

City and Borough of Sitka

Electric Department

105 Jarvis Street

Sitka, Alaska 99835

(907) 747-1870, FAX (907)747-3208

February 4, 2026

Debbie-Anne Reese, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, D.C. 20426

-FILED ELECTRONICALLY-

RE: Green Lake Hydroelectric Project (P-2818) Initial Study Report Filing

Dear Secretary Reese,

In accordance with the Integrated Licensing Process (ILP) schedule for relicensing the Green Lake Hydroelectric Project (Project; FERC No. P-2818) and the Federal Energy Regulatory Commission's (FERC) regulations at 18 CFR § 5.15(c)(1), the City and Borough of Sitka (CBS), Alaska, hereby files its Initial Study Report (ISR) for the Project. The current FERC license for the Project expires March 31, 2029.

CBS initiated the ILP for the Project with the filing of the Pre-Application Document (PAD) and Notice of Intent (NOI) on March 26, 2024, to seek a new license for the Project. FERC issued Scoping Document 1 on May 20, 2024, and held public scoping meetings and a site visit on June 12, 2024. FERC issued Scoping Document 2 on August 29, 2024.

CBS filed its Proposed Study Plan (PSP) with FERC on September 6, 2024. The PSP included three proposed studies in response to study requests and in compliance with Section 106 of the National Historic Preservation Act. CBS addressed comments from FERC and the Alaska State Historic Office and revised their study plan accordingly. On January 6, 2025, CBS filed their Revised Study Plan (RSP). FERC issued their study plan determination on January 24, 2025, approving all three studies as filed without modifications.

This ISR describes CBS's progress in implementing the three studies described in the RSP, summarizes data collected during the 2025 field season, and notes any variances and proposed modifications from the approved RSP.

Pursuant to 18 CFR § 5.15(c)(2), CBS will hold a virtual ISR meeting with FERC and other interested parties on February 17, 2026, to discuss the initial study reports. CBS will file a meeting summary with FERC by March 6, 2026.

In addition to filing the ISR with FERC, CBS will distribute the ISR to interested parties via email and post the ISR on the CBS's Project website at [The City & Borough of Sitka Alaska - Green Lake Hydroelectric Project, FERC Relicensing \(cityofsitka.com\)](https://www.cityofsitka.com/projects/green-lake-hydroelectric-project).

Please feel free to contact me (907-747-1866 or kord.christianson@cityofsitka.org) with any questions regarding this filing.

Sincerely,



Kord Christianson
Electric Department
Project & Regulatory Engineer

Enclosure

cc: Distribution List (see attached)

Federal Agencies

<p>Debbie-Anne Reese, Secretary Federal Energy Regulatory Commission 888 First Street NE Washington, D.C. 20426 202-502-8400</p>	<p>Eric Kennedy, Acting Regional Engineer Federal Energy Regulatory Commission Office of Energy Projects Division of Dam Safety and Inspections Portland Regional Office 1201 NE Lloyd Blvd, Suite 750 Portland, OR 97232 503-552-2799 eric.kennedy@ferc.gov</p>
<p>Sean McDermott, Hydrologist National Oceanic and Atmospheric Administration National Marine Fisheries Service Alaska Region PO Box 21668 Juneau, AK 99802 907-586-7345 sean.mcdermott@noaa.gov</p>	<p>Sara Longan, Chief, Regulatory Division U.S. Army Corps of Engineers Alaska District PO Box 6898 JBER, AK 99506 907-753-2712 sara.longan@usace.army.mil</p>
<p>James Saucedo, Chief Engineer US Army Corps of Engineers Alaska District PO Box 6898 JBER, AK 99506 907-753-2712 james.saucedo@usace.army.mil</p>	<p>Alan McBee, State Conservationist U.S. Department of Agriculture National Resources Conservation Service Alaska State Office 800 West Evergreen Avenue, Suite 100 Palmer, AK 99645 907-761-7780 alan.mcbee@usda.gov</p>
<p>Steve Cohn, State Director U.S. Bureau of Land Management Alaska State Office 222 West 7th Ave., Suite 13 Anchorage, AK 99513 907-271-5960 scohn@blm.gov</p>	<p>Ms. Jolene John, Regional Director U.S. Department of the Interior Bureau of Indian Affairs Alaska Regional Office 3601 C Street, Suite 1200 Anchorage, AK 99503 907-271-1735 jolene.john@bia.gov</p>
<p>Martin Becker, Acting District Ranger U.S. Forest Service, Tongass National Forest 2108 Halibut Point Road Sitka, AK 99835 907-747-6671 martin.becker@usda.gov</p>	<p>Raeanna Wood, Archaeologist U.S. Forest Service, Tongass National Forest 2108 Halibut Point Road Sitka, AK 99835 907-747-6671 raeanne.wood@usda.gov</p>

<p>Christian Zimmerman, Center Director U.S. Department of the Interior U.S. Geological Survey Alaska Science Center 4210 University Drive Anchorage, AK 99508 907-786-7071 czimmerman@usgs.gov</p>	<p>Lisa Fox, Regional Environmental Officer U.S. Department of the Interior Office of Environmental Policy & Compliance 1011 E. Tudor Road Anchorage, AK 99503 907-786-3914 lisa_fox@ios.doi.gov</p>
<p>Sara Boario, Regional Director U.S. Fish & Wildlife Service Alaska Region 1011 East Tudor Road Anchorage, AK 99503 907-786-3542 sara_boario@fws.gov</p>	<p>Carol Mahara, Biologist U.S. Fish & Wildlife Service Ecological Services 4700 BLM Road Anchorage, AK 99507 907-891-3762 carol_mahara@fws.gov</p>
<p>Douglass Cooper – Branch Chief, Ecological Services U.S. Fish and Wildlife Service Southern Alaska Fish and Wildlife Field Office 4700 BLM Road Anchorage Alaska 99507 Douglass_cooper@fws.gov</p>	<p>Caitlin Roesler, Acting Manager NEPA Branch U.S. Environmental Protection Agency Region 10 Seattle, WA 98101 roesler.caitlin@epa.gov</p>
<p>Ariana Monroy U.S. Environmental Protection Agency Region 10 Seattle, WA 98101 monroy.ariana@epa.gov</p>	
State Agencies	
<p>Julie Sande, Commissioner Alaska Department of Commerce, Community and Economic Development PO Box 110803 Juneau, AK 99811 907-465-2500 dcced.commissioner@alaska.gov</p>	<p>Emma Pokon, Commissioner Alaska Department of Environmental Conservation Division of Water P.O. Box 111800 Juneau, AK 99811 907-269-7580 dcced.commissioner@alaska.gov</p>

<p>Jim Rypkema, Storm Water and Wetlands Program Manager Alaska Department of Environmental Conservation Division of Water P.O. Box 111800 Juneau, AK 99811 907-334-2288 james.rypkema@alaska.gov</p>	<p>Doug Vincent-Lang, Commissioner Alaska Department of Fish and Game PO Box 115526 Juneau, AK 99811 907-465-4100 doug.vincent-lang@alaska.gov</p>
<p>Troy Tydingco, Area Manager Alaska Department of Fish and Game Sitka Management Area 304 Lake Street, Room 103 Sitka, AK 99835 907-747-5379 troy.tydingco@alaska.gov</p>	<p>Ann Marie Larquier, Habitat Biologist Alaska Department of Fish and Game Research and Technical Services 333 Raspberry Road Anchorage, AK 99518 907-267-2311 ann.larquier@alaska.gov</p>
<p>Jake Wieliczkiwicz, Assistant Area Biologist Alaska Department of Fish and Game Sitka Management Area 304 Lake Street, Room 103 Sitka, AK 99835 907-747-5355 jake.wieliczkiwicz@alaska.gov</p>	<p>Jennifer Athey, Division Operations Manager Alaska Department of Natural Resources Division of Geological and Geophysical Surveys 3354 College Road Fairbanks, AK 99709 907-451-5001 jennifer.athey@alaska.gov</p>
<p>Ashlee Adoko, OPMP Executive Director Alaska Department of Natural Resources Office of Project Management & Permitting 550 W. 7th Ave, Suite 1360 Anchorage, AK 99501 907-269-8400 ashlee.adoko@alaska.gov</p>	<p>Kaitlyn Raffier, Southeast Regional Manager Alaska Department of Natural Resources Division of Mining, Land, and Water P.O. Box 111020 Juneau, AK 99801 907-465-3524 kaitlyn.raffier@alaska.gov</p>
<p>Clint Gundelfinger, Natural Resource Specialist Alaska Department of Natural Resources Division of Mining, Land, and Water P.O. Box 111020 Juneau, AK 99811 907-465-6363 clint.gundelfinger@alaska.gov</p>	<p>Tom Barrett, Chief, Water Resources Section Alaska Department of Natural Resources Division of Mining, Land, and Water 550 West 7th Avenue, Suite 1360 Anchorage, AK 99501 907-269-8645 tom.barrett@alaska.gov</p>

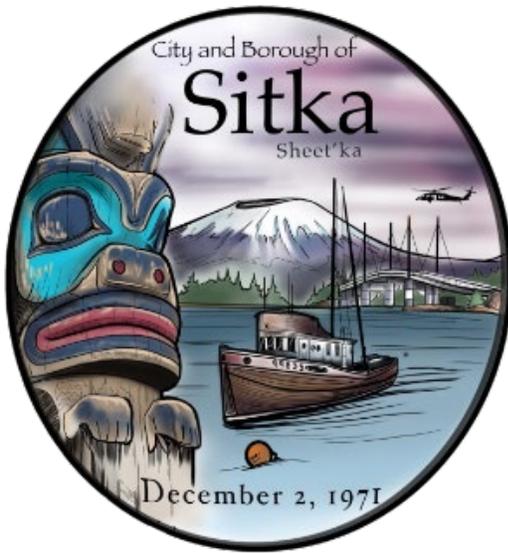
<p>John Crowther, Interim State Historic Preservation Officer Alaska Department of Natural Resources Office of History and Archaeology 550 West 7th Avenue, Suite 1310 Anchorage, AK 99501 907-269-8715 dnr.oha@alaska.gov</p>	<p>Sarah Meitl, Review & Compliance Coordinator Alaska Department of Natural Resources Office of History and Archaeology 550 West 7th Avenue, Suite 1310 Anchorage, AK 99501 907-269-8728 sarah.meitl@alaska.gov</p>
<p>Preston Kroes, Superintendent Southeast Region Alaska Department of Natural Resources Division of Parks and Outdoor Recreation P.O. Box 111071 Juneau, AK 99811 907-465-4563 dnr.pkssoutheast@alaska.gov</p>	<p>Ricky Gease, Division Director Alaska Department of Natural Resources Division of Parks and Outdoor Recreation 550 West 7th Avenue, Suite 1380 Anchorage, AK 99501 907-269-8400 ricky.gease@alaska.gov</p>
<p>Hydroelectric Project Manager Alaska Energy Authority 813 W. Northern Lights Boulevard Anchorage, AK 99503 907-771-3000 info@akenergyauthority.org</p>	<p>Christopher Goins, P.E., Director Southcoast Region Alaska Department of Transportation and Public Facilities P.O. Box 112506 Juneau, AK 99811 907-465-1763 christopher.goins@akaska.gov</p>
<p>Naomi Johnston, Admin Operations Manager Regulatory Commission of Alaska 701 W 8th Ave, Suite 300 Anchorage, AK 99501 907-276-6222 naomi.johnston@alaska.gov</p>	<p>Bert Stedman, Senator Alaska Senate State Capitol, Room 518 Juneau, AK 99801 907-225-8088 Senator.bert.stedman@akleg.gov</p>
<p>Rebecca Himschoot, Representative Alaska House of Representatives State Capitol, Room 409 Juneau, AK 99801 907-465-3732 Representative.rebecca.himschoot@akleg.gov</p>	
Local Agencies and Organizations	
<p>Rachel Roy, Executive Director Greater Sitka Chamber of Commerce 104 Lake Street Sitka, AK 99835 907-747-8604 director@sitkachamber.com</p>	<p>Jessica Ieremia, Library Director Sitka Public Library 320 Harbor Drive Sitka, AK 99835 907-747-4021 jessica.ieremia@cityofsitka.org</p>

<p>Cliff Richter, Executive Director Baranof Island Housing Authority (BIHA) 245 Katlian Street Sitka, AK 99835 cliff.richter@bihasitka.org</p>	<p>Linda Behnken, Executive Director Alaska Longline Fisherman’s Association 304 Baranof Street Sitka, AK 99835 alfafishak@gmail.com</p>
<p>Stephen Rhoads, VP of Sales Seafood Producers Cooperative 507 Katlian Street Sitka, AK 99835 srhoads@spsales.com</p>	<p>Scott Wagner, General Manager Northern Southeast Regional Aquaculture Association 1308 Sawmill Creek Rd. Sitka, AK 99835 907-747-6850 scott_wagner@nsraa.org</p>
<p>Christine Galiza University of Alaska Southeast, Sitka Campus Directors Office 1332 Seward Ave. Sitka, AK 99835 acgaliza@alaska.edu</p>	<p>Arleigh Reynolds, Executive Director Sitka Sound Science Center 834 Lincoln Street Sitka, AK 99835 areynolds@sitkascience.org</p>
<p>Todd Gebler, Sitka School Board Vice Pres. Sitka School District 300 Kostrometinoff St. Sitka, AK 99835 schoolboard@sitkaschools.org</p>	<p>Elizabeth Bagley, PhD. Director Project Drawdown 428 Minnesota Street, Suite 500 St. Paul, MN 55101 elizabeth.a.bagley@gmail.com</p>
<p>Brant Brantman, Founder Sitka Rainpower Project sitkarainpower@gmail.com</p>	<p>Doug Osbourne M.A. Sitka Health Summit P.O. Box 6336 Sitka, AK 99835 sitkahealthsummitak@gmail.com</p>
<p>Advisory Board Sitka Sustainability Commission 100 Lincoln Street Sitka, AK 99835 katie.riley@gmail.com</p>	<p>Kathleen Kreiss Kent Barkhau Transition Sitka info@transitionsitka.org</p>
<p>Andrew Thoms, Executive Director Sitka Conservation Society 201 Lincoln St. Room 4 Sitka, AK 99835 907-747-7509 andrew@sitkawild.org</p>	<p>Sitka Historic Preservation Commission City and Borough of Sitka Roberta Littlefield, Chair 4102 Halibut Point Rd. Sitka, AK 99835 907-738-4004 robbylittlefield@gci.net</p>

Tribes

<p>Rob Allen, Acting General Manager Sitka Tribe of Alaska 204 Siginaka Way, Suite 300 Sitka, AK 99835 907-747-7380 rob.allen@sitkatriben-sn.gov</p>	<p>Sealaska Heritage Institute Rosita Worl, President 105 S. Seward St. Juneau, AK 99801 907-463-4844 kathy.dye@sealaska.com</p>
<p>Central Council of the Tlingit & Haida Indian Tribes Richard J. Peterson, President 9097 Glacier Highway Juneau, AK 99801</p>	<p>Central Council of the Tlingit & Haida Indian Tribes Lisa Lang, Chief Justice P.O. Box 2550 Juneau, AK 99801</p>
<p>Yakutat Tlingit Tribe Shelley Bremner, Tribal Court Administrator P.O. Box 418 Yakutat, AK 99689</p>	<p>Yakutat Tlingit Tribe Yakutat Tlingit Tribal Court P.O. Box 418 Yakutat, AK 99689</p>
<p>The Organized Village of Kake Joel M. Jackson, President 541 Keku Road Keke, AK 99830 907-785-6471 hr@kake-n-sn.gov</p>	<p>Angoon Community Association Tribal President 315 Heendee Rd. Angoon, AK 99820 907-788-3411 mjduncan53@gmail.com</p>

**Green Lake
Hydroelectric Project
FERC No. P-2818**



Initial Study Report

**Submitted by:
City and Borough of Sitka,
Alaska**

Prepared by:



February 2026

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Attachments

- Attachment 1. Recreation Study Interim Report
- Attachment 2. Access Road Water Crossing Structures Study Report
- Attachment 3. Cultural Resources Study Interim Report

Acronyms and Abbreviations

ADOT&PF	Alaska Department of Transportation & Public Facilities
CBS	City and Borough of Sitka
cfs	cubic feet per second
El	elevation
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
FSH	Forest Service Handbook
ILP	Integrated Licensing Process
ISR	Initial Study Report
MW	megawatt
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
PAD	Pre-Application Document
PME	protection, mitigation, and enhancement
Project	Green Lake Hydroelectric Project
PSP	Proposed Study Plan
RSP	Revised Study Plan
SD1	Scoping Document 1
SD2	Scoping Document 2
SPD	Study Plan Determination
USDA	U.S. Department of Agriculture
USR	Updated Study Report

1.0 Introduction

The City and Borough of Sitka (CBS), Alaska, owns and operates the Green Lake Hydroelectric Project (Project; Project No. P-2818) under a license administered by the Federal Energy Regulatory Commission (FERC). The 18.54-megawatt (MW) Project utilizes water from the Green Lake dam and reservoir for power generation. On April 5, 1979, FERC issued an Order Issuing License (Major) for a 50-year license, which expires on March 31, 2029. On March 26, 2024, CBS notified FERC that it intends to apply for a new FERC license for the Project. The Federal Power Act (FPA) requires CBS to file its new license application with FERC no later than March 31, 2027.

CBS is using FERC's Integrated Licensing Process (ILP) as established in 18 CFR, Part 5, which is FERC's default relicensing process. CBS initiated this process by filing the Notice of Intent (NOI) and Pre-Application Document (PAD) on March 26, 2024. FERC issued Scoping Document 1 (SD1) on May 20, 2024, and held agency and public scoping meetings and a site visit on June 12, 2024. FERC issued Scoping Document 2 (SD2) on August 29, 2024, and CBS filed the Proposed Study Plan (PSP) September 6, 2024.

Based on proactive collaboration with stakeholders during study planning and comments received from agencies on the PSP, CBS filed a Revised Study Plan (RSP) with FERC pursuant to 18 CFR § 5.13 on January 6, 2025. FERC then issued a Study Plan Determination (SPD) for the Project on January 24, 2025. All three studies described in the RSP were approved as filed with no required additional studies and/or modifications to existing studies from FERC.

Since the issuance of the SPD, CBS has worked diligently to implement the three studies as described in the RSP. CBS completed one study entirely during Study Year 1 (2025) and plans to continue to collect data through May 2026 for the other two studies with a planned completion date by the end of September 2026.

1.1 Project Description

1.1.1 Project Location and FERC Project Boundary

The Project is located on the west-central portion of Baranof Island in southeast Alaska, approximately 10 miles southeast of Sitka and 95 miles southwest of Juneau, the capital of Alaska. Green Lake sits on the Vodopod River at the headwaters of Silver Bay. The current FERC Project Boundary (Figure 1-1) generally follows the contour of the Green Lake reservoir, the penstock from the dam to the powerhouse, the powerhouse and adjacent substation, and the Project access roads including a spur road to Green Lake and the main access road and transmission line corridor from the powerhouse, following along the shore of Silver Bay, to the former Blue Lake project boundary (Blue Lake is CBS's other hydroelectric project [Project No. 2230]). CBS owns all lands necessary for the operation and maintenance of the Project (i.e., the land within the current FERC Project Boundary).

1.1.2 Project Overview

The Project is an 18.54 MW hydroelectric project that is operated in conjunction with CBS's Blue Lake Hydroelectric Project to meet CBS demand (load). The Project is not interconnected to a grid.

The Project is operated for power generation with no additional water supply components. There are no instream flow requirements into the lower Vodopod River. Green Lake reservoir levels are dominated by reservoir inflow from rain and snowmelt and water releases for generation and spill. Reservoir inflow is highest in summer and fall due to snowmelt and rainfall. During mid-winter, inflow decreases as the majority of precipitation falls as snow and an upstream snowpack accumulates.

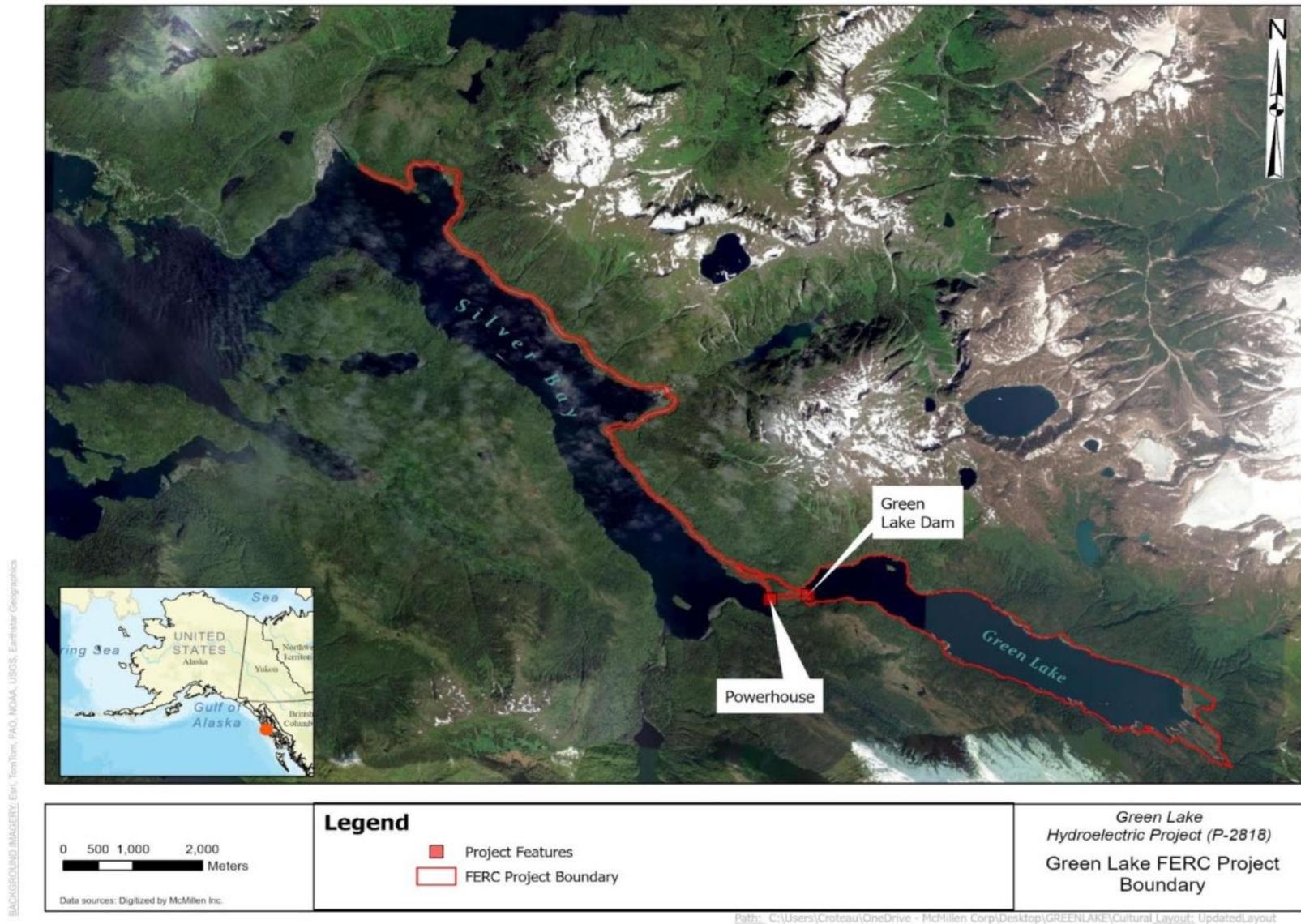


Figure 1-1. Current FERC Project Boundary.

1.1.3 Project Facilities

Project facilities consist of the following:

- a 228-foot high, 462-foot long, concrete double-curvature, variable-radius arch dam, with a crest elevation (El.) of 405 feet¹;
- a 100-foot wide, ungated overflow spillway integrally cast into the left side of the arch with a crest elevation of 395 feet and maximum discharge capacity of 12,400 cubic feet per second (cfs) at reservoir elevation of 405.5 feet, which discharges into a narrow bedrock plunge pool approximately 120 feet from the downstream toe of the dam;
- an approximately 1,000-acre reservoir with a maximum gross storage capacity of 88,000 acre-feet at the spillway crest El. 395 feet, and a usable storage capacity of 70,500 acre-feet;
- a power intake 141 feet below the dam crest to the right of the spillway that is controlled by a vertical-lift headgate operated with a hydraulic hoist, and includes a trash rack;
- a water conveyance that includes a short section of 8-foot-diameter steel penstock that transitions to a 1,900-foot-long, 9-foot-diameter, reinforced concrete-lined power tunnel that conveys water downstream to the powerhouse, which bifurcates into two, steel-lined penstocks immediately upstream of the powerhouse;
- a powerhouse containing two vertical Francis turbine-generator units, each with an installed capacity of 9.27 MW (18.54 MW total) and a capacity of 355 cfs (710 cfs total), and a rated capacity of 13,300 horsepower at a head of 363 feet;
- a substation located adjacent to the powerhouse with three single-phase 6,667/8,333 kVA OA/FA transformers that convert the plant's generated voltage to 69 kilovolt (kV) transmission voltage, and a spare transformer;
- an overhead 69 kV transmission line that runs from the substation located adjacent to the Green Lake powerhouse to an interconnection at the Blue Lake powerhouse and substation and follows the Green Lake Access Road for approximately nine miles; and

¹ Elevations in this document refer to the Mean Lower-Low Water (MLLW) datum at the Sitka, Alaska Tidal Gage #9451600. This is equal to the North American Vertical Datum of 1988 (NAVD88) elevation minus 0.15 meters or 0.4921 feet.

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- an approximately seven-mile-long access road that parallels the Silver Bay shoreline from Herring Cove at the end of the Sawmill Creek highway to the powerhouse with a spur road up to Green Lake and the dam.

These Project facilities are described in more detail in Section 3.4 of the PAD. Current routine maintenance activities are described in Section 3.6 of the PAD.

1.1.4 Project Operations

The Project is operated for power generation with no additional water supply components. Water is released for power generation only; there are no instream flow requirements into the lower Vodopad River. During normal hydropower operations, all water conveyed from Green Lake reservoir passes through the powerhouse, then into Silver Bay. The Project uses a rule curve to predict the likelihood of spilling each year.

The Blue Lake powerhouse is the control center for CBS's entire electric system, including the Project, and is staffed around the clock. Since the capacity of the Blue Lake Hydroelectric Project was increased in late 2014, typical management is for one Green Lake unit to be online at lower load conditions. During high load conditions or when Blue Lake generation is limited, the second Green Lake unit is brought online. Generation is also allocated between the Blue Lake and Green Lake Projects to manage reservoir levels.

Electric loads vary during the year, with the highest demand in winter for heating and summer for seafood processing. The reservoir is gradually drafted over the winter months to meet power demand and has a normal operating range of 100 feet (El. 295 ft to 395 ft).

1.1.5 Project Changes to Project Facilities and Operations

CBS stated in the PAD that they are not proposing to construct any new or modify any existing Project facilities or operational regimes. However, since filing the PAD in March 2024, CBS is now proposing three changes to the current FERC Project Boundary.

1. CBS is proposing to move the switchyard and substation from its current location adjacent to the powerhouse to a new location approximately one-half mile away. This modification is based on FERC's recommendation during a recent inspection and associated insurance risk assessments. The existing location is adjacent to a steep rock wall, where falling rocks and/or vegetation debris pose a risk to the existing switchyard and substation. Furthermore, there is not enough physical separation between existing transformers. If one transformer fails, the remaining transformer on either side would also likely be damaged.

CBS's proposed new switchyard and substation location, also on CBS-owned land, is adjacent to the access road near the junction with the spur road to Green Lake (Figure 1-2). It is a flat area that was previously used as a staging area during Project construction. CBS has evaluated this site via soil resistivity studies and confirmed its suitability for use as a high voltage switchyard and substation. CBS is proposing to expand the FERC Project Boundary by 3.95 acres to fully include the proposed new switchyard and substation location.

2. CBS is proposing to include a short spur road (630.5 feet in length and 100-foot either side of centerline buffer) from the saltwater boat landing to the existing access road in the FERC Project Boundary (Figure 1-2). This road was originally used to bring in equipment during Project construction and since then has been used by recreationists that come in by boat via Silver Bay and hike up to Green Lake. This spur road should have been included in the current FERC Project Boundary but was inadvertently omitted. CBS intends to use the boat landing and spur road to bring in heavy, oversized equipment by barge for the new switchyard and substation. In the future, CBS could use this spur road for other operation or maintenance needs, and it is expected to continue to be used by recreationists, therefore it is appropriate to include it in the Proposed FERC Project Boundary. The spur road addition, totaling 2.8 acres, is located on CBS-owned land.
3. The current FERC Project Boundary does not extend to the point of interconnection at the Blue Lake Hydroelectric Project substation and instead ends just over one mile to the southeast. This corresponds to the previous extent of the Blue Lake Hydroelectric Project Boundary, which has since been modified. CBS proposes extending the current FERC Project Boundary along the existing transmission line and access road to the Blue Lake substation for accuracy and completeness (Figure 1-2). The proposed extension encompasses 16.4 acres, is 1.24 miles in length, and is located wholly on CBS-owned land.

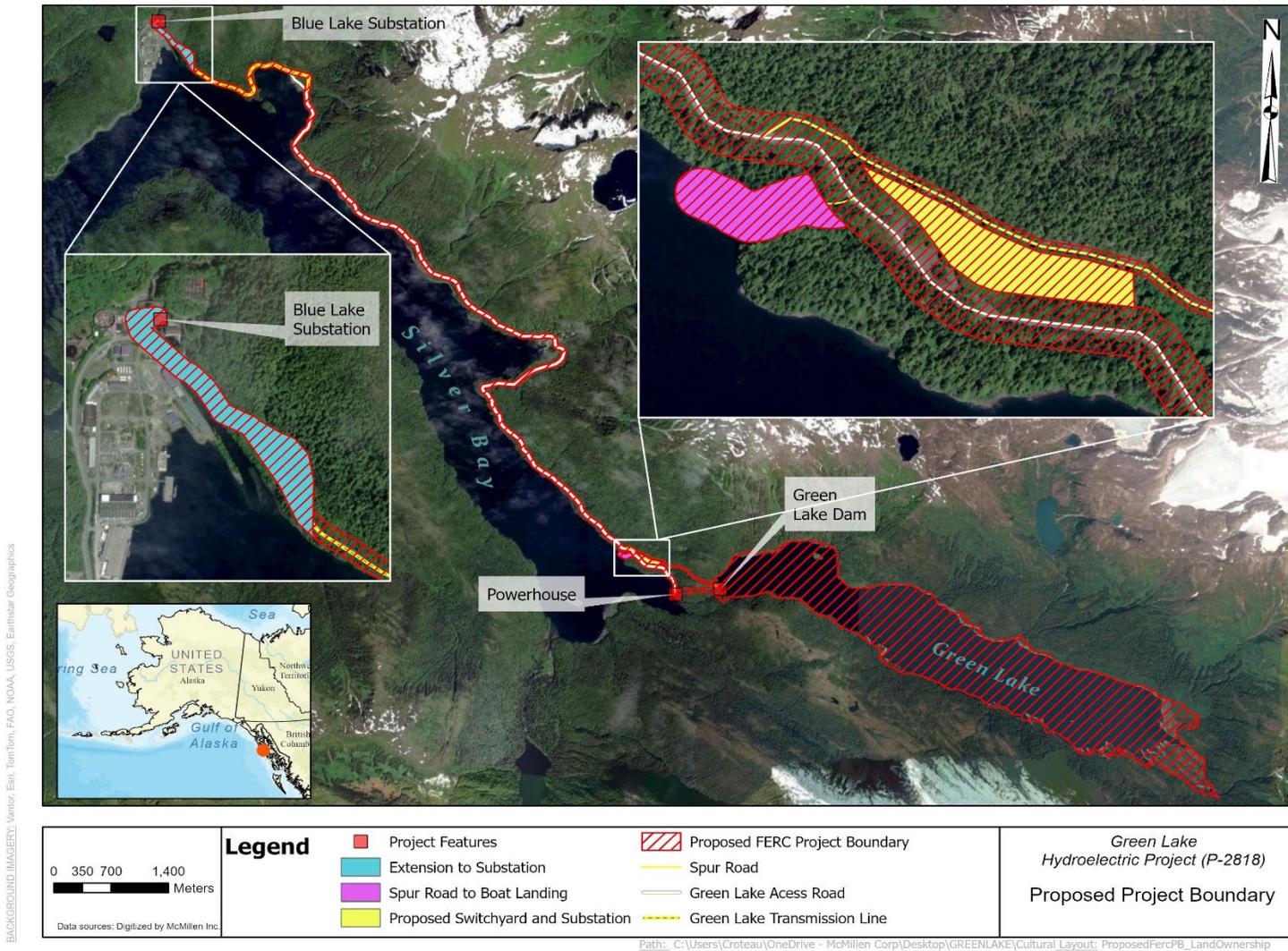


Figure 1-2. Proposed Changes to FERC Project Boundary

These proposed changes to the FERC Project Boundary affect the study areas for the three Project studies as follows:

- Recreation Study – the Recreation Study included the current Green Lake FERC Project Boundary and adjacent areas so the proposed additions to the FERC Project Boundary were included in the overall Recreation Study Area (see Attachment 1, Figure 2-1). No adjustment to the Study Area is needed.
- Access Road Water Crossing Structures Study – this study focused on the portion of the access road that is maintained by CBS, i.e., the approximately seven-mile stretch of the Green Lake access road from the end of the Alaska Department of Transportation & Public Facilities (ADOT&PF) maintained section of road just before the locked gate near Herring Cove, to the powerhouse and the spur road to Green Lake. The Study Area did not include the 1.24 miles of the extended transmission line ROW to the interconnection at the Blue Lake substation, however, the road in the extension area is maintained by ADOT&PF, not CBS (see Attachment 2). Furthermore, no culverts are located on the spur road to the boat landing. No adjustment to the Study Area is needed.
- Cultural Resources Study – prior to field work for the Cultural Resources Study in 2025, the proposed location for the new switchyard and substation had been identified and was included in the Study Area. However, the other two proposed additions to the FERC Project Boundary (spur road to the boat landing and extension to the substation) were inadvertently left off the Study Area. These areas will be surveyed in Spring 2026 utilizing the same protocols and methods as all the cultural resources work done in 2025.

1.2 Integrated Licensing Process

CBS is using the ILP for relicensing the Project, which is FERC’s default relicensing process. Key milestones, timing, and deadlines associated with the ILP are presented below in Table 1-1. The schedule may be modified throughout the relicensing process, with FERC approval for justifiable/unexpected reasons, if needed. After the license application is filed on or before March 31, 2027, FERC will establish a schedule for application processing and ultimate determination.

In Table 1-1, shaded milestones are unnecessary if there are no study disputes. If the due date falls on a weekend or holiday, the due date is the following business day. Early filings or issuances will not result in changes to these deadlines.

Table 1-1. FERC Process Plan and Schedule

Responsible Party	Pre-filing Major Milestone	Date	FERC Regulation (18 CFR)
CBS	NOI/PAD and Request to Utilize the ILP filed	3/26/24	5.5, 5.6
FERC	Initiate Tribal Consultation	4/25/24	5.7
FERC	Issue Notice of Commencement of Proceeding and Scoping Document 1	5/20/24	5.8
FERC	Scoping Meetings and Project Site Visit	6/12/2024	5.8(b)(viii)
All Stakeholders	File Comments on PAD/Scoping Document 1 and Study Requests	7/24/24	5.9
FERC	Issue Scoping Document 2 (if necessary)	9/7/24	5.10
CBS	File Proposed Study Plan	9/7/24	5.11(a)
All Stakeholders	Proposed Study Plan Meeting	10/7/24	5.11(e)
All Stakeholders	File Comments on Proposed Study Plan	12/6/24	5.12
CBS	File Revised Study Plan	1/5/25	5.13(a)
All Stakeholders	File Comments on Revised Study Plan	1/20/25	5.13(b)
FERC	Issue Director's Study Plan Determination	2/4/25	5.13(c)
Mandatory Conditioning Agencies	File Any Study Disputes	2/24/25	5.14(a)
Dispute Panel	Select Third Dispute Resolution Panel Member	3/11/25	5.14(d)(3)
Dispute Panel	Convene Dispute Resolution Panel	3/16/25	5.14(d)
CBS	File Comments on Study Disputes	3/21/25	5.14(j)
Dispute Panel	Dispute Resolution Panel Technical Conference	3/26/25	5.14(j)
Dispute Panel	Issue Dispute Resolution Panel Findings	4/15/25	5.14(k)
FERC	Issue Director's Study Dispute Determination	5/5/25	5.14(l)
CBS	First Study Season	Spring/Summer 2025	5.15(a)
CBS	File Initial Study Report	2/4/26	5.15(c)(1)
All Stakeholders	Initial Study Report Meeting	2/19/26	5.15(c)(2)

Responsible Party	Pre-filing Major Milestone	Date	FERC Regulation (18 CFR)
CBS	File Initial Study Report Meeting Summary	3/6/2026	5.15(c)(3)
All Stakeholders	File Disagreements/Requests to Amend Study Plan	4/5/26	5.15(c)(4)
All Stakeholders	File Responses to Disagreements/Amendment Requests	5/5/26	5.15(c)(5)
FERC	Issue Director's Determination on Disagreements/Amendments	6/4/26	5.15(c)(6)
CBS	Second Study Season (if needed)	Spring/Summer 2026	5.15(a)
CBS	File Updated Study Report	2/4/27	5.15(f)
All Stakeholders	Updated Study Report Meeting	2/19/27	5.15(f)
CBS	File Updated Study Report Meeting Summary	3/6/27	5.15(f)
All Stakeholders	File Disagreements/Requests to Amend Study Plan	4/5/27	5.15(f)
All Stakeholders	File Responses to Disagreements/Amendment Requests	5/5/27	5.15(f)
FERC	Issue Director's Determination on Disagreements/Amendments	6/4/27	5.15(f)
CBS	File Draft License Application	11/1/26	5.16(a)
All Stakeholders	File Comments on Draft License Application	1/30/27	5.16(e)
CBS	File Final License Application	3/31/27	5.17
CBS	Issue Public Notice of Final License Application Filing	4/14/27	5.17(d)(2)

The following subsections describe the regulatory requirements for each major step in the ILP and general information on how each step of the process builds on previous steps to inform a thorough and up-to-date license application. Fundamental relicensing documents that have been completed to date are available on FERC's elibrary or CBS's website using the following link: [The City & Borough of Sitka Alaska - Green Lake Hydroelectric Project, FERC Relicensing \(cityofsitka.com\)](https://www.ferc.gov/elibrary/2026/03/2026-03-0001)

1.2.1 PAD and NOI

CBS filed the PAD and NOI with FERC on March 26, 2024, which initiated the formal relicensing process. The PAD includes a description of Project facilities and operations and a summary of the existing, relevant, and reasonably available information regarding the existing environment. The PAD also provides a preliminary assessment of issues and potential studies.

1.2.2 FERC Scoping Process

On May 20, 2024, FERC issued Notice of Intent to File License Application for a New License and Commencing Pre-filing Licensing Process. FERC's notice designated CBS as FERC's non-federal representative for carrying out informal consultation pursuant to Section 7 of the Endangered Species Act, the Magnuson-Stevens Fishery Management and Conservation Act, and Section 106 of the National Historic Preservation Act (NHPA). Concurrently, FERC issued Scoping Document 1, to identify pertinent issues to be analyzed in their National Environmental Policy Act (NEPA) document.

FERC held two public scoping meetings on June 12, 2024, to receive input on the scope of their NEPA document. A daytime meeting focused on concerns of resource agencies, Native American Tribes, and non-governmental organization, while an evening meeting focused on receiving input from the public. A site visit to the Project was also held on June 12, 2024, and was attended by CBS, federal and state agency representatives, and representatives from FERC. In response to public comments during the scoping meetings and comments filed with FERC on SD1, FERC issued SD2 on August 29, 2024.

1.2.3 Proposed Study Plan

CBS filed its PSP with FERC on September 6, 2024, 45 days after the deadline for comments on the PAD and Scoping Document 1 and study requests. The PSP describes CBS's three proposed studies and the approach for conducting the studies. The proposed studies were in response to study requests filed with FERC and to ensure compliance with the National Historic Preservation Act.

1.2.4 Proposed Study Plan Meeting

CBS held a PSP Meeting on October 3, 2024. The purpose of the meeting was to clarify the intent and content of the PSP and identify any outstanding issues or information needed with respect to the proposed studies. The studies described in the PSP were discussed and interested parties had the opportunity to provide feedback.

1.2.5 Comments on the Proposed Study Plan

Comments on CBS's PSP, including any revised information or study requests, were due to FERC no later than December 6, 2024. Comments were required to include an explanation of any study plan concerns and any agreements reached with CBS regarding those concerns. Proposed modifications to the PSP were required to address FERC's Study Criteria included in 18 CFR § 5.9(b). CBS received three comment letters on the PSP; the comment letters were from Alaska Office of History and Archaeology, FERC, and Alaska Department of Fish and Game (ADFG simply stated that they had no comments).

1.2.6 Revised Study Plan

CBS filed its RSP with FERC on January 3, 2025. The RSP specifically addressed the comments received on the PSP. Comments on the RSP were due no later than January 20, 2025; no comments were received.

1.2.7 Study Plan Determination

FERC issued its SPD on January 24, 2025. FERC approved all three studies as filed and noted they must be completed as described in the RSP.

1.2.8 Study Implementation

CBS completed the first study season in 2025. Field work for the Access Road Water Crossing Structures Study was completed in 2025, and the majority of field work for the Cultural Resources Study was also completed in 2025 (see Section 1.1.5). Adjustments to the FERC Project Boundary after field work was complete in 2025 require one additional field visit in 2026. The recreation use portion of the Recreation Study requires a full year of data collection. Data collection began in May 2025 and will continue through May 2026. Data collection for the facility inventory portion of the Recreation Study was completed in 2025.

1.2.9 Study Reporting and Study Plan Modification

In accordance with FERC's Process Plan and Schedule (Table 1-1), CBS is filing this Initial Study Report (ISR) with FERC by February 4, 2026. This ISR describes the progress in implementing the studies and preliminary study results. It also identifies any variances from the RSP and SPD. CBS will hold the required ISR meeting virtually on February 17, 2026, with interested parties and FERC staff to discuss the ISR. Following this meeting, interested parties may request modifications to ongoing studies or propose new studies in light of the results to date.

CBS will file the Updated Study Report (USR) with FERC no later than February 4, 2027, and CBS will hold the required USR meeting with interested parties and FERC staff by February 19, 2027. Because the USR filing date falls after the Draft License Application filing date, CBS will strive to provide study results from the 2026 field season as early as possible. The final study results will inform an analysis of anticipated Project effects and associated protection, mitigation, and enhancement (PME) measures related to continued Project operations, which will be documented in the Draft License Application.

1.2.10 License Application

In accordance with FERC's regulations, CBS will file a Draft License Application with FERC no later than November 1, 2026, and Final License Application no later than March 31, 2027. The license application will set forth CBS's proposal for continued operations of the Project under a new license and include analysis of Project impacts and proposed PME measures. The license application will include a comprehensive analysis of existing information from the PAD, combined with results from the studies implemented as part of the FERC approved study program, any study results provided to CBS from studies conducted by others during the same timeframe, and an analysis of anticipated Project effects and associated PME measures related to continued Project operations.

1.3 Consultation Efforts to Date

A chronology of engagement activities with Tribes and other interested parties is presented in Table 1-2. CBS has hosted two required meetings and reached out to various potentially interested parties at in-person and virtual initial consultation meetings and held follow-up calls. CBS will continue to consult with interested parties throughout the relicensing process. CBS maintains a distribution list for all relicensing-related notifications.

Table 1-2. Consultation Meetings to Date*

Date	Title
9/27/2023	Initial Consultation Meeting – Tongass National Forest
9/27/2023	Initial Consultation Meeting – Alaska Department of Fish and Game
9/27/2023	Initial Consultation Meeting – Conservation Society
9/27/2023	Initial Consultation Meeting – Sitka Tribe of Alaska
10/30/2023	Initial Consultation Meeting – National Marine Fisheries Service
10/30/2023	Initial Consultation Meeting – U.S. Fish and Wildlife Service
6/12/2024	Site Tour and Scoping Meetings
8/14/2024	Study Clarification Meeting – U.S. Fish and Wildlife Service
10/7/2024	Proposed Study Plan Meeting
11/6/2024	APE Meeting – Alaska Office of History and Archaeology
2/12/2025	Outreach call – Tongass National Forest Archaeologist
5/12/2025	Sitka Trail Works and Parks

*through December 2025

2.0 Current Status of Project Relicensing Studies

CBS initiated all three studies as described in the RSP during the 2025 study season, following the issuance of the SPD in February 2025. One study has been completed as of the submittal of this ISR, and the other two studies will be completed later in 2026 (Table 2-1). Additional details about each of the studies are provided in Section 3.0 (Study Report Summaries) and in Attachments 1 through 3 of this ISR, which contain detailed reports for each study. Any variances from the RSP or FERC’s SPD are discussed in each individual study report.

Table 2-1. Status of Relicensing Studies

Attachment	Study	Study Completed	Study to be completed in 2026	Type of Report ¹
1	Recreation Study		X	Interim
2	Access Road Water Crossing Structures Study	X		Final
3	Cultural Resources Study		X	Interim

¹Final Reports are for 1-Year studies, Interim Reports are for 2-Year studies

3.0 Study Report Summaries

3.1 Recreation Study

3.1.1 Study Goals and Objectives

The goals of the ongoing recreation study are to gather information on existing recreation sites and facilities, evaluate existing recreational use, determine if existing facility conditions and capacity meet user needs, and estimate future recreational demands within the Proposed FERC Project Boundary and surrounding area.

Study objectives include the following:

- Provide an inventory and map of the existing Project facilities that have potential recreation opportunities within the FERC Project Boundary (there are currently no developed recreation amenities, such as toilets, trail signs, etc.).
- Evaluate the condition of the recreation sites and facilities and estimate their physical capacities.
- Estimate current recreation use at each Project recreation site.
- Identify potential measures to enhance recreation opportunities if necessary.

3.1.2 Summary of Results

In 2025, CBS documented 13 recreation facilities in the Study Area (i.e., the Proposed FERC Project Boundary and adjacent areas). Because the Green Lake area is remote, there are limited facilities developed specifically for recreation, but visitors use Project facilities for recreation and to access the area and natural features. These Project facilities include the roads (main access road and spur roads), boat landing area, and Green Lake. Visitors also use the Green Lake access road to access area trails, including several trails or routes that are unmanaged, unofficial, user-created social trails as well as the developed Herring Cove-Beaver Lake Trail with a trailhead and parking lot near the locked gate on the Green Lake access road. The inventory and map of these facilities that provide recreation opportunities in the Study Area were completed in 2025 (see Attachment 1), but recreation use estimates of the facilities will be completed in 2026 and presented in the USR.

To estimate recreation use, CBS strategically installed counters and cameras at 21 monitoring sites in May and October 2025; these counters and cameras will remain in place through May 2026 to capture one year of recreation use data. CBS staff manually download the data approximately monthly. Data will be used to quantify visits and estimate visitor hours spent in different zones or at different facilities in the Study Area. A full year of data will capture

recreation use fluctuations during all seasons. Results and findings will be presented in the USR once data collection is completed.

CBS also conducted visitor surveys during 2025, both on-site and self-select. Researchers conducted in-person visitor intercept surveys at the Herring Cove trailhead on a total of 14 days between May 14-19 and October 1-8. As of October 31, 2025, a total of 106 visitor surveys have been completed through in-person intercept surveys and online self-select surveys. Online self-select surveys will continue to be available through May 2026. Data on recreational visitor use from these two types of surveys will be compiled and analyzed; results will be reported in the USR.

3.2 Access Road Water Crossing Structures Study

3.2.1 Study Goals and Objectives

The goal of the completed study was to provide a baseline inventory and assessment of water crossing features along the CBS-maintained portion of the Green Lake access road, with consideration of stream characteristics and how those characteristics might change.

Specific objectives included the following:

- Identify and survey water crossing structures along the CBS-maintained portion of the Green Lake access road following the Forest Service Handbook (FSH) road condition survey protocol (USDA Forest Service 2000) and document any issues with the structures.
- Categorize the streams at each crossing structure along the CBS-maintained portion of the Green Lake access road following FSH protocols for determining stream value class and channel type. Document any resource concerns and potential site-specific mitigation measures.
- Determine flood flow frequencies for the frontal watersheds feeding the stream crossings with consideration for climate projections.
- Given the condition of the structures, stream characteristics, and projected flood flow frequencies, document considerations for maintenance and/or upgrades at each crossing structure along the CBS-maintained portion of the Green Lake access road.
- Build an inventory of the crossing structures along the CBS-maintained portion of the Green Lake access road, their stream features, and relevant notes and recommendations.

3.2.2 Summary of Results

This study resulted in the documentation of 69 culverts along the CBS-maintained portion of the Green Lake access road and an additional eight culverts on the spur road to Green Lake. Twelve of the culverts were associated with active stream channels and the remaining 57 culverts were associated with non-stream features such as roadside drainage ditches, ephemeral flow paths, or shallow swales. Only one of the eight culverts along the spur road to Green Lake was associated with a stream, which consisted of extremely steep cascades both above and below the culvert. All of the culverts identified along the access road, except one, were found to be located upstream of anadromous fish passage barriers. Two wooden bridges cross Medvejie Creek and appear adequately sized. Medvejie Creek is managed as part of the Medvejie Fish Hatchery and thus does not provide access to extensive anadromous fish habitat due to weirs located immediately upstream of the bridges.

The 12 active streams associated with culverts were predominantly Class III streams (, i.e., channels that do not support fish populations but exhibit sufficient discharge and sediment-transport capacity to influence downstream fish habitat) with either High-Gradient Contained or Moderate-Gradient/Mixed Control channel types, reflecting steep, confined reaches influenced by direct slope runoff.

Flood flow frequency calculations were made for the 12 active streams associated with culverts. The 50% annual exceedance probability varied by culvert and ranged from 6 cfs to 91 cfs and the 0.2% annual exceedance probability ranged from 49 cfs to 400 cfs.

None of the culverts along the access road and the spur road to Green Lake were found to cause major impacts to aquatic habitat or water quality. Overall, the culvert drainage network is functioning effectively to maintain road stability and manage runoff, with most structures functioning as intended for the steep, small watersheds in the area. Findings indicate the system is performing as intended, with no major structural deficiencies or fish passage barriers. The databases developed as part of this study will be used by CBS to monitor, maintain, and upgrade culverts along the Project access road as needed.

An inventory of the crossing structures along the CBS-maintained portion of the Green Lake access road and the spur road to Green lake, their stream features, and relevant notes and recommendations are included as Appendix A to the Draft Access Road Water Crossings Structures Study Report (Attachment 2) and a link to an online map of all surveyed culverts, including photos, is available as Appendix C to the Draft Access Road Water Crossings Structures Study Report (Attachment 2).

3.3 Cultural Resources Study

3.3.1 Study Goals and Objectives

The goal of this ongoing study is to comply with Section 106 of the NHPA through programmatic, ongoing consultation with the Alaska State Historic Preservation Office, Tribes, and other interested parties.

Specific objectives include the following:

- Produce a report that presents information relative to the scope and context of potential effects of the Project.
- Document known historic properties in the APE and present management recommendations.
- Use information gathered to analyze possible Project impacts and propose any necessary PME measures in the relicensing license application for the Project.

3.3.2 Summary of Results

During their 2025 fieldwork, archaeologists relocated all of the sites mentioned in the Ackerman's 1977 report, which documented the results of the original comprehensive archaeological survey of the Project area in advance of construction in the late 1970s (see Attachment 3 for details). Of those, only one, the Silver Bay to Green Lake Trail is within the Area of Potential Effect. Archaeologists also photographed and described the Green Lake Dam and associated hydroelectric facilities because they will reach 50 years of age during the relicensing period. CBS conducted an evaluation of National Register eligibility for the Silver Bay to Green Lake Trail and the Green Lake Hydroelectric Project (see Attachment 3 for details). The Silver Bay to Green Lake Trail was recommended eligible for the National Register but no additional impacts to the trail are anticipated and the finding of effect is "no historic properties affected" under a new license for the Project. Green Lake Dam and associated hydroelectric facilities are not recommended eligible for the National Register; they do not meet the threshold under any criteria.

In addition, archaeologists surveyed the location for a proposed switchyard and substation during the 2025 survey. This area had previously been used as a staging area during Project construction. Due to that previous disturbance, the area has a low potential for any subsurface archaeological remains. The pedestrian survey did not yield any historic cultural resources. Because of changes to the Proposed FERC Project Boundary since the 2025 field survey, CBS plans to survey the spur road to the boat landing and extension to the substation additions

(see Figure 1-2. Proposed Changes to FERC Project Boundary) in 2026 and report on findings in the USR.

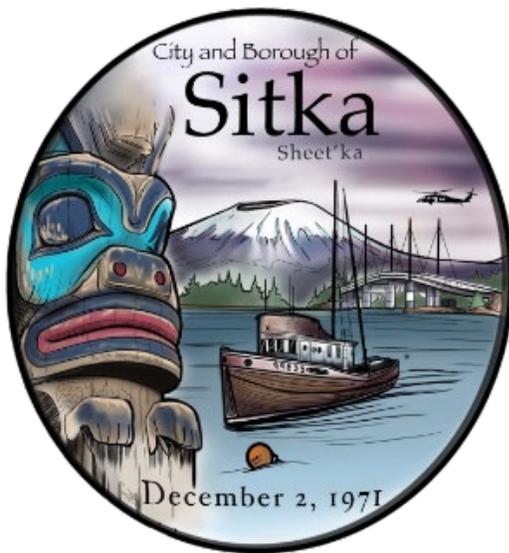
Attachment 1. Recreation Study Interim Report

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**Green Lake
Hydroelectric Project
FERC No. P-2818**

**Recreation
Interim Study Report**

**Submitted by:
City and Borough of Sitka,
Alaska**



Prepared by:



February 2026

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Appendices

- Appendix A. U.S. Forest Service Recreation Opportunity Spectrum and Planning Frameworks
- Appendix B. Recreation Visitor Survey Instrument
- Appendix C. Recreation Study Flyer
- Appendix D. Visitor Use Survey Preliminary Results

Acronyms and Abbreviations

ADA	Americans with Disabilities Act
ADFG	Alaska Department of Fish and Game
ADMLW	Alaska Division of Mining, Land, and Water
ADOT&PF	Alaska Department of Transportation and Public Facilities
ATV	all-terrain vehicle
CBS	City and Borough of Sitka
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
GMU	Game Management Unit
ISR	Initial Study Report
MW	megawatt
NSRAA	Northern Southeast Regional Aquaculture Association
PSP	Proposed Study Plan
QR	Quick Response
ROW	Right-of-Way
RSP	Revised Study Plan
TNF	Tongass National Forest
USDOI	U.S. Department of the Interior
USFS	U.S. Forest Service
USR	Updated Study Report

1.0 Introduction

The City and Borough of Sitka (CBS), Alaska, is in the process of relicensing the 18.54-megawatt (MW) Green Lake Hydroelectric Project (Project; FERC No. P-2818) with the Federal Energy Regulatory Commission (FERC). FERC requested a recreation study to assess the condition and uses of recreation sites/facilities within the FERC Project Boundary and site use. CBS included this study in their Proposed Study Plan (PSP), which was filed with FERC September 6, 2024. FERC provided comments on the recreation study in the PSP. CBS filed the Revised Study Plan (RSP) on January 3, 2025; no additional comments on the study were received.

FERC issued its Study Plan Determination on January 24, 2025, approving the study as filed, and there were no study disputes. This interim study report is being filed with FERC as part of the Initial Study Report (ISR). This study will be completed in 2026.

2.0 Study Report Elements

The sections below outline the study report elements and progress to date for the Recreation Study. This study will be completed in 2026, and this report will be supplemented to create a comprehensive assessment that will be presented in the Updated Study Report (USR).

2.1 Study Goals and Objectives

The goals of the recreation study were to gather information on existing recreation sites and facilities, evaluate existing recreational use, determine if existing facility conditions and capacity are meeting user needs, and estimate future recreational demands within the FERC Project Boundary and surrounding area. Study objectives include the following:

- Provide an inventory and map of the existing Project facilities that have potential recreation opportunities within the FERC Project Boundary.
- Evaluate the condition of the recreation sites and facilities and estimate their physical capacities.
- Estimate current recreation use at each Project recreation site.
- Identify potential measures to enhance recreation opportunities if necessary.

2.2 Study Area

The Project is in a remote area outside of Sitka, Alaska. Green Lake is approximately 14 miles from downtown Sitka at the end of Green Lake Road. The Project is located on CBS-owned land, conveyed to CBS by the State of Alaska in 1979 specifically for development of the Green Lake Hydroelectric Project. The CBS-owned parcel is approximately 5,000 acres, which includes the entirety of the current 1,232-acre Green Lake FERC Project Boundary (Figure 2-1). The land surrounding the CBS-owned parcel is part of the Tongass National Forest (TNF), which is managed by the U.S. Forest Service (USFS), or other CBS-owned land. Green Lake is accessed via a seven-mile gravel utility road that is closed to public vehicular traffic use. Recreation access to the area via the road is open to the public 24/7 year-round for foot or bicycle use but is generally limited to human-powered access methods because a locked gate blocks vehicle traffic except for CBS Utility and authorized Northern Southeast Regional Aquaculture Association (NSRAA) vehicles.

The RSP stated that the recreation study would consider activities occurring within the FERC Project Boundary and adjacent areas, with a focus on key areas. As more dialogue was had and information was gathered, the Study Area was more clearly defined. It encompasses the Proposed FERC Project Boundary as well as adjacent areas that include the recreation use area

around Herring Cove and portions of the adjacent TNF that can be accessed via trails that begin along Green Lake Road. The Proposed FERC Project Boundary includes the current the FERC Project Boundary and three additions including the proposed switchyard and substation, the spur road to the saltwater boat landing, and the extension to the Blue Lake substation. These three additions are described in the ISR Section 1.1.5. The Study Area is shown in Figure 2-1.

2.3 Methodology

The Recreation Study analyzes both land and water-based recreation uses, access considerations, and seasonality in recreational use of the Study Area. Some of the data collection was completed in 2025, other data collection is ongoing through May 2026. Data collection consists of the following methods:

- Compilation of available historical records, plans, mapping information, and agency records (complete).
- Site visits to document and assess recreation facilities (complete).
- Data about site visits and visitor behavior from direct observations, automated counters, and intercept surveys (ongoing).
- Information about visitor preferences from intercept and self-selection surveys (ongoing).
- Review of available recent visitor trip reports published online (ongoing).
- Consultation with CBS staff, local trail organizations, and local recreation enthusiasts (ongoing).

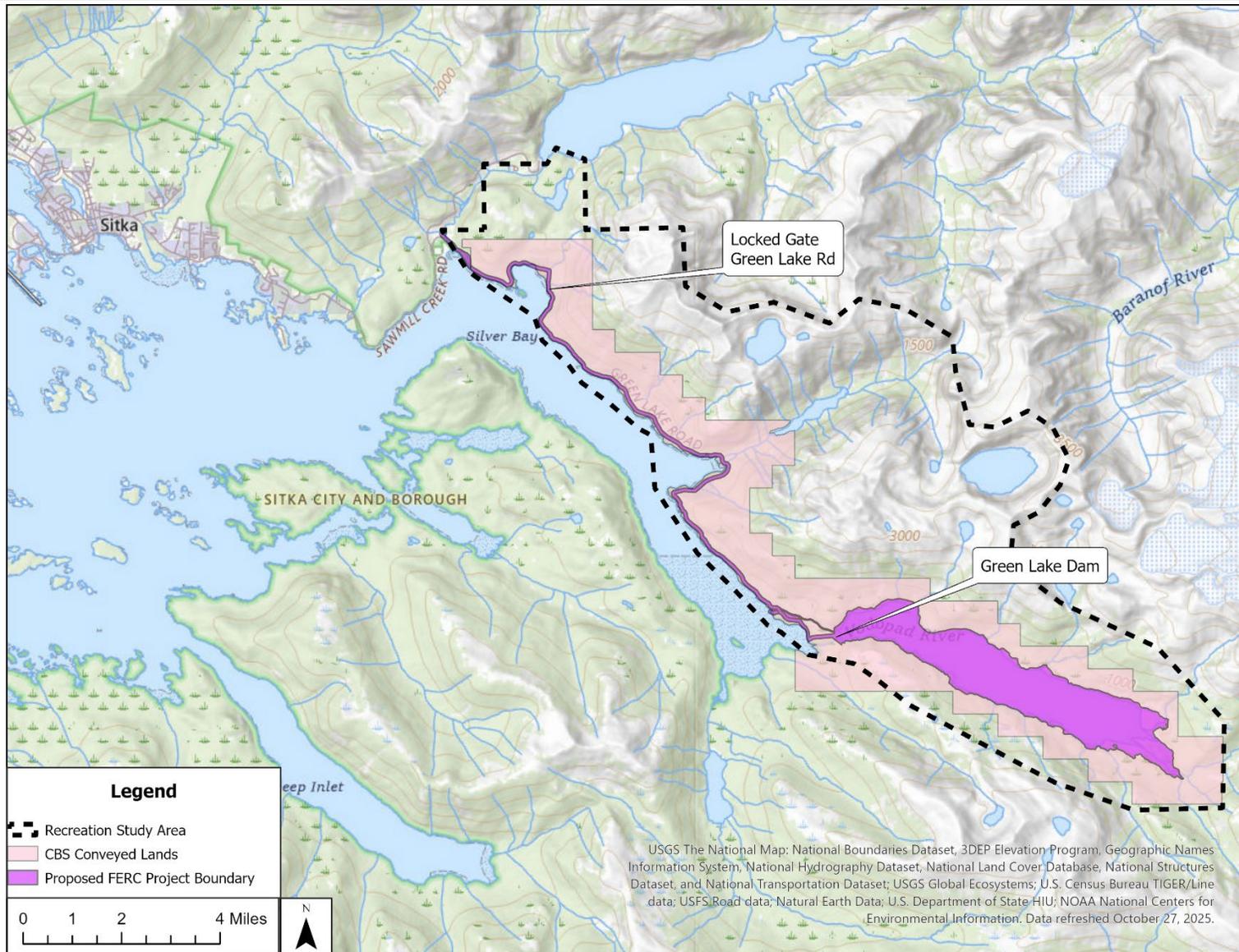


Figure 2-1. Recreation Study Area

2.3.1 Facility Inventory

Most of the data collection for the facility inventory was completed in 2025. An initial site visit with stakeholders was held in June 2024 to become familiar with the Study Area's general character and layout. Additional site visits during the study period took place from May 11-19 and October 1-8, 2025. Observations from site visits and consultation with CBS staff were used to develop a comprehensive facility inventory to:

- Map the location of facilities in relation to the FERC Project Boundary.
- Describe each facility.
- Describe the condition of the facility/amenity and parking capacity (if any).
- Identify whether the facility is a Project or non-Project recreation facility.
- Determine the entity responsible for the operation and maintenance of each facility.
- Describe the hours and season of operation/use.
- Document facilities with photographs.

A Geographic Information System (GIS) database of points of interest and facility improvements (points), trails and routes (lines), and recreation zones (polygons) was created using information gathered during site visits, data available from CBS staff, and online open-source data. An interactive symbolized map of Project zones, facility improvements, and photographs was prepared. The database describes relevant qualities of each facility such as age, condition, materials, dimensions, parking capacity, etc.

Responsible parties were attributed to each facility, distinguishing between ownership, management jurisdiction, maintenance responsibility, whether the facility is part of the Project, etc. This information was collected through interviews with CBS staff and a review of formally recorded documents, policies, or management/maintenance agreements, to the extent these exist.

General information about when (hours of day, seasons) people use the area was gleaned from CBS staff interviews. Recreation use is also being systematically measured through methods described in the Recreation Use Study section (Section 2.3.2); since data collection for the Recreation Use Study is ongoing, a complete data set was not available for the facility inventory.

Any on-site or off-site documentation of posted rules and regulations, along with their sources, were reported. Relevant and illustrative photos of each facility were included in the database.

Established USFS recreation and resource management frameworks were applied to the Green Lake Recreation Study facility inventory to provide a consistent means to evaluate and compare different features within the Project Area, as well as to evaluate consistency and compatibility between settings in CBS-managed Study Area and the neighboring TNF lands. Specifically, the facility inventory makes use of or refers to the USFS Recreation Opportunity Spectrum (ROS), Trail Fundamentals and Management Objectives, and Guidelines for Road Maintenance Levels. References can be found in Appendix A. USFS ROS and Planning Frameworks.

Recreation Opportunity Spectrum

Each area and feature in the facility inventory was described in a manner consistent with the ROS framework used by the USFS since the 1970s to manage recreation settings and environments. The ROS provides a consistent framework to define, classify, allocate, manage, and monitor existing and desired recreation settings and opportunities. In this framework, a “recreation setting” describes the social, managerial, and physical attributes of a place that, when combined, provide a distinct set of recreation opportunities. This framework is based on the premise that visitors choose a specific setting and activity to achieve desired experience(s) and realize beneficial outcomes associated with those experiences.

The ROS categorizes types of settings into six distinct classes: primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, rural, and urban. Each ROS class, with its associated setting characteristics, provides unique opportunities to engage in recreation activities that result in different personal experiences. Where applicable, the facility inventory and GIS map database was modeled off the USFS National ROS Mapping Protocol.

Trail Fundamentals and Road Maintenance

The USFS manages and maintains trails and roads using systems of classification based on how they are used and built. Trails are managed in consideration of five fundamental concepts (“Trail Fundamentals”): Trail type, trail class, managed use, designed use, and design parameters. Where appropriate, trails within the Study Area were described in terms consistent with these concepts and framework for trails classification. Roads were classified by the level of service each should provide and maintained to meet standards appropriate for that level of service. The facility inventory evaluated and described roads and sections of road in the Study Area in reference to this classification system.

2.3.2 Recreation Use Study

The recreation use study is ongoing and collecting information to describe recreation use in terms of amount, type, timing, distribution, and behavior. The study began in May 2025 and

will continue through May 2026. The study is using multiple methods to comprehensively understand current recreational use patterns, preferences, and desired future opportunities and improvements. These methods include the following:

- Automated counting and monitoring of visitors.
- Visitor surveys, including on-site user intercept surveys and self-select surveys.
- Trailhead observations.
- Review of cellular device location data reports provided by CBS Parks and Recreation Division through a third-party location intelligence consultant.
- Review of internet open-source location tracking websites and published trip reports.

2.3.2.1 Automated Counting and Monitoring of Visitors

Automated counters are an accepted and widely applied method of conducting visitor counts during visitor-use monitoring of public lands and recreation areas (English et al. 2020, Leggett et al. 2017, Pettebone and Ziesler 2018). With proper installation, calibration, monitoring, and statistical processing of raw data, automated counters and trail cameras have been shown to produce confidently accurate estimates of visitor use at study sites (Albers et al. 2023; Pettibone et al. 2010). Automated counters are best applied to sites where visitors enter the area through a narrow entryway such as a gate or trailhead, are likely to only make one entrance per day/visit, and where vehicle use is limited to avoid the need for persons-per-vehicle multipliers (Pettebone and Ziesler 2018).

The single primary entrance (one-way-in, one-way-out) and linear corridor layout of the Study Area, combined with its remote location and anticipated low visitation numbers make this Project ideal for automated counters and cameras. Compared to relying solely on in-person random sampling, automated counting provides a wider sampling period, collects information during unpredictable weather-related peaks in use, and simultaneously inventories multiple sites within the Study Area. When complete in May 2026, the result will be a year-long dataset of objectively quantifiable visit counts and a reliable estimate of current use.

Data Types and Collection

Data from infrared trail counters and magnetic vehicle counters (TRAFx brand trail and vehicle counters; www.trafx.net) are being used primarily to quantify visits and estimate visitor hours spent in different zones or at different facilities within the Study Area. Trail camera (Reconyx Hyperfire infrared trail cameras or similar product; www.reconyx.com) images are being used where trail or vehicle counters are not as effective due to road widths, visitor dispersal around a larger area, or the need to distinguish between humans, wildlife, vehicles, and vegetation.

Where installed near a counter, cameras may also validate and supplement counter data by providing additional insight into visitors' mode of travel and/or recreational activity. A full year of automated counting will capture recreation use fluctuations during all seasons and improve relative accuracy via longer monitoring duration (Muhar et al. 2002). This portion of the study is ongoing and monitoring equipment will be maintained in place to operate and collect data through May 2026.

Counter and Camera Locations and Installation

Counters and cameras were installed between May 11-19 and October 1-8, 2025. A preliminary plan for installation locations based on the study plan and knowledge of the area was refined after in-person inspection. The physical conditions of each location, availability of trees, poles or posts for mounting equipment, and ability to install equipment to conform to manufacturer's recommended installation standards influenced the ultimate choice of locations and study adjustments.

A total of 21 counting and monitoring sites were established during field visits in May 11-19 and October 1-8, 2025 (Table 2-1). Fieldwork in May involved installing six TRAFx magnetic vehicle counters along Sawmill Creek Road, Herring Cove trailhead parking area, and at Green Lake; six TRAFx infrared trail counters along established trails, identifiable routes, or pedestrian corridors; and five Reconyx Hyperfire II game cameras along the Green Lake Road corridor. In October, an additional vehicle counter, two trail counters, and one camera were installed; one vehicle counter was relocated; and two vehicle counters were recalibrated and settings adjusted (see Table 2-1 for detailed explanations). Installation sites were chosen based on the need to understand use of the area or facility, likelihood of triggering positive counts and collecting usable data, and the availability of site features necessary to install equipment according to best practices and adhere as close as possible to manufacturers' instructions. For example, infrared trail cameras were located where visitors would pass through a narrow area and not congregate; cameras were used where visitors might disperse or where it would be necessary to distinguish between counts generated by pedestrians, cyclists, vehicles and wildlife; and magnetic vehicle counters were used along roads where vehicular use is the primary subject. Counter and camera settings were kept at the manufacturers' default or adjusted where necessary based on the specific site dimensions and conditions or specific data needs. A map of precise counter and camera installation locations is not provided to avoid study delays associated with vandalism and theft, as the study is ongoing and equipment remains in the field; a detailed map will be provided in the USR when data collection is complete.

Data from all counters and equipment must be downloaded manually. CBS staff retrieve data as schedules and weather allow. At the time of the ISR filing, data has been retrieved and sites

inspected on six separate occasions, approximately monthly during the 2025 study season: May 18, June 3, July 9, August 7, September 28, October 1, and November 6. Data were reviewed promptly after each download for abnormalities or signs of equipment malfunction. Camera data is handled sensitively and reviewed by staff limited to the CBS project manager and consultants managing data analysis. Images that may include potentially sensitive, personally identifiable information will not be shared in the report to protect privacy.

Table 2-1 Visitor monitoring equipment types, location and installation date

Site #	Install Location	Type	Install Month
1	Sawmill Creek Road, shore side	Vehicle	May ¹
2	Sawmill Creek Road, mountain side	Vehicle	May ¹
3	Herring Cove Point	Trail	May
4	Beaver Hump Trail	Trail	May
5	Herring Cove-Beaver Hump Trailhead – Parking Entrance	Vehicle	May
6	Herring Cove-Beaver Hump Trailhead – Parking Exit	Vehicle	Oct
7	Herring Cove-Beaver Hump Trailhead – Trail	Trail	Oct
8	Green Lake Road Entrance Locked Gate – Pedestrian gate	Trail	May
9	Green Lake Road – First mile	Camera	May
10	Green Lake Road – First mile	Vehicle	May
11	Bear Mountain – Ridge route	Trail	May
12	Bear Mountain – Lake route	Camera	Oct ²
13	Bear Mountain – Lake route	Trail	Oct ²
14	Medvejie Lake Trail	Camera	May
15	Medvejie Lake Trail	Trail	May
16	Green Lake Road – Third mile	Vehicle	May ³
17	Cross Mountain Trail	Trail	May
18	Saltwater boat landing	Camera	May
19	Green Lake Road – Last mile	Camera	May
20	Green Lake Road – Last mile	Vehicle	May
21	Green Lake Dam	Camera	May

¹ Tested and recalibrated in October 2025 to better account for anomalous data.

² A suitable location for the Bear Mountain Lake camera and counter was not found in May due to the braided nature of the route and multiple points of beginning. A preferred location was identified after further research and consultation with local visitors over the summer of 2025 and during the October 2025 field effort.

³ Relocated in October from a tree trunk to a nearby utility pole to reduce anomalies caused by wind. The housing was destroyed by a bear shortly after relocation.

2.3.2.2 Visitor Surveys

Surveys gather information about each visitor and the details of their visit (who, what, when, where, how, and why). The surveys ask about the purpose of each visit to distinguish between recreation visits and non-recreation visits, asking specifically about subsistence activities that may be hard to distinguish from recreation by other means of observation (e.g., hunting, trapping, and foraging). Among recreational visitors, various types or levels of recreation demand is assessed by asking about their chosen activities, settings where they choose to engage in those activities, desired experiences during the visit, and anticipated benefits resulting from the visit. Satisfaction and experience preference information can ultimately be used to assist managers in developing management objectives, standards, and indicators of performance.

The survey instrument was refined from the study plan after visiting the site to better capture current conditions and local placenames. The final survey instrument and questions can be found in Appendix B. Recreation Visitor Survey Instrument. The survey is available to take online using the ArcGIS Survey123 platform and by printed paper copy through May 2026.

On-Site Visitor Intercept Sampling

Visitor surveys were administered on-site through convenience intercept sampling at the Herring Cove trailhead on a total of 14 calendar days between May 14-19 and October 1-8, 2025. On-site visitor intercept sampling is complete, although self-select survey opportunities will be available through May 2026. Sampling periods were chosen to observe and capture recreation use during different seasons and times of day. One or two study team members were stationed under a pop-up tent at the Herring Cove trailhead to solicit participation in the survey by all visitors encountered during that time. Study team members were stationed at the trailhead for between three and ten hours on a single day depending on visitor activity/inactivity, weather, and study needs elsewhere in the Study Area. A detailed schedule including sampling times can be found in Table 2-2.

Table 2-2-2 Intercept Survey Trailhead Sampling Dates and Times

Date	Day of Week	Times (24hr)	Hours
5/14/2025	Wednesday	1500-2000	5
5/15/2025	Thursday	1000-1700	7
5/16/2025	Friday	1030-1830	8
5/17/2025	Saturday	1000-1900	9
5/18/2025	Sunday	1030-1930	9
5/19/2025	Monday	1430-1730	3
10/1/2025	Wednesday	1400-1700	3
10/2/2025	Thursday	1430-1730	3
10/3/2025	Friday	1200-1800	6
10/4/2025	Saturday	0800-1700	9
10/5/2025	Sunday	0730-1700	9.5
10/6/2025	Monday	0800-1200; 1500-1800	7
10/7/2025	Tuesday	1130-1830	7
10/8/2025	Wednesday	0800-1700; 1930-2100	10.5

In-person intercept surveys were self-administered or interviewer-administered depending on the visitor’s preference. In both cases, the interviewer/administrator explained the purpose and voluntary nature of the study, requesting the visitor to fill out a survey, and asking if they need assistance. If self-administered, the interviewer provided the visitor with a survey for the visitor to read and respond to each question on their own using a tablet or paper and pencil. If interviewer-administered, the interviewer/administrator assisted willing visitors with completing surveys by reading questions aloud and/or by writing their spoken response and repeating the response back to them. Administrator observations were also recorded (time of day, number in party, mode, and direction of travel, etc.). A flyer with a Quick Response (QR) code and link to the online survey was also present onsite. Visitors who did not want to take the survey in the presence of the administrator were encouraged to take a photo of the flyer and participate in the survey on their own schedule after their visit. No additional on-site intercept sampling is planned for this study.

Visitor Self-Select Surveys

To increase response rates and sampling days and times, the survey was designed to be self-administered by visitors who are not intercepted by staff during staff visits or who do not wish to interact with interviewers. The self-select survey is available online and is the same survey as the intercept survey, but visitors can fill out the survey at their convenience. All survey

responses, regardless of sampling methods, are submitted via the same link to the online survey and collected in the same online database.

Posters with survey instructions and a photographable QR code and web address to the online survey were posted around the Herring Cove site on May 18, 2025, and reposted periodically throughout the summer as the signs were ripped, vandalized, or damaged by weather. The flyer directions encourage one to take the survey online and inform visitors that paper surveys are available at the CBS Electric Department office. A copy of the flyer can be found in Appendix C. Recreation Study Survey Flyer. CBS's Parks and Recreation Division and local trail organizations encouraged sharing and participation in the survey. The self-administered survey will continue through May 2026.

2.3.2.3 Trailhead Observations

Observations of visitor use of the Herring Cove trailhead were recorded during field study periods in May and October. The survey administrator stationed at the trailhead recorded the number of visitors encountered at the site, their mode of travel, and noteworthy details about visitor use of the area gathered from direct observation or from conversations with the visitor.

2.4 Preliminary Results

2.4.1 Facility Inventory

For this study, recreation facilities are existing Project facilities within the Study Area that are used or have potential for recreation use. Observations and findings from the facility inventory are organized by four primary geographic zones within the Study Area (Table 2-3, Figure 2-2.): Herring Cove and Beaver Lake area (Zone 1), Green Lake Road corridor (Zone 2), trails and uplands above Green Lake Road (Zone 3), and Green Lake and the dam (Zone 4).

Table 2-3. Green Lake Recreation Facilities by Zone

Zone 1 Herring Cove and Beaver Lake Area	Zone 2 Green Lake Road Corridor	Zone 3 Trails and Uplands above Green Lake Road	Zone 4 Green Lake and Dam
<ul style="list-style-type: none"> • Sawmill Creek Road • Herring Cove Point and Island • Beaver Hump Trail • Herring Cove – Beaver Lake Trail 	<ul style="list-style-type: none"> • Green Lake Road • Medvejie Hatchery at Bear Cove • Saltwater boat landing • Powerhouse 	<ul style="list-style-type: none"> • Medvejie Lake Trail • Bear Mountain West Ridge Route • Bear Mountain Lake Route • Cross Mountain 	<ul style="list-style-type: none"> • Green Lake and Dam

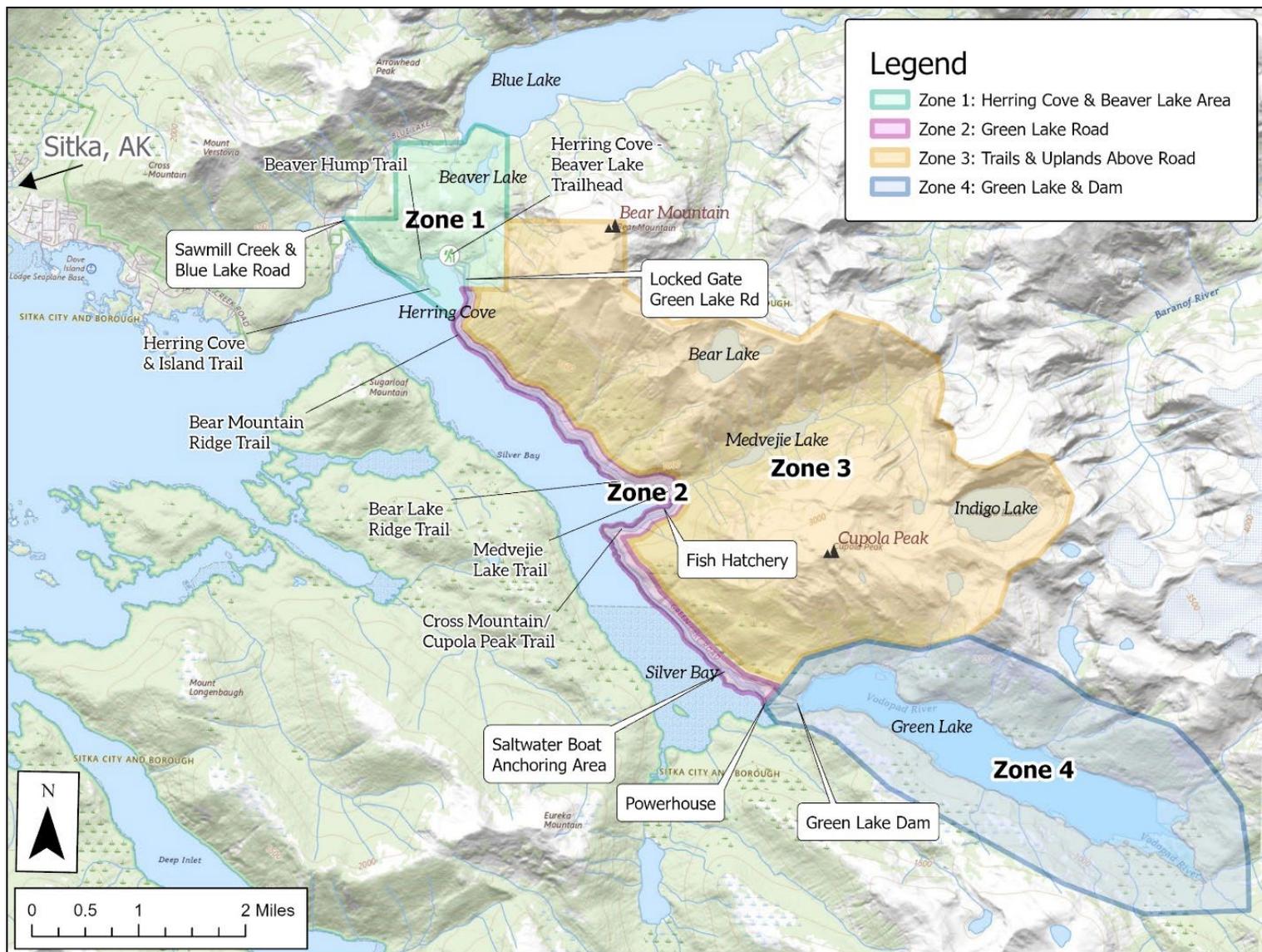


Figure 2-2 Green Lake Recreation Study Area Zone Map

The Green Lake Study Area is remote and, with one exception (Zone 1 Herring Cove-Beaver Lake Trail and trailhead area), lacks facilities developed specifically for recreational use such as developed parking areas, toilets, trailheads and signs, developed trails, etc. Recreation use of the area appears regular but relatively low in volume. In the absence of facilities developed specifically for recreation, visitors use Project facilities, including the roads, boat landing area, and Green Lake, to access the area and natural features. These facilities and natural features are described below, organized by zone (Sections 2.4.1.1 through 2.4.14). Facilities and features are described in terms of their setting characteristics that may contribute to different types of recreational opportunities. Characteristics of the physical, managerial, and social setting are considered; these characteristics are listed in Table 2-3. All facilities used for recreation are open to the public year-round, 24/7.

Table 2-4. Characteristics of the Physical, Managerial, and Social Setting

Physical Setting Characteristics	Managerial Setting Characteristics	Social Setting Characteristics
<ul style="list-style-type: none"> • Size and remoteness of the area • Scenic character • Access • Presence of infrastructure or level of development 	<ul style="list-style-type: none"> • Degree of visitor management • Management presence • Degree of onsite controls 	<ul style="list-style-type: none"> • Activities and opportunities • Likelihood and types of social encounters • Visitor density • Degree of challenge/risk

An online GIS database and map (GIS Database and Web Map; <https://arcg.is/1Lm9Gi0>) summarizes pertinent information about recreation facilities in the Study Area, including location, condition, parking capacity, whether the facility is within the FERC Project Boundary, entity responsible for operation and maintenance, seasons of use, and recreation uses.

All information necessary for the facility inventory was collected through in-person site inspections, consultations with staff and partners, and desktop analysis and research during the 2025 study season. The facility inventory is considered complete as of filing of the ISR. However, a complete analysis of use is contingent on the results of the recreation use study (Section 2.4.2) and will be updated in the USR.

2.4.1.1 Zone 1: Herring Cove and Beaver Lake

Zone 1 Herring Cove and Beaver Lake begins at the western extent of the Study Area. It includes the gravel portion of Sawmill Creek Road from where it crosses Sawmill Creek (the outflow of Blue Lake) to its eastern terminus where it becomes Green Lake Road at the locked gate. Key features accessed from and used within this zone for recreation include Sawmill Creek Road, Herring Cove (water body), Herring Cove Point and Island, Beaver Hump Trail, Herring Cove-Beaver Lake Trail, and formal and informal parking areas and pull-outs to access some features. See GIS Database and Web Map (<https://arcg.is/1Lm9Gi0>) for feature locations, details, and photographs.

Sawmill Creek Road

The portion of Sawmill Creek Road in Zone 1, approximately 1.5 miles long and maintained by Alaska Department of Transportation & Public Facilities (ADOT&PF), is between the bridge at Sawmill Creek, and the Herring Cove-Beaver Lake trailhead parking area. The road surface is gravel and approximately 30 feet wide to accommodate two-way traffic. The road is cut into a steep mountainside, with cliffs on the north/east and the steep shoreline on the south/west. A guardrail runs most of the length of the road along the shoreline. Drainage is accomplished by ditching on the cliff side, crowning, and culverts. Aerial electrical transmission lines and power poles share this road corridor. The transmission line runs from the Blue Lake powerhouse to the Green Lake powerhouse at the end of Green Lake Road. Poles are along the shore side of the road for most of this road section. Each pole is visibly labeled with sequential identifying numbers. Visitors are known to use the poles and their numbers to orient themselves and as a relative measure of distance (e.g. "Meet me at Sawmill Creek Road. Park your car at the pullout at Pole 9 and we'll walk the dogs from there."). There are few widened sections of the road that are used as pullouts for cars to park out of the main roadway, though they are unmarked and informal. The road widens into a large turnaround before the Herring Cove Trailhead. The turnaround is regularly used for parking. Drivers can continue past the turnaround through a gate opening to access the trailhead or Green Lake Road past the parking area.

Exposed cliffs along the road are typically wet from frequent rain and runoff from the hillside. Two large sections of cliff are slightly overhung with drainage to the sides, keeping the rock on those cliff faces dry in most conditions. A series of steel anchor bolts lead up these dry crags to different anchor chains at the top of the cliff, marking 5th-class rock climbing routes for lead and top-rope climbing. No signs or wayfinding are present at the crags.

Sawmill Creek Road represents the western extend of the Study Area, is the most proximal facility to the Sitka community, and is connected directly to the community road network. As most users of Study Area facilities enter through this corridor, this is expected to be the least

remote and most visited area within the Study Area and where visitors are most likely to encounter others. Outside of the Study Area, the paved western extent of Sawmill Creek Road includes a separated pedestrian path that ends when the road turns to gravel on the east side of the Sawmill Creek bridge. As such, some uses naturally extend from the pedestrian facility and into the Study Area.

Observed recreation activities and land uses along Sawmill Creek Road included driving for pleasure, access to Herring Cove and beyond, walking, dog walking, running, bicycling, rock climbing, fishing, wildlife viewing, wood cutting, and berry picking. Accessing other areas, driving for pleasure, walking, dog walking, and running were the most observed uses during the field study. Traffic is slowed due to potholes, which adds to a sense of safety for bikers and pedestrians. The lands off the road are primitive undeveloped wilderness and most recreational activities involve moving within and through the road corridor, so visitor density is typically low.

This portion of road is a public right-of-way (ROW) through CBS land. While the CBS is a home rule borough and exercises road maintenance powers, the Sawmill Creek ROW is maintained by ADOT&PF to Herring Cove. ADOT&PF maintains only two major road corridors in Sitka used for accessing critical infrastructure, including Sawmill Creek Road. The speed limit is 25-45 mph, posted outside the Study Area on the paved section of Sawmill Creek Road on the west side of Sawmill Cove. Few signs (and no speed limit) are posted along the gravel corridor within the Study Area.

Taking of fish and game resources in this area is managed by Alaska Department of Fish and Game (ADFG), though the U.S. Department of the Interior (USDOI) may apply federal subsistence wildlife regulations on lands managed by the USFS. Game Management Unit (GMU) 4, which includes Baranof Island, lists the Sitka Road System as a restricted area, closed by ADFG to the taking of big game within 0.25 miles of all state highways, which include Sawmill Creek Road.

Herring Cove Point and Island

Herring Cove Point is accessed off gravel Sawmill Creek Road about 0.9 miles past the Sawmill Creek bridge at Pole 21. Visitors informally park their car along the guardrail on a curved section of road. Visitors must step over the guardrail to find an informal social trail that enters the mature forest with a steep climb down a rock ledge. In the forest, the trail braids and meanders around the point. The trail is not improved or hardened, nor does it have any drainage features.

The point is known as a popular spot for groups to gather and party. Use of the area by humans is evident. A rope is left tied at the entrance ledge to make the short belay more

secure. Along the routes through the forest, one may encounter litter, cut logs, broken pallets, and charred wood from campfires. Soils are entrenched and disturbed where visitors most commonly walk. At the end of the point is a large fishing net strung in a tree and used as a group hammock. A rope swing over the channel between the point and the island makes for a unique swimming experience.

The area of the point that is most used by visitors is about 2.4 acres. The adjacent island is 3.2 acres. One can access the island by boat or swimming and possibly wading across the channel at low tide. The island is known to be used for overnight camping, though no developed facilities exist.

While the forest obscures much of the area from visibility from the road, the farthest end of the point is only 440 feet from the road. The tree net provides a view across Herring Cove where visitors may see vehicles driving or other groups on the beach or at the trailhead.

As a relatively small area that is commonly used by groups to socialize, visitor density may be comparatively high at this area versus others in the Study Area.

Herring Cove Point is CBS-owned land. It is not formally advertised or actively managed as a recreation facility. There is no sign to designate a parking area or a trail. The improvements, including the trail, rope belay, tree net, and rope swing, are all installed, maintained and used by casual visitors.

Beaver Hump Trail

Beaver Hump trail climbs approximately one mile from Sawmill Creek Road to the top of the “Beaver’s Hump”, a small, rounded mountain that peaks at approximately 1,050 feet elevation. “Beaver Hump” is the name used by CBS staff in interviews about the area but is not a formal name or well known in the community. The Beaver Hump is bordered by the Sawmill Creek in the west, Beaver Creek in the east, Blue Lake in the north, and Silver Bay in the south. The entire Beaver Hump feature spans approximately 600 acres.

The trail leaves the north side of Sawmill Creek Road between Herring Cove Point and the end of the road, approximately 0.25 miles beyond and north of the Point. Just east of the trail entrance, an informal pullout on the south/shore side of the road provides a safe and close place to park a car out of the roadway. The widening gives space for up to about four standard vehicles.

The trail begins in the forest along a small natural drainage. After crossing the drainage, it climbs through mature forest to the top of the mountain, or “hump,” crests and opens to an

alpine muskeg landscape. The biological variety and views of surrounding mountains and waterbodies add to the appeal of this destination.

The trail condition is undeveloped through a natural, mostly unmodified environment. Its tread is narrow (single lane) and rough, though mostly continuous and discernable. As the trail becomes more distant from the road, sections of tread may be intermittent and indistinct, making the route confusing at times. Surveyors tape left by visitors may mark trees along sections of the route where the tread is indistinct. Once in the alpine, the trail tread disappears, and visitors are likely to disperse. The tread is all natural, native material. Obstacles such as downed trees, drainage crossings, and wet soils are common. Many downed trees have been cleared or cut into steps by past visitors. Vegetation is allowed to encroach into the trailway and must be cleared voluntarily by users. There are no structures to assist with fords, obstacles, or drainage, and no signs for wayfinding, confidence, regulatory information, or interpretation.

As the trail distances from the road, the experience becomes more remote. The trail climbs through a large, natural forest and open alpine meadows, adding to a sense of remoteness. Evidence of human use include the presence of the social trail, minor trail improvements such as sawcuts through fallen logs, some surveyors tape marking the trail route, and younger trees indicating past timber harvests. This trail connects a number game trails and provides direct access to alpine meadows above Beaver Lake and access to a temporary meteorological tower recently installed to measure wind resources. Local recreational hikers and hunters have found this trail provides relatively easy access to alpine area and have adopted it as an alternative route to the Beaver Lake area.

Visitors are unlikely to encounter another party on this trail. Due to the terrain, use of the trail is limited to pedestrian activities such as hiking, hunting, wildlife viewing, and berry picking.

The trail access off Sawmill Creek Road starts on CBS-owned land. There is no sign onsite to designate a parking area or a trail, and the trail route is not shown on any online open-source digital maps. The trail crosses onto USFS land as it reaches roughly 800 feet elevation more distant from the road.

Herring Cove-Beaver Lake Trail

The Herring Cove-Beaver Lake Trail is a popular Sitka destination that offers a developed trail of moderate difficulty and short distance with views of surrounding mountains; mature forests of hemlock, spruce and yellow cedar; high-elevation muskeg; a scenic lake; spectacular waterfalls; and wildlife viewing opportunities.

The trail connects two trailheads: one at the USFS Sawmill Creek Campground off Blue Lake Road, and one at Herring Cove within the Study Area off Sawmill Creek Road. Both trailheads are accessible by vehicle, though Sawmill Creek Road is open to the public year-round and Blue Lake Road typically closes to vehicular traffic November – May due to snow and avalanche danger.

Connecting these trailheads are three trail sections: the trail connecting Herring Cove to Beaver Lake (“Herring Cove Trail”), a loop around Beaver Lake (“Beaver Lake Loop”), and the trail from Beaver Lake to Sawmill Creek Campground (“Beaver Lake Trail”). The trail from Herring Cove crosses an anadromous stream (“Beaver Creek”) then parallels its cascades up a steep hillside. At the top of the hillside, visitors reach a hanging valley with a view of a 100-foot waterfall from Bear Mountain above. The trail generally flattens and circles Beaver Lake. Beaver Lake is a freshwater lake of approximately 29 surface acres and 55-foot depth, is entirely within the USFS TNF boundary, and is not part of the Study Area. The trail is considered moderately difficult mostly due to the steep grade at the beginning of the trail from Herring Cove.

From Herring Cove to Sawmill Creek Campground via the trail is either 2.3 or 2.9 miles depending on whether the user hikes around the north side of Beaver Lake. The hike gains about 520 feet in elevation and takes roughly 1.5 hours one-way. The hike from Herring Cove, around Beaver Lake, and back is 3.6 miles. For a longer hike or run, around six miles long, some users complete a loop around the Beaver Hump by connecting Blue Lake Road and Sawmill Creek Road.

The trail was professionally designed and constructed to USFS standards. The trail tread is continuous and obvious, single-lane width, and built with mostly native materials. Obstacles are common but not substantial and vegetation is cleared outside the railway. Constructed features are common and substantial along the trail, including rock steps, drainage features, raised and hardened trail tread, boardwalks, benches, platforms, and bridges over water crossings. Route identification signage is present at junctions and minimal or non-existent elsewhere and there is no interpretive signage. The environment surrounding the trail is natural and primarily unmodified.

Several sections of the trail have been improved over the years. Noteworthy improvements include: a trailhead at Herring Cove with a graded gravel parking lot offering 18 dedicated spaces (including one Americans with Disabilities Act [ADA] space) with curb stops and signage; trailhead sign and bench; approximately 500 feet of ADA accessible gravel trail from the Herring Cove trailhead to the first creek crossing; wayfinding signs at junctions; rock steps and realignments at the steep grade along the cascading falls by Herring Cove; wooden bridge structures at creek crossings; crushed gravel trail tread hardening; log and stone steps around

the lake; wooden staircase and railings; wooden puncheon and boardwalks with fishnet for traction; wooden benches and picnic pads at Beaver Creek and Beaver Lake; and fishing docks at Beaver Lake. The USFS provides a small aluminum skiff and paddles at the dock for visitor use free of charge. The trail is relatively new, constructed in 2003 and 2009 and has been periodically improved and maintained since. The condition of the trail and structures are good and will require regular maintenance and replacement of wooden structures that are prone to rot and fail over time. For example, the 2023 Tongass Sustainable Trails Plan recommends replacing the wooden bridge near the Herring Cove trailhead.

The trail is surrounded by natural landscape and insulated from road noise and the forest obscures views of the roads and Sitka. Tread improvements, signs, and structures (bridges, docks, boardwalk, etc.) along the trail and lake are the primary evidence of human use of the area. These characteristics provide a sense of remoteness despite being relatively close to the trailheads.

Encounters with others and visitor density are more likely on the Herring Cove-Beaver Lake Trail than other parts of the Study Area, though they are still considered low compared to attractions nearer to Sitka's center. Encounters with one or more other parties can be expected on the trail: it is the most developed and improved trail in the Study Area, is actively managed by the CBS and USFS, is close to Sitka, has two trailheads accessible by highway vehicle from the public road system, and provides spectacular and varied scenery that is accessible in a relatively short distance and time and without much difficulty or risk. The trail is also well known. Information such as maps and trail descriptions are easily found online from numerous formal and informal sources. Visitor density is low overall as users are frequently moving through the area along the trail. Density is likely highest at the few places users might stop and congregate including the trailhead parking, picnic pads and benches at stream crossings and the lake, at the waterfall viewing, and at the docks on the lake.

The USFS manages Sawmill Creek Campground, the Beaver Lake Trail and loop, and the portion of Herring Cove Trail between the lake and the waterfall viewing. CBS Electric Department manages the Herring Cove Trail parking area and the trail up to the waterfall viewing. The trail is managed for non-motorized use and is not designed to support bicycles or skis. Sport fish resources in Beaver Lake are managed by ADFG as part of the Southeast Region Sitka Management Unit and are currently open to baited sport angling year-round. Beaver Lake was stocked in the past with grayling and a small self-sustaining population remains.

Sitka Trail Works, a local non-profit organization, also provides some trail maintenance support via volunteers, grants, and funding from CBS and the USFS.

2.4.1.2 Zone 2: Green Lake Road corridor

The Green Lake Road Corridor includes all of Green Lake Road and facilities immediately along the road including the Medvejie Fish Hatchery at Bear Cove, the saltwater anchoring area, and the Green Lake powerhouse. Trails and routes leaving the road are discussed in Zone 3 and Green Lake and dam are discussed in Zone 4. See GIS Database and Web Map (<https://arcg.is/1Lm9Gi0>) for feature locations, details and photographs.

Green Lake Road

From Herring Cove at the end of Sawmill Creek Road (road turnaround and first gate just before Herring Cove Trailhead parking), the Green Lake Road begins along the shoreline to a locked Utility Access Gate, then follows the north shoreline of Silver Bay to the south and east approximately seven miles to the Green Lake powerhouse, with a spur road up to Green Lake and Green Lake Dam. An additional spur road provides a short (< 0.1 mile) connection between Green Lake Road and a saltwater anchoring area on the north shore of Silver Bay. Green Lake Road's primary function is to access and maintain the Green Lake Hydroelectric Project facilities, including the dam and the high-voltage aerial transmission line that shares the road corridor between the Green Lake powerhouse and the Blue Lake powerhouse. The mountain side of the road is steep, forested or near vertical blasted rock cut into the mountainside, and on the water side is the Silver Bay shoreline. Most of the shoreline is very steep and inaccessible from the road, except for a few short sections where the grade relaxes and the road is close to the shoreline.

The utility road is usable by prudent drivers of standard passenger cars, though user comfort and convenience are low priorities. The road is single lane, approximately 12 feet wide on average with little or no shoulder. Few small turnouts allow passing. The road surface is a rough course of native crushed rock and gravel. Drainage is accomplished by slight crowning, intermittent ditching, culverts and dips. Potholing and washboarding are common and speeds are slow. Vegetation is regularly managed along the road corridor and under the aerial transmission lines. Due to past and current clearcutting, the vegetation is short but dense immediately off much of the road corridor, adding to the difficulty of travelling off the road. Vehicular traffic volume is low and limited to authorized CBS Utility workers, NSRAA, and authorized contractor vehicles.

From the road there are scenic views of Silver Bay and of old-growth forest, steep mountainsides and high peaks. Structures along the road are limited to the ever-present overhead transmission lines and poles, two short bridges across both outlets of Medvejie Creek, the Medvejie Hatchery facilities at Medvejie Creek/Bear Cove, the Green Lake powerhouse and Green Lake Dam. There are very few signs along the road. Evidence of

humans is generally limited to these structures, the road itself, visibly managed vegetation, and gravel extraction or material sites for road construction.

Green Lake Road intersects multiple avalanche chutes as it contours the steep mountainsides. Debris from avalanches, landslides and rockfall at times enter or block the roadway. CBS clears the road of hazards as necessary to maintain utility operations.

Observed recreation uses on Green Lake Road included walking, walking dogs, biking, and e-biking. Visits along the road took place within a single day and during daylight hours and usually appeared to be the primary activity. Others may walk or bike the road as a mode of travel to reach a more remote destination for a different activity, such getting to a trail or route to leave the road for alpine hiking, hunting, or a multi-day trek with backcountry camping.

The road is primarily used for Project operations and maintenance, and secondarily for access and operations at the NSRAA hatchery. Public vehicle access is restricted by a locked vehicle gate but is open 24/7 year-round to the public for foot and bicycle use. Recreation use is regular but tertiary to the other uses. During a single visit, one can expect to encounter multiple vehicles when on the road, depending on the duration of the visit. CBS Electric Department and NSRAA staff drive the road multiple times daily and throughout the day. Encountering other recreational visitors is not uncommon, but less frequent than vehicles. Visitor use is contained mostly within the road corridor. Visitor density is low along the entire road, as the nature of most use is to keep moving through the corridor, though density is expected to be relatively higher nearer the locked gate which is the primary point of beginning for most visits.

The Green Lake Road corridor is entirely within the Study Area and on land owned by CBS. Except for the NSRAA Medvejie Hatchery at Bear Cove, CBS maintains the Green Lake Road and all facilities along it. The road is open to the public for non-motorized use 24 hours/day, 7 days/week during all seasons. Motorized use of Green Lake Road is limited to authorized CBS and NSRAA staff and contractors. Vehicular access is controlled by a locked gate about 0.25 miles east of the end of Sawmill Creek Road.

Multiple signs on the gate indicate that the facility is open to the public, that unauthorized motor vehicle use is prohibited, that the road is part of the FERC Green Lake Hydroelectric Project, and that the road is owned and managed by the CBS Electric Department.

Physical access around the sides of the gate is constrained by a boulder on one side and additional fenceposts on the other side, leaving a 3-foot, gate-free gap for pedestrians and bikers to circumvent the locked gate and use the road.

There is a regular management presence along the road as CBS and NSRAA vehicles travel the road daily and throughout each day.

CBS Code 8.05.032 designates lands along Green Lake Road one of eight areas where dogs are permitted to be off-leash and under voice control.

Medvejie Hatchery at Bear Cove

The NSRAA Medvejie Hatchery is located at Bear Cove about 3.25 miles from the Green Lake Road locked gate. The hatchery was built and expanded throughout the 1980s and produces chum, Chinook, and coho salmon. Fry are reared at the hatchery before being released at Bear Cove or other locations. Hatchery facilities include indoor egg incubation rooms, freshwater raceways for egg rearing, saltwater net pens for fry rearing, water re-use systems, maintenance garage, storage sheds, and a year-round home residence for the hatchery manager and family. The hatchery expanded in the 1990s to include a Chinook yearling rearing program in Green Lake.

Chances of encountering others at the hatchery are high. The hatchery is staffed full-time by the hatchery manager and other staff are present onsite during normal work hours during the busy spring, summer, and fall seasons. At roughly halfway along the road, the hatchery is a natural turnaround point for some walkers, runners and cyclists starting at the gate. The gentle shoreline in Bear Cove, tidal marsh and spawning salmon also make this a destination for wildlife viewing as bears and otter are often seen in the cove.

Hatchery facilities are owned by NSRAA and situated on CBS leased land and State of Alaska-managed tideland and submerged land. The use of the tideland and submerged land parcels is through a 55-year lease (ADL108301) from Alaska Division of Mining, Land, and Water (ADMLW). Hatchery operations are regulated by the ADFG.

Some onsite signage is present, including interpretive panels, placenames, and directional signs. A simple trail sign at the road directs visitors behind the manager's residence to the inconspicuous start of the Medvejie Lake Trail (see Zone 3).

Taking of fish and game resources in this area is managed by ADFG. GMU 4, which includes Baranof Island, lists Bear Cove as a restricted area closed to the taking of brown bears. The closed area encompasses approximately one mile of beach and extends 0.25 miles upland of the beach.

Saltwater boat landing

Near the headwaters of Silver Bay, on the east shore and approximately 0.66 miles north of the Vodopad River, is a small cove suitable for anchoring a small boat. The shoreline slope is relatively gentle, creating a gravel landing ramp about 30 feet wide that leads to a flat clearing of approximately 0.15 acres. The east end of the clearing daylight to another stretch of shoreline that is steeper and rockier but has potential as a boat landing. From the clearing, a single-lane driveway leads 350 feet up a gentle hill to the Green Lake Road near the spur road to Green Lake. The landing, clearing and driveway are remnants of the dam's construction when materials were barged to the location. The site appears to have been partially filled with local rock and gravel and graded for a level surface, including filling in the landing to form a gentler ramp. The flat clearing is void of trees and brush with grass covering the rock and gravel. Vegetation is managed regularly here to maintain the clearing, landing, and driveway. The clearing drains poorly, is often saturated and can form a large puddle, potentially limiting the usable or drivable area.

The clearing is not in view of the main road and offers views of Silver Bay on the west end and to the south on the east end. Trees and brush along the rest of the shoreline provide a visual barrier and some sense of privacy.

The landing area is known to be used by visitors who are hauling small skiffs or kayaks to Green Lake. Despite non-motorized regulations, CBS is permissive of visitors who land their boats here to unload an all-terrain vehicle (ATV) and trailer a small boat up the remaining 0.75 miles of road (and 500 feet elevation gain) to Green Lake. Boats, trailers, or ATVs are sometimes stashed here for a period of time. Anchors, cinder blocks, dunnage, and campfire rings left by previous visitors may also be present at any given time. During different field visits, staff observed a ~10-foot skiff on a trailer in the brush behind signs, a four-wheeler near the landing, campfire rings, and anchor materials.

Encounters with others are unlikely and visitor density low. The size of the clearing may support a large group, but the small size of the cove and landing limits the number and size of boats that can land at one time.

Two signs are installed where the clearing funnels into the driveway. The first is a facility sign and rudimentary map on an otherwise blank, roofed, wooden kiosk. The kiosk is tilted and the roof is decomposing. A second sign on two aluminum posts is adjacent to the kiosk to explain the rules and regulations of the area. This sign is rusting and delaminating with many of the words illegible.

Powerhouse

The powerhouse site is located at the end of Green Lake Road overlooking the east end of Silver Bay. The powerhouse offers no features to facilitate recreation use and is strictly managed for the Project operations. Recreational visits to the Powerhouse area are likely for wildlife watching at the view over Silver Bay, sightseeing and curiosity about the Project's features and function, to reach the "end" of the road without going up the hill to the dam, for the challenge of covering more distance or all road miles in a single visit, or even by accident when attempting to reach the dam and lake.

There is no signage at the junction of the spur road to indicate that the powerhouse is located at the end of the road. The overhead transmission lines and numbered poles continue to the powerhouse and not uphill to the dam and Green Lake.

The facility area is cut into the steep hillside, exposing a rocky cliff behind the powerhouse structures. Chain link wraps some of the cliff to prevent falling debris from damaging the facility. Between the cliff and road is a parking area surfaced with compacted gravel that can accommodate about six vehicles.

The powerhouse is a concrete structure with a footprint approximately 75'x40', two-stories above ground and two-stories below ground. The name "Green Lake Power Plant" is cast in concrete on north side of the building facing the driveway. The powerhouse receives water from the dam via the bifurcated end of a penstock. The structure houses two turbines and generators, a control room, and the draft tube and outflow. The outflow enters Silver Bay about 250 feet north of the natural mouth of the Vodopad River. Outside the powerhouse along its western perimeter one can view the outflow from an open walkway protected by a railing. The interior of the powerhouse is accessed by one of two man-doors or a high-clearance garage door. A portable toilet is located outside of the powerhouse entrance.

Outside the powerhouse is a switchyard and substation with transformers connecting to the overhead transmission line. Only the fence, switchyard, substation, and concrete building are visible to the public.

The powerhouse is perched about thirty feet above Silver Bay. The shoreline is extremely steep and inaccessible directly from the site. Trees are mostly cleared on the shore side, presenting an unobstructed view of Silver Bay from the powerhouse driveway.

Visible across the cove of the mouth of the Vodopad is a gentle shoreline with small drainages and an abandoned shelter on USFS property. This exposed tidal marsh presents a good opportunity for viewing bears and eagles that emerge to feed on spawning salmon. This vantage is unique to the powerhouse site.

Compared to the dam and other features along the road, the powerhouse site is not known as a key recreation destination and is not known as a place for visitors to congregate. Visitors travelling on water may be relatively more concentrated here near the end of Silver Bay and may be visible at times from the powerhouse vantage. Boats are known to anchor occasionally in the cove near the mouth of the Vodopad and/or fish for salmon congregating near the mouth before spawning. Marine cruise tours bring passengers to the end of Silver Bay almost daily during the summer season. The tour operation visits the Silver Bay Homestead site on USFS land outside the Study Area. The homestead site and tour operation structures are not visible from the powerhouse.

CBS Electric Department mechanics and staff visit the powerhouse daily for inspections and preventive maintenance. The probability of encountering staff or seeing their vehicle parked at the site during daytime hours is high. The powerhouse is locked and accessible only to authorized CBS personnel. Access to the substation is controlled with chain link fence and barbed wire signed with warnings of high voltage. There are no interpretive signs or displays illustrating the function and components of the power plant.

2.4.1.3 Zone 3: Trails and uplands above Green Lake Road

Along Green Lake Road are four known and observed informal game trails or hiking routes: a route up Bear Mountain's west ridge, a route to Bear Mountain Lake, the Medvejie Lake Trail, and a route up Cross Mountain's west ridge. Except for the Medvejie Lake Trail, these trails or routes are unmanaged, unofficial, user-created social trails. Other than a somewhat defined point of beginning, they function more as routes and are not classifiable as developed trails. The three routes and Medvejie Lake Trail each support visitors accessing destination landmarks beyond the CBS-owned Study Area and on adjacent USFS land. The inventory for Zone 3 includes descriptions of the portions of these trails and routes that start within the Study Area, as well as descriptions of the destinations and natural features they access outside the Study Area. See GIS Database and Web Map (<https://arcg.is/1Lm9Gi0>) for feature locations, details and photographs.

Medvejie Lake Trail

The Medvejie Lake Trail begins from the hatchery a little more than three miles beyond the Green Lake Road gate. The trail follows the north side of the Medvejie Creek valley, between Bear Mountain and Cross Mountain, to Medvejie Lake. Beyond the lake, the trail continues intermittently to Camp Lake and beyond to access routes into the alpine and across the island to Baranof Warm Springs on the island's east coast. The trail exists for recreational use and to access these scenic lakes and alpine destinations. The trail gains about 200 feet elevation gradually over the 0.75 miles to the Medvejie Lake and takes about one hour.

On the Green Lake Road at the NSRAA Medvejie Hatchery, a simple sign points visitors to turn left and walk behind the hatchery employee housing. A driveway leads about 100 yards to a cleared gravel area where some hatchery equipment and materials are staged. Here, a second and final directional sign points to the creek bank from where a trail clearing is visible on the other side. There are no directional or informational signs on the trail north of the creek.

From here, the trail begins with a natural ford crossing of Medvejie Creek. The creek may be swift, deep, and impassible depending on the time of year, such as during the spring from snowmelt runoff. The stream banks are steep and rocky, indicative of regular flooding and fast currents.

Once across the creek, the trail tread is continuous and obvious, but narrow (single lane) and rough. It is suitable for foot traffic only. While it is not formally maintained or developed, there are many locations where downed trees blocking the trail are cut to maintain passage and avoid reroutes. Some downed trees remain, requiring a short duck, crawl, or straddle. Vegetation is allowed to encroach into the trail but is kept clear by regular use by humans and animals. Debris from rockslides or avalanches are not cleared but crossed over.

There are no intact structures along the trail. A user-constructed footbridge had been in place for the initial creek crossing but was swept away by flooding in 2020. An old log abutment (used to constrain river channel migration) on the bank east of the trail is visible. At the lake, remnants of a small user-built boat storage rack is evident but it is no longer intact.

The well-defined trail stops at the west end of Medvejie Lake. The lake is scenic, clear and blue, and surrounded by steep mountainsides. To venture further up the Medvejie valley typically requires paddling one mile across the lake to find another section of trail. While some visitors travel on foot along the north side of the lake instead of paddling, the hillside terrain is steep, prone to rockslides and avalanche, and lacks a discernable trail. A small, lightweight skiff and set of paddles is left at the lake for the crossing and journeys farther into the backcountry. Medvejie Lake does not support a resident fish population (it is too cold to support vegetation and organic growth) and is not stocked.

Medvejie Lake and the trail are well-known destinations both as day-hikes and for longer, multi-day backcountry adventures. Visitors are unlikely to encounter other parties on the trail but should expect to see hatchery employees and residents at the start of the trip and may find the trailhead to feel intrusive of the employee residence. Medvejie is derived from the Russian word for bear. Signs of bear and bear encounters are possible as the valley and trail are well-used by bears who regularly visit the hatchery at Bear Cove when salmon are spawning.

Beyond Medvejie Lake, a game trail continues along the northern shore and up the valley to Camp Lake. Camp Lake hangs above the Medvejie Valley and is a well-known backcountry camping destination, though also undeveloped. The trail is also part of a route known as the Baranof Cross-Island Traverse, connecting Bear Cove on the west side of Baranof Island to

Baranof Lake and Baranof Warm Springs on the eastside of Baranof Island. Baranof Warm Springs Bay is a remote destination with lodges, boardwalk, and natural hot springs. Most visits are by chartered boat or plane as part of a tour. The Medvejie Lake Trail and Cross-Island route offers instead a self-led, expert-level, challenging, multi-day alpine traverse experience. This trip typically culminates with a water or air taxi to or from Baranof Warm Spring Bay.

Bear Mountain West Ridge Route

Bear Mountain's summit and west face are visible from much of Sitka, including Sawmill Creek Road and Silver Bay, making it an attractive destination for adventurers and peak-baggers. The Project and Green Lake Road provide the best access to the mountain, although there is no developed access point, trailhead, or trail to reach Bear Mountain's alpine ridges or 4,250-foot elevation summit.

Along Green Lake Road, roughly 0.5 miles beyond the locked gate at pole 45, is a user-made social trail that supports a route to Bear Mountain's alpine via the west ridge. The road affords enough solid shoulder for a vehicle to park out of the roadway, but there is no pullout or widening. A faint path is visible under the powerline through berry brush and fallen trees. Users have sawn through the downed trees that accumulate when the powerline is cleared. After about 100 feet of brush, the trail enters the forest. The trail is obvious here in contrast to the surrounding, young and tightly growing hemlock. The tread is narrow and natural with some rock and blowdown timber obstacles. After another 200 feet, the trail enters the old growth forest where the trees are large and sightlines are longer. Here, the user-worn trail tread gradually becomes less distinct, then intermittent, and eventually disappears altogether to require route finding. The terrain is steep and obstacles are common, naturally occurring, often substantial and sometimes impassable. The most common obstacles are fallen timber, encroaching vegetation, steep cliffs, small streams, and landslides or avalanche debris. There are no built structures or drainage features, or improvements for fording streams. No signs mark the trail point of beginning and there is no formal route identification along the way. The steep and rugged environments surrounding the route are natural and unmodified. This remote, primitive recreation setting provides opportunities to experience solitude, risk taking, challenge, and self-reliance.

Treefall may influence the route's evolution as moving around the obstacle will often be less effort than clearing massive, downed trees from the trail. Multiple instances were observed of an old trail being blocked by treefall and a newer social route developing around it. These frequent changes combined with low visitation may slow the development of a lasting and obvious social route. For this and other reasons, the trail often disappears making navigation challenging. To aid in navigation, users are known to flag their route with surveyors' tape while ascending then retrace their path down.

At roughly 800 feet elevation, land ownership and management changes from CBS to USFS. Beyond the road, powerline clearing, dense hemlock (indicative of past clearcutting), and short section of social trail, there are no major signs of human use or management of the area. A visitor is unlikely to encounter others on this route.

Primary recreation activities for visitors using this route are likely hiking, peak-bagging, hunting, backcountry skiing or snowboarding, and photography.

Bear Mountain Lake Route

Bear Mountain Lake is a small, 100-acre alpine lake east of Bear Mountain's summit and at a lower elevation of 2,750 feet. The preferred route to reach Bear Lake begins at Green Lake Road pole 82 and climbs about 2,500 feet in roughly 2.1 miles. Of the three undeveloped routes (Bear Mountain via the west ridge, Bear Mountain Lake, and Cross Mountain via the west ridge), Bear Lake is the most well-known and popular. The alpine lake is attractive for its scenic qualities and, as a destination, is less exposed and steep than the Bear Mountain and Cross Mountain peaks. The route is used to reach the lake and the surrounding alpine for hiking, wildlife viewing, peak-bagging, hunting, and photography.

There is no developed access point, trailhead, or trail to reach Bear Mountain Lake, though there are pullouts along Green Lake Road near the most common points of beginning. One of these pullouts, at Pole 78, features the green project sign that labels "Bear Mt. Trail" as a location along the road. This pullout is near a steep drainage. Though this is not the preferred point of beginning, some visitors do begin their trek up Bear Mountain from this drainage. Disturbed ground and surveyor's tape mark where hikers have gone before. There are cliffs and steep slopes all around the creek requiring technical scrambles or resulting in dead ends.

Instead, farther along Green Lake Road at Pole 82 is a well-worn but hard-to see path up a steep cliff against the road. After a short scramble along the cliff edge and through berry brush, one enters an open, mature forest. While this is not a developed trail, it features a distinct, user-worn, narrow trail tread and periodic flagging and directional notches blazed into the trees. Multiple routes are visible through the early forest and the trail tread gradually becomes less distinct as obstacles require several reroutes. Major blowdowns and landslides have blocked older segments of the route and new routes find a way around them. Newer and older surveyor's tape left on trees also indicated recent route changes around such obstacles. Navigation is somewhat more challenging on this route as steep cliffs along the creek and on the mountainside make for fewer route options. The correct route must be chosen to avoid these obstacles and hazards.

There are no built structures, drainage features, or improvements for fording streams along this route. No signs mark the trail point of beginning and there is no formal route identification along the way. The steep and rugged environments surrounding the route are natural and unmodified. This remote, primitive recreation setting provides opportunities to experience solitude, risk taking, challenge, and self-reliance.

At roughly 800 feet elevation, land ownership and management changes from CBS to USFS. There are few signs of human use or management of the area, though the hatchery facility and Green Lake Road, while eventually distant, are visible from much of the route. A visitor is unlikely to encounter others on this route.

Cross Mountain

“Cross Mountain,” officially named Cupola Peak (elevation 3,976 feet), gets its local name from the cross-shaped, permanent snow field on the mountain’s north face. The topographically prominent mountain and its “cross” are visible from Sitka in the west. It is one of the higher and more prominent peaks immediately surrounding the Study Area. The summit offers panoramic views of Silver Bay, Sitka Sound, Sitka and Sawmill Creek, Green Lake, Green Lake Road, and surrounding peaks including Mount Bassie and Baranof Island’s high point at 5,390 feet elevation.

The common route is roughly 2.5 miles and mostly follows the west ridgeline to the peak. It is a tough and challenging route, undeveloped and intermittent, and not classifiable as a trail. The route begins from Green Lake Road at pole 102 about 3.5 miles beyond the locked gate and 0.5 miles beyond Medveje Hatchery. An unimproved pullout on the left side of the road, about 1,600 square feet in area, provides space for a few cars and to stash one’s bike. From here, a visible path through berry brush marks the obvious entrance to the forest. The route generally takes the shortest, steepest, fall-line path up the mountainside for about 0.3 miles to the west ridge, meeting the ridgeline at about 800 feet elevation. Prior to reaching the ridge, there is not distinguishable trail tread. Visitors must choose a route up the steep mountainside, sometimes scrambling, climbing over or around blowdown, or retracing steps after encountering an impassible obstacle. While there are visible disturbances in the moss and soil on the hillside from human and wildlife, there is no singular or obvious path. A recent landslide to the left provides a natural landmark against which to orient on the climb up to the ridge. There are no signs, marking, or other wayfinding.

Once on the ridgeline, the path is more constrained by topography and thus more obvious, though intermittent, worm tread. At 1,500 feet elevation on the ridgeline visitors cross from CBS lands to USFS lands, and between 2,000 and 2,500 feet, visitors surpass the tree line and begin to experience views above the forest. The route requires some third class scrambling on very steep sections, and possibly fourth class climbing on the rocks and snow along the

exposed ridges leading to the summit. The hike is strenuous and may take more than three hours from the trail beginning to the summit, not including the bike along the road. The ridge above tree line may be snow-covered in winter and spring.

Indigo Lake is a well-known alpine lake named for its deep blue color. The lake is about 1.5 miles beyond the Cross Mountain summit along ridgeline to east. Indigo Lake rests at 2,500 feet elevation and is surrounded by extremely steep walls to peaks as high as 4,000 feet, sheltering it from view of any human development. The setting character of Indigo Lake and the mountains deeper into Baranof Island's backcountry are more remote and secluded and feature no signs of human development. The Cross Mountain route from Green Lake Road is used to access Indigo Lake as well as higher peaks, glaciers and snowfields farther east that offer opportunity for more challenging alpine climbing and backcountry skiing experiences.

Due to the distance to access and challenge on this route, visitors are not likely to encounter other parties. Those who do recreate on this route likely possess advanced skills and greater fitness.

Visitors are unlikely to encounter any land management presence on the route, and there are no signs or structures. CBS owns and manages the lands around Green Lake Road and the shoreline up to elevations between 1,200 and 2,000, beyond which is USFS land.

2.4.1.4 Zone 4: Green Lake and Dam

This zone includes Green Lake, Green Lake Dam, and the use-at-your-own-risk boat storage and landing area on the lake's west shore. See GIS Database and Web Map (<https://arcg.is/1Lm9Gi0>) for feature locations, details, and photographs.

Green Lake is a freshwater lake fed by the Vodopad River and artificially expanded by the Green Lake Dam near the Vodopad's western outlet into Silver Bay. The lake is about 1,200 surface acres and 250 feet deep with a drainage area of about 28 square miles. The lake is oblong, spanning nearly four miles from east to west. To the south of Green Lake is the gentle and rolling Lucky Chance ridge, and to the north are the steep mountains around Indigo Lake and the glaciated snowfields around the highest peaks on Baranof Island.

The shoreline surrounding the lake is mostly steep and rocky and only the east and west ends offer the gentlest landings. Visitors to Green Lake either walk or bike Green Lake Road from Herring Cove, or boat to the saltwater boat landing, then make their way up the spur road to the lake and dam. The saltwater landing is crucial for those bringing hard-sided boats to the lake. Boat motors are allowed in Green Lake.

The lake is primarily accessed from Green Lake Road, though float plane landings are not prohibited and are known to have occurred in the past.

Along the west end of the lake is a rock driveway that leads to a rough, rocky ramp into the lake where visitors, staff, and partners can launch boats. Several small paddle boats (kayaks, canoes, aluminum skiffs with transoms) are stashed along the edge of the forest by private parties at this end of the lake for their future use. There is no formal storage facility and no formal permission required from CBS to store one's boat here, it is simply a public use and store-at-your-own-risk opportunity.

Strong east winds funnel between the mountains and across the lake, causing large logs and root wads to accumulate on the west end of the lake. Piles of heavy tangled debris can make access to the lake and launching a boat difficult. A floating boom keeps debris from entering and impacting the dam structure.

South of the lake and east of the mouth of the Vodopad is Lucky Chance Mountain and Lucky Chance Ridge (both are outside the Study Area). The alpine terrain on this ridge and mountain system is uniquely gentle compared to the steep and technical mountains along the road. For this reason, Lucky Chance Ridge is a desirable hiking and camping destination. The ridge is accessed from Silver Bay by boat rather than Green Lake Road, Green Lake, or the dam, as there is no bridge across the Vodopad and the lake shoreline near the dam is prohibitively steep.

Sport fishing in Green Lake is regulated by ADFG. Bait fishing is currently allowed year-round. The lake is home to a large and productive population of brook trout, including the largest (20") ever caught in the state in 2012. Brook trout are not native to Alaska but were planted in Green Lake and others prior to statehood. During the summer NSRAA maintains Chinook hatchery rearing pens located in Green Lake. NSRAA store Chinook rearing net pens at the south end of the dam site parking area when not in use. Throughout the summer NSRAA staff can be found working at the boat launch area or maintaining the floating pens in Green Lake about 1,000 feet beyond the debris boom.

The dam is managed by CBS whose staff visit the facility at a minimum twice per week, or daily to perform non-routine inspections and preventive maintenance. CBS staff also use the boat ramp to reach and remove debris caught in the floating boom.

2.4.2 Recreational Use

The recreational use portion of this study consists of multiple methods: automated counting and monitoring of visitors, visitor surveys, trailhead observations, review of cellular device location data, and review of internet trip reports. Data collection was initiated in May 2025 and will continue through May 2026. Since data collection is ongoing, complete results of recreational use in the Study Area will be reported in the USR.

2.4.2.1 Automated Counting and Monitoring of Visitors

CBS staff continue to maintain the automated counting equipment and regularly downloads data from the counter and cameras. Data from infrared counters, magnetic vehicle counters, and camera traps continue to be reviewed, organized, and analyzed. Over the course of the 2025 study season, the equipment has performed reliably, withstood weather conditions, produced informative data, experienced relatively few problems with vandalism and environmental interference, and provided good coverage of the Project area and some measure of redundancy at areas of highest interest.

Preliminary results provided below reflect a sampling period between May 19, 2025, through October 31, 2025. Results are preliminary and subject to change as new data is collected, outliers are examined and accounted for, and additional analyses performed. Complete results describing findings from these efforts will be available in the USR. Preliminary results are presented below by zone (Figure 2-3 through Figure 2-6) and are limited to estimated daily total visits. In these preliminary results, a “visit” is defined as the entry of one human individual onto the monitored facility, presumably for leisure activities, distinct from gainful work. Visits quantified in preliminary results are also distinct from “vehicle counts.” Additional analyses will be conducted once complete results are available, including comparisons to visitation estimates produced from cellular device location data procured and shared by CBS Parks & Recreation.

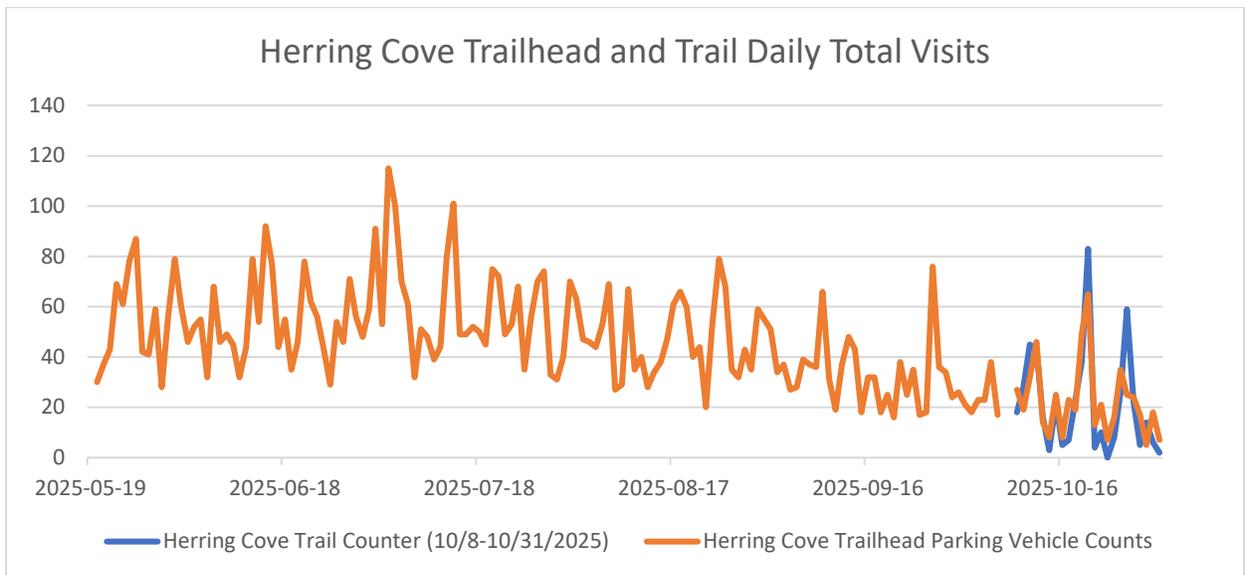
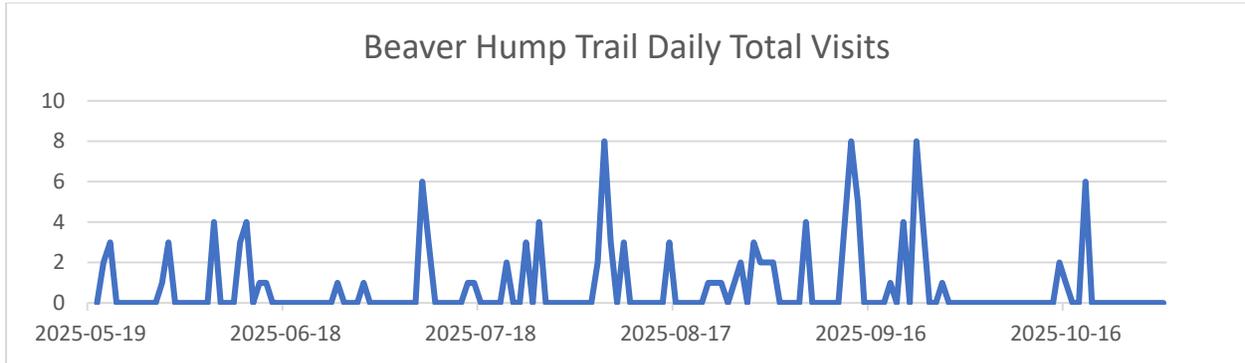


Figure 2-3. Zone 1 - Daily Total Visits Preliminary Results

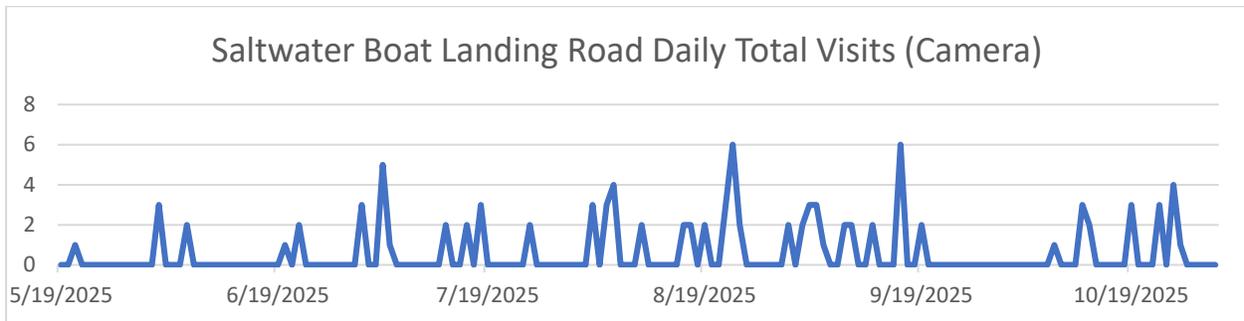
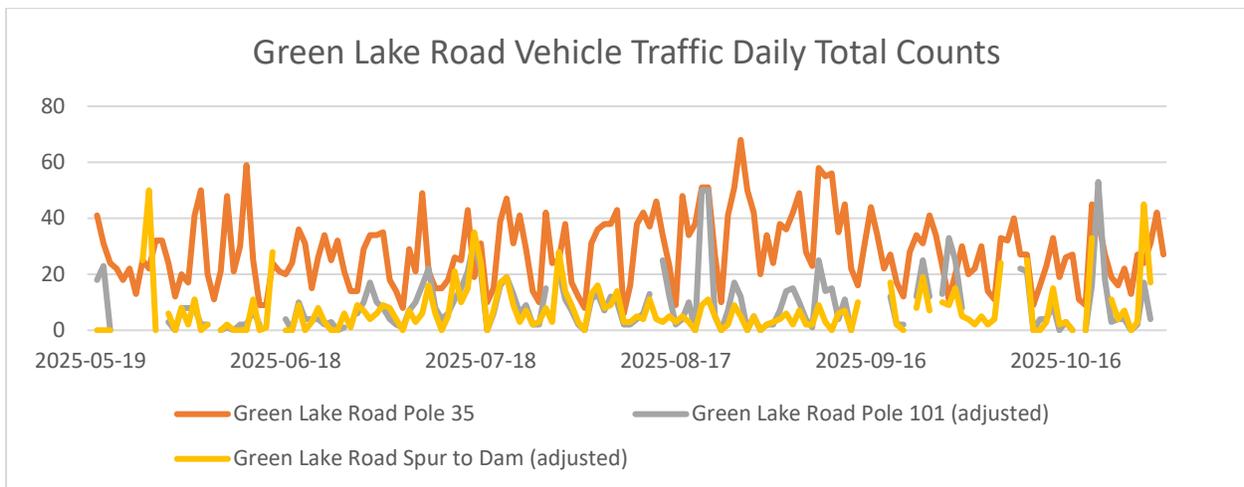
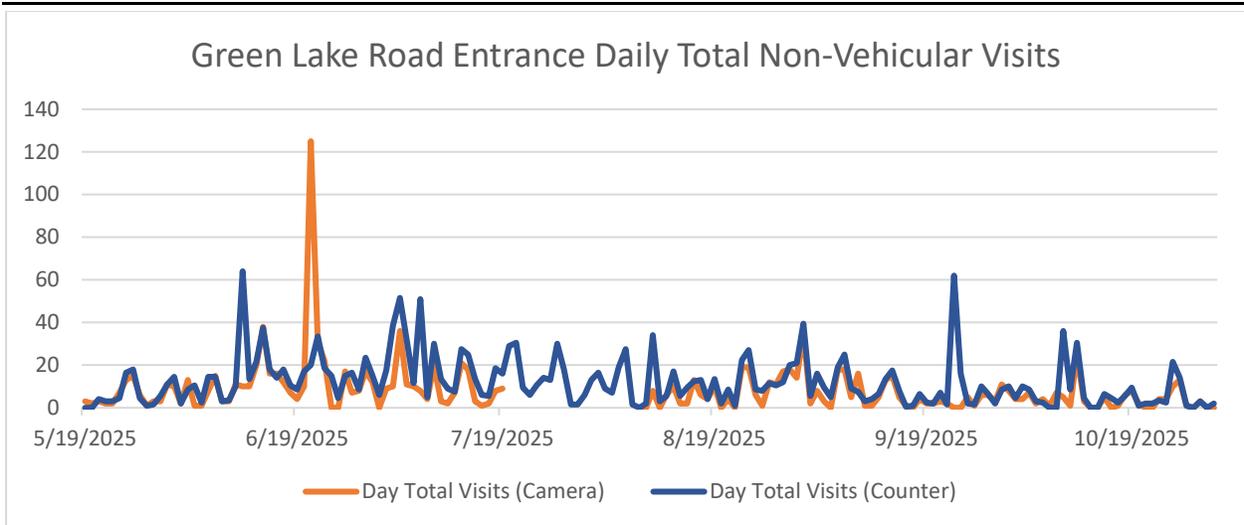


Figure 2-4. Zone 2 - Daily Total Visits Preliminary Results

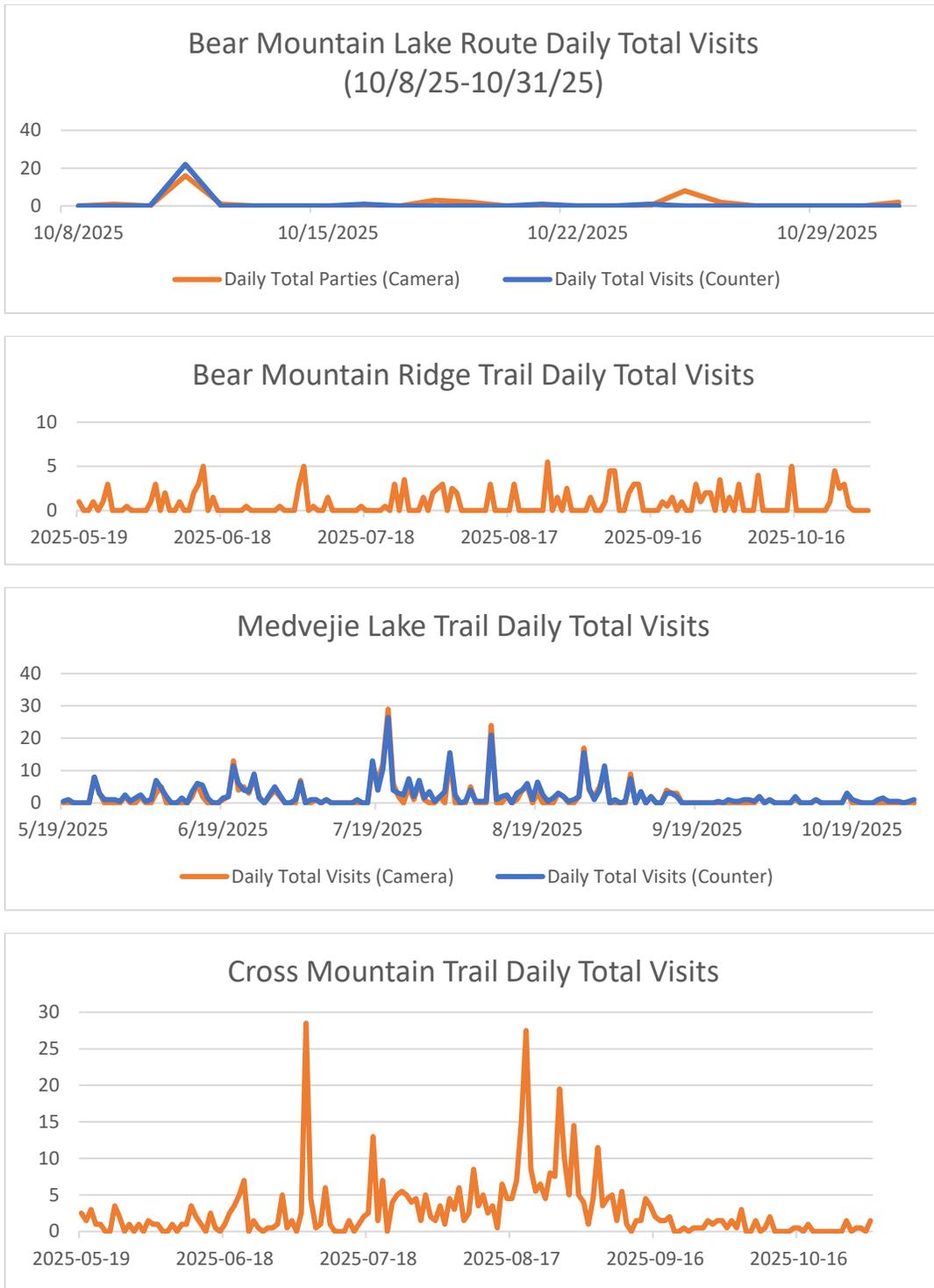


Figure 2-5. Zone 3 - Daily Total Visits Preliminary Results⁴

⁴ Bear Lake Route camera installed in October 2025

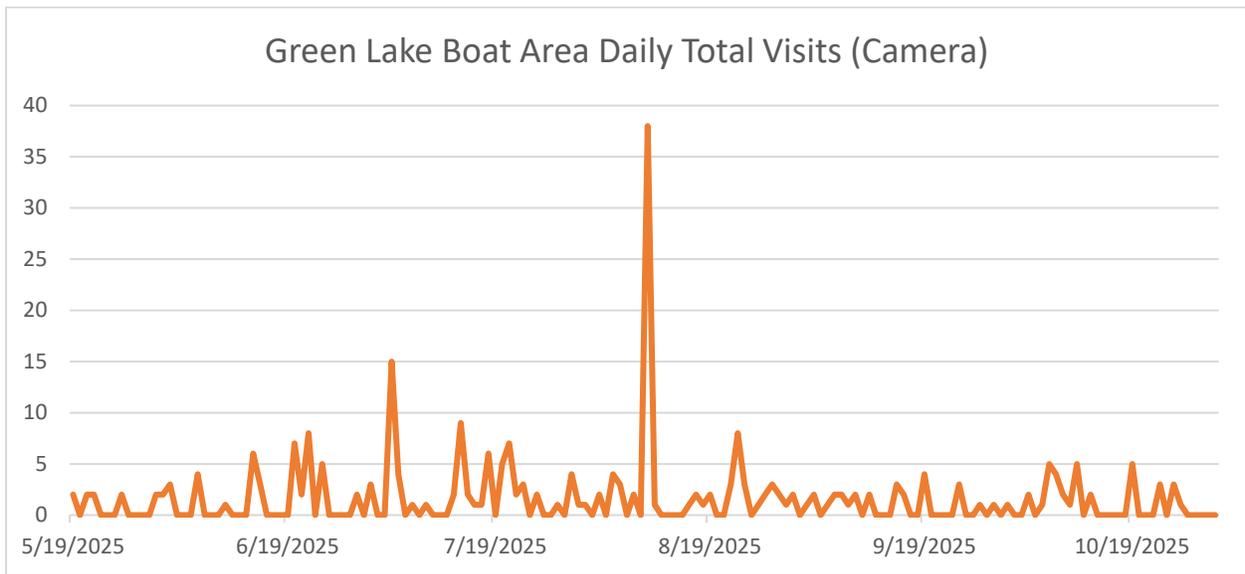
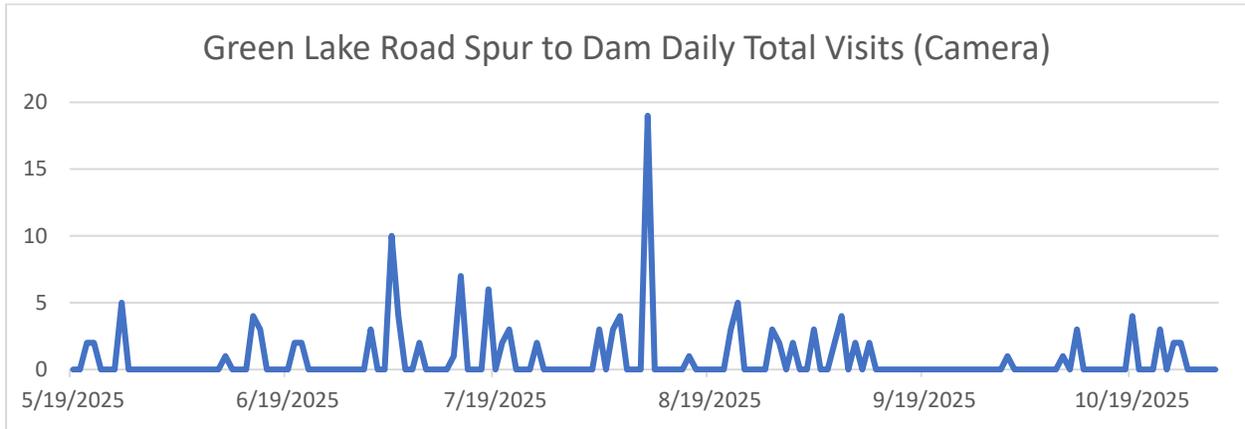


Figure 2-6. Zone 4 - Daily Total Visits Preliminary Results

2.4.2.2 Visitor Surveys

During 2025, researchers conducted in-person visitor intercept surveys at the Herring Cove trailhead on a total of 14 days between May 14-19 and October 1-8, 2025. As of October 31, a cumulative total of 106 online and in-person visitor surveys have been completed. Online self-select surveys will continue through May 2026. Results provided in this ISR reflect a sampling period between May 14, 2025, through October 31, 2025. Results are preliminary and subject to change as new data is collected and additional analyses performed. Complete results describing findings from the visitor use survey will be available in the USR. A comprehensive set of preliminary results can be found in Appendix D. Visitor Use Survey Preliminary Results. Pages that may display personal information are redacted for confidentiality.

During the intercept survey sampling period at Herring Cove trailhead staff observed or encountered a total of 246 visitors between May 14 and May 19, 2025, and 85 visitors from October 10 through October 8, 2025 (Figure 2-7). In May, 24.8% (61) responded to and submitted a visitor survey while at the trailhead, 19.5% (48) took a picture of the QR code to take the survey later but did not complete a survey at the trailhead, and 55.7% (137) did not stop to talk to survey administrators or declined to submit a survey or take the QR code. In October, the response rate was fewer, with 12.9% (11) completing a survey at the trailhead, 30.6% (26) volunteering to take the survey later via QR code, and 56.5% (48) declining to interact with or take the survey from administrators.

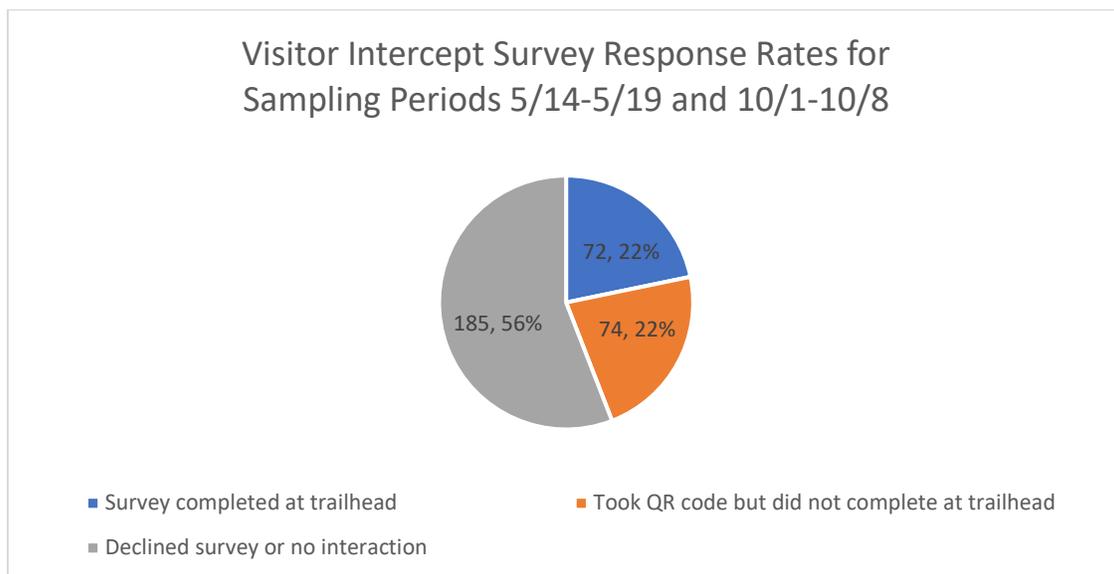


Figure 2-7. 2025 Visitor Intercept Survey Response Rates

Of the 106 surveys submitted between May 14 and October 31, 2025, 51 (48%) were intercept via digital tablet, 21 (20%) were intercept via paper survey, and 34 (32%) were self-administered via the online survey link (Figure 2-8). In-person intercept sampling at the Herring Cove trailhead accounted for 67.9% of survey responses between May 14 and October 31, 2025.

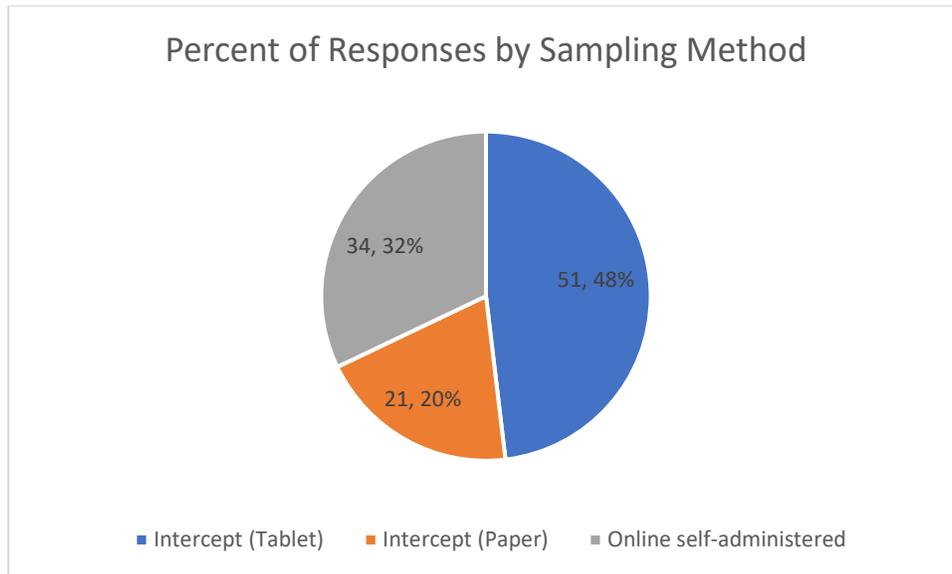


Figure 2-8. Percent of Survey Responses by Sampling Method

Respondents can take the survey multiple times to describe different visits and describe a visit to the Study Area that occurred at any date within the last year. Data from each survey is not necessarily associated with a visit from the same date of the response submittal. From May 14 to October 23, most responses described trips in May (67.9%; 72), followed by October (19.8%; 21), and 12.3% (13) throughout July and September (Figure 2-9). No survey responses were generated during June 2025. Only two respondents noted taking the survey more than once for different visits.

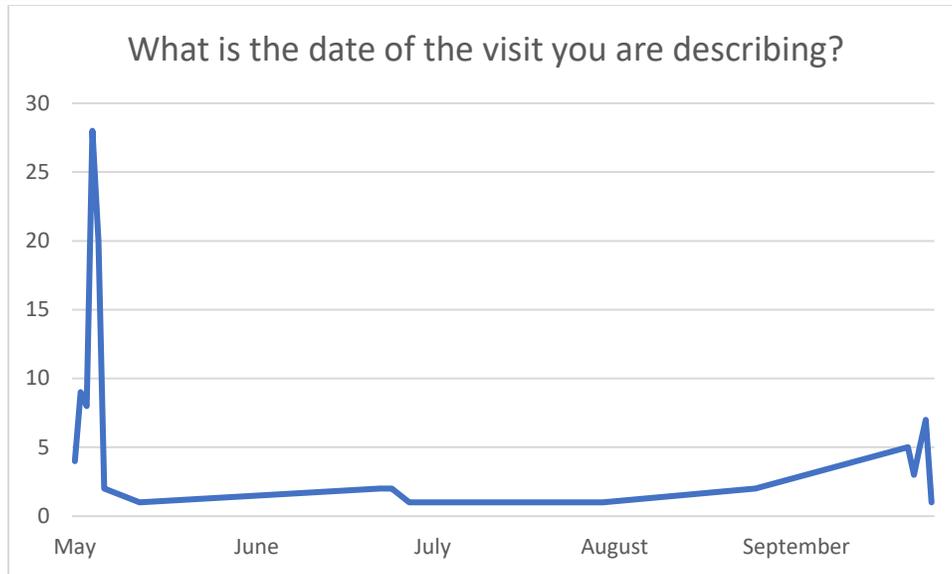


Figure 2-9. Dates of Visits Described in Completed Surveys

Most respondents reside in the Sitka area (63.2%; 67) followed by visitors from other US states (24.5%; 26), other parts of Alaska (7.5%; 8), international locations (2.8%; 3), and other (1.9%; 2) (Figure 2-10). Those visitors not from Sitka were most often independent travelers travelling for work (29.8%) or vacation (25.5%) or seasonally employed in Sitka (19.2%) (Figure 2-11).

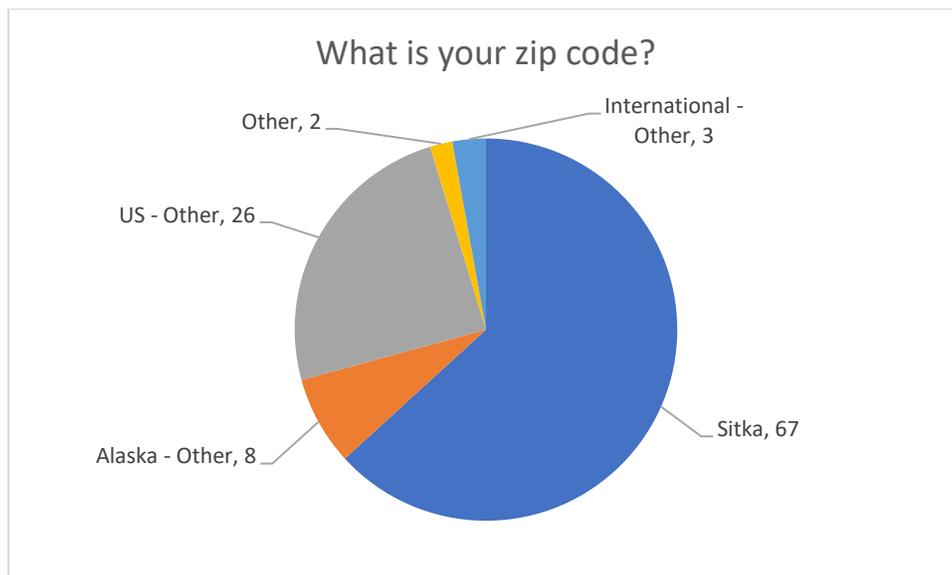


Figure 2-10. Visitor Zip Code by Category

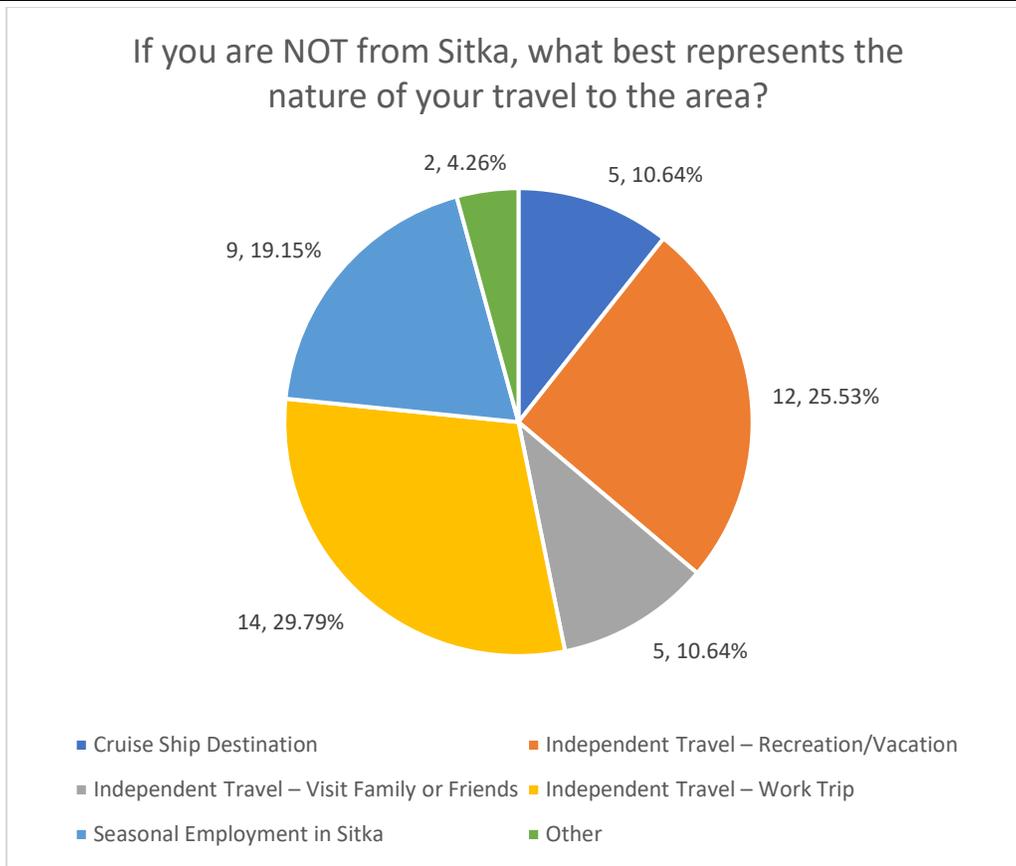


Figure 2-11. Nature of Travel for Non-Local Visitors

2.4.2.3 Trailhead Observations

During 2025, researchers conducted a total of 17 days of in-person trailhead observations at the Herring Cove trailhead between May 11-19 and October 1-8. Data collected from these trailhead observations will be reported in the USR in conjunction with the results from the automated counting and monitoring of visitors and visitor surveys portions of this study.

2.5 Discussion and Findings

2.5.1 2.5.1 Facility Inventory

A complete analysis and discussion of the facility inventory, including recommendations, is contingent on the results of the recreation use study and will be provided as part of the USR.

Upon initial review, the remote and undeveloped Green Lake area presents a unique niche in the recreation landscape in the Sitka area. In contrast to other, more developed trails and outdoor recreation sites near the community, visitors to the Green Lake area can reliably experience solitude, risk, and challenge in a natural, primitive setting free from many common

management controls. The utility road provides only basic access, effectively limiting who can reach the area's destinations and thus reducing crowding and preserving important opportunities for less crowded social settings and more arduous adventures. These areas can be critical for locals who may want to escape crowds of cruise ship passengers and tourists near town during the summer tourism season.

2.5.2 2.5.2 Recreational Use

Data on recreational visitor use continues to be collected through May 2026. Analysis and discussion of the significance of the recreation study results will be prepared after data collection concludes and reported in the USR.

2.6 Study Variances and Modifications

The approved study plan proposed to equip CBS staff to conduct regular trailhead observations throughout the study year. During the first field study period in May 2025, the study team found that observations while stationed at the trailhead throughout each day during field reconnaissance and while administering intercept surveys gave sufficient insight into the patterns and types of use of the trailhead area, the end of Sawmill Creek Road, and the beginning of Green Lake Road before the locked gate. More longitudinal quantitative information about use levels at the trailhead will be gained from vehicle and trail counters, further reducing the need for regular or systematic documentation of CBS staff observations. It also became apparent that having CBS mechanics conduct regular trailhead observations would not be feasible with their regular working schedule, as their workday lacks the flexibility needed for this and they typically pass the trailhead at consistent times of day in the early morning and midafternoon.

3.0 References

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Appendix A. U.S. Forest Service Recreation Opportunity Spectrum and Planning Frameworks

Physical, Managerial, and Social Characteristics for Each ROS Class

Table 6. Summer Season Physical, Managerial, and Social Characteristics for Each ROS Setting.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Physical Theme	<p>Predominately unmodified; naturally evolving, vast, and remote.</p> <p>Typically 3 miles or more from designated motorized routes and areas and large in scale (5,000 or more acres).</p>	<p>Predominately natural/natural appearing; rustic improvements to protect resources.</p> <p>Typically ½ mile or more from designated motorized routes and areas and moderate to large in scale (2,500 or more acres).</p>	<p>Predominately natural appearing; motorized use visible and audible.</p> <p>Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres).</p>	<p>Natural appearing with nodes and corridors of development, such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts.</p> <p>Typically within ½ mile of designated improved roads.</p>	<p>Altered landscapes with cultural emphasis, such as rural, pastoral, or agricultural.</p> <p>Administrative sites, historic complexes, and moderately developed resorts are typical.</p>	<p>Highly developed site modifications and facilities. Regionally significant destination resorts, as well as large, highly developed visitor centers are examples of urban nodes within National Forest System lands.</p>
Infrastructure (access and facilities)	<p>Access: Nonmotorized trails; typically trail class 1; travel on foot and horse; no motorized travel; no mechanized travel within designated wilderness.</p> <p>Recreation sites: Typically development scale 0; no improvements.</p> <p>Sanitation: No facilities; leave no trace.</p> <p>Water supply: Undeveloped, natural.</p> <p>Signing: Minimal; constructed of rustic, natural materials.</p> <p>Interpretation: Through self-discovery.</p> <p>Water crossing: Minimal; pedestrian only; made of natural materials.</p>	<p>Access: Nonmotorized routes; trail classes 1-2 typical. Foot, horse, mountain bike use; no motorized travel. Closed and temporary roads may be present.</p> <p>Recreation sites: Typically development scale 0-1, sometimes development scale 2. Minor investments to protect natural and cultural resources.</p> <p>Sanitation: No facilities; leave no trace.</p> <p>Water supply: Undeveloped; natural.</p> <p>Signing: Rustic, natural materials.</p> <p>Interpretation: Typically self-discovery.</p> <p>Water crossing: Rustic structures for foot, horse, and bicycle traffic.</p>	<p>Access: Motorized routes; maintenance level 2 roads and trail class 2 typical; off-highway vehicles allowed on designated routes and areas.</p> <p>Recreation sites: Typically development scales 0-2; purpose of infrastructure is to protect natural and cultural resources.</p> <p>Sanitation: Limited facilities; outhouses may be in areas of concentrated use.</p> <p>Water supply: Undeveloped; natural.</p> <p>Signing: Rustic, made of natural materials.</p> <p>Interpretation: Self-discovery; located offsite or at trailheads.</p> <p>Water crossing: Rustic structures or bridges.</p>	<p>Access: Typically maintenance level 3-5 roads; maintenance level 2 roads may also be present. Typically trail classes 3-4. Highway vehicles, off-highway vehicles, and other motorized travel on designated routes.</p> <p>Recreation sites: Typically development scales 0-3, sometimes development scale 4.</p> <p>Sanitation: Typically vault toilets.</p> <p>Water supply: Often developed.</p> <p>Signing: Variety of materials; blend with natural setting.</p> <p>Interpretation: Simple roadside signs; some interpretive displays.</p> <p>Water crossings: Bridges, natural materials.</p>	<p>Access: Typically maintenance level 3-5; roads and trail classes 3-5; mass transit sometimes available.</p> <p>Recreation sites: Typically development scale 4-5.</p> <p>Sanitation: Flush toilets.</p> <p>Water supply: Developed; showers common.</p> <p>Signing: Natural and synthetic materials.</p> <p>Interpretation: Roadside exhibits, interpretive programs, etc.</p> <p>Water crossings: Bridges that accommodate highway vehicles, recreation vehicles, and heavy equipment.</p>	<p>Access: Typically maintenance level 4-5; roads and trail classes 4-5; mass transit often available.</p> <p>Recreation sites: Typically development scale 5, sometimes development scale 4.</p> <p>Sanitation: Flush toilets.</p> <p>Water supply: Hot water, showers.</p> <p>Signing: Extensive.</p> <p>Interpretation: Exhibits in staffed visitor centers; highly developed and formalized exhibits.</p> <p>Water crossings: Bridges for highway vehicles, buses, recreation vehicles, and heavy equipment.</p>

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Vegetation	Natural, no treatments except for fire use.	Treatments enhance forest health and mimic natural vegetation patterns.	Treatments improve forest health and mimic natural vegetation patterns.	Vegetation treatments are evident but in harmony with the scenic character.	Treatments often visible, blend with landscape.	Often planted, manicured, and maintained.
Scenic Integrity	Very High	Typically High	Typically High to Moderate	Ranges from High to Low	Ranges from High to Low	Ranges from High to Low
Managerial	Little to no onsite regimentation; few encounters with Forest Service personnel. Visitor use management is largely offsite and accomplished through regulation, permitting, and other visitor use management techniques.	Minimum or subtle signing, regulations, or other onsite regimentation. Low encounters with Forest Service personnel, partners, or volunteers working on behalf of the agency.	Minimum, subtle onsite controls; designated motorized routes and areas.	Signs and regulations present but typically subordinate to the setting. Moderate likelihood of encountering Forest Service personnel, volunteers, or partners working on behalf of the agency.	Obvious signing (regulation and information); education and law enforcement staff. Motorized and mechanized travel common and often separated.	Intensive onsite management, obvious signs, and staffing; education and law enforcement available. Motorized and mechanized travel on designated routes.
Social	Very high probability of solitude; closeness to nature; self-reliance. High challenge and risk; little evidence of people. Typically 6 or fewer encounters with other parties on trails, and fewer than 3 parties visible from camping sites.	High probability of solitude; closeness to nature; self-reliance. High to moderate challenge and risk. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate to high probability of solitude. High to moderate degree of risk and challenge. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate evidence of human sights and sounds; moderate concentration of users at developed recreation sites; little challenge or risk is expected in these outdoor settings due to nearby amenities and management controls; opportunities to socialize.	High interaction among users is common. Other people in constant view. Little challenge or risk associated with being outdoors.	High degree of interaction with people. People are in constant view. Challenge and risk are unimportant, except for competitive sports.

Table 7. Winter Season Physical, Managerial, and Social Characteristics for Each ROS Setting.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Physical Theme	<p>Predominately unmodified; naturally evolving, vast, and remote.</p> <p>Typically 3 miles or more from designated motorized routes and areas and large in scale (5,000 or more acres).</p>	<p>Predominately natural/natural appearing; rustic improvements to protect resources.</p> <p>Typically ½ mile or more from designated motorized routes and areas and moderate to large in scale (2,500 or more acres).</p>	<p>Predominately natural appearing; motorized use visible and audible</p> <p>Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres).</p>	<p>Natural appearing with nodes and corridors of development, such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts.</p> <p>Typically within ½ mile of designated improved roads.</p>	<p>Altered landscapes with cultural emphasis, such as rural, pastoral, or agricultural. Administrative sites, historic complexes, and moderately developed resorts are typical.</p> <p>Not remote; often near other (non-Forest Service) rural settings and communities.</p>	<p>Highly developed site modifications and facilities. Regionally significant destination resorts, as well as large, highly developed visitor centers, are examples of urban nodes within National Forest System lands.</p> <p>Often close to towns and cities.</p>
Infrastructure (access and facilities)	<p>Access: No roads or motorized trails.</p> <p>User-created ski and snowshoe routes.</p> <p>No motorized over-snow vehicles are present.</p> <p>No mechanized travel within designated wilderness is present.</p> <p>No other infrastructure or facilities typically present.</p>	<p>Access: Ungroomed nonmotorized trails with some trail markers, user-created routes, and areas for ski or snowshoe use.</p> <p>No over-snow vehicles are present.</p> <p>No other infrastructure or facilities typically available.</p>	<p>Access: Ungroomed but marked over-snow vehicle routes and areas.</p> <p>Ungroomed ski trails.</p> <p>Over-snow vehicle use on designated routes and areas.</p> <p>Few, if any, facilities or services available.</p>	<p>Access: Some plowed roads and groomed over-snow vehicle routes.</p> <p>Groomed ski trails may also exist.</p> <p>Warming huts, cabins, and rustic facilities may be present.</p>	<p>Access: Groomed over-snow vehicle routes, groomed cross country skiing, skate skiing, and downhill ski and snowboard trails.</p> <p>Over-snow vehicle use on designated routes and areas.</p> <p>Full-service facilities and resorts often present.</p>	<p>Access: Groomed over-snow vehicle routes, groomed cross country skiing, skate skiing, and downhill ski and snowboard trails.</p> <p>Full-service facilities, visitor centers, resorts, and lodging often present.</p>
Vegetation	<p>Natural, no treatments except for fire use.</p>	<p>Treatments enhance forest health and mimic natural vegetation patterns.</p>	<p>Treatments improve forest health and mimic natural vegetation patterns.</p>	<p>Vegetation treatments are evident but in harmony with the scenic character.</p>	<p>Treatments often visible, blend with landscape.</p>	<p>Often planted, manicured, and maintained.</p>
Scenic Integrity	<p>Very High</p>	<p>Typically High</p>	<p>Typically High to Moderate</p>	<p>Ranges from High to Low.</p>	<p>Ranges from High to Low</p>	<p>Ranges from High to Low</p>

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Managerial	Little to no onsite regimentation; few encounters with Forest Service personnel. Visitor use management is largely offsite and accomplished through regulation, permitting, and other visitor use management techniques.	Minimum or subtle signing, regulations, or other onsite regimentation. Low encounters with Forest Service personnel, partners, or volunteers working on behalf of the agency.	Minimum, subtle onsite controls; designated motorized routes and areas.	Signs and regulations present but typically subordinate to the setting. Moderate likelihood of encountering Forest Service personnel, volunteers, or partners working on behalf of the agency.	Obvious signing (regulation and information); education and law enforcement staff. Motorized and mechanized travel common and often separated.	Intensive onsite management, obvious signs, and staffing; education and law enforcement available. Motorized and mechanized travel on designated routes.
Social	Very high probability of solitude; closeness to nature; self-reliance. High challenge and risk; little evidence of people. Typically 6 or fewer encounters with other parties on trails, and fewer than 3 parties visible from camping sites.	High probability of solitude; closeness to nature; self-reliance. High to moderate challenge and risk. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate to high probability of solitude. High to moderate degree of risk or challenge. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate evidence of human sights and sounds; moderate concentration of users at developed recreation sites; little challenge or risk is expected in these outdoor settings due to nearby amenities and management controls; opportunities to socialize.	High interaction among users is common. Other people in constant view. Little challenge or risk associated with being outdoors.	High degree of interaction with people. People are in constant view. Challenge and risk are unimportant, except for competitive sports.

Recreation Site Development Scale

The following table displays the classification of recreation sites that distinguishes the degree of site amenities and alteration present within a spectrum based on resource protection and user comfort.

Table 11. Recreation Site Development Scale (FSH 2309.13, secs. 10.5 and 10.8).

DEVELOPMENT SCALE	TYPICAL RECREATION OPPORTUNITY SPECTRUM (ROS) CONSISTENCY	TYPICAL SITE AND FACILITY CHARACTERISTICS	TYPICAL MANAGEMENT EMPHASIS
0	May occur in any ROS setting.	<ul style="list-style-type: none"> User-created dispersed use. No Forest Service investment or amenities. 	May include monitoring of resource conditions.
1	May occur in any ROS setting.	<ul style="list-style-type: none"> Primarily user-created dispersed use area. Informal vehicle circulation and parking. Minimal Forest Service investment; may include signage. 	Resource protection.
2	May occur in any ROS setting.	<ul style="list-style-type: none"> Defined vehicle circulation and parking with minimal Forest Service investment to accommodate user-created dispersed-use area. Limited amenities may include signage, tables, fire rings. In rare instances, may include vault toilet. 	Resource protection.
3	Roaded Natural	<ul style="list-style-type: none"> Designed developed site with significant Forest Service investment and delineation. Amenities may include signage, fire rings, tables, toilet, waste collection, potable water. Roads are surfaced; maintenance level 3 or 4. 	Visitor comfort and resource protection.
4	Roaded Natural, Rural, Urban	<ul style="list-style-type: none"> Designed developed site with significant Forest Service investment and delineation. Amenities include signage, interpretive materials, fire rings, grills, tables, waste collection, potable water, flush toilets. Roads, parking, and paths are surfaced and may be paved; maintenance level 4 or 5. 	Visitor comfort and resource protection.
5	Rural, Urban	<ul style="list-style-type: none"> Designed developed site with significant Forest Service investment and delineation. Amenities typically include signage, interpretive displays, fire rings, grills, tables, waste collection, potable water, flush toilets. May include utility hook-ups, showers, and laundry facilities. Roads, parking, and pathways are clearly delineated and are often paved; maintenance level 4 or 5. 	Visitor comfort and resource protection.

Note: Dispersed site scales 0–2 can occur across all ROS settings; however, developed site scales 3–5 are limited to more developed ROS settings.

Recreation Opportunity Components.

ROS is used to describe and map desired recreation settings that are a spatial depiction of desired conditions. Desired ROS functions as a framework for: (1) meeting the persisting and evolving needs of diverse user groups and (2) ensuring that recreation is appropriately prioritized and balanced with other forest resources over time.

In general, primitive settings occur primarily in designated wilderness, recommended wilderness areas, or other areas where the desire is to preserve a remote and more challenging experience. Semi-primitive settings reflect a desire for these areas to remain less developed and potentially allow for less encounters with others than the more developed roaded natural and rural settings. Semi-primitive nonmotorized settings reflect a desire for these areas to not feature future motorized routes or areas, while semi-primitive motorized settings reflect a desire for future motorized route construction or decisions be considered.





Trail Class Matrix (FSH 2353, Section 14.2, Exhibit 01)

Trail Classes are general categories reflecting trail development scale, arranged along a continuum. The Trail Class identified for a National Forest System (NFS) trail prescribes its development scale, representing its intended design and management standards.¹ Local deviations from any Trail Class descriptor may be established based on trail-specific conditions, topography, or other factors, provided that the deviations do not undermine the general intent of the applicable Trail Class.

Identify the appropriate Trail Class for each National Forest System trail or trail segment based on the management intent in the applicable land management plan, travel management direction, trail-specific decisions, and other related direction. Apply the Trail Class that most closely matches the management intent for the trail or trail segment, which may or may not reflect the current condition of the trail.

Trail Attributes	Trail Class 1 Minimally Developed	Trail Class 2 Moderately Developed	Trail Class 3 Developed	Trail Class 4 Highly Developed	Trail Class 5 Fully Developed
Tread & Traffic Flow	<ul style="list-style-type: none"> Tread intermittent and often indistinct May require route finding Single lane with no allowances constructed for passing Predominantly native materials 	<ul style="list-style-type: none"> Tread continuous and discernible, but narrow and rough Single lane with minor allowances constructed for passing Typically native materials 	<ul style="list-style-type: none"> Tread continuous and obvious Single lane, with allowances constructed for passing where required by traffic volumes in areas with no reasonable passing opportunities available Native or imported materials 	<ul style="list-style-type: none"> Tread wide and relatively smooth with few irregularities Single lane, with allowances constructed for passing where required by traffic volumes in areas with no reasonable passing opportunities available Double lane where traffic volumes are high and passing is frequent Native or imported materials May be hardened 	<ul style="list-style-type: none"> Tread wide, firm, stable, and generally uniform Single lane, with frequent turnouts where traffic volumes are low to moderate Double lane where traffic volumes are moderate to high Commonly hardened with asphalt or other imported material
Obstacles	<ul style="list-style-type: none"> Obstacles common, naturally occurring, often substantial and intended to provide increased challenge Narrow passages; brush, steep grades, rocks and logs present 	<ul style="list-style-type: none"> Obstacles may be common, substantial, and intended to provide increased challenge Blockages cleared to define route and protect resources Vegetation may encroach into trailway 	<ul style="list-style-type: none"> Obstacles may be common, but not substantial or intended to provide challenge Vegetation cleared outside of trailway 	<ul style="list-style-type: none"> Obstacles infrequent and insubstantial Vegetation cleared outside of trailway 	<ul style="list-style-type: none"> Obstacles not present Grades typically < 8%

Trail Attributes	Trail Class 1 Minimally Developed	Trail Class 2 Moderately Developed	Trail Class 3 Developed	Trail Class 4 Highly Developed	Trail Class 5 Fully Developed
Constructed Features & Trail Elements	<ul style="list-style-type: none"> Structures minimal to non-existent Drainage typically accomplished without structures Natural fords Typically no bridges 	<ul style="list-style-type: none"> Structures of limited size, scale, and quantity; typically constructed of native materials Structures adequate to protect trail infrastructure and resources Natural fords Bridges as needed for resource protection and appropriate access 	<ul style="list-style-type: none"> Structures may be common and substantial; constructed of imported or native materials Natural or constructed fords Bridges as needed for resource protection and appropriate access 	<ul style="list-style-type: none"> Structures frequent and substantial; typically constructed of imported materials Constructed or natural fords Bridges as needed for resource protection and user convenience Trailside amenities may be present 	<ul style="list-style-type: none"> Structures frequent or continuous; typically constructed of imported materials May include bridges, boardwalks, curbs, handrails, trailside amenities, and similar features
Signs²	<ul style="list-style-type: none"> Route identification signing limited to junctions Route markers present when trail location is not evident Regulatory and resource protection signing infrequent Destination signing, unless required, generally not present Information and interpretive signing generally not present 	<ul style="list-style-type: none"> Route identification signing limited to junctions Route markers present when trail location is not evident Regulatory and resource protection signing infrequent Destination signing typically infrequent outside of wilderness; generally not present in wilderness Information and interpretive signing not common 	<ul style="list-style-type: none"> Route identification signing at junctions and as needed for user reassurance Route markers as needed for user reassurance Regulatory and resource protection signing may be common Destination signing likely outside of wilderness; generally not present in wilderness Information and interpretive signs may be present outside of wilderness 	<ul style="list-style-type: none"> Route identification signing at junctions and as needed for user reassurance Route markers as needed for user reassurance Regulatory and resource protection signing common Destination signing common outside of wilderness; generally not present in wilderness Information and interpretive signs may be common outside of wilderness Accessibility information likely displayed at trailhead 	<ul style="list-style-type: none"> Route identification signing at junctions and for user reassurance Route markers as needed for user reassurance Regulatory and resource protection signing common Destination signing common Information and interpretive signs common Accessibility information likely displayed at trailhead
Typical Recreation Environments & Experience³	<ul style="list-style-type: none"> Natural, unmodified ROS: Typically Primitive to Roded Natural WROS: Typically Primitive to Semi-Primitive 	<ul style="list-style-type: none"> Natural, essentially unmodified ROS: Typically Primitive to Roded Natural WROS: Typically Primitive to Semi-Primitive 	<ul style="list-style-type: none"> Natural, primarily unmodified ROS: Typically Primitive to Roded Natural WROS: Typically Semi-Primitive to Transition 	<ul style="list-style-type: none"> May be modified ROS: Typically Semi-Primitive to Rural WROS: Typically Portal or Transition 	<ul style="list-style-type: none"> May be highly modified Commonly associated with visitor centers or high-use recreation sites ROS: Typically Roded Natural to Urban Generally not present in wilderness

¹ For National Quality Standards for Trails, Potential Appropriateness of Trail Classes for Managed Uses, Design Parameters, and other related guidance, refer to FSM 2353, FSH 2309.18, and other applicable agency references.

² For standards and guidelines for the use of signs and posters along trails, refer to the Sign and Poster Guidelines for the Forest Service (EM-7100-15).

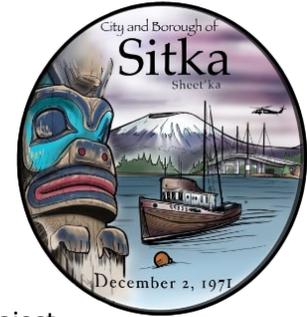
³ The Trail Class Matrix shows the combinations of Trail Class and Recreation Opportunity Spectrum (ROS) or Wilderness Recreation Opportunity Spectrum (WROS) settings that commonly occur, although trails in all Trail Classes may and do occur in all settings. For guidance on the application of the ROS and WROS, refer to FSM 2310 and 2353 and FSH 2309.18.

Appendix B. Recreation Visitor Survey Instrument

RECREATION VISITOR SURVEY – GREEN LAKE HYDROELECTRIC PROJECT

ABOUT THE PROJECT

The City and Borough of Sitka (CBS) owns and operates the Green Lake Hydroelectric Project (Project) which provides clean, renewable power to the community. The Project is undergoing relicensing in accordance with the Federal Energy Regulatory Commission (FERC) Integrated Licensing Process. CBS is studying current recreational use at the Green Lake Hydroelectric Project (Project), including Green Lake Road and Green Lake Dam, to inform relicensing. More information is available on the CBS website at <https://www.cityofsitka.com/departments/Electric/GreenLakeHydroelectricProject>.



ABOUT THIS SURVEY & RECREATION STUDY

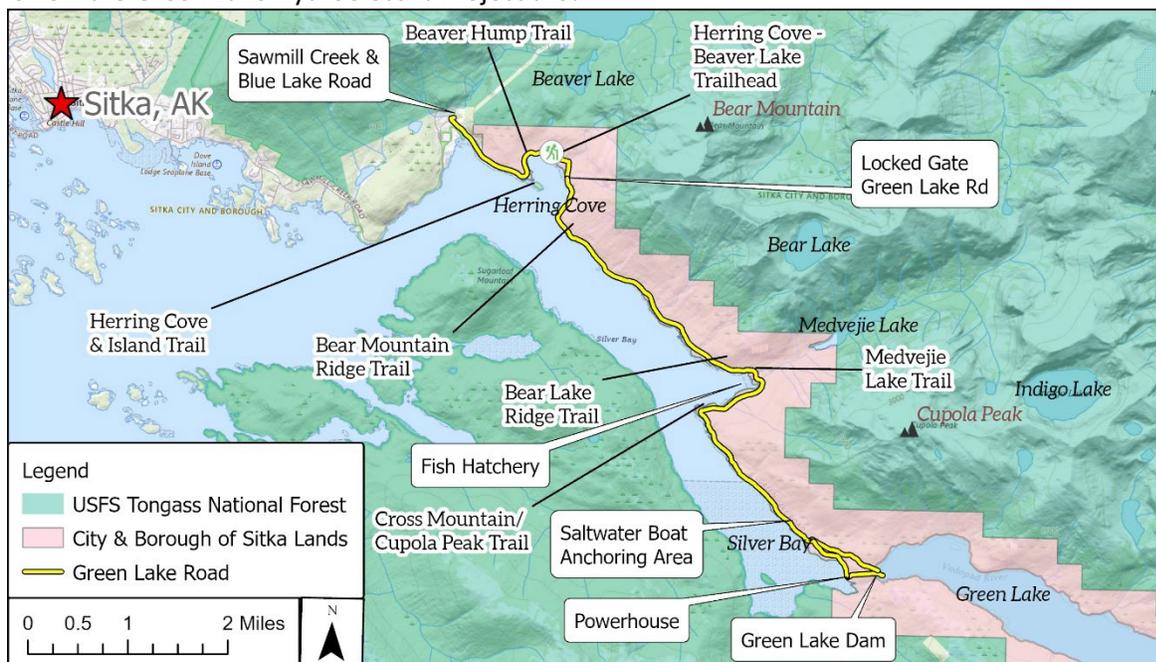
The purpose of this survey is to learn about your recreational experiences, including your recreational activities (for example, walking, biking, sport fishing, boating, etc.) within the Project area.

The survey may take between 5 and 15 minutes to complete.

You and each member of your group are encouraged to **take this survey every time you visit** the Project area during this study period (May '25-'26). You can take the survey online here: <https://arcg.is/Sta0m1>

PROJECT AREA

The survey asks about you and your experiences with recreational activities within the Project area, including Green Lake Road, Green Lake Dam, and Green Lake. Refer to the map on the next page to review the Green Lake Hydroelectric Project area.



Note: Except for the Herring Cove-Beaver Lake Trail, the “trails” shown on the map are not maintained or developed with parking, signs, trail markers, etc. Trails are remote and may be overgrown or lack a defined route. Local names for the trails may vary. Locations on map are approximate.

INFORMED CONSENT: YOUR PARTICIPATION IS VOLUNTARY

Participation is voluntary and **all responses will be kept anonymous**. By completing and submitting this survey, you consent to have your responses used by CBS and project partners to inform the FERC relicensing process. A study report will be prepared by CBS and will be available for public review near the end of 2026. For questions or concerns, please contact Bryant Wright, R&M Consultants, Inc. at bwright@rmconsult.com; 907-458-4307.

YOUR VISIT TO THE GREEN LAKE HYDROELECTRIC PROJECT AREA

1. Have you answered this survey before in the last year?

- Yes
 No

2. What is the date of the visit you are describing?

[DAY] [MONTH] [DATE] [YEAR]
_____, ____/ ____/ _____

3. How would you describe the weather during your visit?

Select all that apply:

- | | |
|--|--------------------------------|
| <input type="checkbox"/> Heavy Rain | <input type="checkbox"/> Warm |
| <input type="checkbox"/> Light Rain | <input type="checkbox"/> Cold |
| <input type="checkbox"/> Overcast | <input type="checkbox"/> Windy |
| <input type="checkbox"/> Partly Cloudy | <input type="checkbox"/> Calm |
| <input type="checkbox"/> Sunny | |

4. Including today's visit, approximately how many times have you visited the Green Lake Hydro Project area in the last 6 months?

- Between 1-5 times
 Between 6-10 times
 Between 11-20 times
 More than 20 times

5. From where did you access the Project area today?

The "Project Area" includes lands along the Green Lake Road (from Sawmill Creek bridge to the Green Lake Dam), the Green Lake Dam, and Green Lake.

- From Sawmill Creek Road via Green Lake Road
 From Silver Bay via the Saltwater Boat Anchoring Area near the end of Green Lake Road
 From Blue Lake Campground via Beaver Lake-Herring Cove Trail
 Other Location: _____

6. How did you get to the Project area? (Select one, or multiple if used in combination)

- By car
- By foot
- By bicycle
- By ATV/UTV
- By boat/skiff (motorized)
- By paddle boat/kayak/canoe
- Other: _____

7. Including yourself, how many are in your party during your visit to the Project area?

- a. Number of people in party: _____
- b. Number of dogs: _____

8. Which best describes your group today?

- Part of a tour group
- Independent

9. How many other groups or parties (including individuals alone), other than your own, did you encounter during this visit to the Project area?

- a. Number of groups encountered: _____
- b. Number of individuals (approximate) encountered: _____

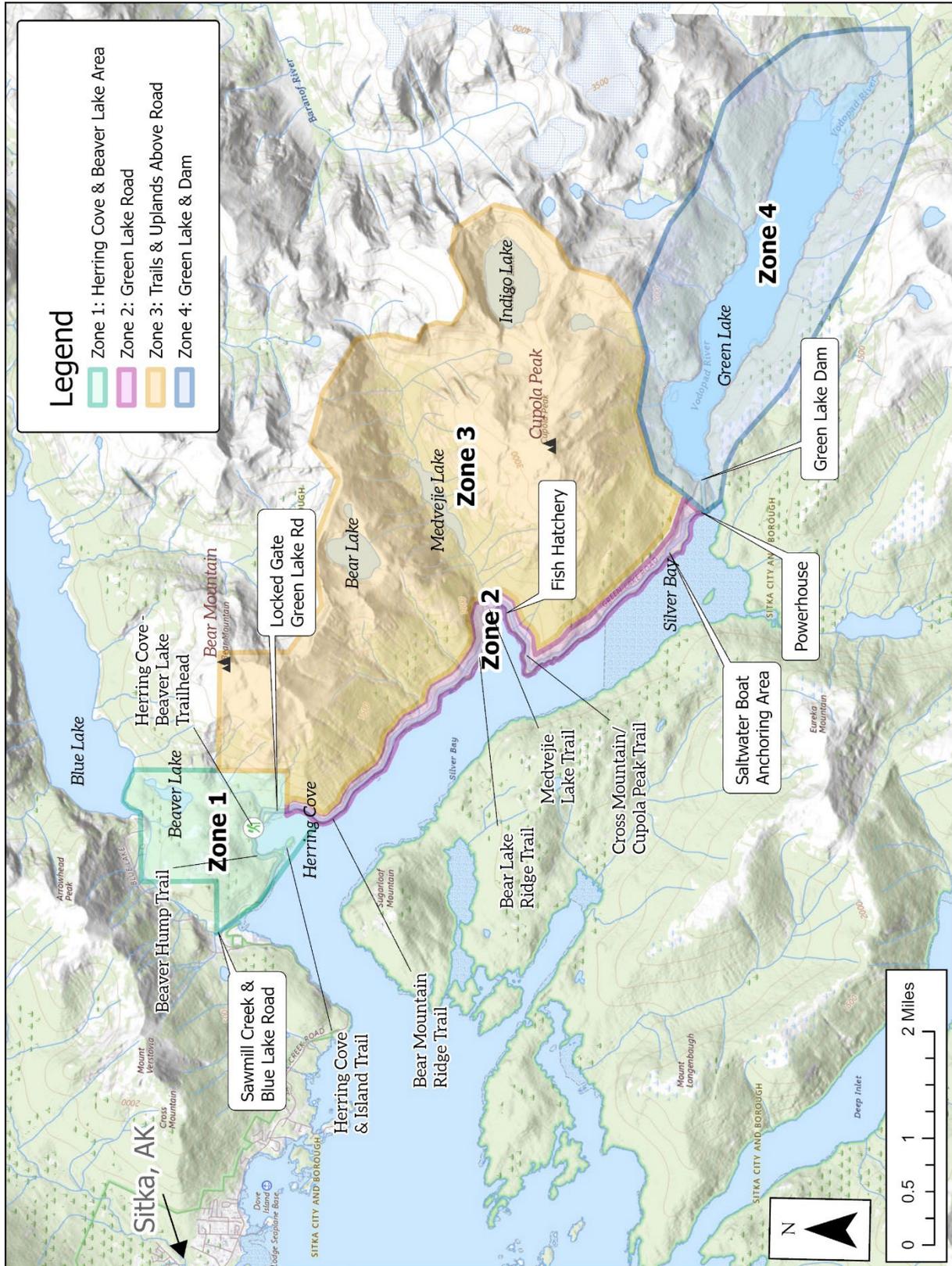
10. Did you visit any of the following trails or locations today?

Refer to the map on the cover page or the next page for approximate locations.

Select all that apply. Skip if "no."

- Beaver Hump Trail
- Trail to Herring Cove Point & Island
- Herring Cove – Beaver Lake Trail
- Beach at Herring Cove
- Bear Mountain Ridge Trail
- Bear Lake Ridge Trail
- Medvejie Lake Trail (aka Warm Springs Trail)
- Cross Mountain Trail (aka Cupola Peak and Indigo Lake Trail)
- Other: _____

Next, we would like to know where you went and what activities you participated in at those locations. Use the map on this page as a reference to complete the table on the following page.



11. What activities did you do during this visit and where did you do them?

Mark “X” in the box to indicate your main activity in each area (“Zone”) you visited. If you also did other activities, select those under the “Other” column for each area you visited.

Area Visited →	Zone 1: Herring Cove & Beaver Lake Area		Zone 2: Green Lake Rd beyond locked gate		Zone 3: Trails & Uplands Above Road		Zone 4: Green Lake & Green Lake Dam	
	Main activity <i>(select 1)</i>	Other <i>(select all that apply)</i>	Main activity <i>(select 1)</i>	Other <i>(select all that apply)</i>	Main activity <i>(select 1)</i>	Other <i>(select all that apply)</i>	Main activity <i>(select 1)</i>	Other <i>(select all that apply)</i>
Paddling/floating								
Boating (Motorized)								
Camping								
Biking								
Winter/fat tire biking								
E-Biking								
Photography								
Watching birds or other wildlife								
Sightseeing								
Commercial guiding								
Hike/Walk/Run								
Snowshoeing								
Cross-Country Skiing								
*Fishing or angling								
*Scouting for wild game								
*Berry picking								
*Harvesting other wild plants								
*Trapping								
*Hunting								
Other:								

If the purpose of the activity is primarily for **SUBSISTENCE, write “S” in the box. “Subsistence” includes harvesting wild game, plants, and materials for income, survival at a minimum level, or eligible customary and traditional uses, and/or by residents of Sitka and other rural Alaska communities hunting/gathering on federal lands.*

YOUR REASONS FOR VISITING GREEN LAKE HYDRO PROJECT AREA

12. What motivated you to visit the area around the Green Lake Hydroelectric Project?

There are many reasons you might have decided to recreate in the Project area. Considering today's visit, **please rate how important were each of these experiences in motivating you to use the area.**

Motivating Experiences	Not at all important	Not very important	Neutral	Somewhat Important	Extremely Important
Getting exercise or keeping physically fit					
Improving mental health or reducing stress					
Challenging myself					
Being close to nature					
Exploring new places or environments					
Escaping crowds or experiencing solitude					
Teaching or sharing outdoor skills with others					
Socializing with family or friends					
Using or testing my equipment					
Doing something thrilling or exciting					
Exercising my pets					
Other Reason (write in):					

YOUR EVALUATION AND SUGGESTIONS

13. How satisfied are you with your experience at the Project area on this visit? Please select the option that best represents your level of satisfaction.

Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied

14. Why are you satisfied or dissatisfied with your recreational experience? Please explain.

IF YOU HAVE ANSWERED THIS SURVEY BEFORE, PLEASE SKIP QUESTIONS 15 & 16

15. On a scale of 1-5, how much development would you like to see at the Project area for recreation access in the future?

For this question, “development” means man-made improvements and infrastructure in the area.

	← Less development.	Keep as is.	More development.	→	
	1	2	3	4	5
Desired level of development (check one)					

16. Do you support allowing public use of e-bikes on Green Lake Road?

Pedal-assisted electric bicycles (“e-bikes”) have recently gained popularity. The City and Borough of Sitka is considering whether to allow the use of e-bikes on Green Lake Road, which is currently a non-motorized facility.

	Strongly Opposed	Somewhat Opposed	Neutral	Somewhat Supportive	Strongly Supportive
Level of support for e-bike use (check one)					

17. Are there any improvements you would like to see made at the Project area for a better recreation experience? If “yes,” please describe.

ABOUT YOU

18. What is your zip code?

Write the five-digit zip code of your physical address or residence.

Zip Code: _____

19. If you are NOT from Sitka, what best represents the nature of your travel to the area?

- Cruise Ship Destination
- Independent Travel – Recreation/Vacation
- Independent Travel – Visit Family or Friends
- Independent Travel – Work Trip
- Independent Travel – Local Seasonal Work
- Other: _____

20. What is your age group?

- Under 16 years
- 16 – 25 years
- 26 – 35 years
- 36 – 45 years
- 46 – 55 years
- 56 – 65 years
- Over 65 years

21. What is your race and/or ethnicity?

Select all that apply.

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Middle Eastern or North African
- Native Hawaiian or other Pacific Islander
- White
- Some other race: _____

22. What is your gender?

- Man
- Woman
- Non-Binary
- Prefer not to answer

THANK YOU

Thank you for your time and feedback!

Your input will inform the relicensing process for the Green Lake Hydroelectric Project.

Please deliver completed surveys to:

City and Borough of Sitka Electric Department

105 Jarvis Street

Sitka, AK 99835

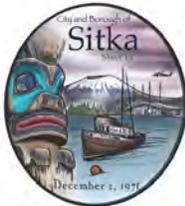
Appendix C. Recreation Study Flyer

How do you recreate?

Share what activities you do in the Green Lake area!



The City and Borough of Sitka (CBS) owns and operates the Green Lake Hydroelectric Project which provides clean, renewable power to the community. The Project is undergoing relicensing in accordance with the Federal Energy Regulatory Commission (FERC) Integrated Licensing Process.



More information is available on the CBS website at <https://www.cityofsitka.com/departments/Electric/GreenLakeHydroelectricProject>.

CBS is studying current recreational use at the Green Lake Hydroelectric Project, including Green Lake Road and Green Lake Dam, to inform relicensing.

Questions? Contact:

Bryant Wright
R&M Consultants Inc.
bwright@rmconsult.com
907-458-4307

Kord Christianson
City and Borough of Sitka
kord.christianson@cityofsitka.org
907-747-1886

Tell us in the Online Survey:

Take the 5-minute survey to tell us about your most recent recreational outing in the area generally from Sawmill Creek Road to Green Lake on or near Green Lake Road.

The study is collecting data from *everyone*, residents and visitors, for a *full year*. Each member of your group is encouraged to participate.

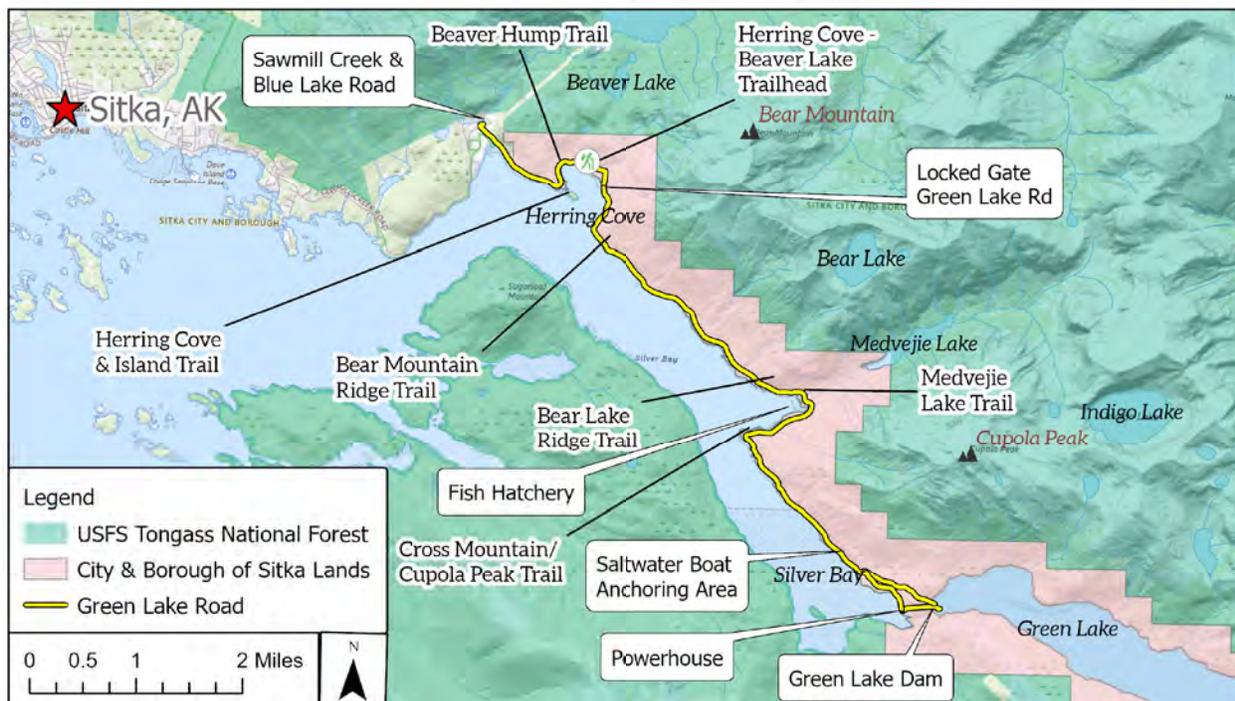


Take this survey *every time* you visit!



Prefer paper?
Pick up a print copy at
CBS Electric Department
105 Jarvis St, Sitka, AK

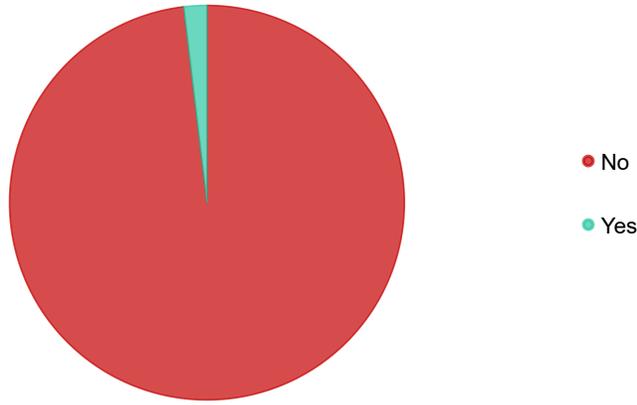
No cell service?
Take a picture of the
QR code or go directly
<https://arcg.is/STa0m1>



Appendix D. Visitor Use Survey Preliminary Results

Sitka Green Lake Hydro Project Recreation Survey

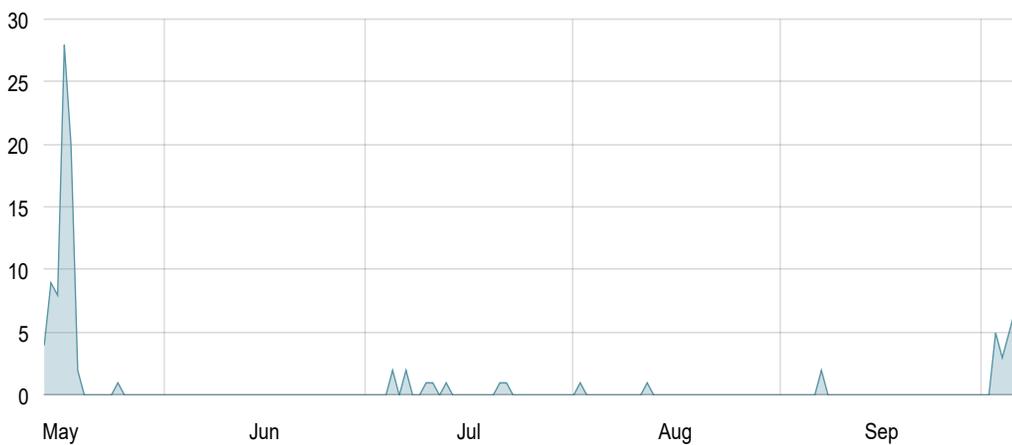
1. Have you answered this survey before in the last year? *



Answers	Count	Percentage
No	104	98.11%
Yes	2	1.89%

Answered: 106 Skipped: 0

2. What is the date of the visit you are describing? *

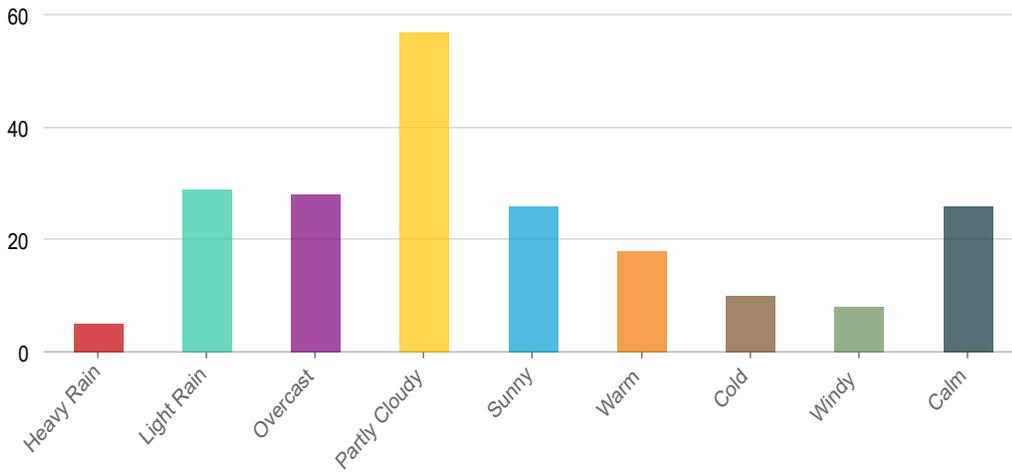


Date	Count
May 14, 2025 - May 15, 2025	4
May 15, 2025 - May 16, 2025	9

May 16, 2025 - May 17, 2025	8
May 17, 2025 - May 18, 2025	28
May 18, 2025 - May 19, 2025	20
May 19, 2025 - May 20, 2025	2
May 25, 2025 - May 26, 2025	1
Jul 5, 2025 - Jul 6, 2025	2
Jul 7, 2025 - Jul 8, 2025	2
Jul 10, 2025 - Jul 11, 2025	1
Jul 11, 2025 - Jul 12, 2025	1
Jul 13, 2025 - Jul 14, 2025	1
Jul 21, 2025 - Jul 22, 2025	1
Jul 22, 2025 - Jul 23, 2025	1
Aug 2, 2025 - Aug 3, 2025	1
Aug 12, 2025 - Aug 13, 2025	1
Sep 7, 2025 - Sep 8, 2025	2
Oct 3, 2025 - Oct 4, 2025	5
Oct 4, 2025 - Oct 5, 2025	3
Oct 5, 2025 - Oct 6, 2025	5
Oct 6, 2025 - Oct 7, 2025	7
Oct 7, 2025 - Oct 7, 2025	1

Answered: 106 Skipped: 0

3. How would you describe the weather during your visit?

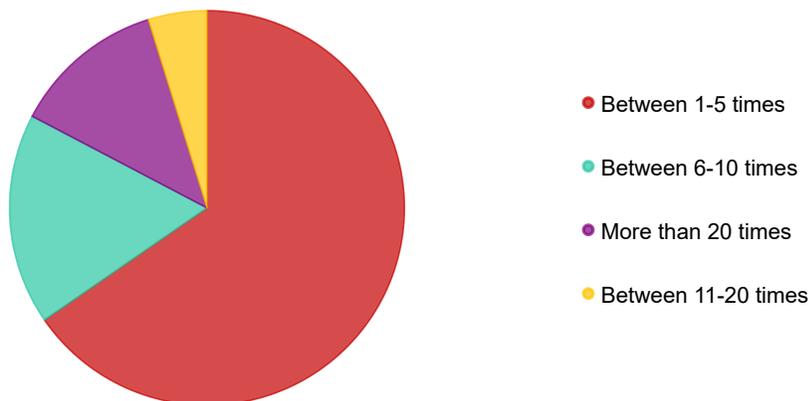


Answers **Count** **Percentage**

Answers	Count	Percentage
Heavy Rain	5	4.72%
Light Rain	29	27.36%
Overcast	28	26.42%
Partly Cloudy	57	53.77%
Sunny	26	24.53%
Warm	18	16.98%
Cold	10	9.43%
Windy	8	7.55%
Calm	26	24.53%

Answered: 106 Skipped: 0

4. Including today's visit, approximately how many times have you visited the Gree...

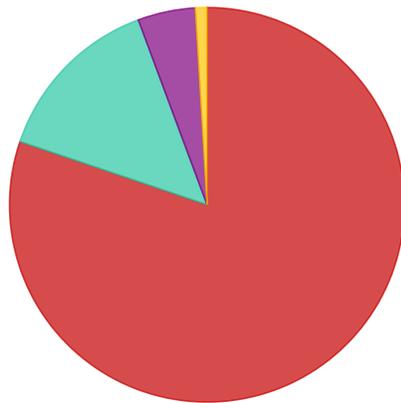


Answers	Count	Percentage
---------	-------	------------

Between 1-5 times	68	64.15%
Between 6-10 times	18	16.98%
More than 20 times	13	12.26%
Between 11-20 times	5	4.72%

Answered: 104 Skipped: 2

5. From where did you access the Project area today? *



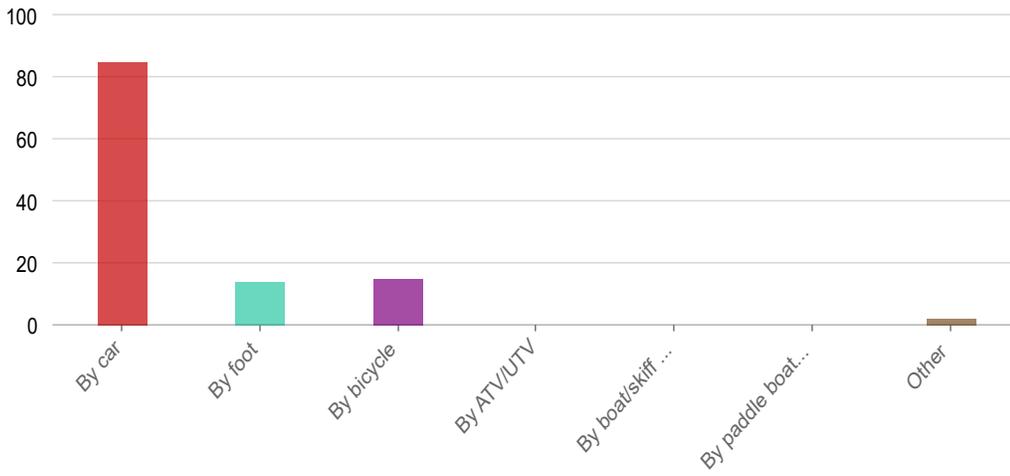
- From Sawmill Creek Road via Green Lake Road
- From Blue Lake Campground via Beaver Lake-Herring Cove Trail
- From Silver Bay via the Saltwater Beach Anchoring Area near the end of Green Lake Road
- Other location

Answers	Count	Percentage
---------	-------	------------

From Sawmill Creek Road via Green Lake Road	85	80.19%
From Blue Lake Campground via Beaver Lake-Herring Cove Trail	15	14.15%
From Silver Bay via the Saltwater Beach Anchoring Area near the end of Green Lake Road	5	4.72%
Other location	1	0.94%

Answered: 106 Skipped: 0

6. How did you get to the Project area? *

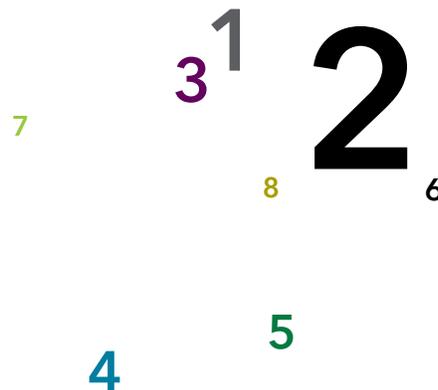


Answers **Count** **Percentage**

Answers	Count	Percentage
By car	85	80.19%
By foot	14	13.21%
By bicycle	15	14.15%
By ATV/UTV	0	0%
By boat/skiff (motorized)	0	0%
By paddle boat/kayak/canoe	0	0%
Other	2	1.89%

Answered: 106 Skipped: 0

7A. Number of people in party:



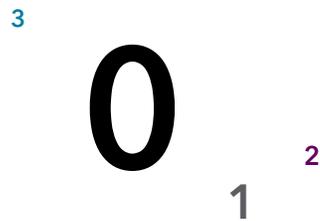
Word **Count**

2	49
---	----

1	19
3	12
4	10
5	8
6	3
7	2
8	2

Answered: 105 Skipped: 1

7B. Number of dogs:

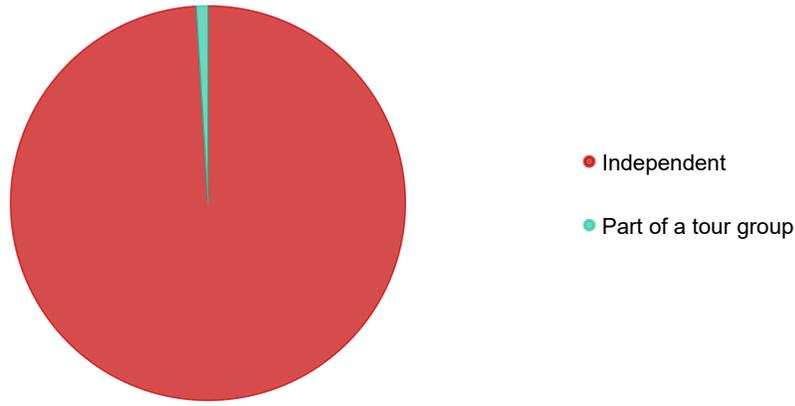


Word **Count**

0	71
1	15
2	5
3	3

Answered: 95 Skipped: 11

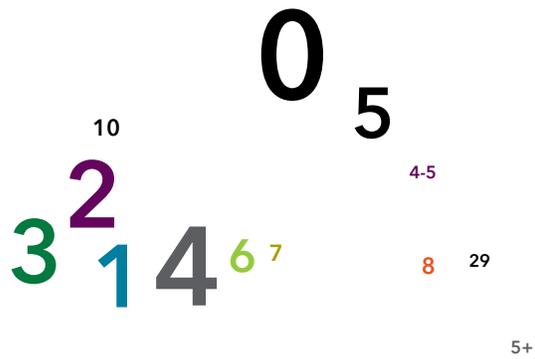
8. Which best describes your group today?



Answers	Count	Percentage
Independent	104	98.11%
Part of a tour group	1	0.94%

Answered: 105 Skipped: 1

9 A. Number of groups encountered:



Word	Count
0	19
4	17
2	14
1	13
3	13
5	10

6	6
7	2
8	2
10	2
29	1
5+	1
4-5	1

Answered: 101 Skipped: 5

9 B. Number of individuals (approximate) encountered:



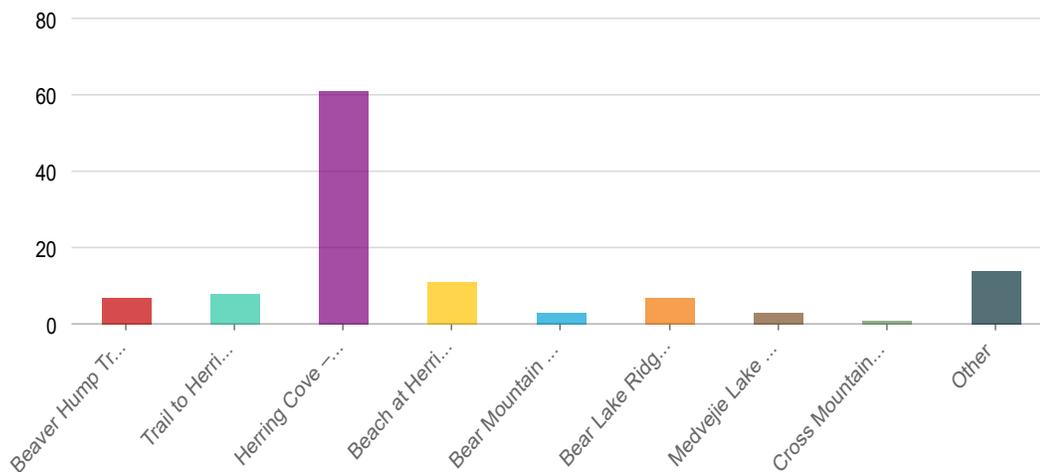
Word **Count**

0	14
10	12
5	8
6	8
15	8
1	7
2	7
4	7
8	5
3	4

20	4
7	2
25	2
30	2
9	1
12	1
13	1
14	1
21	1
24	1
29	1
to4	1
people	1
group	1
dogs	1
off-leashes.	1

Answered: 97 Skipped: 9

10. Did you visit any of the following trails or locations today? Refer to the map for approxima...



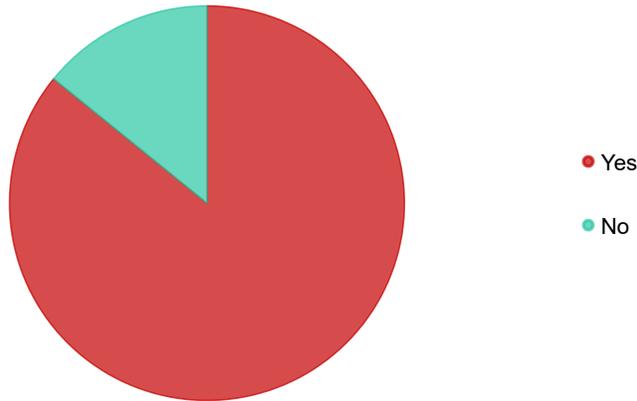
Answers **Count** **Percentage**

Beaver Hump Trail	7	6.6%
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Trail to Herring Cove Point & Island	8	7.55%
Herring Cove – Beaver Lake Trail	61	57.55%
Beach at Herring Cove	11	10.38%
Bear Mountain Ridge Trail	3	2.83%
Bear Lake Ridge Trail	7	6.6%
Medveje Lake Trail (aka Warm Springs Trail)	3	2.83%
Cross Mountain Trail (aka Cupola Peak and Indigo Lake Trail)	1	0.94%
Other	14	13.21%

Answered: 92 Skipped: 14

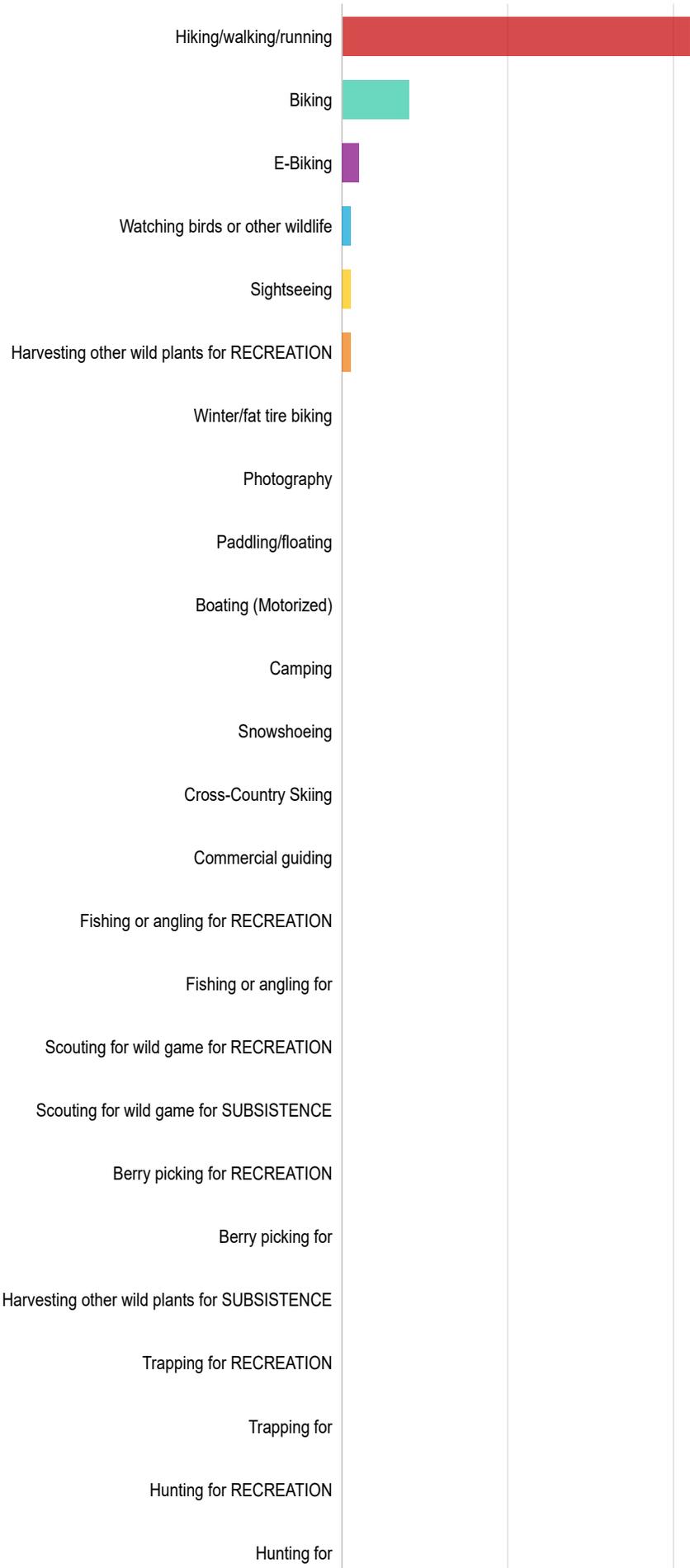
11.1. Did you visit Zone 1 Herring Cove & Beaver Lake Area? *



Answers	Count	Percentage
Yes	91	85.85%
No	15	14.15%

Answered: 106 Skipped: 0

Zone 1 Herring Cove and Beaver Lake Area



Other

0

20

40

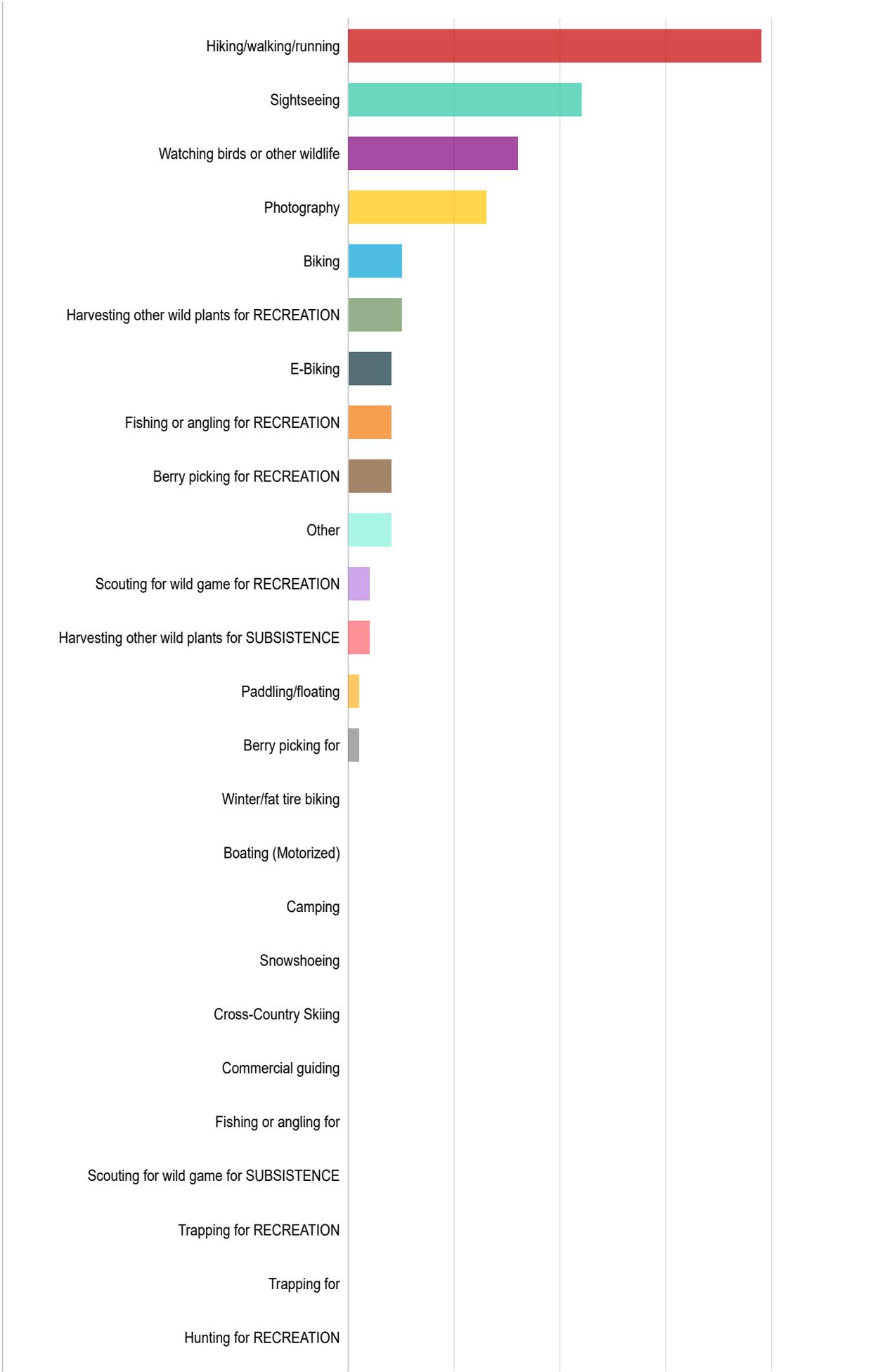
60

Answers	Count	Percentage
Hiking/walking/running	42	39.62%
Biking	8	7.55%
E-Biking	2	1.89%
Watching birds or other wildlife	1	0.94%
Sightseeing	1	0.94%
Harvesting other wild plants for RECREATION	1	0.94%
Winter/fat tire biking	0	0%
Photography	0	0%
Paddling/floating	0	0%
Boating (Motorized)	0	0%
Camping	0	0%
Snowshoeing	0	0%
Cross-Country Skiing	0	0%
Commercial guiding	0	0%
Fishing or angling for RECREATION	0	0%
Fishing or angling for SUBSISTENCE	0	0%
Scouting for wild game for RECREATION	0	0%
Scouting for wild game for SUBSISTENCE	0	0%
Berry picking for RECREATION	0	0%
Berry picking for SUBSISTENCE	0	0%
Harvesting other wild plants for SUBSISTENCE	0	0%
Trapping for RECREATION	0	0%
Trapping for SUBSISTENCE	0	0%
Hunting for RECREATION	0	0%
Hunting for SUBSISTENCE	0	0%

Other	0	0%
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Answered: 55 Skipped: 51

Zone 1 Herring Cove and Beaver Lake Area - Other Activities



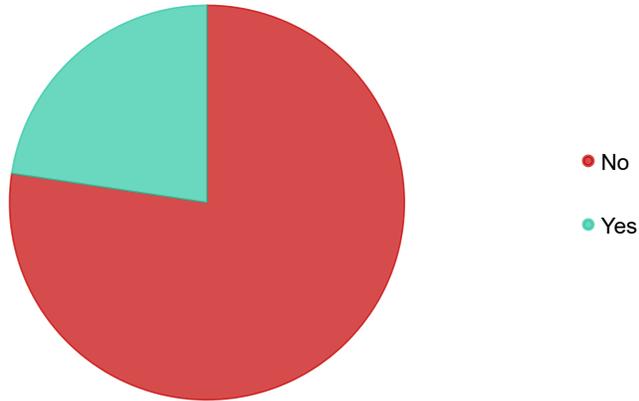


Answers	Count	Percentage
Hiking/walking/running	39	36.79%
Sightseeing	22	20.75%
Watching birds or other wildlife	16	15.09%
Photography	13	12.26%
Biking	5	4.72%
Harvesting other wild plants for RECREATION	5	4.72%
E-Biking	4	3.77%
Fishing or angling for RECREATION	4	3.77%
Berry picking for RECREATION	4	3.77%
Other	4	3.77%
Scouting for wild game for RECREATION	2	1.89%
Harvesting other wild plants for SUBSISTENCE	2	1.89%
Paddling/floating	1	0.94%
Berry picking for SUBSISTENCE	1	0.94%
Winter/fat tire biking	0	0%
Boating (Motorized)	0	0%
Camping	0	0%
Snowshoeing	0	0%
Cross-Country Skiing	0	0%
Commercial guiding	0	0%
Fishing or angling for SUBSISTENCE	0	0%
Scouting for wild game for SUBSISTENCE	0	0%
Trapping for RECREATION	0	0%
Trapping for SUBSISTENCE	0	0%
Hunting for RECREATION	0	0%

Hunting for SUBSISTENCE	0	0%
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Answered: 68 Skipped: 38

11.2. Did you visit Zone 2 Green Lake Road beyond the Locked Gate? *



Answers	Count	Percentage
No	82	77.36%
Yes	24	22.64%

Answered: 106 Skipped: 0

Zone 2 Green Lake Road past the Locked Gate



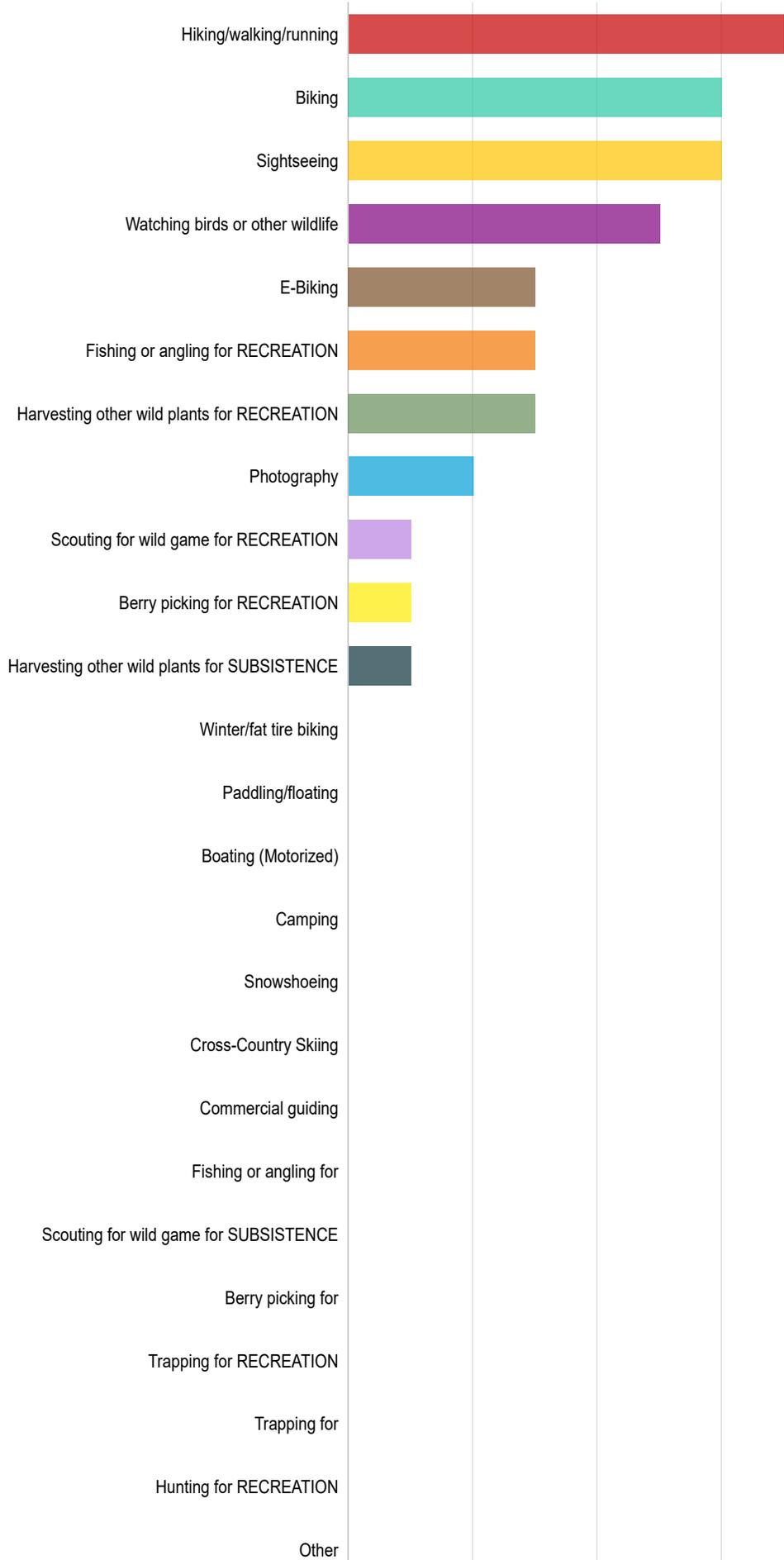


Answers	Count	Percentage
Biking	9	8.49%
Hiking/walking/running	7	6.6%
E-Biking	1	0.94%
Scouting for wild game for SUBSISTENCE	1	0.94%
Berry picking for SUBSISTENCE	1	0.94%
Winter/fat tire biking	0	0%
Photography	0	0%
Watching birds or other wildlife	0	0%
Sightseeing	0	0%
Paddling/floating	0	0%
Boating (Motorized)	0	0%
Camping	0	0%
Snowshoeing	0	0%
Cross-Country Skiing	0	0%
Commercial guiding	0	0%
Fishing or angling for RECREATION	0	0%
Fishing or angling for SUBSISTENCE	0	0%
Scouting for wild game for RECREATION	0	0%
Berry picking for RECREATION	0	0%
Harvesting other wild plants for RECREATION	0	0%
Harvesting other wild plants for SUBSISTENCE	0	0%
Trapping for RECREATION	0	0%
Trapping for SUBSISTENCE	0	0%
Hunting for RECREATION	0	0%
Hunting for SUBSISTENCE	0	0%

Other	0	0%
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Answered: 19 Skipped: 87

Zone 2 Green Lake Road Past the Locked Gate - Other Activities

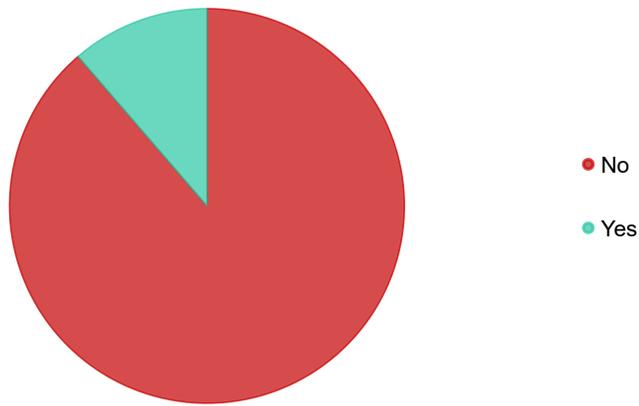


0 2 4 6 8

Answers	Count	Percentage
Hiking/walking/running	7	6.6%
Biking	6	5.66%
Sightseeing	6	5.66%
Watching birds or other wildlife	5	4.72%
E-Biking	3	2.83%
Fishing or angling for RECREATION	3	2.83%
Harvesting other wild plants for RECREATION	3	2.83%
Photography	2	1.89%
Scouting for wild game for RECREATION	1	0.94%
Berry picking for RECREATION	1	0.94%
Harvesting other wild plants for SUBSISTENCE	1	0.94%
Winter/fat tire biking	0	0%
Paddling/floating	0	0%
Boating (Motorized)	0	0%
Camping	0	0%
Snowshoeing	0	0%
Cross-Country Skiing	0	0%
Commercial guiding	0	0%
Fishing or angling for SUBSISTENCE	0	0%
Scouting for wild game for SUBSISTENCE	0	0%
Berry picking for SUBSISTENCE	0	0%
Trapping for RECREATION	0	0%
Trapping for SUBSISTENCE	0	0%
Hunting for RECREATION	0	0%
Other	0	0%

Answered: 23 Skipped: 83

11.3. Did you visit Zone 3 Trails and Uplands Above Green lake Road? *



Answers **Count** **Percentage**

No	94	88.68%
Yes	12	11.32%

Answered: 106 Skipped: 0

Zone 3 Trails and Uplands Above Road



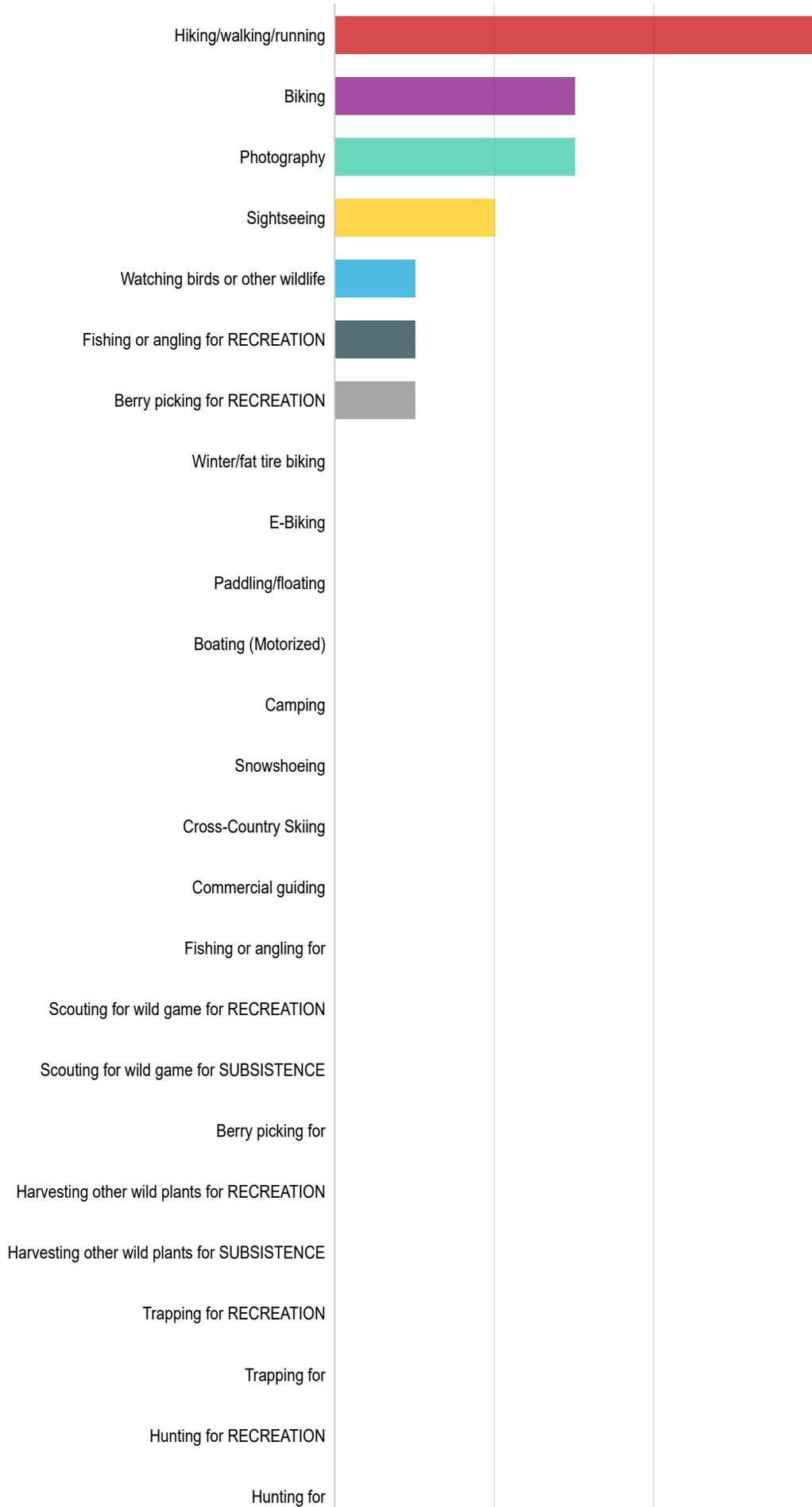


Answers	Count	Percentage
Hiking/walking/running	4	3.77%
Biking	3	2.83%
Scouting for wild game for SUBSISTENCE	1	0.94%
Winter/fat tire biking	0	0%
E-Biking	0	0%
Photography	0	0%
Watching birds or other wildlife	0	0%
Sightseeing	0	0%
Paddling/floating	0	0%
Boating (Motorized)	0	0%
Camping	0	0%
Snowshoeing	0	0%
Cross-Country Skiing	0	0%
Commercial guiding	0	0%
Fishing or angling for RECREATION	0	0%
Fishing or angling for SUBSISTENCE	0	0%
Scouting for wild game for RECREATION	0	0%
Berry picking for RECREATION	0	0%
Berry picking for SUBSISTENCE	0	0%
Harvesting other wild plants for RECREATION	0	0%
Harvesting other wild plants for SUBSISTENCE	0	0%
Trapping for RECREATION	0	0%
Trapping for SUBSISTENCE	0	0%
Hunting for RECREATION	0	0%
Hunting for SUBSISTENCE	0	0%

Other	0	0%
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Answered: 8 Skipped: 98

Zone 3 Trails and Uplands Above Road - Other Activities



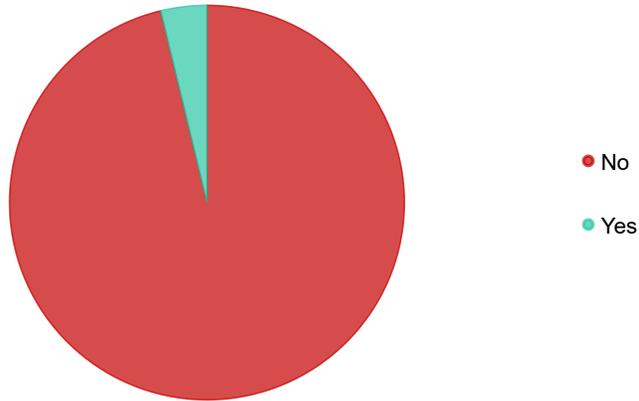


Answers	Count	Percentage
Hiking/walking/running	6	5.66%
Biking	3	2.83%
Photography	3	2.83%
Sightseeing	2	1.89%
Watching birds or other wildlife	1	0.94%
Fishing or angling for RECREATION	1	0.94%
Berry picking for RECREATION	1	0.94%
Winter/fat tire biking	0	0%
E-Biking	0	0%
Paddling/floating	0	0%
Boating (Motorized)	0	0%
Camping	0	0%
Snowshoeing	0	0%
Cross-Country Skiing	0	0%
Commercial guiding	0	0%
Fishing or angling for SUBSISTENCE	0	0%
Scouting for wild game for RECREATION	0	0%
Scouting for wild game for SUBSISTENCE	0	0%
Berry picking for SUBSISTENCE	0	0%
Harvesting other wild plants for RECREATION	0	0%
Harvesting other wild plants for SUBSISTENCE	0	0%
Trapping for RECREATION	0	0%
Trapping for SUBSISTENCE	0	0%
Hunting for RECREATION	0	0%
Hunting for SUBSISTENCE	0	0%

Other	0	0%
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Answered: 9 Skipped: 97

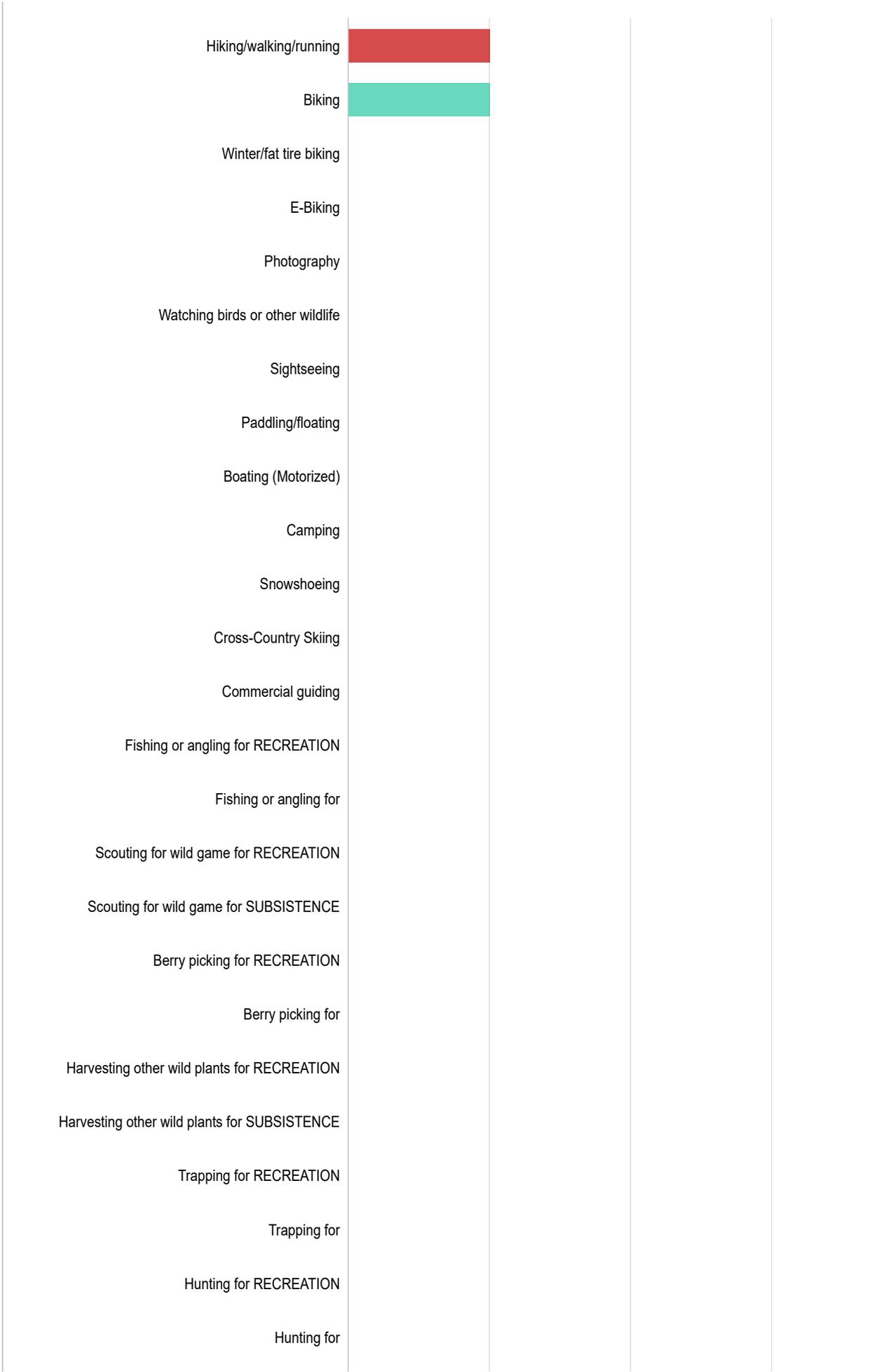
11.4. Did you visit Zone 4 Green Lake and Green Lake Dam? *



Answers	Count	Percentage
No	102	96.23%
Yes	4	3.77%

Answered: 106 Skipped: 0

Zone 4 Green Lake and Dam



Other

0

1

2

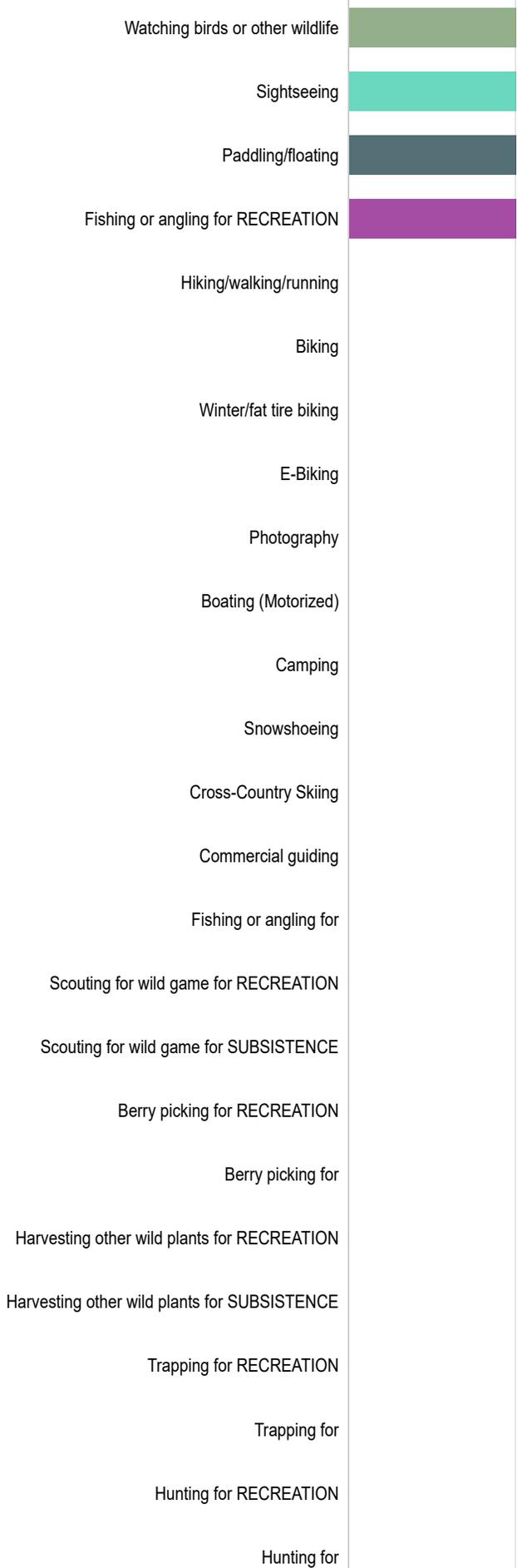
3

Answers	Count	Percentage
Hiking/walking/running	1	0.94%
Biking	1	0.94%
Winter/fat tire biking	0	0%
E-Biking	0	0%
Photography	0	0%
Watching birds or other wildlife	0	0%
Sightseeing	0	0%
Paddling/floating	0	0%
Boating (Motorized)	0	0%
Camping	0	0%
Snowshoeing	0	0%
Cross-Country Skiing	0	0%
Commercial guiding	0	0%
Fishing or angling for RECREATION	0	0%
Fishing or angling for SUBSISTENCE	0	0%
Scouting for wild game for RECREATION	0	0%
Scouting for wild game for SUBSISTENCE	0	0%
Berry picking for RECREATION	0	0%
Berry picking for SUBSISTENCE	0	0%
Harvesting other wild plants for RECREATION	0	0%
Harvesting other wild plants for SUBSISTENCE	0	0%
Trapping for RECREATION	0	0%
Trapping for SUBSISTENCE	0	0%
Hunting for RECREATION	0	0%
Hunting for SUBSISTENCE	0	0%

Other	0	0%
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Answered: 2 Skipped: 104

Zone 4 Green Lake and Dam - Other Activities





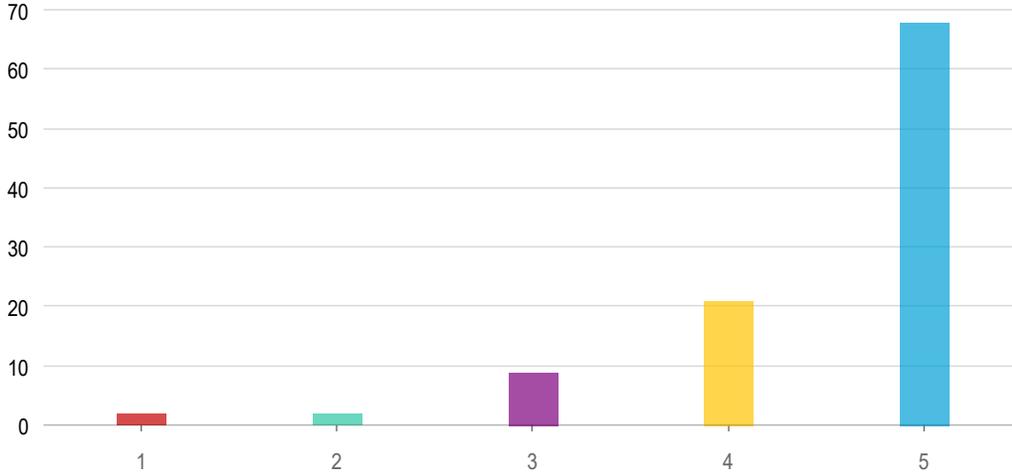
Answers	Count	Percentage
Watching birds or other wildlife	1	0.94%
Sightseeing	1	0.94%
Paddling/floating	1	0.94%
Fishing or angling for RECREATION	1	0.94%
Hiking/walking/running	0	0%
Biking	0	0%
Winter/fat tire biking	0	0%
E-Biking	0	0%
Photography	0	0%
Boating (Motorized)	0	0%
Camping	0	0%
Snowshoeing	0	0%
Cross-Country Skiing	0	0%
Commercial guiding	0	0%
Fishing or angling for SUBSISTENCE	0	0%
Scouting for wild game for RECREATION	0	0%
Scouting for wild game for SUBSISTENCE	0	0%
Berry picking for RECREATION	0	0%
Berry picking for SUBSISTENCE	0	0%
Harvesting other wild plants for RECREATION	0	0%
Harvesting other wild plants for SUBSISTENCE	0	0%
Trapping for RECREATION	0	0%
Trapping for SUBSISTENCE	0	0%
Hunting for RECREATION	0	0%
Hunting for SUBSISTENCE	0	0%

Other	0	0%
-------	---	----

Answered: 3 Skipped: 103

12. What motivated you to visit the area around the Green Lake Hydroelectric Project?

Getting exercise or keeping physically fit

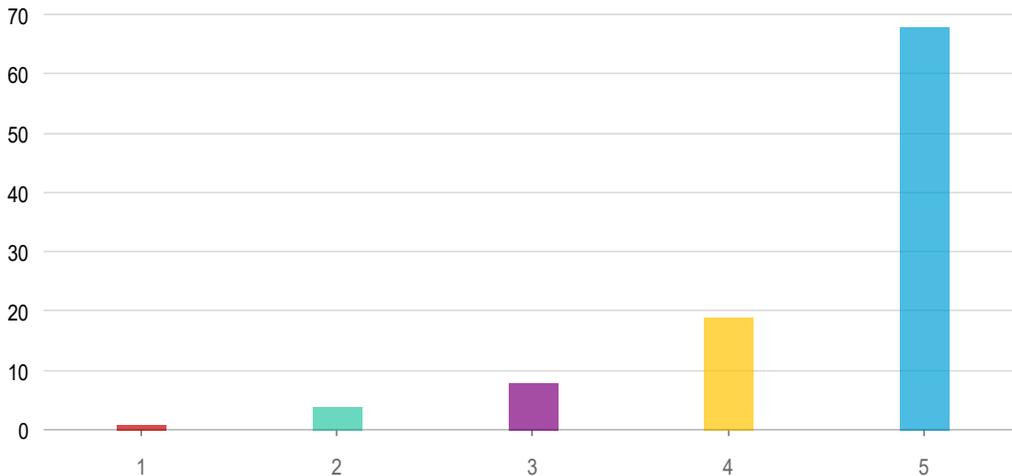


Answers	Count	Percentage
---------	-------	------------

1	2	1.89%
2	2	1.89%
3	9	8.49%
4	21	19.81%
5	68	64.15%

Answered: 102 Skipped: 4

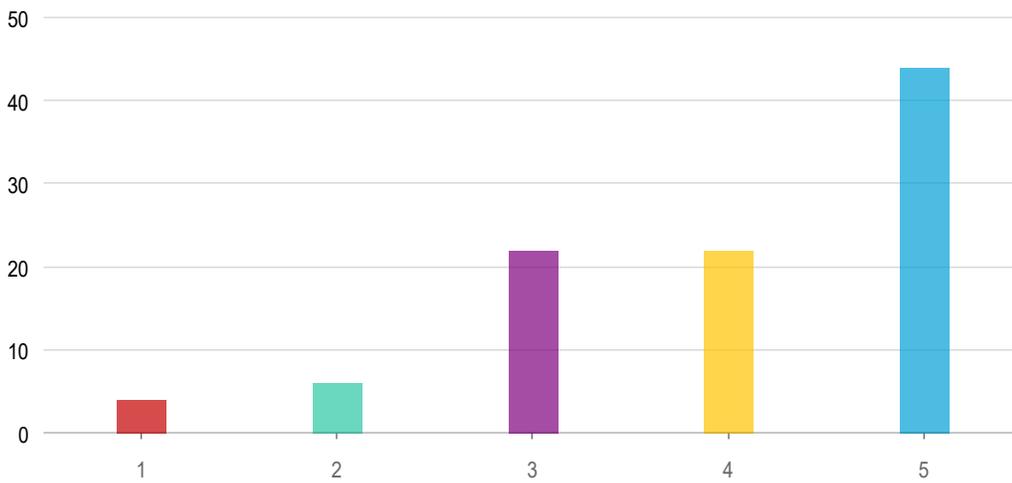
Improving mental health or reducing stress



Answers	Count	Percentage
1	1	0.94%
2	4	3.77%
3	8	7.55%
4	19	17.92%
5	68	64.15%

Answered: 100 Skipped: 6

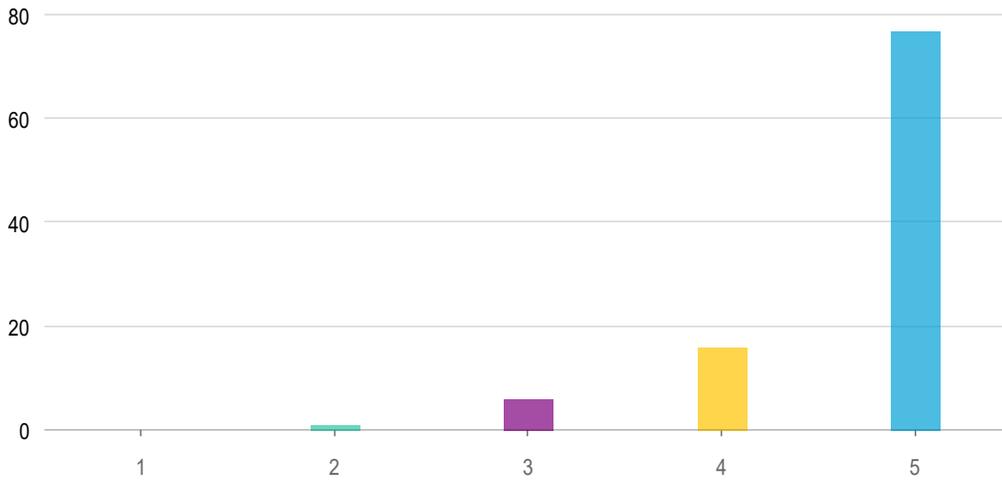
○ Challenging myself



Answers	Count	Percentage
1	4	3.77%
2	6	5.66%
3	22	20.75%
4	22	20.75%
5	44	41.51%

Answered: 98 Skipped: 8

○ Being close to nature

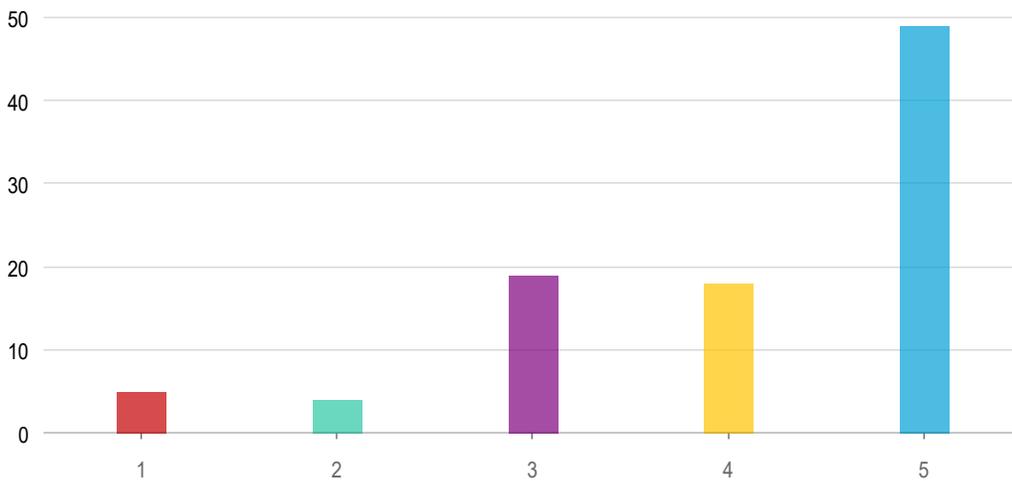


Answers **Count** **Percentage**

1	0	0%
2	1	0.94%
3	6	5.66%
4	16	15.09%
5	77	72.64%

Answered: 100 Skipped: 6

Exploring new places or environments



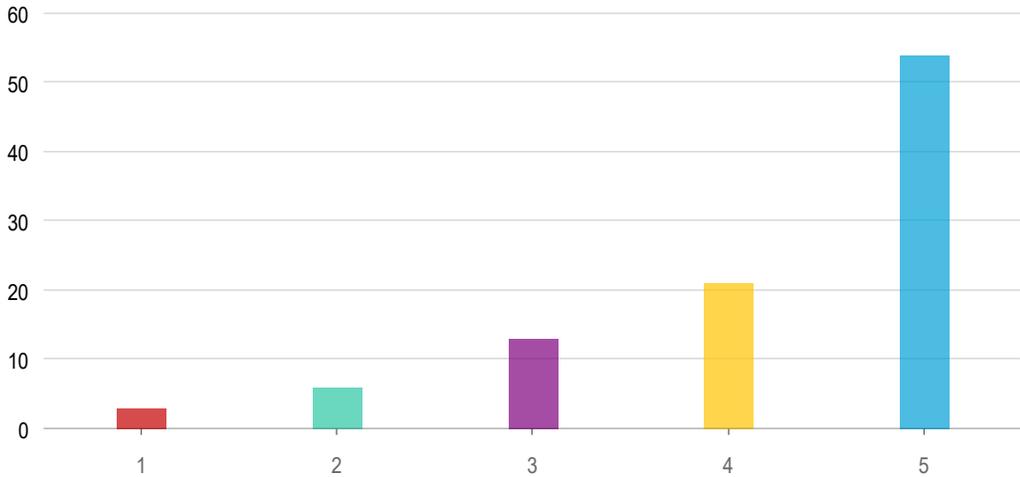
Answers **Count** **Percentage**

1	5	4.72%
2	4	3.77%
3	19	17.92%

4	18	16.98%
5	49	46.23%

Answered: 95 Skipped: 11

o Escaping crowds or experiencing solitude

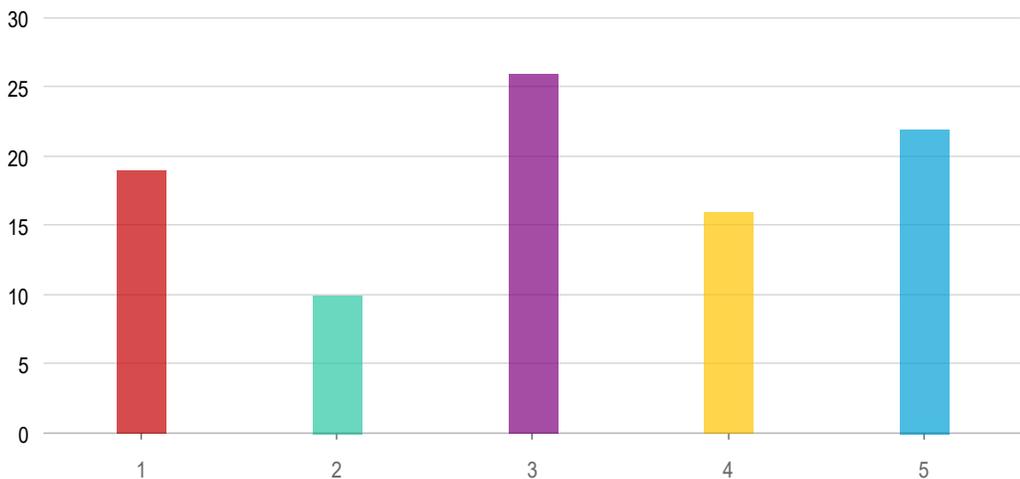


Answers	Count	Percentage
---------	-------	------------

1	3	2.83%
2	6	5.66%
3	13	12.26%
4	21	19.81%
5	54	50.94%

Answered: 97 Skipped: 9

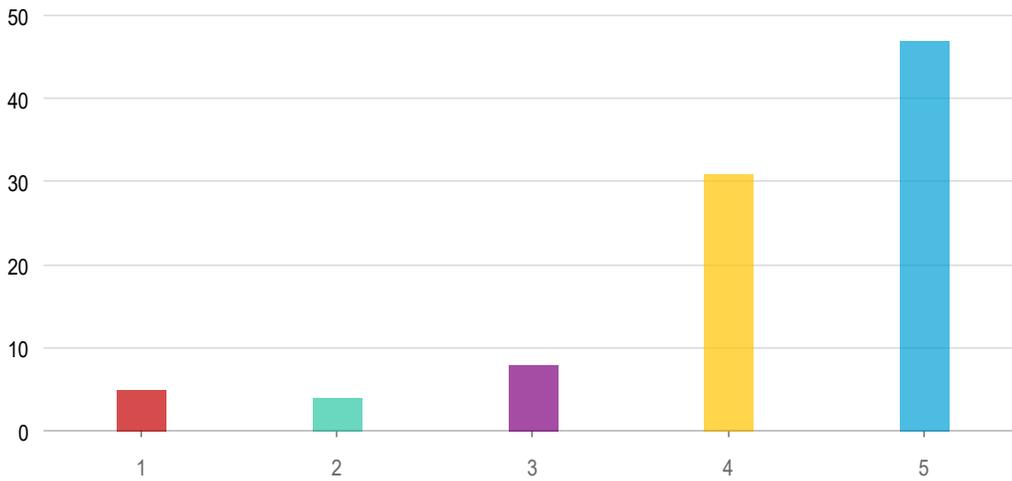
o Teaching or sharing outdoor skills with others



Answers	Count	Percentage
1	19	17.92%
2	10	9.43%
3	26	24.53%
4	16	15.09%
5	22	20.75%

Answered: 93 Skipped: 13

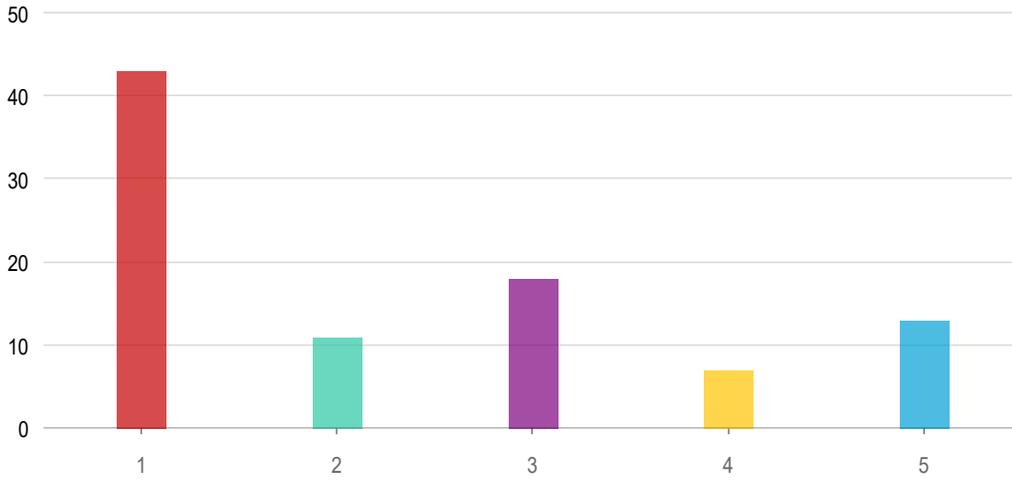
o Socializing with family or friends



Answers	Count	Percentage
1	5	4.72%
2	4	3.77%
3	8	7.55%
4	31	29.25%
5	47	44.34%

Answered: 95 Skipped: 11

o Using or testing my equipment

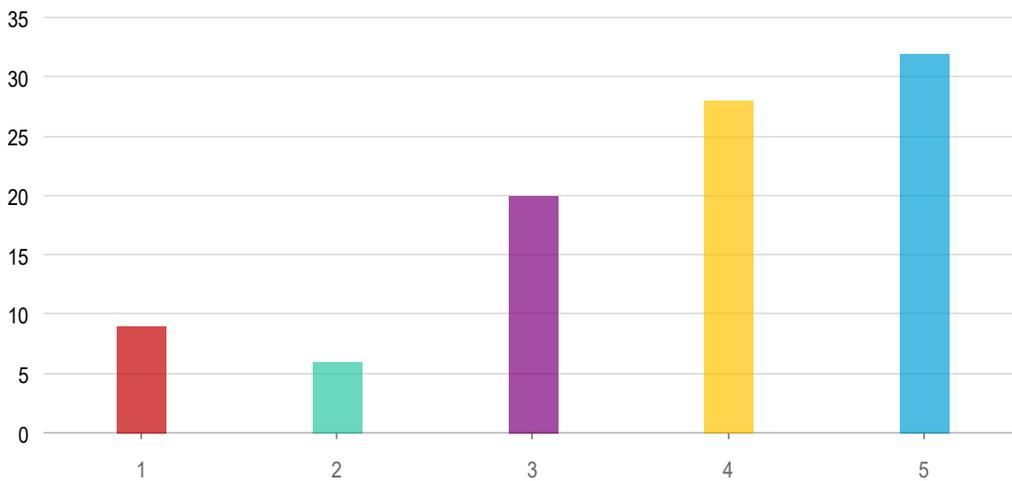


Answers **Count** **Percentage**

Answers	Count	Percentage
1	43	40.57%
2	11	10.38%
3	18	16.98%
4	7	6.6%
5	13	12.26%

Answered: 92 Skipped: 14

Doing something thrilling or exciting



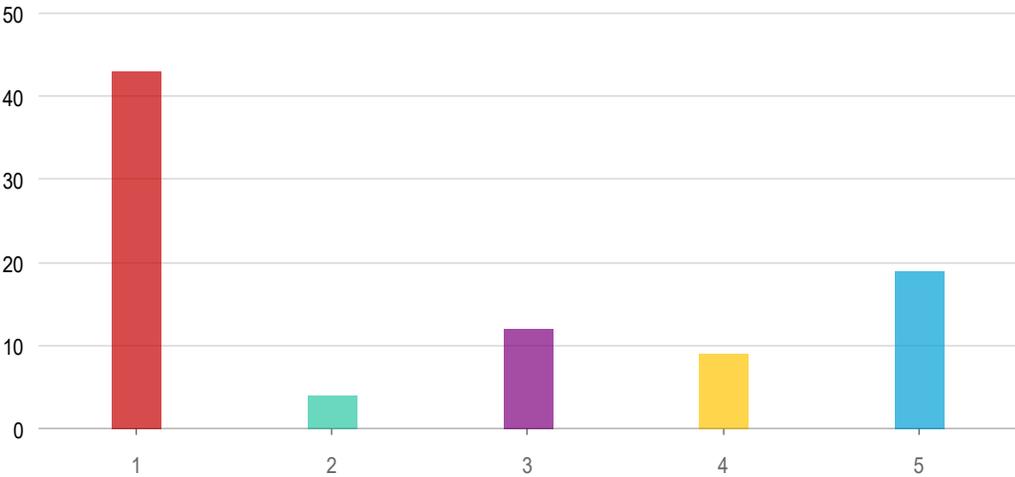
Answers **Count** **Percentage**

Answers	Count	Percentage
1	9	8.49%
2	6	5.66%
3	20	18.87%

4	28	26.42%
5	32	30.19%

Answered: 95 Skipped: 11

o Exercising my pets

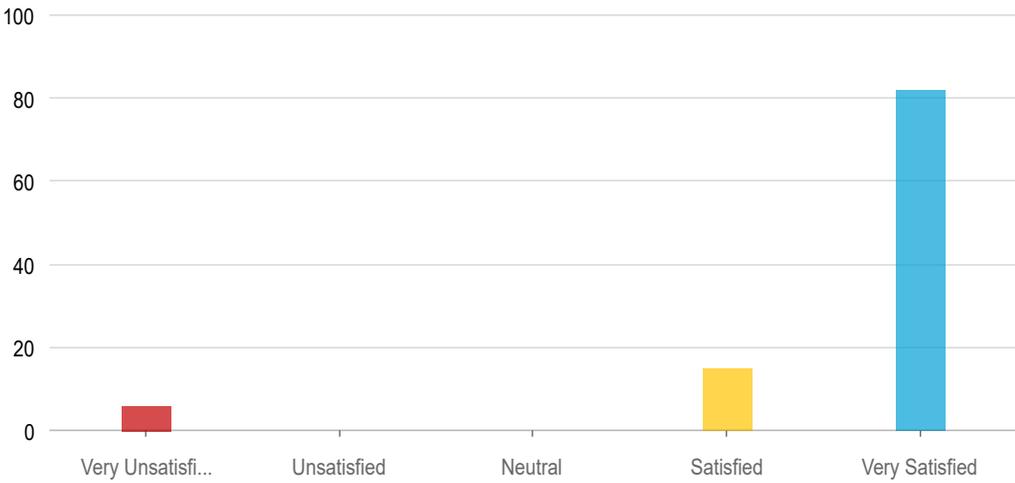


Answers **Count** **Percentage**

Answers	Count	Percentage
1	43	40.57%
2	4	3.77%
3	12	11.32%
4	9	8.49%
5	19	17.92%

Answered: 87 Skipped: 19

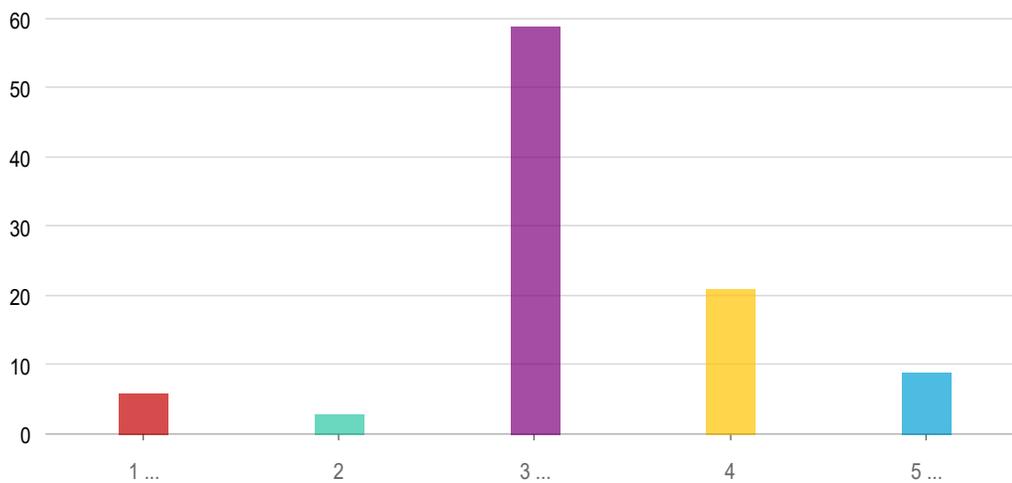
13. How satisfied are you with your experience at the Project area during this visit?



botany	1
fresh	1
ari	1
stress	1
EXCERCISE.	1
education.	1
accessible	1
absolutely	1
stunningly	1
!!	1
cruise	1
ship	1
nomtour	1

Answered: 71 Skipped: 35

15. On a scale of 1-5, how much development would you like to see at the Project...

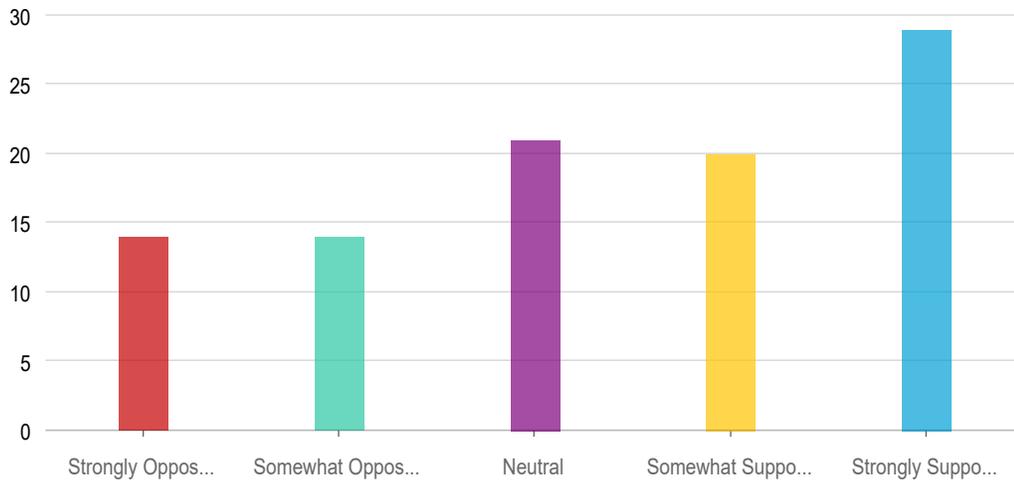


Answers	Count	Percentage
1 (Less Development)	6	5.66%
2	3	2.83%
3 (Keep as is)	59	55.66%
4	21	19.81%

5 (More Development)	9	8.49%
----------------------	---	-------

Answered: 98 Skipped: 8

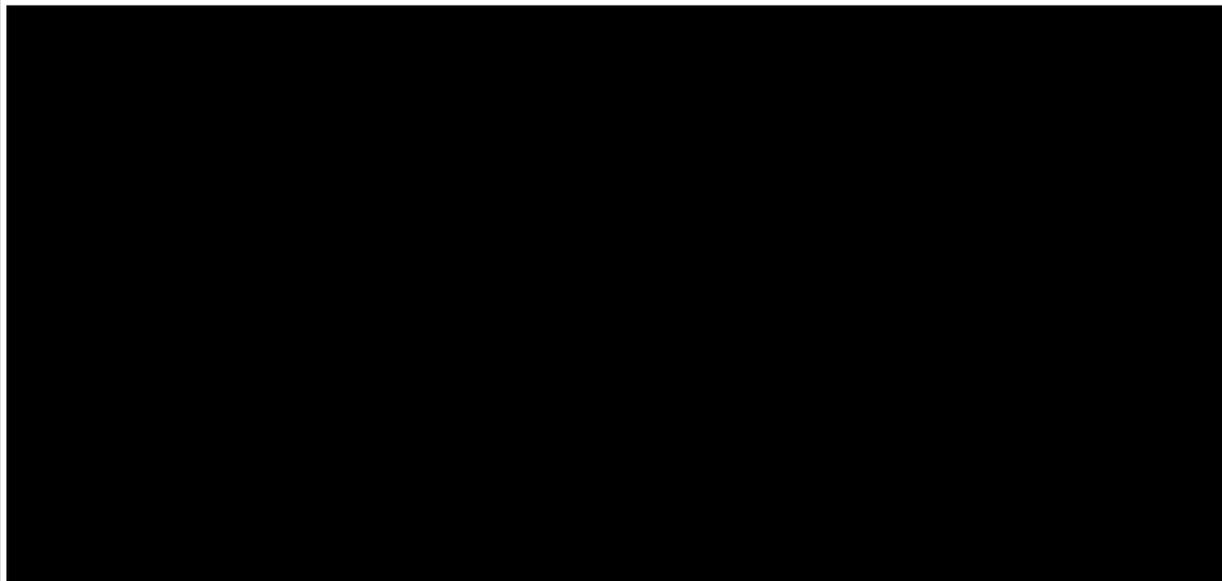
16. Do you support allowing public use of e-bikes on Green Lake Road?



Answers	Count	Percentage
Strongly Opposed	14	13.21%
Somewhat Opposed	14	13.21%
Neutral	21	19.81%
Somewhat Supportive	20	18.87%
Strongly Supportive	29	27.36%

Answered: 98 Skipped: 8

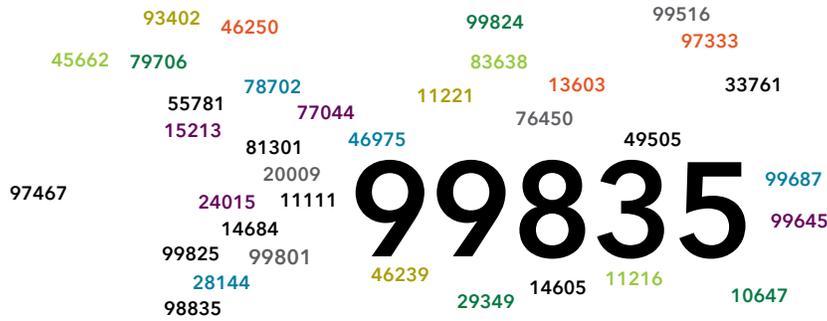
17. Are there any improvements you would like to see made at the Project area for a better...



complete	1
describe	1
notes	1
found	1
sheet	1
(required)	1
blank.*	1
[010_Paper	1
,	1

Answered: 49 Skipped: 57

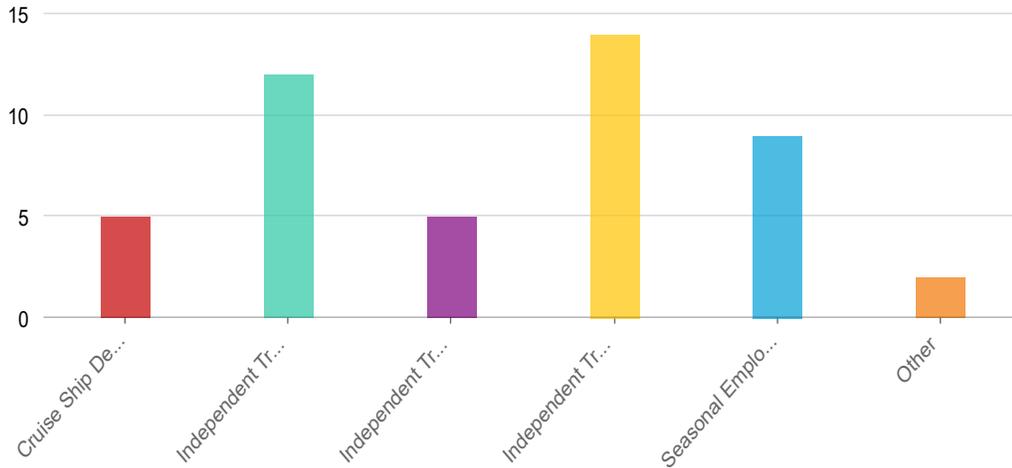
18. What is your zip code? *



Word **Count**

Word	Count
99835	67
99801	3
15213	2
46975	2
10647	1
11111	1
11216	1
11221	1

19. If you are NOT from Sitka, what best represents the nature of your travel to the...

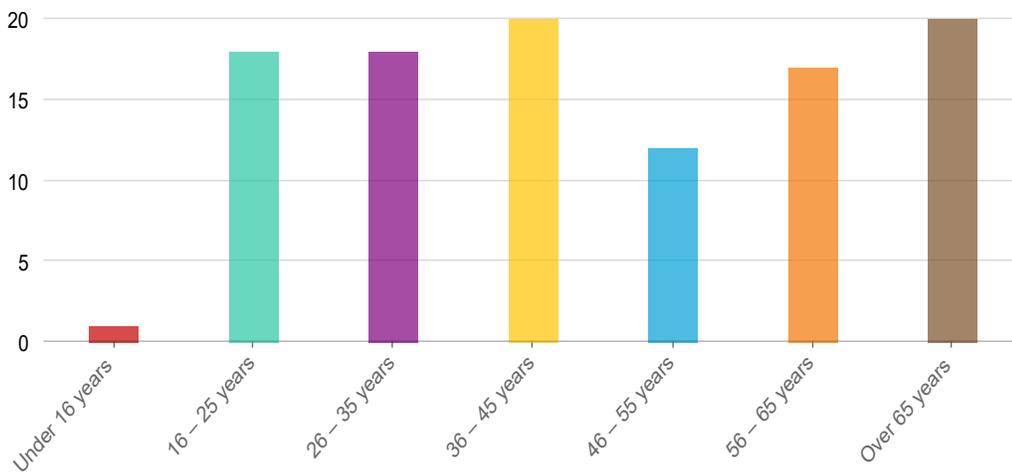


Answers **Count** **Percentage**

Answers	Count	Percentage
Cruise Ship Destination	5	4.72%
Independent Travel – Recreation/Vacation	12	11.32%
Independent Travel – Visit Family or Friends	5	4.72%
Independent Travel – Work Trip	14	13.21%
Seasonal Employment in Sitka	9	8.49%
Other	2	1.89%

Answered: 47 Skipped: 59

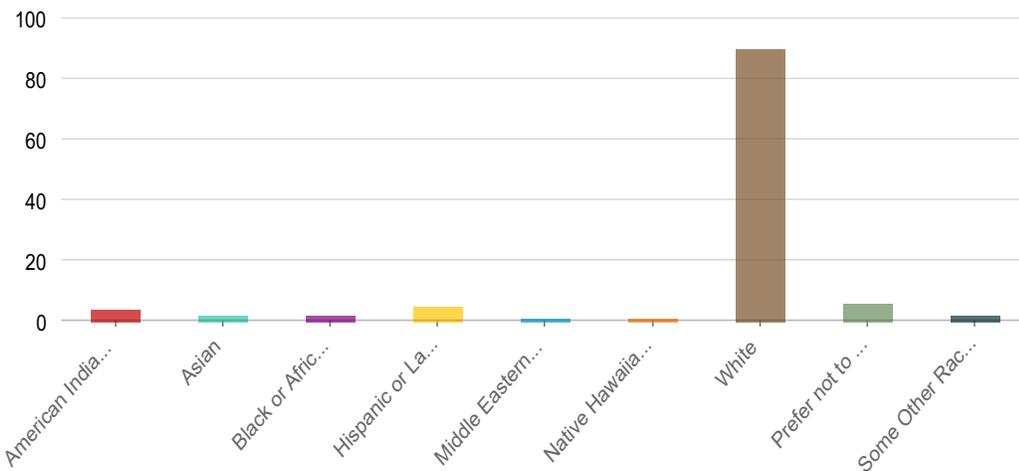
17. What is your age group? *



Answers	Count	Percentage
Under 16 years	1	0.94%
16 – 25 years	18	16.98%
26 – 35 years	18	16.98%
36 – 45 years	20	18.87%
46 – 55 years	12	11.32%
56 – 65 years	17	16.04%
Over 65 years	20	18.87%

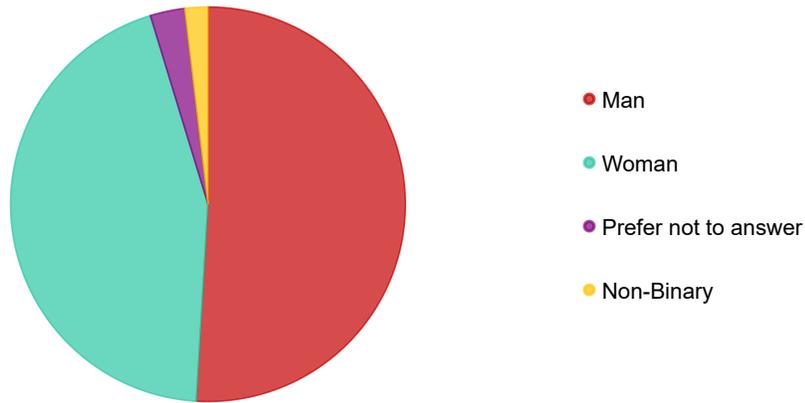
Answered: 106 Skipped: 0

18. What is your race and/or ethnicity? *



Answers	Count	Percentage
American Indian or Alaska Native	4	3.77%
Asian	2	1.89%
Black or African American	2	1.89%
Hispanic or Latino	5	4.72%
Middle Eastern or North African	1	0.94%
Native Hawaiian or other Pacific Islander	1	0.94%
White	90	84.91%
Prefer not to answer	6	5.66%
Some Other Race:	2	1.89%

19. What is your gender identity? *



Answers **Count** **Percentage**

Answers	Count	Percentage
Man	54	50.94%
Woman	47	44.34%
Prefer not to answer	3	2.83%
Non-Binary	2	1.89%

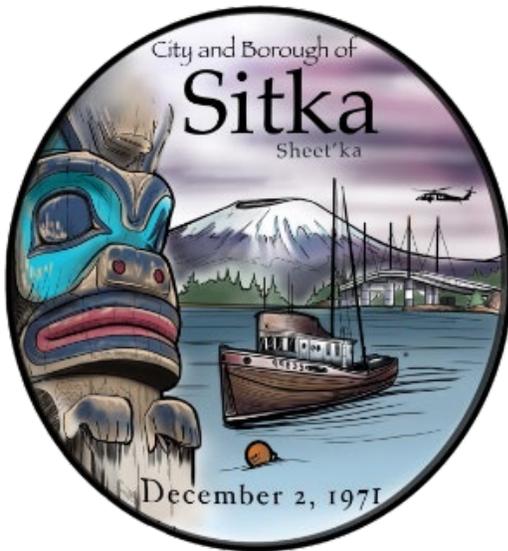
Attachment 2. Access Road Water Crossing Structures Study Report

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**Green Lake
Hydroelectric Project
FERC No. P-2818**

**Access Road Water
Crossing Structures
Study Report**

**Submitted by:
City and Borough of Sitka,
Alaska**



Prepared by:



February 2026

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Appendices

- Appendix A. Culvert Database
- Appendix B. Stream-Associated Culvert Survey Data
- Appendix C. ArcGIS Online Map

Acronyms and Abbreviations

ADFG	Alaska Department of Fish and Game
ADOT&PF	Alaska Department of Transportation & Public Facilities
AEP	annual-exceedance probabilities
AWC	Anadromous Waters Catalog
CBS	City and Borough of Sitka
CCSM	Community Climate System Model
cfs	cubic feet per second
CMP	corrugated metal pipe
FERC	Federal Energy Regulatory Commission
FSH	Forest Service Handbook
GFDL	Geophysical Fluid Dynamics Laboratory
HC	High-Gradient Contained
HDPE	high-density polyethylene
LiDAR	Light Detection and Ranging
MM	Moderate-Gradient/Mixed Control
MW	megawatt
NOAA	National Oceanic and Atmospheric Administration
USDA	United States Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 Introduction

The City and Borough of Sitka (CBS), Alaska, is in the process of relicensing the 18.54-megawatt (MW) Green Lake Hydroelectric Project (Project; FERC No. P-2818) with the Federal Energy Regulatory Commission (FERC). The U.S. Fish and Wildlife Service (USFWS) filed a study request with FERC for an access road water crossing structures assessment. CBS included this study in their Proposed Study Plan, which was filed with FERC September 6, 2024. No comments were submitted on the proposed Access Road Water Crossing Structures Study. CBS filed the Revised Study Plan on January 3, 2025, and again, no comments on the study were received.

FERC issued its Study Plan Determination on January 24, 2025, approving the study as filed, and there were no study disputes. This study report is being filed with FERC as part of the Initial Study Report. The study was completed in 2025.

2.0 Study Report Elements

The sections below outline the study report elements for the Access Road Water Crossing Structures Study.

2.1 Study Goals and Objectives

The goal of the study was to provide a baseline inventory and assessment of water crossing structures along the CBS-maintained portion of the Green Lake access road, with consideration of stream characteristics and how those characteristics might change.

Specific objectives of the study included the following:

- Identify and survey water crossing structures along the CBS-maintained portion of the Green Lake access road following the Forest Service Handbook (FSH) road condition survey protocol (U.S. Department of Agriculture [USDA] Forest Service 2000) and document any issues with the structures.
- Categorize the streams at each crossing structure along the CBS-maintained portion of the Green Lake access road following FSH protocols for determining stream value class and channel type. Document any resource concerns and potential site-specific mitigation measures.
- Determine flood flow frequencies for the frontal watersheds feeding the stream crossings with consideration for climate projections.
- Given the condition of the structures, stream characteristics, and projected flood flow frequencies, document considerations for maintenance and/or upgrades at each crossing structure along the CBS-maintained portion of the Green Lake access road.
- Build an inventory of the crossing structures along the CBS-maintained portion of the Green Lake access road, their stream features, and relevant notes and recommendations.

2.2 Study Area

CBS conducted this study along the approximately seven-mile stretch of the Green Lake access road from the end of the Alaska Department of Transportation & Public Facilities (ADOT&PF) maintained section of road just before the locked gate near Herring Cove to the powerhouse, as well as on the spur road to Green Lake (Figure 2-1). CBS controls and maintains this stretch of access road and the spur road to Green Lake. The portion of the road that is owned and maintained by ADOT&PF is not included in this study even though approximately 1.5 miles is within the Proposed FERC Project Boundary; CBS has no control over this section of the road (Figure 2-1).

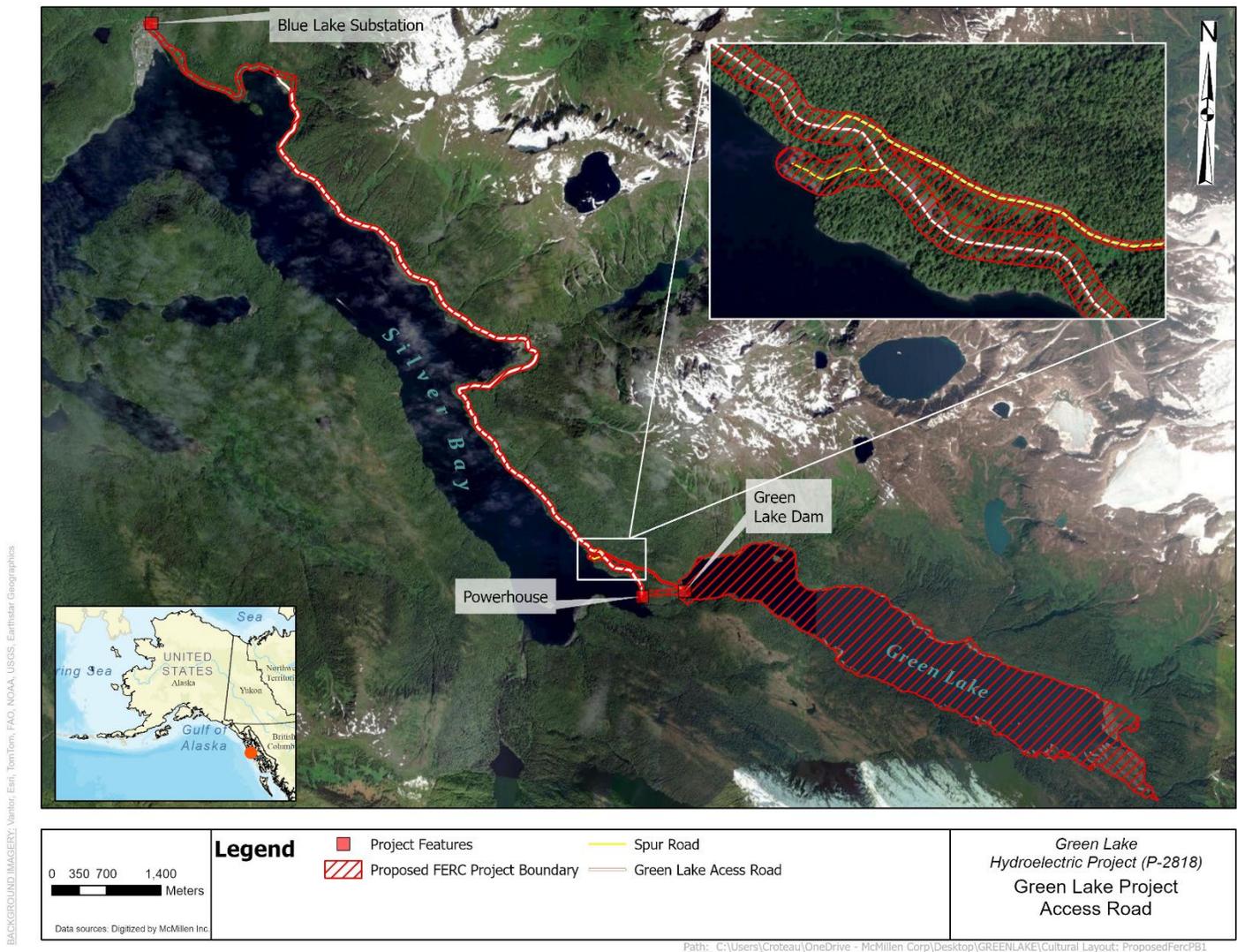


Figure 2-1. Study Area for Access Road Water Crossing Structures Study

2.3 Methodology

2.3.1 Culvert Survey

For this study, CBS used the USFWS recommended methodology for assessing culvert structures, the FSH for road condition survey (USDA Forest Service 2000). For the stream value class and channel type components of the survey, CBS uses the USFWS recommended methodologies: Tier I protocol in the FSH – Aquatic Habitat Management (USDA Forest Service 2001) and the Region 10 Channel Type Revision (USDA Forest Service 2024).

Prior to field data collection, the potential location of culverts along the access road were identified using existing CBS databases and available Light Detection and Ranging (LiDAR) topography information to identify places where the access road crosses drainage valleys. Additionally, CBS personnel pre-flagged all culverts that crossed the access road prior to the start of field data collection by driving along the road and searching for culverts along the road section by section. The access road was then surveyed in its entirety from April 7 through April 10, 2025, to visually identify and confirm the presence of the culverts. Locational information was collected using the ArcGIS Field Maps application and the FSH survey protocols were conducted for each culvert. ArcGIS Field Maps were used to store the database of the culverts and include the information collected during the condition assessment and flood frequency analysis.

2.3.2 Flood Frequency Analysis

CBS used U.S. Geological Survey (USGS) guidelines for estimating flood magnitude and frequency on un-gaged sites on streams in Alaska (Curran et al. 2016) to determine frequencies of flood flows for the frontal watersheds that feed stream crossings at the access road in conjunction with climate projections from Lader et. al. 2022. This methodology has been used by other agencies, including Alaska Department of Fish and Game (ADFG) and the U.S. Forest Service (USFS), in southeast Alaska to inventory and assess extensive road systems.

The USGS regression equations used in this assessment relate drainage area, mean annual precipitation, and basin physiography to expected peak flows at specific annual-exceedance probabilities (AEPs), including the 50 percent, 10 percent, and one percent events. AEP is the statistical measure of that likelihood expressed as a percentage or probability. Together, they describe how large a flood is expected to be and how often it may occur. For example, a flood frequency flow with a one percent AEP has a one percent chance of being exceeded in any single year.

The USGS regression equations used in this assessment relate drainage area, mean annual precipitation, and basin physiography to expected peak flows at specific AEPs, including the 50 percent, 10 percent, and one percent events.

To evaluate potential sensitivity to future climate conditions, peak flows were also estimated using mid-century climate projection models (Lader et. al. 2022):

- CCSM (Community Climate System Model) and
- GFDL (Geophysical Fluid Dynamics Laboratory model).

Lader et. al. used these two global climate models to generate future climate projections for southeast Alaska. Both models represent credible climate futures for Southeast Alaska and capture the range of precipitation and temperature responses expected under continued warming. The CCSM model was developed by the National Center for Atmospheric Research and simulates interactions among the atmosphere, ocean, land surface, and sea ice at relatively coarse global resolution. The CCSM model has a lower climate sensitivity, meaning it generally produces more moderate responses to greenhouse gas forcing compared to some other models. The GFDL model was developed by the National Oceanic and Atmospheric Administration (NOAA) and is similar to the CCSM model, however it uses more complex atmospheric physics. It has a higher climate sensitivity, often producing stronger warming and more pronounced hydrologic changes under the same emissions scenario (Lader et. al. 2022).

In order to compute the frequency of flood flows, Climate Normals¹ for average annual precipitation for Sitka were obtained from NOAA weather station at the Sitka Airport (NOAA 2025). The projected change in mean precipitation for Southeast Alaska from Table 1 of Lader et. al. 2022 was then used to calculate a percent increase in the average annual precipitation obtained from the Climate Normals (1991-2020) from the Sitka Airport station for both the CCSM and GFDL models. Drainage areas for each of the culverts identified in the field to have stream channels were delineated using USGS topographic maps in the ArcGIS². The annual precipitation obtained from the NOAA weather station, and climate projections using the CCSM and GFDL models as well as the drainage areas were then used in the equations in Table 7 of Curan et. al. 2016 to compute the flood frequency flows.

¹ Climate Normals are 30-year averages for climate variables like precipitation. The newest Climate Normals dataset for the United States, released in May 2021, spans the most recent 30-year period, 1991-2020. (NOAA 2026)

² Drainage areas were delineated by hand as the areas were too small to be delineated using developed tools like USGS StreamStats or ArcGIS Create Watersheds. All of the watersheds delineated for the culverts along the access road were smaller than one square mile, meaning that some error was likely introduced while delineating drainage areas by hand.

2.4 Results

The results of both the field-based culvert survey and the flood frequency analysis are presented in this section. This study produced three different databases, which are included as appendices to this study report and explained further in the sections below. The three databases are:

- MS Excel spreadsheet database of all culverts surveyed (Appendix A)
- MS Excel spreadsheet of survey data and figures (Appendix B)
- ArcGIS Online map of all culverts, which also contains photos (Appendix C)

Because these data formats cannot be directly attached to this document, the spreadsheets have been filed separately and a publicly available link to the ArcGIS Online map is included in Appendix C.

2.4.1 Culvert Survey

A total of 69 culverts along the CBS maintained portion of the Green Lake access road and eight culverts along the spur road to Green Lake were identified and surveyed (Figure 2-2). Culverts were categorized as either stream-associated or non-stream, depending on whether a defined channel was present at the crossing. This distinction highlights which culverts have significant contributing drainage areas versus those functioning solely as roadway drainage features. Stream-associated culverts often had perennial streams with flowing water observed during data collection, while non-stream culverts did not show signs of clearly defined channels and often did not have water flowing through them. It is likely that these non-stream culverts primarily convey localized surface runoff from the road or adjacent slopes and function to prevent erosion or saturation along the roadway. These culverts likely drain ephemeral flow paths, roadside ditches, or shallow swales that only convey water during periods of heavy rainfall or snowmelt.

Of the 69 culverts identified along the Green Lake access road, 12 culverts were associated with active stream channels, while 57 culverts were associated with non-stream features such as roadside drainage ditches, ephemeral flow paths, or shallow swales. The eight culverts along the spur road to Green Lake were not associated with streams except for GD02, which consisted of extremely steep cascades both above and below the culvert. This made surveying the culvert in the field unsafe and, therefore, this culvert is not further evaluated. However, the steep bedrock cascades both upstream and downstream of this culvert preclude fish passage (see photos in Appendix C).

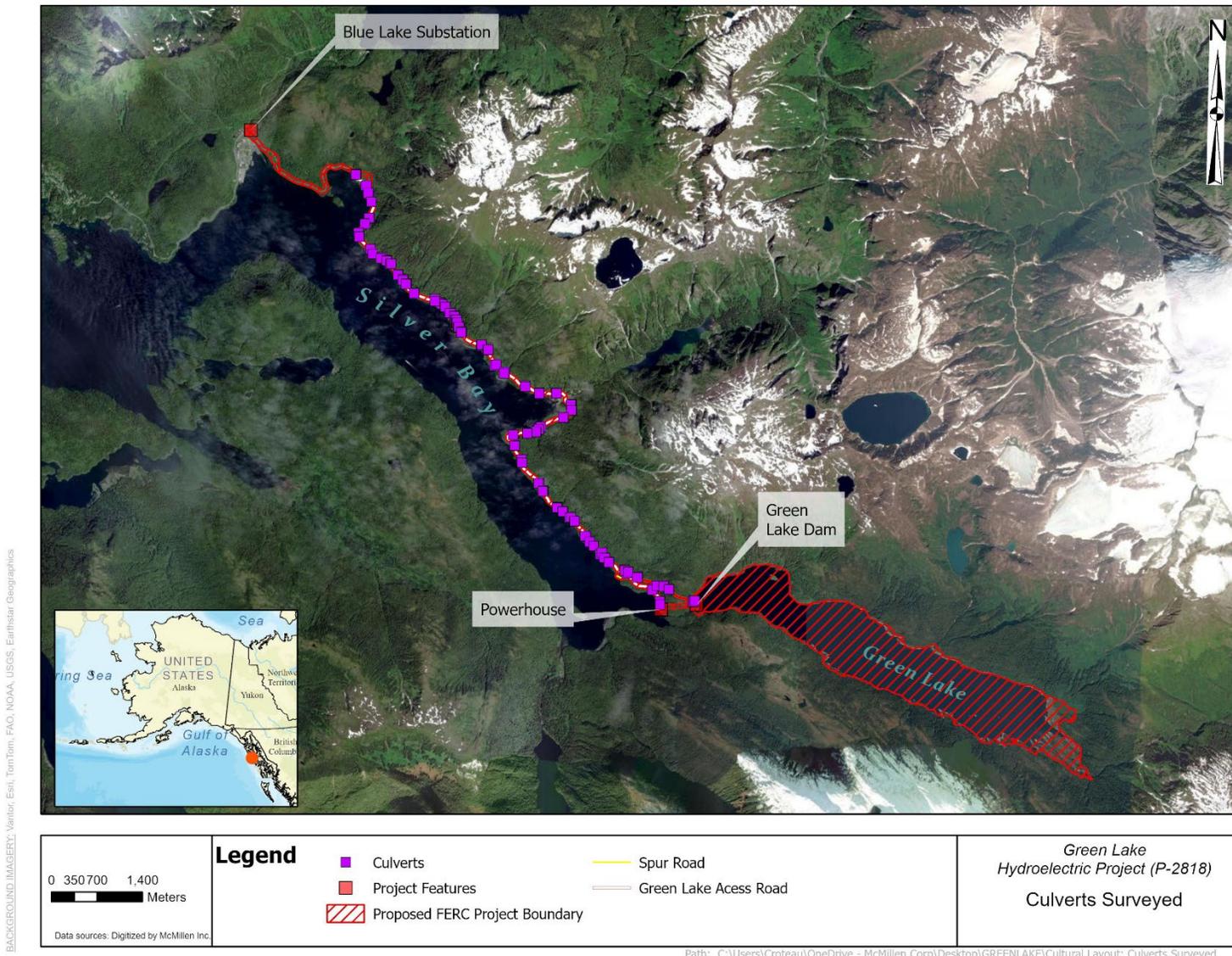


Figure 2-2. Culverts Surveyed

Stream-associated culverts and their contributing drainage areas are listed in Table 2-1 and shown Figure 2-3. Channel types were predominantly High-Gradient Contained (HC) and Moderate-Gradient/Mixed Control (MM), reflecting steep, confined reaches influenced by direct slope runoff. Based on FSH 2090.21 criteria, all of the stream-associated culverts, except G31-A, were classified as Class III streams, i.e., channels that do not support fish populations but exhibit sufficient discharge and sediment-transport capacity to influence downstream fish habitat.

The stream associated with G31-A was classified as a Class I stream based on FSH 2090.21 criteria, which are streams that have anadromous or adfluvial fish or fish habitat. ADFG maintains anadromous waters data for the state in their online Anadromous Waters Catalog (AWC; ADFG 2025). The AWC confirms the stream associated with culvert G31-A (Stream 113-41-10240) is anadromous and was most recently surveyed by ADFG in 2012 (ADFG 2016). This stream has a defined stream channel, and the G31-A culvert is functioning as intended and is not showing signs of significant erosion or overtopping, indicating it is appropriately sized for this stream. The inlet and outlet are not perched and are submerged in the stream, allowing for aquatic organism passage (see photos below).



G31-A Inlet



G31-A Outlet

Table 2-1. Stream-Associated Culverts

Road Mile	Culvert ID	Drainage Area (sq mi)	Stream Class	Channel Type	Notes
0.15	G31-A	1.04	Class I	Estuary/Moderate Gradient Contained	Located before locked gate, AWC Stream 113-41-10240
1.89	G61-B	0.11	Class III	High Gradient Contained	
2.08	G63-B	0.04	Class III	High Gradient Contained/ Moderate Gradient Contained	
2.10	G64-A	0.10	Class III	Moderate Gradient Contained	
2.19	G66-A	0.66	Class III	Moderate Gradient Contained	Two culverts. Upstream of anadromy limit, AWC Stream 113-41-10260
2.47	G72-A	0.19	Class III	Moderate Gradient Contained	
2.55	G73-A	0.13	Class III	High Gradient Contained	
2.87	G78-A	0.40	Class III	High Gradient Contained	Very steeply perched outlet, AWC Stream 113-41-10270
4.10	G101-C	0.53	Class III	Moderate Gradient Contained	Two culverts
5.26	G123-A	0.19	Class III	High Gradient Contained	
5.65	G129-A	0.18	Class III	Moderate Gradient Contained	
6.20	G138-B	0.42	Class III	Moderate Gradient Contained/High Gradient Contained	High gradient, upstream of anadromy limit, AWC Stream 113-41-10305

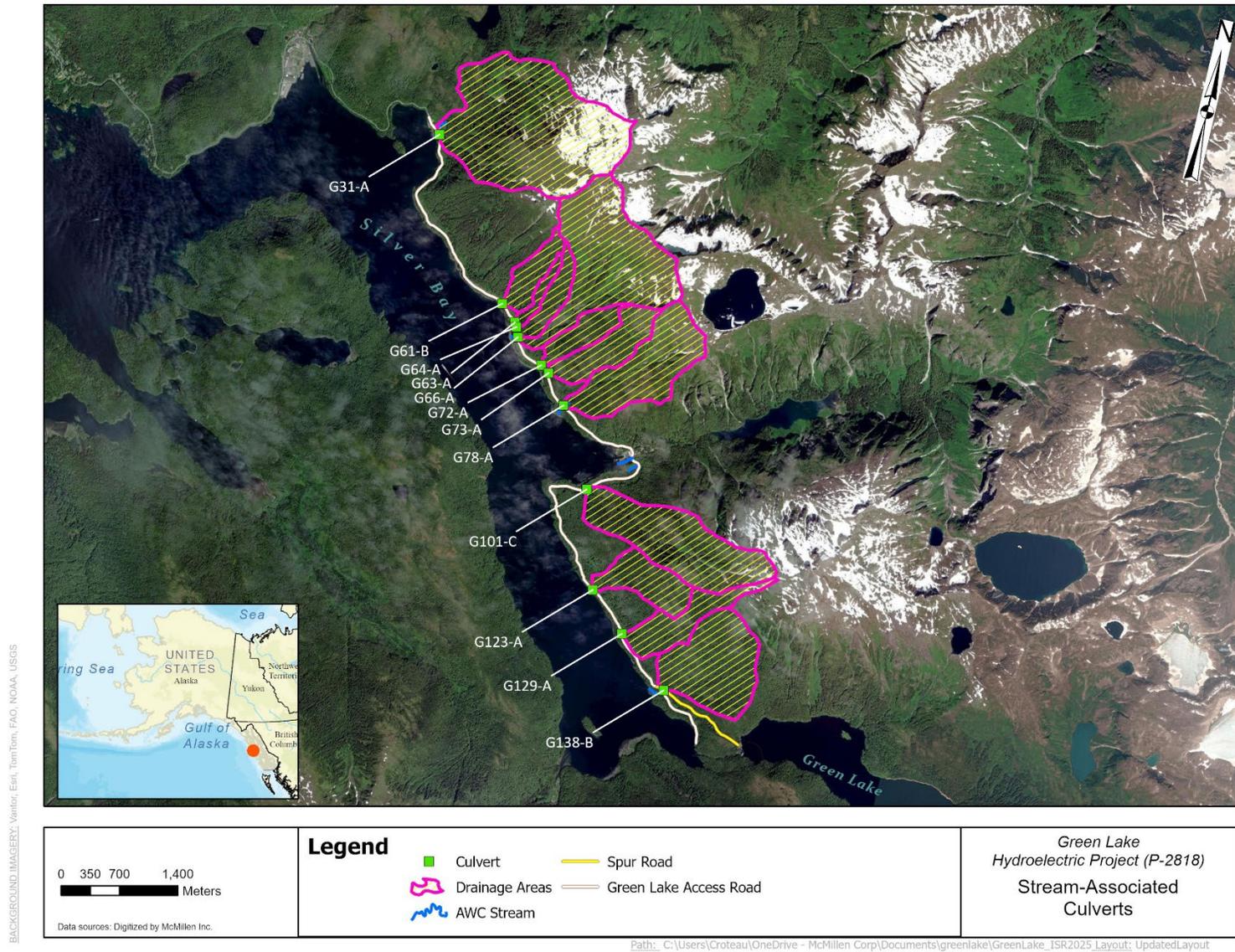


Figure 2-3. Stream-Associated Culverts

Culverts G66-A, G78-A, and G138-B are also associated with AWC streams but were still categorized as Class III streams because fish passage does not extend up to the culvert. The AWC confirms that fish passage does not extend to culverts G66-A and G138-B; however, the stream associated with culvert G78-A (Stream 113-41-10270) shows fish passage extending through the culvert (ADFG 2025). According to the AWC, this determination was made by ADFG in 1983. In 2023, CBS requested that ADFG review this stream because a high gradient reach downstream of the access road appears to prevent fish passage. In 2024, ADFG did evaluate this stream and in correspondence with CBS said that a recommendation would be made to shorten the anadromous reach in the AWC to downstream of the culvert, but the AWC has not been updated (Christenson, pers. com. 2024). The results of this survey confirm fish passage does not extend to the culvert (see photos of culvert G78-A in Appendix C).

As can be seen in Figure 2-3, no stream-associated culverts were identified between G31-A and G61-B. It is likely that the drainages coming off the slopes in this area are small enough that the ditches along the access road convey them to the many smaller culverts between G31-A and G61-B resulting in no single culvert conveying a large amount of flow in this section of the access road. The wooden bridges crossing Medvejie Creek are maintained by CBS (Electric Department) but were not included in this assessment for several reasons. Based on observations by CBS staff after past large storm events, one of which was large enough to change the creek bed, water has not overtopped the Medvejie Creek bridges; indicating the bridges are adequately sized. Additionally, Medvejie Creek is managed as part of the Medvejie Fish Hatchery and thus does not provide access to extensive anadromous fish habitat due to weirs located immediately upstream of the bridges.

Across both groups, culverts varied in material, size, and design, reflecting differences in drainage area and installation age. The dominant culvert material across all sites was corrugated metal pipe (CMP), representing approximately 87 percent of installations, followed by high-density polyethylene (HDPE) at 16 percent. No other material types were encountered. Culvert widths averaged 2.6 ft, heights averaged 2.4 ft, and mean culvert length was approximately 29 ft. While most culverts were found to be circular, Appendix A includes both the height and width of the culvert openings in order to document any crushing of the culvert outlet and/or inlet.

Appendix A also includes a column for Replacement Priority for each culvert (High, Medium, or Low). Replacement priority was determined based on the outlet/inlet conditions, whether flowing water was observed in the culvert during field data collection, and the overall culvert condition. If the culvert was found to have flowing water and was in poor condition (significant deterioration, crushing of the inlet/outlet) it was ranked as High for Replacement Priority. If the culvert was in poor condition but did not have flowing water or a clear stream channel, it was ranked as Medium for Replacement Priority. Culverts that were in good condition were ranked

as Low. Approximately 25% of culverts were ranked as High priority for replacement, 56% were ranked as Low priority, and 18% were ranked as Medium priority.

2.4.2 Flood Frequency Analysis

Flood-frequency calculations were completed only for stream-associated culverts. Non-stream drainage culverts were excluded because they do not convey perennial flow and did not have clearly definable contributing drainage areas, which was a key metric for computing flood frequency. Figure 2-4 shows the flood frequency flows for all stream-associated culverts based on the 1991 to 2020 normal precipitation value obtained from the Sitka Airport NOAA weather station. Figure 2-5 and Figure 2-6 show the flood frequency flows for the CCSM and GFDL climate projection models.

The 50% annual exceedance probability ranged from 6 cubic feet per second (cfs) at G63-B to 91 cfs at G31-A and the 0.2% annual exceedance probability ranged from 49 cfs at G63-B to 400 cfs at G31-A. Flood frequency flows are directly related to the drainage area of each respective culvert, as the same precipitation value was used for all, with the larger drainage area culverts exhibiting higher flood frequency flows and the smaller drainage area culverts exhibiting lower flood frequency flows. As expected, flood frequency flows increased under the CCSM and GFDL climate projection models, as annual precipitation is expected to increase under these models.

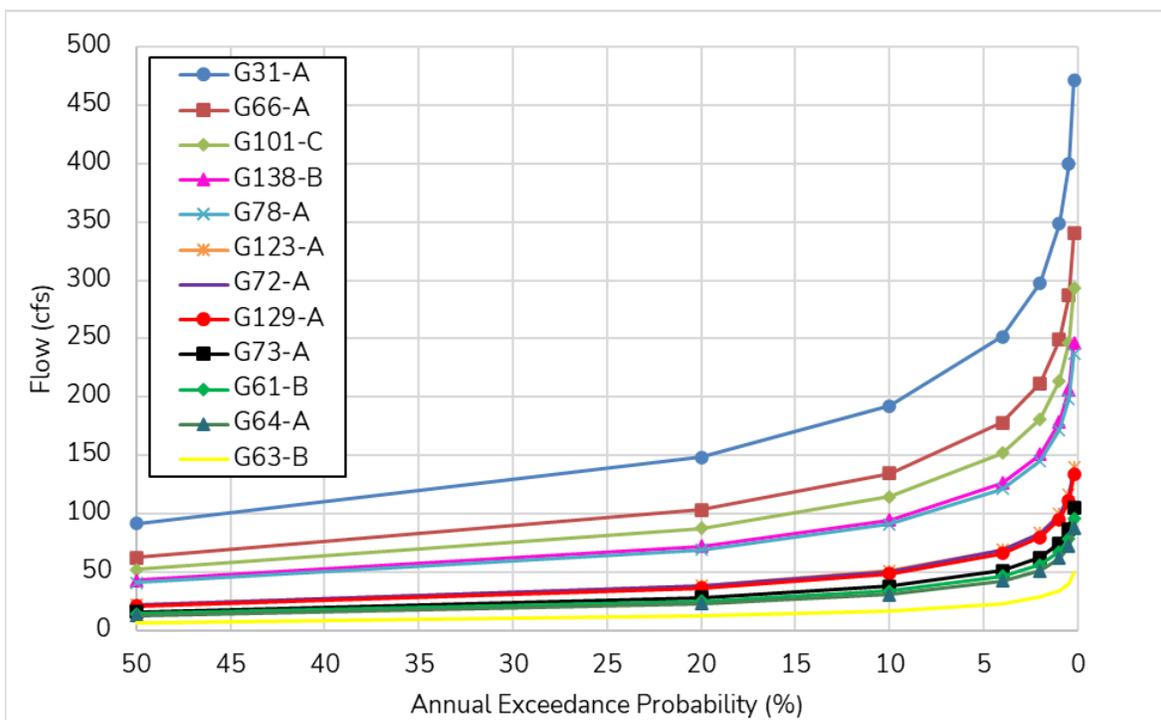


Figure 2-4. Flood Frequency Flows (1991-2020 Normal)

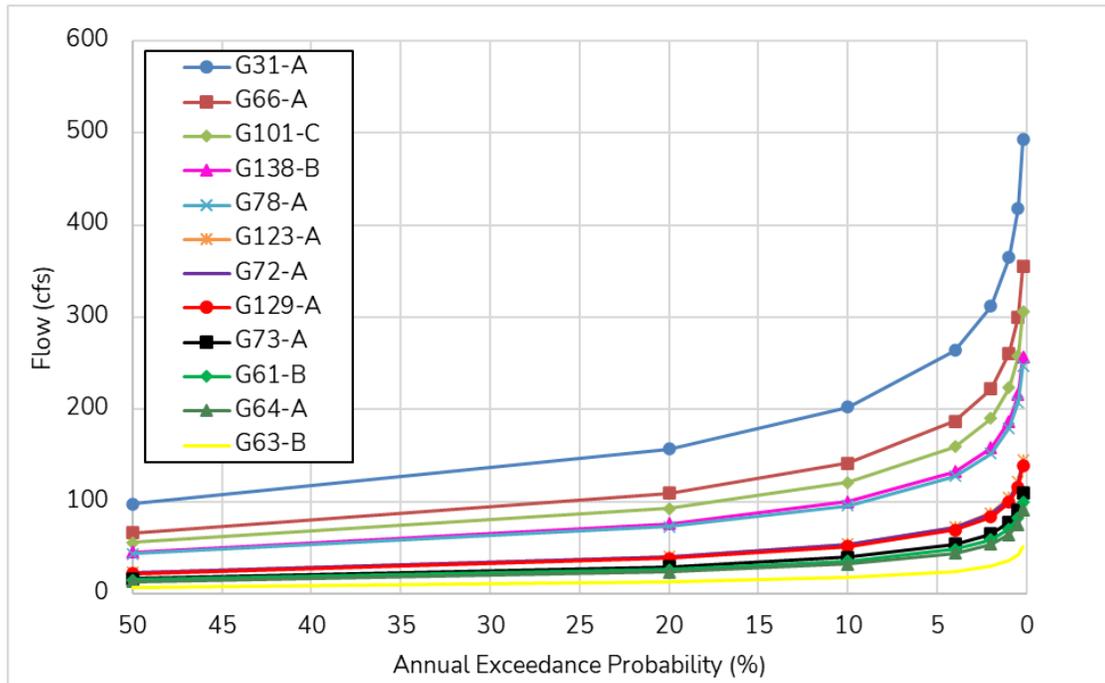


Figure 2-5. Flood Frequency Flows (CCSM)

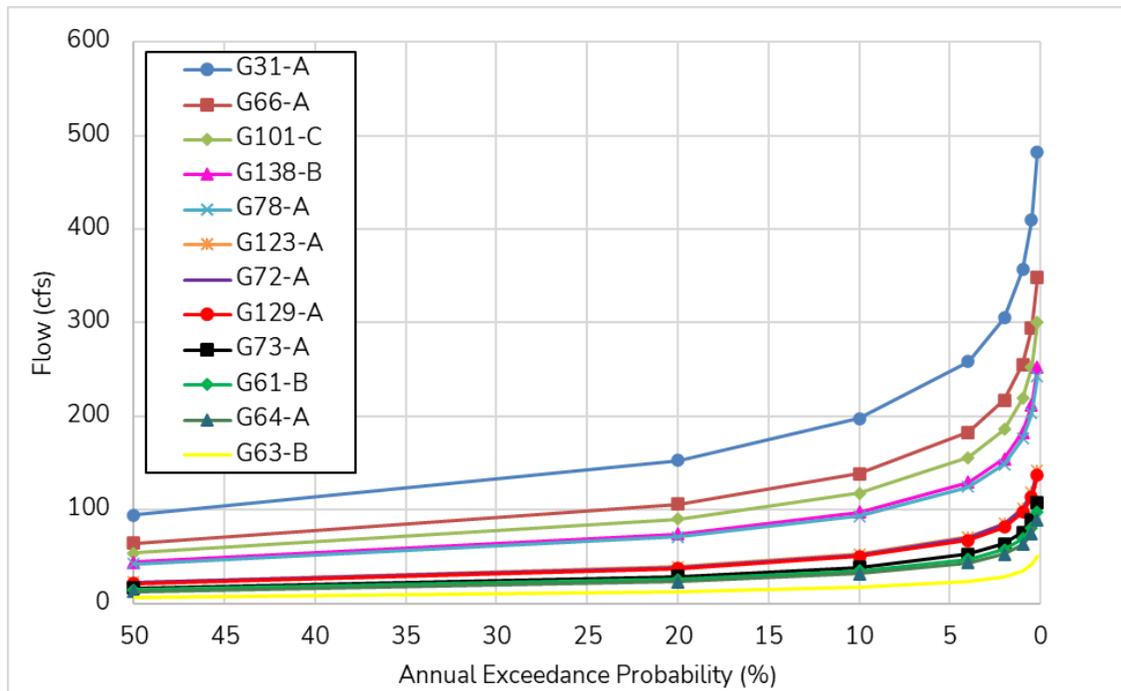


Figure 2-6. Flood Frequency Flows (GFDL)

2.5 Discussion and Findings

All of the culverts identified along the Project access road (aside from G31-A) were found to be located upstream of anadromous fish passage barriers. The Project access road is characterized by extremely steep terrain down to tide water. Most culvert outlets were found to discharge down the side of steep cliffs and did not exhibit clear stream channels. Stream-associated culverts, while showing more typical channel characteristics, were often very steep (see longitudinal profile plots in Appendix B) and did not contain suitable aquatic habitat. As such, none of the culverts along the access road were found to cause major impacts to aquatic habitat or water quality. The only culvert with a clear stream channel and a Class I stream, G31-A, is functioning as intended and appears to be appropriately sized.

The culvert drainage network is functioning effectively to maintain road stability and manage runoff, with most structures functioning as intended for the steep, small watersheds in the area. More than half of the 69 culverts along the Project access road were found to be in good condition, and no culverts with major drainages or large stream channels were found to be in poor condition. The study meets project objectives by documenting crossing conditions, classifying streams, and evaluating flood-frequency behavior under current and future climates and no further work is proposed. Findings indicate the system is performing as intended, with no major structural deficiencies or fish passage barriers. The databases developed as part of this study (and included in the Appendices) will be used by CBS to monitor, maintain, and upgrade culverts along the Project access road as needed.

2.6 Study Variances and Modifications

There were no variances from the FERC-approved study plan. CBS is not proposing any modifications to this study.

3.0 References

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Appendix A. Culvert Database

The Culvert Database is provided as a separate attachment in MS Excel format.

Appendix A provides the cleaned and organized field data for all culverts surveyed along the Green Lake access road and the spur road to the Green Lake dam. The workbook includes two tabs, one for each road segment, and incorporates both field observations and additional calculations (e.g., drainage area estimates and related metrics) used to support the culvert assessment.

Appendix B. Stream-Associated Culvert Survey Data

The Stream-Associated Culvert Survey Data is provided as a separate attachment in MS Excel format.

Appendix B summarizes culvert data collected in April 2025 using standard field survey methods, including measuring culvert dimensions, documenting inlet and outlet conditions, and recording channel geometry. Each tab contains the culvert IDs that were surveyed. “Tail Crest Cross-Section” and “Upstream Cross-Section” refer to channel measurements taken just downstream and upstream of each culvert, as outlined in USFS 2000, USFS 2001, and USFS 2024.

Appendix C. ArcGIS Online Map

The link to the ArcGIS online map of all surveyed culverts, including photos is below:

<https://arcg.is/ieGzi0>

Attachment 3. Cultural Resources Study Interim Report

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