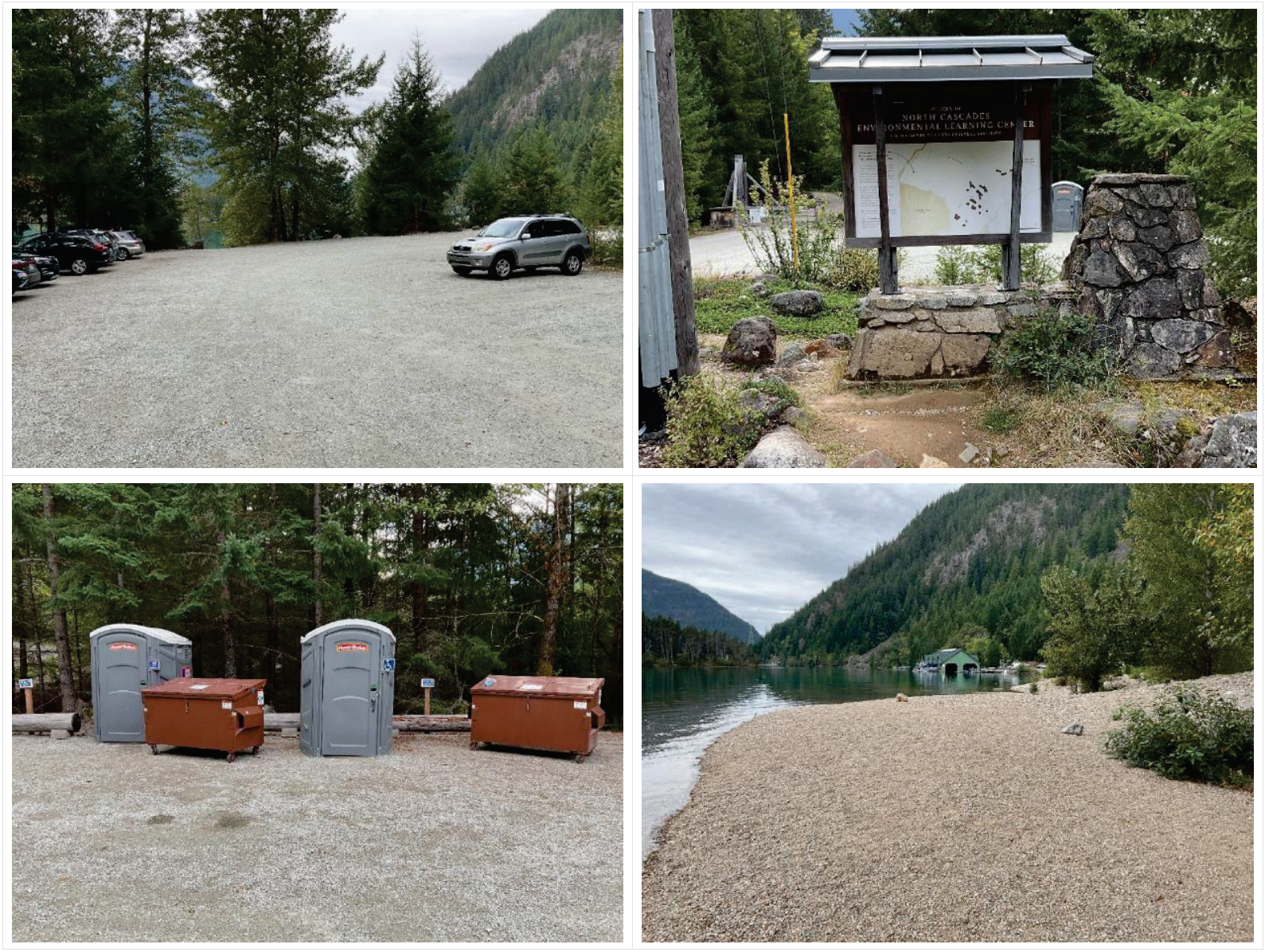


Figure B-15. Photographs of North Cascades ELC parking area [taken 09/14/21].



Figure B-16. Photographs of Diablo Overlook parking, picnic, and restroom facilities [taken 09/14/21].



Figure B-17. Photographs of Diablo Overlook interpretive signage [taken 09/14/21].



Figure B-18. Photographs of Colonial Creek Campground [taken 09/14/21].



Figure B-19. Photographs of Colonial Creek Boat Launch [taken 09/14/21].



Figure B-20. Photographs of Colonial Creek Fishing Pier [taken 09/14/21].



Figure B-21. Photographs of Diablo Lake boat-in campsite (Thunder Point) [taken 09/14/21].

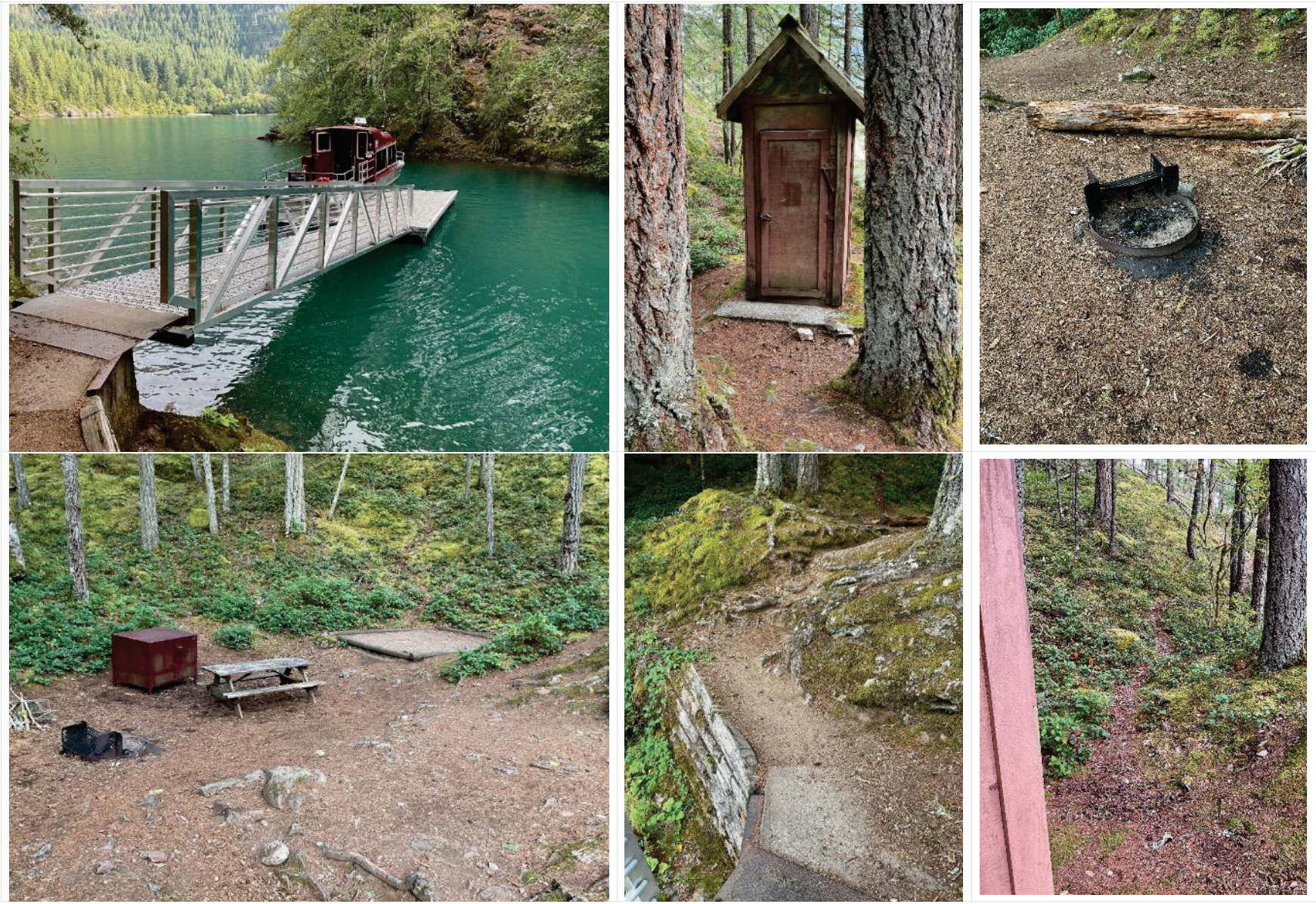


Figure B-22. Photographs of Diablo Lake boat-in campsite (Hidden Cove) [taken 09/14/21].



Figure B-23. Photographs of Diablo Lake boat-in campsite (Buster Brown) [taken 09/14/21].



Figure B-24. Photographs of Thunder Knob Trailhead [taken 09/15/21].

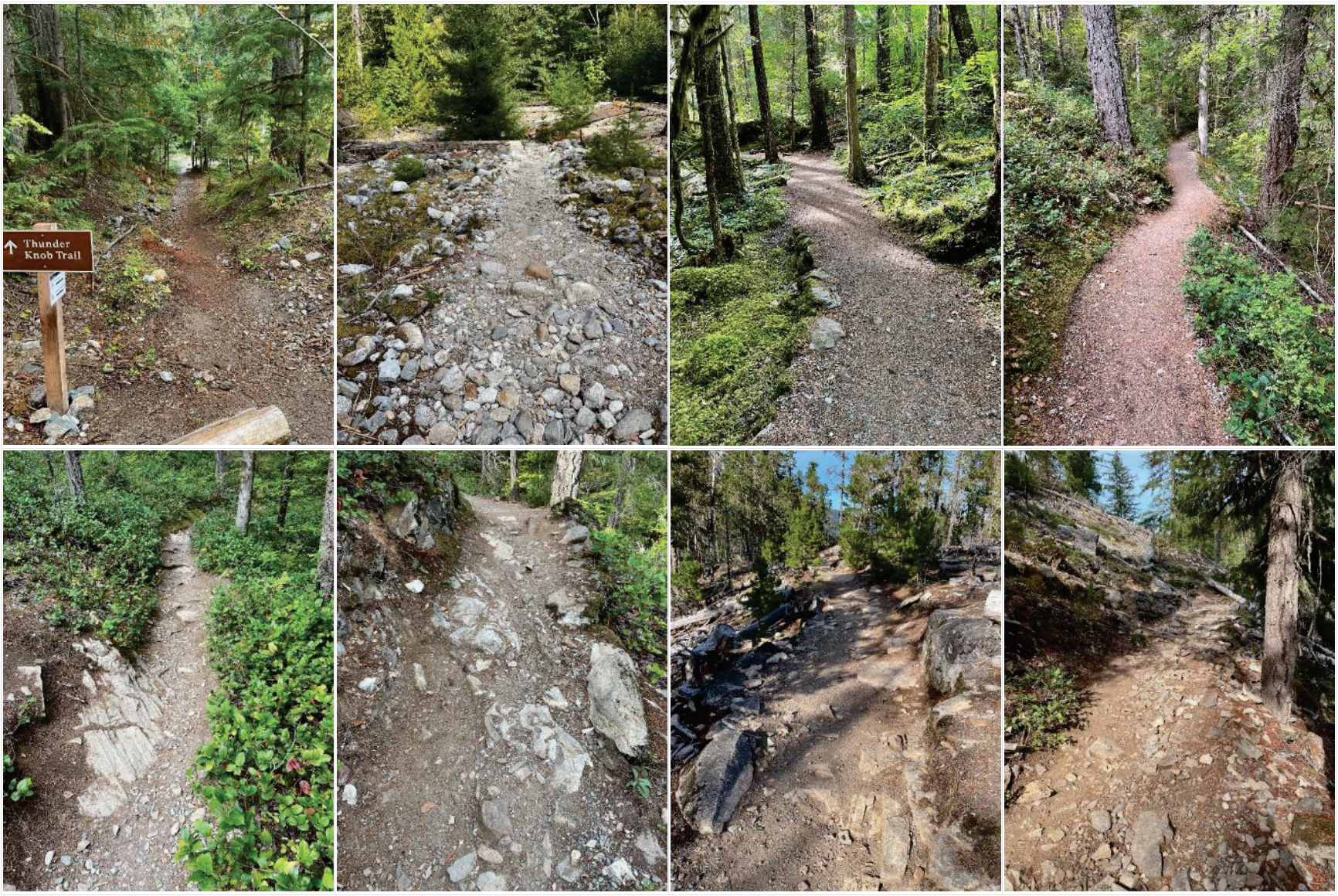


Figure B-25. Photographs of Thunder Knob Trail [taken 09/16/21].



Figure B-26. Photographs of Thunder Creek Trailhead [taken 09/16/21].



Figure B-27. Photographs of Thunder Creek Trail [taken 09/16/21].



Figure B-28. Photographs of Diablo Lake Trail [taken 09/18/21].



Figure B-29. Photographs of Ross Lodge Picnic Shelter [taken 09/14/21].



Figure B-30. Photographs of Gorge Lake Boat Launch [taken 09/16/21].



Figure B-31. Photographs of Gorge Lake Campground [taken 09/16/21].



Figure B-32. Photographs of Diablo Dam Trail [taken 09/14/21].



Figure B-33. Photographs of Sourdough Mountain (upper) and Stetattle Creek (lower) Trailheads [taken 09/14/21].



Figure B-34. Photographs of Gorge Creek Overlook [taken 09/14/21].

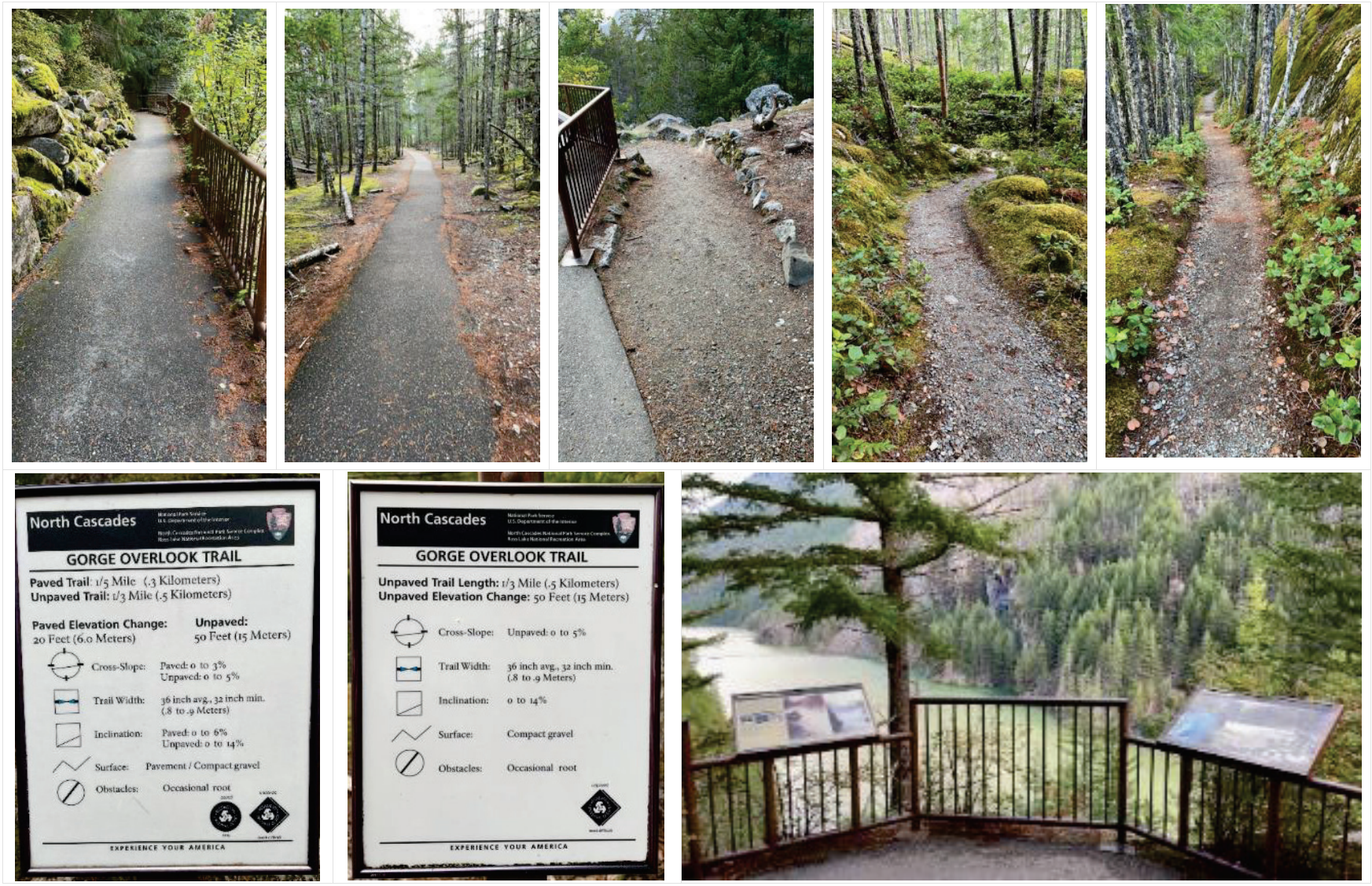


Figure B-35. Photographs of Gorge Creek Overlook Trail [taken 09/18/21].



Figure B-36. Photographs of Gorge Powerhouse Parking Area [taken 09/13/21].



Figure B-37. Photographs of Gorge Powerhouse Visitor Gallery [taken 09/13/21].

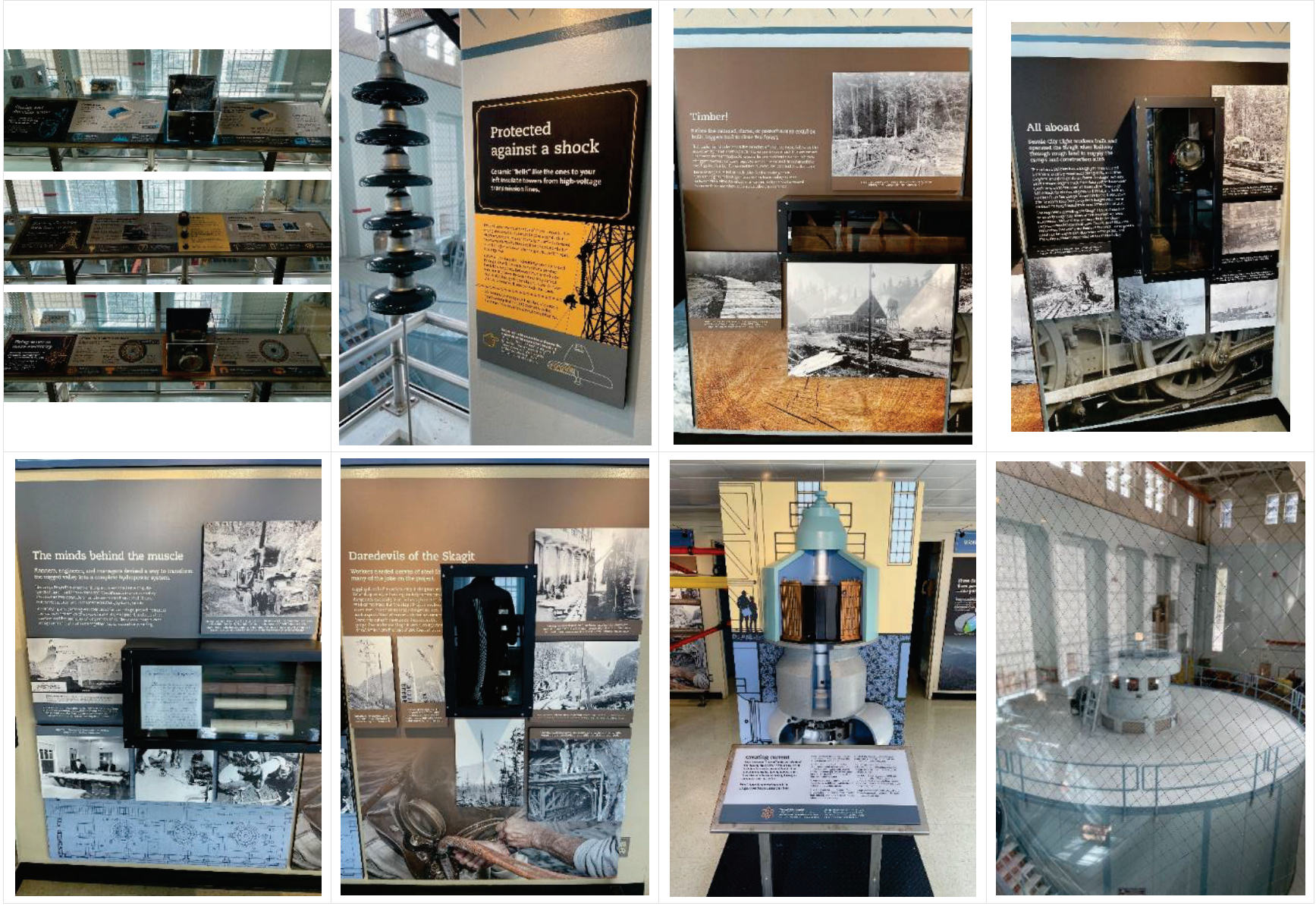


Figure B-38. Photographs of Gorge Powerhouse Visitor Gallery [taken 09/13/21].



Figure B-39. Photographs of Skagit Information Center [taken 09/13/21].



Figure B-40. Photographs of Gorge Inn Museum exhibits [taken 09/13/21].



Figure B-41. Photographs of Gorge Inn Museum [taken 09/13/21].



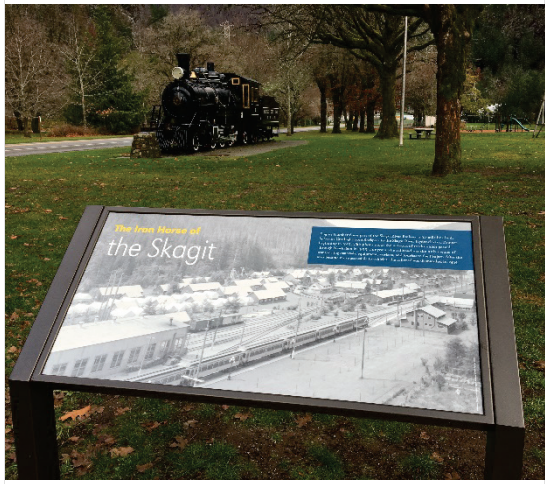
Figure B-42. Photographs of Newhalem townsite Main Street (upper) and SR 20 (lower) parking areas [taken 09/13/21].



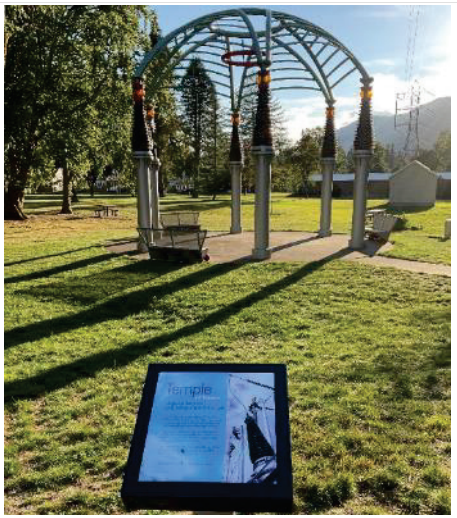
Figure B-43. Photographs of Newhalem townsite picnic sites and playground [taken 09/13/21].



Waterwheel



Iron Horse of the Skagit



Temple of Power



Spinning Waterwheel



Chinook Red



Automobiles Come to the Skagit

Figure B-44. Photographs of Newhalem townsite interpretive displays [taken 09/13/21].



Figure B-45. Photographs of Ladder Creek Falls Trail and Garden [taken 09/18/21].



Figure B-46. Photographs of Trail of the Cedars trail conditions [taken 09/18/21].



Figure B-47. Photographs of Trail of the Cedars interpretive displays [taken 09/18/21].



Figure B-48. Photographs of Trail of the Cedars interpretive displays [taken 09/18/21].



Figure B-49. Photographs of Trail of the Cedars interpretive displays (Newhalem Creek Powerhouse) [taken 09/18/21].



Figure B-50. Photographs of Goodell Creek Campground [taken 09/13/21].



Figure B-51. Photographs of Goodell Creek Boat Launch [taken 09/13/21].



Figure B-52. Photographs of Damnation Creek Boat-in Picnic Site [taken 09/13/21].



Figure B-53. Photographs of Copper Creek Boat Access Site [taken 09/13/21].



Figure B-54. Photographs of Marblemount Boat Launch [taken 09/13/21].

RECREATION USE AND FACILITY ASSESSMENT

ATTACHMENT C

SUMMARY OF OBSERVED VEHICLES BY SEASON, DAY TYPE, PARKING AREA, AND VEHICLE TYPE

Table C1. Detailed summary of observed vehicles by season, day type and vehicle type at Ross Dam Trailhead.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	22.3	0.9	**23.2**	21.1	0.9	**22.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.4	0.0	**0.4**	0.7	0.0	**0.7**
	Max.	61	13	**74**	59	13	**72**	1	0	**1**	0	0	**0**	3	0	**3**	4	0	**4**
Weekday (n=28)	Ave.	16.9	0.5	**17.4**	16.0	0.5	**16.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.0	**0.3**	0.6	0.0	**0.6**
	Max.	41	4	**41**	40	4	**40**	0	0	**0**	0	0	**0**	3	0	**3**	4	0	**4**
Weekend (n=28)	Ave.	28.0	1.5	**29.5**	26.4	1.5	**27.9**	0.2	0.0	**0.2**	0.0	0.0	**0.0**	0.6	0.0	**0.6**	0.9	0.0	**0.9**
	Max.	61	13	**74**	59	13	**72**	1	0	**1**	0	0	**0**	2	0	**2**	4	0	**4**
Holiday (n=4)	Ave.	19.8	0.0	**19.8**	19.0	0.0	**19.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.8	0.0	**0.8**
	Max.	29	0	**29**	29	0	**29**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**
PEAK SEASON																			
Overall (n=72)	Ave.	59.3	6.5	**65.8**	57.7	6.4	**64.1**	0.3	0.1	**0.4**	0.0	0.0	**0.0**	0.9	0.0	**0.9**	0.4	0.0	**0.4**
	Max.	86	30	**114**	83	29	**110**	1	1	**1**	0	0	**0**	4	1	**4**	2	0	**2**
Weekday (n=32)	Ave.	51.9	2.0	**53.9**	50.1	1.9	**52.0**	0.3	0.1	**0.4**	0.0	0.0	**0.0**	0.9	0.0	**0.9**	0.7	0.0	**0.7**
	Max.	65	8	**71**	63	8	**69**	1	1	**1**	0	0	**0**	4	0	**4**	2	0	**2**
Weekend (n=32)	Ave.	66.0	11.2	**77.2**	64.5	11.0	**75.5**	0.5	0.1	**0.6**	0.0	0.0	**0.0**	0.8	0.1	**0.9**	0.3	0.0	**0.3**
	Max.	86	30	**114**	83	29	**110**	1	1	**1**	0	0	**0**	3	1	**3**	2	0	**2**
Holiday (n=8)	Ave.	62.1	5.8	**67.9**	61.0	5.8	**66.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	1.1	0.0	**1.1**	0.0	0.0	**0.0**
	Max.	76	27	**94**	76	27	**92**	0	0	**0**	0	0	**0**	2	0	**2**	0	0	**0**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	42.5	4.0	**46.5**	41.0	3.9	**44.9**	0.2	0.1	**0.3**	0.0	0.0	**0.0**	0.7	0.0	**0.7**	0.6	0.0	**0.6**
	Max.	86	30	**114**	83	29	**110**	1	1	**1**	0	0	**0**	4	1	**4**	4	0	**4**
Weekday (n=60)	Ave.	35.6	1.3	**36.9**	34.2	1.2	**35.4**	0.1	0.1	**0.2**	0.0	0.0	**0.0**	0.6	0.0	**0.6**	0.7	0.0	**0.7**
	Max.	65	8	**71**	63	8	**69**	1	1	**1**	0	0	**0**	4	0	**4**	4	0	**4**
Weekend (n=60)	Ave.	48.3	6.7	**55.0**	46.7	6.6	**53.3**	0.4	0.1	**0.4**	0.0	0.0	**0.0**	0.7	0.1	**0.7**	0.5	0.0	**0.5**
	Max.	86	30	**114**	83	29	**110**	1	1	**1**	0	0	**0**	3	1	**3**	4	0	**4**
Holiday (n=12)	Ave.	48.0	3.8	**51.8**	47.0	3.8	**50.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.8	0.0	**0.8**	0.3	0.0	**0.3**
	Max.	76	27	**94**	76	27	**92**	0	0	**0**	0	0	**0**	2	0	**2**	3	0	**3**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C2. Summary of observed vehicles by season, day type and vehicle type at Colonial Creek Boat Launch.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	19.6	0.1	**19.6**	18.0	0.0	**18.0**	0.7	0.0	**0.8**	0.5	0.0	**0.5**	0.4	0.0	**0.4**	0.0	0.0	**0.0**
	Max.	70	2	**70**	67	2	**67**	4	1	**4**	2	0	**2**	4	0	**4**	0	0	**0**
Weekday (n=28)	Ave.	15.3	0.1	**15.4**	13.7	0.1	**13.8**	0.3	0.0	**0.4**	0.5	0.0	**0.5**	0.8	0.0	**0.8**	0.0	0.0	**0.0**
	Max.	44	2	**44**	43	2	**43**	4	1	**4**	2	0	**2**	4	0	**4**	0	0	**0**
Weekend (n=28)	Ave.	23.8	0.0	**23.8**	22.4	0.0	**22.4**	0.8	0.0	**0.8**	0.6	0.0	**0.6**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	70	1	**70**	67	0	**67**	2	1	**2**	2	0	**2**	1	0	**1**	0	0	**0**
Holiday (n=4)	Ave.	20.5	0.0	**20.5**	16.8	0.0	**16.8**	3.0	0.0	**3.0**	0.8	0.0	**0.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	36	0	**36**	31	0	**31**	4	0	**4**	1	0	**1**	0	0	**0**	0	0	**0**
PEAK SEASON																			
Overall (n=64)	Ave.	65.0	0.8	**65.9**	59.7	0.1	**59.8**	2.9	0.7	**3.6**	0.7	0.0	**0.8**	1.6	0.0	**1.6**	0.1	0.0	**0.1**
	Max.	119	10	**119**	112	1	**112**	6	8	**9**	3	2	**3**	7	1	**7**	1	2	**2**
Weekday (n=24)	Ave.	47.6	0.4	**48.0**	40.7	0.0	**40.7**	3.9	0.3	**4.1**	1.0	0.1	**1.1**	1.9	0.0	**1.9**	0.1	0.0	**0.1**
	Max.	75	7	**75**	69	1	**69**	6	5	**7**	3	2	**3**	6	0	**6**	1	0	**1**
Weekend (n=32)	Ave.	73.4	0.2	**73.6**	68.5	0.1	**68.6**	2.6	0.2	**2.8**	0.5	0.0	**0.5**	1.6	0.0	**1.6**	0.1	0.0	**0.1**
	Max.	119	3	**119**	112	1	**112**	6	2	**6**	1	0	**1**	7	0	**7**	1	0	**1**
Holiday (n=8)	Ave.	84.0	4.5	**88.5**	81.6	0.1	**81.8**	1.0	4.0	**5.0**	0.6	0.0	**0.6**	0.8	0.1	**0.9**	0.0	0.3	**0.3**
	Max.	106	10	**116**	106	1	**106**	3	8	**9**	1	0	**1**	2	1	**3**	0	2	**2**
FULL STUDY SEASON																			
Overall (n=124)	Ave.	43.0	0.5	**43.5**	39.5	0.0	**39.5**	1.8	0.4	**2.2**	0.6	0.0	**0.7**	1.0	0.0	**1.0**	0.1	0.0	**0.1**
	Max.	119	10	**119**	112	2	**112**	6	8	**9**	3	2	**3**	7	1	**7**	1	2	**2**
Weekday (n=52)	Ave.	30.2	0.2	**30.4**	26.2	0.1	**26.2**	2.0	0.1	**2.1**	0.7	0.0	**0.8**	1.3	0.0	**1.3**	0.1	0.0	**0.1**
	Max.	75	7	**75**	69	2	**69**	6	5	**7**	3	2	**3**	6	0	**6**	1	0	**1**
Weekend (n=60)	Ave.	50.2	0.1	**50.4**	47.0	0.0	**47.0**	1.8	0.1	**1.9**	0.6	0.0	**0.6**	0.9	0.0	**0.9**	0.1	0.0	**0.1**
	Max.	119	3	**119**	112	1	**112**	6	2	**6**	2	0	**2**	7	0	**7**	1	0	**1**
Holiday (n=12)	Ave.	62.8	3.0	**65.8**	60.0	0.1	**60.1**	1.7	2.7	**4.3**	0.7	0.0	**0.7**	0.5	0.1	**0.6**	0.0	0.2	**0.2**
	Max.	106	10	**116**	106	1	**106**	4	8	**9**	1	0	**1**	2	1	**3**	0	2	**2**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C3. Summary of observed vehicles by season, day type and vehicle type at Thunder Knob Trailhead.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	12.2	6.3	**18.5**	11.8	6.0	**17.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.4	0.2	**0.6**	0.0	0.0	**0.0**
	Max.	28	33	**53**	27	33	**53**	1	1	**1**	0	0	**0**	3	2	**3**	0	1	**1**
Weekday (n=28)	Ave.	9.9	4.1	**14.0**	9.4	3.6	**13.0**	0.0	0.0	**0.1**	0.0	0.0	**0.0**	0.5	0.4	**0.9**	0.0	0.0	**0.0**
	Max.	28	29	**48**	27	27	**45**	1	1	**1**	0	0	**0**	3	2	**3**	0	1	**1**
Weekend (n=28)	Ave.	14.0	7.5	**21.5**	13.6	7.4	**21.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.4	0.1	**0.5**	0.0	0.0	**0.0**
	Max.	26	33	**53**	24	33	**53**	0	0	**0**	0	0	**0**	2	1	**3**	0	0	**0**
Holiday (n=4)	Ave.	15.0	13.5	**28.5**	15.0	13.5	**28.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	20	28	**48**	20	28	**48**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	18.4	34.3	**52.7**	17.2	32.7	**49.9**	0.2	0.3	**0.5**	0.0	0.0	**0.0**	0.9	0.9	**1.8**	0.1	0.3	**0.4**
	Max.	42	128	**151**	38	122	**145**	2	3	**3**	0	1	**1**	4	5	**5**	2	3	**3**
Weekday (n=32)	Ave.	16.8	14.6	**31.5**	15.3	13.3	**28.6**	0.3	0.3	**0.6**	0.0	0.0	**0.0**	1.2	0.8	**2.0**	0.1	0.2	**0.3**
	Max.	42	51	**57**	38	46	**55**	2	1	**2**	0	1	**1**	3	5	**5**	1	2	**2**
Weekend (n=32)	Ave.	19.6	49.8	**69.4**	18.6	47.8	**66.4**	0.1	0.4	**0.5**	0.0	0.0	**0.0**	0.8	1.2	**2.0**	0.1	0.4	**0.5**
	Max.	33	128	**151**	33	122	**145**	1	3	**3**	0	0	**0**	4	5	**5**	2	3	**3**
Holiday (n=8)	Ave.	19.6	50.8	**70.4**	19.1	50.3	**69.4**	0.5	0.0	**0.5**	0.0	0.0	**0.0**	0.0	0.3	**0.3**	0.0	0.3	**0.3**
	Max.	20	87	**107**	20	87	**106**	1	0	**1**	0	0	**0**	0	1	**1**	0	2	**2**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	15.6	21.5	**37.1**	14.7	20.6	**35.3**	0.1	0.2	**0.3**	0.0	0.0	**0.0**	0.7	0.6	**1.3**	0.1	0.2	**0.2**
	Max.	42	128	**151**	38	122	**145**	2	3	**3**	0	1	**1**	4	5	**5**	2	3	**3**
Weekday (n=60)	Ave.	13.6	9.7	**23.3**	12.5	8.8	**21.3**	0.2	0.2	**0.4**	0.0	0.0	**0.0**	0.9	0.6	**1.5**	0.1	0.1	**0.2**
	Max.	42	51	**57**	38	46	**55**	2	1	**2**	0	1	**1**	3	5	**5**	1	2	**2**
Weekend (n=60)	Ave.	17.0	30.0	**47.1**	16.3	28.9	**45.2**	0.0	0.2	**0.3**	0.0	0.0	**0.0**	0.6	0.7	**1.3**	0.1	0.2	**0.3**
	Max.	33	128	**151**	33	122	**145**	1	3	**3**	0	0	**0**	4	5	**5**	2	3	**3**
Holiday (n=12)	Ave.	18.1	38.3	**56.4**	17.8	38.0	**55.8**	0.3	0.0	**0.3**	0.0	0.0	**0.0**	0.0	0.2	**0.2**	0.0	0.2	**0.2**
	Max.	20	87	**107**	20	87	**106**	1	0	**1**	0	0	**0**	0	1	**1**	0	2	**2**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C4. Summary of observed vehicles by season, day type and vehicle type at Thunder Creek Trailhead.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=44)	Ave.	8.0	0.2	**8.1**	8.0	0.2	**8.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	20	2	**22**	20	2	**22**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
Weekday (n=20)	Ave.	5.9	0.1	**6.0**	5.9	0.1	**6.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	12	2	**12**	12	2	**12**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
Weekend (n=20)	Ave.	10.5	0.3	**10.8**	10.5	0.3	**10.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	20	2	**22**	20	2	**22**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Holiday (n=4)	Ave.	5.8	0.0	**5.8**	5.8	0.0	**5.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	10	0	**10**	10	0	**10**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
PEAK SEASON																			
Overall (n=64)	Ave.	13.4	0.1	**13.5**	13.2	0.1	**13.2**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.0	**0.3**	0.0	0.0	**0.0**
	Max.	20	1	**20**	20	1	**20**	1	0	**1**	0	0	**0**	3	0	**3**	0	0	**0**
Weekday (n=24)	Ave.	11.0	0.0	**11.0**	10.7	0.0	**10.7**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.0	**0.3**	0.0	0.0	**0.0**
	Max.	17	0	**17**	17	0	**17**	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**
Weekend (n=32)	Ave.	14.6	0.1	**14.7**	14.4	0.1	**14.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.0	0.0	**0.0**
	Max.	20	1	**20**	20	1	**20**	1	0	**1**	0	0	**0**	1	0	**1**	0	0	**0**
Holiday (n=8)	Ave.	16.1	0.1	**16.3**	15.6	0.1	**15.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.5	0.0	**0.5**	0.0	0.0	**0.0**
	Max.	17	1	**17**	16	1	**16**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
FULL STUDY SEASON																			
Overall (n=108)	Ave.	11.2	0.1	**11.3**	11.0	0.1	**11.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.0	0.0	**0.0**
	Max.	20	2	**22**	20	2	**22**	1	0	**1**	0	0	**0**	3	0	**3**	0	0	**0**
Weekday (n=44)	Ave.	8.7	0.0	**8.7**	8.5	0.0	**8.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.0	0.0	**0.0**
	Max.	17	2	**17**	17	2	**17**	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**
Weekend (n=52)	Ave.	13.0	0.2	**13.2**	12.9	0.2	**13.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	20	2	**22**	20	2	**22**	1	0	**1**	0	0	**0**	1	0	**1**	0	0	**0**
Holiday (n=12)	Ave.	12.7	0.1	**12.8**	12.3	0.1	**12.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.0	**0.3**	0.0	0.0	**0.0**
	Max.	17	1	**17**	16	1	**16**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C5. Summary of observed vehicles by season, day type and vehicle type at Diablo Dam parking area.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	1.1	0.8	**1.9**	1.0	0.8	**1.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.2**
	Max.	5	7	**11**	5	7	**10**	0	0	**0**	0	0	**0**	0	1	**1**	4	1	**4**
Weekday (n=28)	Ave.	0.4	0.1	**0.6**	0.3	0.1	**0.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	5	2	**6**	2	2	**3**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**
Weekend (n=28)	Ave.	1.5	1.0	**2.5**	1.3	1.0	**2.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	5	7	**9**	5	7	**9**	0	0	**0**	0	0	**0**	0	1	**1**	3	0	**3**
Holiday (n=4)	Ave.	3.5	4.0	**7.5**	3.5	3.8	**7.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.3	**0.3**
	Max.	4	7	**11**	4	6	**10**	0	0	**0**	0	0	**0**	0	0	**0**	0	1	**1**
PEAK SEASON																			
Overall (n=72)	Ave.	1.1	1.4	**2.5**	1.0	1.3	**2.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.1	**0.1**
	Max.	7	12	**15**	6	12	**15**	1	1	**1**	0	0	**0**	0	1	**1**	2	2	**2**
Weekday (n=32)	Ave.	0.9	0.6	**1.5**	0.9	0.5	**1.4**	0.0	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	3	3	**5**	3	3	**5**	1	1	**1**	0	0	**0**	0	1	**1**	0	0	**0**
Weekend (n=32)	Ave.	0.9	1.5	**2.3**	0.8	1.3	**2.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.2	**0.3**
	Max.	5	5	**8**	5	5	**8**	0	0	**0**	0	0	**0**	0	1	**1**	2	2	**2**
Holiday (n=8)	Ave.	2.8	4.8	**7.5**	2.5	4.8	**7.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.0	**0.3**
	Max.	7	12	**15**	6	12	**15**	0	0	**0**	0	0	**0**	0	0	**0**	2	0	**2**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	1.1	1.2	**2.3**	1.0	1.1	**2.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.1	**0.1**
	Max.	7	12	**15**	6	12	**15**	1	1	**1**	0	0	**0**	0	1	**1**	4	2	**4**
Weekday (n=60)	Ave.	0.7	0.4	**1.1**	0.6	0.3	**1.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	5	3	**6**	3	3	**5**	1	1	**1**	0	0	**0**	0	1	**1**	4	0	**4**
Weekend (n=60)	Ave.	1.2	1.3	**2.4**	1.1	1.1	**2.2**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.1	**0.2**
	Max.	5	7	**9**	5	7	**9**	0	0	**0**	0	0	**0**	0	1	**1**	3	2	**3**
Holiday (n=12)	Ave.	3.0	4.5	**7.5**	2.8	4.4	**7.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.2	0.1	**0.3**
	Max.	7	12	**15**	6	12	**15**	0	0	**0**	0	0	**0**	0	0	**0**	2	1	**2**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C6. Summary of observed vehicles by season, day type and vehicle type at Skagit Tour Dock.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	0.4	0.1	**0.5**	0.2	0.1	**0.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.2	0.0	**0.2**
	Max.	5	2	**7**	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**
Weekday (n=28)	Ave.	0.4	0.2	**0.6**	0.3	0.2	**0.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	5	2	**7**	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**
Weekend (n=28)	Ave.	0.3	0.1	**0.4**	0.1	0.1	**0.2**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.2	0.0	**0.2**
	Max.	4	1	**4**	1	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**
Holiday (n=4)	Ave.	0.8	0.0	**0.8**	0.8	0.0	**0.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	2	0	**2**	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	0.7	0.4	**1.1**	0.7	0.4	**1.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	6	9	**14**	6	9	**14**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Weekday (n=32)	Ave.	0.3	0.3	**0.6**	0.3	0.3	**0.6**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	2	3	**3**	2	3	**3**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Weekend (n=32)	Ave.	0.5	0.1	**0.6**	0.5	0.1	**0.6**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	2	2	**4**	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Holiday (n=8)	Ave.	2.6	2.1	**4.8**	2.6	2.1	**4.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	6	9	**14**	6	9	**14**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	0.5	0.3	**0.8**	0.5	0.3	**0.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	6	9	**14**	6	9	**14**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**
Weekday (n=60)	Ave.	0.4	0.2	**0.6**	0.3	0.2	**0.6**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	5	3	**7**	2	3	**4**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**
Weekend (n=60)	Ave.	0.4	0.1	**0.5**	0.3	0.1	**0.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	4	2	**4**	2	2	**4**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**
Holiday (n=12)	Ave.	2.0	1.4	**3.4**	2.0	1.4	**3.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	6	9	**14**	6	9	**14**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C7. Summary of observed vehicles by season, day type and vehicle type at West Ferry Landing.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	10.4	8.6	**19.0**	9.9	7.8	**17.7**	0.0	0.0	**0.0**	0.2	0.7	**0.8**	0.0	0.0	**0.0**	0.3	0.2	**0.5**
	Max.	28	28	**46**	26	27	**44**	0	2	**2**	2	2	**3**	0	1	**1**	1	1	**1**
Weekday (n=28)	Ave.	10.0	7.3	**17.3**	9.6	6.2	**15.8**	0.0	0.1	**0.1**	0.1	0.8	**1.0**	0.0	0.0	**0.0**	0.3	0.2	**0.4**
	Max.	19	18	**34**	19	16	**31**	0	2	**2**	1	2	**3**	0	1	**1**	1	1	**1**
Weekend (n=28)	Ave.	11.8	11.1	**22.9**	11.3	10.4	**21.7**	0.0	0.0	**0.0**	0.2	0.6	**0.8**	0.0	0.0	**0.0**	0.3	0.1	**0.4**
	Max.	28	28	**46**	26	27	**44**	0	0	**0**	2	2	**2**	0	0	**0**	1	1	**1**
Holiday (n=4)	Ave.	3.5	0.3	**3.8**	2.8	0.0	**2.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.8	0.3	**1.0**
	Max.	5	1	**5**	4	0	**4**	0	0	**0**	0	0	**0**	0	0	**0**	1	1	**1**
PEAK SEASON																			
Overall (n=72)	Ave.	20.2	20.2	**40.4**	20.0	18.6	**38.6**	0.0	0.2	**0.2**	0.0	0.6	**0.6**	0.1	0.2	**0.3**	0.0	0.7	**0.7**
	Max.	34	36	**57**	34	34	**55**	0	1	**1**	0	2	**2**	1	1	**2**	0	1	**1**
Weekday (n=32)	Ave.	20.4	17.4	**37.8**	20.3	15.5	**35.8**	0.0	0.2	**0.2**	0.0	0.8	**0.8**	0.1	0.2	**0.3**	0.0	0.8	**0.8**
	Max.	34	35	**56**	34	33	**54**	0	1	**1**	0	2	**2**	1	1	**2**	0	1	**1**
Weekend (n=32)	Ave.	20.3	21.8	**42.2**	20.1	20.4	**40.6**	0.0	0.3	**0.3**	0.0	0.4	**0.4**	0.2	0.1	**0.3**	0.0	0.6	**0.6**
	Max.	24	33	**54**	24	31	**52**	0	1	**1**	0	2	**2**	1	1	**1**	0	1	**1**
Holiday (n=8)	Ave.	18.6	25.1	**43.8**	18.5	23.8	**42.3**	0.0	0.0	**0.0**	0.0	0.9	**0.9**	0.1	0.0	**0.1**	0.0	0.5	**0.5**
	Max.	21	36	**57**	21	34	**55**	0	0	**0**	0	1	**1**	1	0	**1**	0	1	**1**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	15.7	15.0	**30.7**	15.4	13.7	**29.1**	0.0	0.1	**0.1**	0.1	0.6	**0.7**	0.1	0.1	**0.2**	0.1	0.4	**0.6**
	Max.	34	36	**57**	34	34	**55**	0	2	**2**	2	2	**3**	1	1	**2**	1	1	**1**
Weekday (n=60)	Ave.	15.5	12.7	**28.3**	15.3	11.2	**26.5**	0.0	0.1	**0.1**	0.1	0.8	**0.9**	0.0	0.1	**0.2**	0.1	0.5	**0.6**
	Max.	34	35	**56**	34	33	**54**	0	2	**2**	1	2	**3**	1	1	**2**	1	1	**1**
Weekend (n=60)	Ave.	16.4	16.8	**33.2**	16.0	15.8	**31.8**	0.0	0.1	**0.1**	0.1	0.5	**0.6**	0.1	0.1	**0.2**	0.1	0.4	**0.5**
	Max.	28	33	**54**	26	31	**52**	0	1	**1**	2	2	**2**	1	1	**1**	1	1	**1**
Holiday (n=12)	Ave.	13.6	16.8	**30.4**	13.3	15.8	**29.1**	0.0	0.0	**0.0**	0.0	0.6	**0.6**	0.1	0.0	**0.1**	0.3	0.4	**0.7**
	Max.	21	36	**57**	21	34	**55**	0	0	**0**	0	1	**1**	1	0	**1**	1	1	**1**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C8. Summary of observed vehicles by season, day type and vehicle type at ELC parking area.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	20.0	1.0	**21.0**	19.5	0.9	**20.4**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.1	0.0	**0.1**	0.3	0.0	**0.3**
	Max.	48	10	**57**	47	10	**56**	0	0	**0**	2	1	**2**	1	1	**1**	1	0	**1**
Weekday (n=28)	Ave.	14.3	0.0	**14.3**	13.7	0.0	**13.7**	0.0	0.0	**0.0**	0.4	0.0	**0.4**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	30	0	**30**	27	0	**27**	0	0	**0**	2	0	**2**	1	0	**1**	1	0	**1**
Weekend (n=28)	Ave.	23.4	1.1	**24.6**	22.9	1.1	**24.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.1**	0.4	0.0	**0.4**
	Max.	48	10	**57**	47	10	**56**	0	0	**0**	2	1	**2**	1	1	**1**	1	0	**1**
Holiday (n=4)	Ave.	36.3	6.3	**42.5**	36.0	6.3	**42.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.0	**0.3**	0.0	0.0	**0.0**
	Max.	40	10	**50**	40	10	**50**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	31.0	5.1	**36.1**	29.8	4.7	**34.5**	0.3	0.1	**0.4**	0.0	0.0	**0.0**	0.5	0.2	**0.6**	0.4	0.1	**0.5**
	Max.	50	43	**86**	49	42	**83**	4	1	**4**	1	1	**1**	3	2	**4**	2	1	**3**
Weekday (n=32)	Ave.	25.1	0.3	**25.4**	23.9	0.2	**24.0**	0.6	0.1	**0.7**	0.0	0.0	**0.0**	0.4	0.0	**0.4**	0.2	0.0	**0.2**
	Max.	40	1	**41**	39	1	**40**	4	1	**4**	1	0	**1**	2	0	**2**	1	0	**1**
Weekend (n=32)	Ave.	35.0	7.3	**42.3**	34.1	6.8	**40.8**	0.1	0.2	**0.3**	0.0	0.0	**0.0**	0.3	0.2	**0.5**	0.5	0.1	**0.7**
	Max.	48	43	**76**	46	42	**74**	1	1	**1**	0	1	**1**	3	2	**3**	2	1	**2**
Holiday (n=8)	Ave.	38.4	15.6	**54.0**	36.1	14.6	**50.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	1.1	0.9	**2.0**	1.1	0.1	**1.3**
	Max.	50	38	**86**	49	36	**83**	0	0	**0**	0	0	**0**	3	2	**4**	2	1	**3**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	26.0	3.2	**29.2**	25.1	3.0	**28.1**	0.2	0.1	**0.2**	0.1	0.0	**0.1**	0.3	0.1	**0.4**	0.4	0.0	**0.4**
	Max.	50	43	**86**	49	42	**83**	4	1	**4**	2	1	**2**	3	2	**4**	2	1	**3**
Weekday (n=60)	Ave.	20.1	0.2	**20.2**	19.1	0.1	**19.2**	0.3	0.1	**0.4**	0.2	0.0	**0.2**	0.3	0.0	**0.3**	0.2	0.0	**0.2**
	Max.	40	1	**41**	39	1	**40**	4	1	**4**	2	0	**2**	2	0	**2**	1	0	**1**
Weekend (n=60)	Ave.	29.6	4.4	**34.0**	28.9	4.1	**33.0**	0.1	0.1	**0.2**	0.0	0.0	**0.1**	0.2	0.1	**0.3**	0.5	0.1	**0.5**
	Max.	48	43	**76**	47	42	**74**	1	1	**1**	2	1	**2**	3	2	**3**	2	1	**2**
Holiday (n=12)	Ave.	37.7	12.5	**50.2**	36.1	11.8	**47.9**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.8	0.6	**1.4**	0.8	0.1	**0.8**
	Max.	50	38	**86**	49	36	**83**	0	0	**0**	0	0	**0**	3	2	**4**	2	1	**3**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C9. Summary of observed vehicles by season, day type and vehicle type at Gorge Lake Boat Launch.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	0.5	0.1	**0.6**	0.4	0.0	**0.4**	0.1	0.1	**0.2**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	7	3	**7**	5	0	**5**	2	3	**3**	1	0	**1**	1	0	**1**	0	0	**0**
Weekday (n=28)	Ave.	0.5	0.0	**0.5**	0.4	0.0	**0.4**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	7	0	**7**	5	0	**5**	1	0	**1**	1	0	**1**	1	0	**1**	0	0	**0**
Weekend (n=28)	Ave.	0.5	0.1	**0.6**	0.4	0.0	**0.4**	0.1	0.1	**0.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	2	3	**3**	2	0	**2**	2	3	**3**	0	0	**0**	1	0	**1**	0	0	**0**
Holiday (n=4)	Ave.	0.3	0.0	**0.3**	0.3	0.0	**0.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	0.5	0.1	**0.6**	0.4	0.1	**0.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.1	0.0	**0.1**
	Max.	6	5	**11**	2	5	**7**	1	0	**1**	0	0	**0**	2	0	**2**	4	0	**4**
Weekday (n=32)	Ave.	0.5	0.0	**0.6**	0.3	0.0	**0.3**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.0	0.0	**0.0**
	Max.	2	1	**2**	2	1	**2**	1	0	**1**	0	0	**0**	2	0	**2**	0	0	**0**
Weekend (n=32)	Ave.	0.7	0.2	**0.8**	0.5	0.2	**0.7**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	6	5	**11**	2	5	**7**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**
Holiday (n=8)	Ave.	0.1	0.0	**0.1**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	0.5	0.1	**0.6**	0.4	0.0	**0.4**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	7	5	**11**	5	5	**7**	2	3	**3**	1	0	**1**	2	0	**2**	4	0	**4**
Weekday (n=60)	Ave.	0.5	0.0	**0.6**	0.3	0.0	**0.4**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	7	1	**7**	5	1	**5**	1	0	**1**	1	0	**1**	2	0	**2**	0	0	**0**
Weekend (n=60)	Ave.	0.6	0.1	**0.7**	0.5	0.1	**0.5**	0.1	0.1	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	6	5	**11**	2	5	**7**	2	3	**3**	0	0	**0**	1	0	**1**	4	0	**4**
Holiday (n=12)	Ave.	0.2	0.0	**0.2**	0.2	0.0	**0.2**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C10. Summary of observed vehicles by season, day type and vehicle type at Diablo Dam Trailhead.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=36)	Ave.	0.1	0.0	**0.1**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**
Weekday (n=16)	Ave.	0.1	0.0	**0.1**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Weekend (n=16)	Ave.	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**
Holiday (n=4)	Ave.	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
PEAK SEASON																			
Overall (n=16)	Ave.	0.1	0.0	**0.1**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Weekday (n=8)	Ave.	0.1	0.0	**0.1**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Weekend (n=4)	Ave.	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Holiday (n=4)	Ave.	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
FULL STUDY SEASON																			
Overall (n=52)	Ave.	0.1	0.0	**0.1**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**
Weekday (n=24)	Ave.	0.1	0.0	**0.1**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Weekend (n=20)	Ave.	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**
Holiday (n=8)	Ave.	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C11. Summary of observed vehicles by season, day type and vehicle type at Sourdough Mountain Trailhead.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	4.3	0.2	**4.5**	4.2	0.2	**4.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	16	2	**18**	16	2	**18**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
Weekday (n=28)	Ave.	3.6	0.0	**3.6**	3.5	0.0	**3.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	9	0	**9**	8	0	**8**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
Weekend (n=28)	Ave.	5.2	0.4	**5.5**	5.1	0.4	**5.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	16	2	**18**	16	2	**18**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
Holiday (n=4)	Ave.	3.5	0.0	**3.5**	3.5	0.0	**3.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	5	0	**5**	5	0	**5**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	11.6	2.4	**13.9**	11.1	2.2	**13.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.4	0.2	**0.6**	0.1	0.0	**0.1**
	Max.	33	17	**40**	33	17	**40**	0	0	**0**	0	0	**0**	3	1	**3**	3	0	**3**
Weekday (n=32)	Ave.	7.3	0.8	**8.1**	6.9	0.7	**7.6**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.4	0.2	**0.5**	0.0	0.0	**0.0**
	Max.	30	9	**39**	29	8	**37**	0	0	**0**	0	0	**0**	2	1	**2**	0	0	**0**
Weekend (n=32)	Ave.	14.2	3.6	**17.8**	13.4	3.4	**16.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.5	0.2	**0.7**	0.2	0.0	**0.2**
	Max.	29	17	**37**	28	17	**35**	0	0	**0**	0	0	**0**	3	1	**3**	3	0	**3**
Holiday (n=8)	Ave.	18.5	3.5	**22.0**	18.5	3.5	**22.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	33	7	**40**	33	7	**40**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	8.3	1.4	**9.7**	8.0	1.3	**9.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.1	**0.3**	0.1	0.0	**0.1**
	Max.	33	17	**40**	33	17	**40**	0	0	**0**	0	0	**0**	3	1	**3**	3	0	**3**
Weekday (n=60)	Ave.	5.6	0.5	**6.0**	5.3	0.4	**5.7**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.1	**0.3**	0.0	0.0	**0.0**
	Max.	30	9	**39**	29	8	**37**	0	0	**0**	0	0	**0**	2	1	**2**	0	0	**0**
Weekend (n=60)	Ave.	10.0	2.1	**12.1**	9.5	2.0	**11.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.1	**0.4**	0.1	0.0	**0.1**
	Max.	29	17	**37**	28	17	**35**	0	0	**0**	0	0	**0**	3	1	**3**	3	0	**3**
Holiday (n=12)	Ave.	13.5	2.3	**15.8**	13.5	2.3	**15.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	33	7	**40**	33	7	**40**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C12. Summary of observed vehicles by season, day type and vehicle type at Gorge Creek Overlook.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	8.1	3.4	**11.4**	7.7	3.1	**10.8**	0.0	0.0	**0.1**	0.0	0.0	**0.0**	0.3	0.2	**0.5**	0.1	0.0	**0.1**
	Max.	24	23	**42**	24	23	**39**	1	1	**2**	0	0	**0**	3	3	**3**	2	0	**2**
Weekday (n=28)	Ave.	5.0	1.2	**6.2**	4.7	0.9	**5.6**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.2	0.3	**0.5**	0.1	0.0	**0.1**
	Max.	15	8	**17**	15	5	**16**	0	0	**0**	0	0	**0**	1	3	**3**	1	0	**1**
Weekend (n=28)	Ave.	9.7	4.4	**14.0**	9.1	4.1	**13.2**	0.0	0.1	**0.1**	0.0	0.0	**0.0**	0.4	0.2	**0.5**	0.2	0.0	**0.2**
	Max.	21	23	**42**	20	23	**39**	1	1	**2**	0	0	**0**	3	1	**3**	2	0	**2**
Holiday (n=4)	Ave.	18.3	11.8	**30.0**	18.3	11.8	**30.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	24	16	**39**	24	16	**39**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	10.8	3.1	**13.9**	9.9	2.4	**12.3**	0.1	0.1	**0.2**	0.0	0.0	**0.0**	0.3	0.3	**0.6**	0.6	0.3	**0.8**
	Max.	24	13	**34**	24	10	**32**	1	3	**3**	0	0	**0**	2	3	**4**	10	4	**10**
Weekday (n=32)	Ave.	8.5	2.0	**10.5**	7.5	1.4	**8.8**	0.0	0.1	**0.1**	0.0	0.0	**0.0**	0.4	0.4	**0.8**	0.6	0.2	**0.8**
	Max.	17	6	**21**	16	5	**17**	1	1	**1**	0	0	**0**	2	3	**4**	10	2	**10**
Weekend (n=32)	Ave.	12.7	4.3	**17.0**	11.9	3.4	**15.3**	0.0	0.2	**0.2**	0.0	0.0	**0.0**	0.2	0.3	**0.4**	0.6	0.4	**1.0**
	Max.	24	13	**34**	24	10	**32**	1	3	**3**	0	0	**0**	2	1	**2**	5	4	**5**
Holiday (n=8)	Ave.	11.1	2.5	**13.6**	10.1	2.4	**12.5**	0.3	0.0	**0.3**	0.0	0.0	**0.0**	0.3	0.1	**0.4**	0.5	0.0	**0.5**
	Max.	24	5	**29**	23	4	**27**	1	0	**1**	0	0	**0**	2	1	**2**	4	0	**4**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	9.5	3.2	**12.8**	8.8	2.8	**11.6**	0.0	0.1	**0.1**	0.0	0.0	**0.0**	0.3	0.3	**0.5**	0.4	0.1	**0.5**
	Max.	24	23	**42**	24	23	**39**	1	3	**3**	0	0	**0**	3	3	**4**	10	4	**10**
Weekday (n=60)	Ave.	6.7	1.6	**8.3**	6.1	1.1	**7.2**	0.0	0.1	**0.1**	0.0	0.0	**0.0**	0.3	0.3	**0.6**	0.3	0.1	**0.4**
	Max.	17	8	**21**	16	5	**17**	1	1	**1**	0	0	**0**	2	3	**4**	10	2	**10**
Weekend (n=60)	Ave.	11.3	4.3	**15.6**	10.6	3.7	**14.3**	0.0	0.1	**0.2**	0.0	0.0	**0.0**	0.3	0.2	**0.5**	0.4	0.2	**0.6**
	Max.	24	23	**42**	24	23	**39**	1	3	**3**	0	0	**0**	3	1	**3**	5	4	**5**
Holiday (n=12)	Ave.	13.5	5.6	**19.1**	12.8	5.5	**18.3**	0.2	0.0	**0.2**	0.0	0.0	**0.0**	0.2	0.1	**0.3**	0.3	0.0	**0.3**
	Max.	24	16	**39**	24	16	**39**	1	0	**1**	0	0	**0**	2	1	**2**	4	0	**4**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C13. Summary of observed vehicles by season, day type and vehicle type at Gorge Powerhouse parking area.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	2.4	0.9	**3.3**	2.3	0.8	**3.2**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	12	4	**12**	10	4	**10**	0	1	**1**	0	0	**0**	1	1	**1**	2	0	**2**
Weekday (n=28)	Ave.	1.8	1.2	**3.0**	1.8	1.2	**3.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	7	4	**9**	7	4	**9**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Weekend (n=28)	Ave.	2.6	0.7	**3.3**	2.5	0.6	**3.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.1	**0.1**	0.1	0.0	**0.1**
	Max.	12	3	**12**	10	3	**10**	0	1	**1**	0	0	**0**	1	1	**1**	2	0	**2**
Holiday (n=4)	Ave.	5.0	0.0	**5.0**	4.8	0.0	**4.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.0	**0.3**	0.0	0.0	**0.0**
	Max.	9	0	**9**	9	0	**9**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	3.7	1.3	**5.0**	3.5	1.3	**4.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.1	**0.1**	0.1	0.0	**0.1**
	Max.	16	6	**17**	12	6	**15**	0	1	**1**	0	0	**0**	1	1	**1**	5	0	**5**
Weekday (n=32)	Ave.	2.1	1.1	**3.2**	2.0	1.0	**3.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.1	**0.1**	0.1	0.0	**0.1**
	Max.	6	4	**8**	6	3	**7**	0	1	**1**	0	0	**0**	0	1	**1**	3	0	**3**
Weekend (n=32)	Ave.	5.1	1.8	**6.9**	5.0	1.8	**6.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	12	6	**15**	12	6	**15**	0	0	**0**	0	0	**0**	1	1	**1**	0	0	**0**
Holiday (n=8)	Ave.	4.1	0.4	**4.5**	3.5	0.4	**3.9**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.6	0.0	**0.6**
	Max.	16	2	**17**	11	2	**12**	0	0	**0**	0	0	**0**	0	0	**0**	5	0	**5**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	3.1	1.1	**4.2**	3.0	1.1	**4.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.1**	0.1	0.0	**0.1**
	Max.	16	6	**17**	12	6	**15**	0	1	**1**	0	0	**0**	1	1	**1**	5	0	**5**
Weekday (n=60)	Ave.	2.0	1.2	**3.1**	1.9	1.1	**3.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.1	**0.1**	0.1	0.0	**0.1**
	Max.	7	4	**9**	7	4	**9**	0	1	**1**	0	0	**0**	0	1	**1**	3	0	**3**
Weekend (n=60)	Ave.	4.0	1.3	**5.3**	3.9	1.2	**5.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.1	**0.1**	0.0	0.0	**0.0**
	Max.	12	6	**15**	12	6	**15**	0	1	**1**	0	0	**0**	1	1	**1**	2	0	**2**
Holiday (n=12)	Ave.	4.4	0.3	**4.7**	3.9	0.3	**4.2**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.4	0.0	**0.4**
	Max.	16	2	**17**	11	2	**12**	0	0	**0**	0	0	**0**	1	0	**1**	5	0	**5**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C14. Summary of observed vehicles by season, day type and vehicle type at Main Street parking area.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	7.7	0.4	**8.1**	7.2	0.4	**7.6**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.2	0.0	**0.3**
	Max.	15	9	**15**	15	9	**15**	1	0	**1**	0	0	**0**	3	0	**3**	3	1	**3**
Weekday (n=28)	Ave.	8.8	0.4	**9.2**	8.1	0.3	**8.5**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.3	0.0	**0.3**	0.3	0.1	**0.4**
	Max.	15	2	**15**	14	2	**15**	1	0	**1**	0	0	**0**	1	0	**1**	3	1	**3**
Weekend (n=28)	Ave.	6.2	0.5	**6.7**	5.9	0.5	**6.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.1	0.0	**0.1**
	Max.	14	9	**14**	14	9	**14**	1	0	**1**	0	0	**0**	1	0	**1**	1	0	**1**
Holiday (n=4)	Ave.	10.0	0.3	**10.3**	9.0	0.3	**9.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	1.0	0.0	**1.0**	0.0	0.0	**0.0**
	Max.	15	1	**15**	15	1	**15**	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	10.5	0.8	**11.3**	9.8	0.8	**10.6**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.2	0.0	**0.3**	0.4	0.0	**0.4**
	Max.	22	10	**32**	22	10	**30**	1	1	**1**	0	0	**0**	2	1	**2**	4	2	**4**
Weekday (n=32)	Ave.	10.6	0.6	**11.1**	9.8	0.5	**10.3**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.1	0.1	**0.2**	0.6	0.0	**0.6**
	Max.	22	5	**23**	22	5	**22**	1	1	**1**	0	0	**0**	2	1	**2**	4	0	**4**
Weekend (n=32)	Ave.	10.8	1.2	**11.9**	10.2	1.1	**11.3**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.3	0.0	**0.3**	0.2	0.1	**0.3**
	Max.	22	10	**32**	20	10	**30**	1	0	**1**	0	0	**0**	2	0	**2**	2	2	**2**
Holiday (n=8)	Ave.	9.1	0.6	**9.8**	8.5	0.6	**9.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.5	0.0	**0.5**	0.1	0.0	**0.1**
	Max.	22	5	**27**	21	5	**26**	0	0	**0**	0	0	**0**	2	0	**2**	1	0	**1**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	9.2	0.6	**9.9**	8.6	0.6	**9.2**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.3	0.0	**0.3**
	Max.	22	10	**32**	22	10	**30**	1	1	**1**	0	0	**0**	3	1	**3**	4	2	**4**
Weekday (n=60)	Ave.	9.8	0.5	**10.2**	9.0	0.4	**9.4**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.5	0.0	**0.5**
	Max.	22	5	**23**	22	5	**22**	1	1	**1**	0	0	**0**	2	1	**2**	4	1	**4**
Weekend (n=60)	Ave.	8.6	0.8	**9.5**	8.2	0.8	**9.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.2	0.0	**0.2**
	Max.	22	10	**32**	20	10	**30**	1	0	**1**	0	0	**0**	2	0	**2**	2	2	**2**
Holiday (n=12)	Ave.	9.4	0.5	**9.9**	8.7	0.5	**9.2**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.7	0.0	**0.7**	0.1	0.0	**0.1**
	Max.	22	5	**27**	21	5	**26**	0	0	**0**	0	0	**0**	3	0	**3**	1	0	**1**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C15. Summary of observed vehicles by season, day type and vehicle type at SR 20 parking area.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	3.5	2.2	**5.7**	2.8	1.1	**3.9**	0.2	0.5	**0.8**	0.0	0.0	**0.0**	0.4	0.4	**0.8**	0.1	0.1	**0.2**
	Max.	15	19	**30**	15	10	**19**	3	3	**3**	0	1	**1**	4	8	**9**	2	4	**4**
Weekday (n=28)	Ave.	3.2	1.9	**5.0**	2.3	1.1	**3.4**	0.2	0.5	**0.8**	0.0	0.0	**0.0**	0.6	0.1	**0.7**	0.1	0.1	**0.2**
	Max.	8	6	**14**	7	4	**9**	1	3	**3**	0	0	**0**	4	1	**4**	2	4	**4**
Weekend (n=28)	Ave.	3.8	2.5	**6.2**	3.1	1.1	**4.3**	0.3	0.5	**0.7**	0.0	0.0	**0.0**	0.3	0.8	**1.1**	0.1	0.0	**0.1**
	Max.	15	19	**30**	15	10	**19**	3	2	**3**	0	1	**1**	3	8	**9**	1	1	**1**
Holiday (n=4)	Ave.	3.8	2.5	**6.3**	3.5	1.3	**4.8**	0.3	1.0	**1.3**	0.0	0.0	**0.0**	0.0	0.3	**0.3**	0.0	0.0	**0.0**
	Max.	5	3	**8**	5	2	**7**	1	2	**2**	0	0	**0**	0	1	**1**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	5.5	5.2	**10.7**	4.5	3.7	**8.2**	0.2	0.9	**1.1**	0.0	0.0	**0.0**	0.7	0.5	**1.2**	0.1	0.1	**0.3**
	Max.	20	58	**67**	17	55	**61**	2	6	**6**	0	0	**0**	3	4	**5**	2	2	**2**
Weekday (n=32)	Ave.	5.2	1.6	**6.8**	4.0	0.6	**4.6**	0.2	0.5	**0.7**	0.0	0.0	**0.0**	0.8	0.3	**1.1**	0.3	0.1	**0.4**
	Max.	11	8	**18**	9	2	**11**	2	6	**6**	0	0	**0**	3	4	**4**	2	2	**2**
Weekend (n=32)	Ave.	6.5	9.7	**16.2**	5.6	7.5	**13.1**	0.2	1.3	**1.5**	0.0	0.0	**0.0**	0.8	0.7	**1.5**	0.0	0.2	**0.2**
	Max.	20	58	**67**	17	55	**61**	2	6	**6**	0	0	**0**	3	2	**5**	1	2	**2**
Holiday (n=8)	Ave.	2.1	1.8	**3.9**	2.1	0.8	**2.9**	0.0	0.8	**0.8**	0.0	0.0	**0.0**	0.0	0.1	**0.1**	0.0	0.1	**0.1**
	Max.	8	5	**10**	8	2	**9**	0	4	**4**	0	0	**0**	0	1	**1**	0	1	**1**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	4.6	3.8	**8.4**	3.7	2.5	**6.2**	0.2	0.7	**0.9**	0.0	0.0	**0.0**	0.6	0.5	**1.0**	0.1	0.1	**0.2**
	Max.	20	58	**67**	17	55	**61**	3	6	**6**	0	1	**1**	4	8	**9**	2	4	**4**
Weekday (n=60)	Ave.	4.3	1.7	**6.0**	3.2	0.8	**4.1**	0.2	0.5	**0.7**	0.0	0.0	**0.0**	0.7	0.2	**0.9**	0.2	0.1	**0.3**
	Max.	11	8	**18**	9	4	**11**	2	6	**6**	0	0	**0**	4	4	**4**	2	4	**4**
Weekend (n=60)	Ave.	5.2	6.3	**11.5**	4.4	4.5	**9.0**	0.2	0.9	**1.1**	0.0	0.0	**0.0**	0.6	0.7	**1.3**	0.1	0.1	**0.2**
	Max.	20	58	**67**	17	55	**61**	3	6	**6**	0	1	**1**	3	8	**9**	1	2	**2**
Holiday (n=12)	Ave.	2.7	2.0	**4.7**	2.6	0.9	**3.5**	0.1	0.8	**0.9**	0.0	0.0	**0.0**	0.0	0.2	**0.2**	0.0	0.1	**0.1**
	Max.	8	5	**10**	8	2	**9**	1	4	**4**	0	0	**0**	0	1	**1**	0	1	**1**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C16. Summary of observed vehicles by season, day type and vehicle type at Goodell Creek Boat Launch.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	1.2	0.4	**1.7**	1.1	0.2	**1.3**	0.1	0.2	**0.3**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	13	4	**17**	12	3	**15**	1	1	**1**	0	0	**0**	1	1	**1**	0	0	**0**
Weekday (n=28)	Ave.	1.3	0.5	**1.8**	1.2	0.2	**1.4**	0.0	0.2	**0.2**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	13	4	**17**	12	3	**15**	0	1	**1**	0	0	**0**	1	1	**1**	0	0	**0**
Weekend (n=28)	Ave.	1.1	0.4	**1.6**	1.0	0.2	**1.1**	0.1	0.3	**0.3**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.0	0.0	**0.0**
	Max.	4	2	**4**	4	1	**4**	1	1	**1**	0	0	**0**	1	0	**1**	0	0	**0**
Holiday (n=4)	Ave.	1.3	0.0	**1.3**	1.0	0.0	**1.0**	0.3	0.0	**0.3**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	2	0	**2**	2	0	**2**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**
PEAK SEASON																			
Overall (n=72)	Ave.	4.7	3.3	**7.9**	4.1	2.3	**6.3**	0.2	0.9	**1.1**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.3	0.1	**0.4**
	Max.	12	26	**36**	12	22	**31**	2	5	**6**	0	0	**0**	2	1	**2**	8	2	**8**
Weekday (n=32)	Ave.	2.0	0.4	**2.3**	1.5	0.0	**1.5**	0.1	0.3	**0.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.4	0.1	**0.4**
	Max.	10	3	**11**	6	0	**6**	1	1	**2**	0	0	**0**	1	0	**1**	8	2	**8**
Weekend (n=32)	Ave.	7.5	6.7	**14.2**	6.8	5.0	**11.8**	0.3	1.4	**1.8**	0.0	0.0	**0.0**	0.2	0.1	**0.3**	0.2	0.2	**0.4**
	Max.	12	26	**36**	12	22	**31**	2	5	**6**	0	0	**0**	2	1	**2**	1	2	**2**
Holiday (n=8)	Ave.	4.1	1.1	**5.3**	3.9	0.1	**4.0**	0.3	0.9	**1.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.1	**0.1**
	Max.	11	3	**14**	10	1	**10**	1	2	**3**	0	0	**0**	0	0	**0**	0	1	**1**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	3.1	2.0	**5.1**	2.7	1.3	**4.0**	0.1	0.6	**0.7**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.1	0.1	**0.2**
	Max.	13	26	**36**	12	22	**31**	2	5	**6**	0	0	**0**	2	1	**2**	8	2	**8**
Weekday (n=60)	Ave.	1.7	0.4	**2.1**	1.4	0.1	**1.5**	0.1	0.3	**0.3**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.2	0.0	**0.2**
	Max.	13	4	**17**	12	3	**15**	1	1	**2**	0	0	**0**	1	1	**1**	8	2	**8**
Weekend (n=60)	Ave.	4.5	3.8	**8.3**	4.1	2.8	**6.8**	0.2	0.9	**1.1**	0.0	0.0	**0.0**	0.2	0.1	**0.2**	0.1	0.1	**0.2**
	Max.	12	26	**36**	12	22	**31**	2	5	**6**	0	0	**0**	2	1	**2**	1	2	**2**
Holiday (n=12)	Ave.	3.2	0.8	**3.9**	2.9	0.1	**3.0**	0.3	0.6	**0.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.1	**0.1**
	Max.	11	3	**14**	10	1	**10**	1	2	**3**	0	0	**0**	0	0	**0**	0	1	**1**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.

Table C17. Summary of observed vehicles by season, day type and vehicle type at Marblemount Boat Launch.

Day Type	Stat	Total Vehicles			By Vehicle Type														
					Single Vehicle			Vehicle with Trailer			Trailer Only			RV/ Motor-home			Other		
		Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total	Main Lot	Over-flow	Total
OFF-PEAK SEASON																			
Overall (n=60)	Ave.	3.9	0.1	**4.0**	2.3	0.0	**2.4**	1.5	0.0	**1.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	18	2	**18**	12	1	**12**	8	1	**8**	0	0	**0**	0	0	**0**	2	0	**2**
Weekday (n=28)	Ave.	2.4	0.1	**2.5**	1.6	0.0	**1.7**	0.7	0.0	**0.8**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
	Max.	6	2	**6**	5	1	**5**	3	1	**3**	0	0	**0**	0	0	**0**	1	0	**1**
Weekend (n=28)	Ave.	5.0	0.0	**5.0**	2.5	0.0	**2.5**	2.4	0.0	**2.4**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.1	0.0	**0.1**
	Max.	18	1	**18**	12	1	**12**	8	0	**8**	0	0	**0**	0	0	**0**	2	0	**2**
Holiday (n=4)	Ave.	6.8	0.0	**6.8**	5.8	0.0	**5.8**	0.5	0.0	**0.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.5	0.0	**0.5**
	Max.	13	0	**13**	11	0	**11**	2	0	**2**	0	0	**0**	0	0	**0**	2	0	**2**
PEAK SEASON																			
Overall (n=72)	Ave.	10.4	0.5	**10.9**	7.9	0.4	**8.3**	1.6	0.0	**1.6**	0.1	0.0	**0.1**	0.3	0.0	**0.3**	0.6	0.0	**0.6**
	Max.	26	11	**29**	21	9	**26**	11	1	**11**	2	0	**2**	2	1	**2**	4	1	**4**
Weekday (n=32)	Ave.	5.3	0.1	**5.4**	3.7	0.1	**3.8**	0.7	0.0	**0.7**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.8	0.0	**0.8**
	Max.	15	3	**15**	13	2	**13**	3	1	**4**	0	0	**0**	1	0	**1**	4	0	**4**
Weekend (n=32)	Ave.	13.7	1.1	**14.8**	11.4	0.9	**12.3**	1.4	0.0	**1.4**	0.1	0.0	**0.1**	0.3	0.1	**0.4**	0.4	0.0	**0.5**
	Max.	26	11	**29**	21	9	**26**	3	1	**3**	2	0	**2**	2	1	**2**	2	1	**2**
Holiday (n=8)	Ave.	17.3	0.0	**17.3**	10.4	0.0	**10.4**	5.8	0.0	**5.8**	0.0	0.0	**0.0**	0.5	0.0	**0.5**	0.6	0.0	**0.6**
	Max.	26	0	**26**	14	0	**14**	11	0	**11**	0	0	**0**	1	0	**1**	2	0	**2**
FULL STUDY SEASON																			
Overall (n=132)	Ave.	7.4	0.3	**7.7**	5.3	0.3	**5.6**	1.5	0.0	**1.6**	0.0	0.0	**0.0**	0.2	0.0	**0.2**	0.4	0.0	**0.4**
	Max.	26	11	**29**	21	9	**26**	11	1	**11**	2	0	**2**	2	1	**2**	4	1	**4**
Weekday (n=60)	Ave.	4.0	0.1	**4.1**	2.8	0.1	**2.8**	0.7	0.0	**0.7**	0.0	0.0	**0.0**	0.1	0.0	**0.1**	0.4	0.0	**0.4**
	Max.	15	3	**15**	13	2	**13**	3	1	**4**	0	0	**0**	1	0	**1**	4	0	**4**
Weekend (n=60)	Ave.	9.7	0.6	**10.2**	7.3	0.5	**7.8**	1.9	0.0	**1.9**	0.1	0.0	**0.1**	0.2	0.0	**0.2**	0.3	0.0	**0.3**
	Max.	26	11	**29**	21	9	**26**	8	1	**8**	2	0	**2**	2	1	**2**	2	1	**2**
Holiday (n=12)	Ave.	13.8	0.0	**13.8**	8.8	0.0	**8.8**	4.0	0.0	**4.0**	0.0	0.0	**0.0**	0.3	0.0	**0.3**	0.6	0.0	**0.6**
	Max.	26	0	**26**	14	0	**14**	11	0	**11**	0	0	**0**	1	0	**1**	2	0	**2**

1 Other vehicles typically include motorcycles, buses, box trucks/vans or other types of vehicles that do not fit in the displayed vehicle types.