

**REVIEW OF APPLICATION FOR LIHI RECERTIFICATION  
Of The BEAR RIVER HYDROELECTRIC PROJECT, LIHI #53, FERC No. 20**



**Prepared by Thomas N. Russo, Certification Reviewer**

**August 11, 2023**

## Table of Contents

I. INTRODUCTION.....	1
II. PROJECT GEOGRAPHIC LOCATION.....	3
III. PROJECT SITE CHARACTERISTICS .....	4
A. Soda Development .....	4
B. Grace Development.....	7
C. Oneida Development.....	9
IV. ZONES OF EFFECT (ZoEs) .....	12
V. REGULATORY AND COMPLIANCE STATUS .....	23
A. Water Quality Certificate .....	23
B. FERC Licensing Requirements.....	23
VI. LIHI PUBLIC COMMENTS .....	26
A. Comment Letters.....	26
B. Agency Correspondence .....	27
VII. DETAILED CRITERIA REVIEW .....	27
A. Ecological Flows.....	27
Summary .....	30
B. Water Quality.....	31
Summary .....	34
C. Upstream Fish Passage.....	35
Summary .....	38
D. Downstream Fish Passage.....	40
Summary .....	42
E. Shoreline and Watershed Protection .....	43
Summary .....	44
F. Threatened and Endangered Species Protection .....	45
Summary .....	46
G. Cultural and Historical Resource Protection.....	47
Summary .....	47
H. Recreational Resources.....	48
VIII. RECOMMENDATION.....	54
IX. APPENDIX A .....	55

## List of Figures

Figure 1. Restoration Highlights of the Bear River Hydroelectric Project .....	2
Figure 2. Hydropower Projects in the Bear River Basin .....	3
Figure 3. The Soda Dam and Powerhouse .....	4
Figure 4. Aerial View of Soda Development and Features .....	5
Figure 5. Soda Powerhouse and Alexander Reservoir .....	6
Figure 6. Aerial View of Grace Development and Features .....	7
Figure 7. The Grace Dam of the Bear River Hydroelectric Project .....	8
Figure 8. Aerial View of Oneida Development and Features .....	10
Figure 9. The Oneida Reservoir, Dam, and Spillway .....	11
Figure 10. Zones of Effect conceptual diagram of the Bear River Project.....	13
Figure 11. Aerial Photo of ZoE 1, Soda Impoundment.....	14
Figure 12. Aerial Photo of ZoE 2, Soda Regulated Riverine Reach .....	15
Figure 13. Aerial Photo of ZoE 3, Grace Impoundment .....	16
Figure 14. Aerial Photo of ZoE 4, Grace Bypass Reach .....	17
Figure 15. Aerial Photo of ZoE 5, Grace Regulated Riverine Reach.....	18
Figure 16. Aerial Photo of ZoE 6, Oneida Impoundment .....	19
Figure 17. Aerial Photo of ZoE 7, Oneida Bypassed Reach .....	20
Figure 18. Aerial Photo of ZoE 8, Oneida Regulated Riverine Reach.....	21
Figure 19. Average Monthly Discharges from the Bear River Project Developments .....	28
Figure 20. Bonneville cutthroat trout (Photo By/Credit: Clint Wirick/USFWS) .....	36
Figure 21. Recreational Facilities at the Oregon Trail Park and Marina.....	49
Figure 22. Aerial Photo of Black Canyon Bypass Reach and Whitewater Take-in and Out Facilities .	51
Figure 23. Whitewater boater in Black Canyon Bypassed Reach ZoE-4.....	52

## List of Tables

Table 1. Descriptions of ZoEs in the Project.....	12
Table 2. Zones of Effect and Ratings against LIHI Criteria and Standards .....	22
Table 3. Generation and Reservoir information for each of the Project Developments.....	28
Table 4. Idaho State Water Quality Use Categories and Criteria .....	31
Table 5. Upstream Fish Passage Standards Matrix .....	35
Table 6. Downstream Fish Passage Standards Matrix .....	40
Table 7. Fish Species Present in the Bear River Projects Vicinity.....	41

## I. INTRODUCTION

PacifiCorp owns and operates the Bear River Hydroelectric Project (Project), a multi-development project located on the Bear River in Idaho. The Project's total installed generating capacity is 77.45 megawatts (MW). Based on records from 1992 to 2021, the Project's average annual generation of 170,250 megawatt-hours (MWh) of renewable electric energy.

PacifiCorp operates the Project under a 30-year license issued by the Federal Energy Regulatory Commission (FERC) on December 22, 2003 (FERC No. 20). Before issuance of the current Project license, FERC prepared an environmental impact statement pursuant to the National Environmental Policy Act (NEPA). PacifiCorp also entered into a comprehensive settlement agreement (Settlement Agreement) with federal and state resource agencies and other stakeholders. FERC approved and incorporated the comprehensive settlement into the current license.<sup>1</sup> FERC also included conditions necessary to protect water quality required by the state of Idaho pursuant to Section 401 of the Clean Water Act (CWA). Also, before the current license, the Project consisted of the Soda Project (FERC No. 20), the Grace-Cove Project (formerly FERC No. 2401) and Oneida Project (formerly FERC No. 472), which were subsequently licensed together as the Bear River Project under FERC No. 20. In 2006, FERC approved the decommissioning and removal of the 80-year-old Cove development, which allowed Bonneville cutthroat trout to move upstream to Black Canyon reach of the Bear River.

As discussed in this review, PacifiCorp's implementation of the license, Settlement Agreement, and state water quality certificate has also established conservation lands, helped to enhance Bonneville cutthroat trout populations, and enhanced recreation on the Bear River, and more (Figure 1).

---

<sup>1</sup> Order issuing FERC License and Approving Settlement Agreement <https://bit.ly/3MPcMQM>





Figure 1. Restoration Highlights of the Bear River Hydroelectric Project

Based on a review of the FERC license, settlement agreement, and state water quality conditions, the Low Impact Hydropower Institute (LIHI) originally certified the Project as "low impact" (Certificate No. 53) in 2009 and recertified it effective December 31, 2014. The current LIHI Certificate expired on December 31, 2022. However, because PacifiCorp filed an initial application for LIHI Recertification before the expiration date, LIHI extended the certification term until June 30, 2023, and again to August 31, 2023.

PacifiCorp is applying for LIHI recertification to satisfy a direct energy buyer's purchasing requirement for renewable energy. The company also wishes to continue participation: 1) in the state

Renewable Portfolio Standard program, 2) in the voluntary Renewable Energy Certificate (REC) market (e.g., Green-e), and 3) to satisfy its own corporate sustainability goals.

## II. PROJECT GEOGRAPHIC LOCATION

The Bear River Basin spans the states of Idaho, Wyoming and Utah. However, the three Project developments are all located in Idaho. The hydropower developments include Soda, Grace, and Oneida, which are operated under FERC Project No. 20 license (Figure 2).

PacifiCorp also owns and operates the Last Chance and Cutler hydroelectric projects in Idaho and Utah, respectively. The former project is small and located between Soda and Grace Reservoirs. The Last Chance Project (FERC No. 4580) is exempt from licensing. The Cutler hydroelectric project (LIHI #62) is operated under FERC license No. 2420. The Cutler development is located 44 miles downstream of the Oneida Development in Utah, near the confluence of several major tributaries. A sixth facility, the Cove development, which was a part of the Project when it was licensed, was decommissioned in 2006. It had been located just downstream of the Grace development.

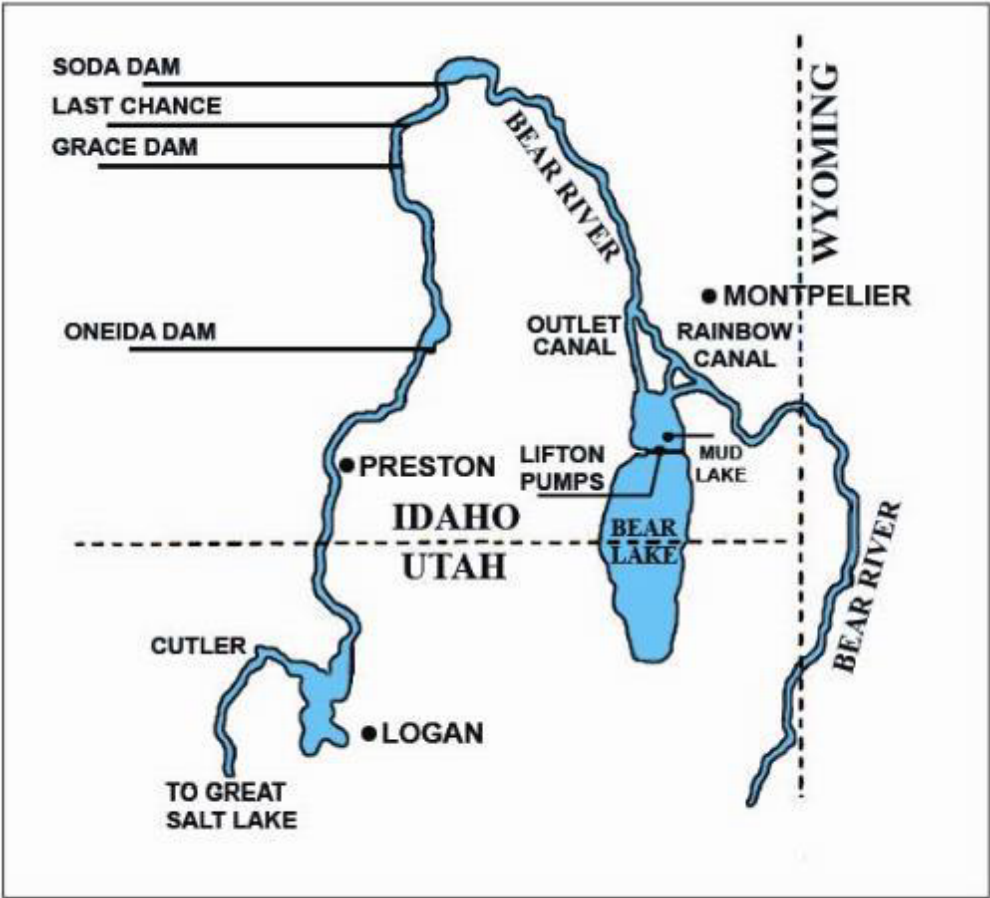


Figure 2. Hydropower Projects in the Bear River Basin

### III. PROJECT SITE CHARACTERISTICS

The Bear River Hydroelectric Project consists of three developments, Soda, Grace, and Oneida listed from upstream to downstream. Since the last LIHI Certification, there have been no changes to the authorized maximum and minimum reservoir water surface elevations.

#### A. Soda Development

The Soda development consists of the Soda reservoir, commonly known as the Alexander Reservoir, and Soda dam and integral powerhouse housing two turbine-generators with a total installed capacity of 14.45 MW. The Soda development does not contain a bypassed reach, diversion, or conduit.

The Soda dam is a 103-foot-high by 433-foot-long concrete gravity dam with a 109-foot-long integral powerhouse section containing five headgates that supply water to the generating unit penstocks and to a 900-cfs-capacity low-level discharge (Johnson valve). The concrete dam also has a 210-foot-long non-overflow gravity section and a 114-foot-long gated overflow spillway section containing three, 30-foot by 14-foot Tainter gates. A 55-foot-long by 19-foot-high earth fill dam also forms parts of the development (Figures 3 and 4).



*Figure 3. The Soda Dam and Powerhouse*





*Figure 4. Aerial View of Soda Development and Features*

The Soda development's 109-foot-long powerhouse contains two vertical Francis units: Unit 1 with an installed capacity of 7.45 MW and Unit 2 with an installed capacity of 7 MW, and maximum hydraulic capacities of 1,827 and 1,337 cfs, respectively. The development includes a tailrace immediately downstream of the powerhouse with a normal tailwater elevation of 5,641 feet.

The Soda reservoir has a surface area of 1,100 acres and a maximum full pool elevation of 5,720 feet. The 4.5-mile-long reservoir extends upstream to just downstream of the Big Spring Creek confluence with the Bear River. Approximately 16,300 acre-feet of storage are available in Soda reservoir. (Figure 5). However, increased recreational use of the reservoir, combined with the coordinated control now required to operate the system, have reduced its usable capacity. The reservoir low water elevation cannot fall below the low-level discharge penstock elevation of 5,670 feet. The combined authorized discharge for the Soda Development is 2,624 cfs. The low-level discharge is capable of passing 900 cfs at a normal operating pool of 5,719 feet. The maximum water surface level, due to the Probable Maximum Flood (PMF), is elevation 5,735.80 feet.





*Figure 5. Soda Powerhouse and Alexander Reservoir*

## B. Grace Development

The Grace development consists of the Grace reservoir, a diversion dam, flow line, and a powerhouse with three turbine-generators with an installed capacity of 33 MW. The development also has a 6.8-mile-long bypassed reach (Figure 6).

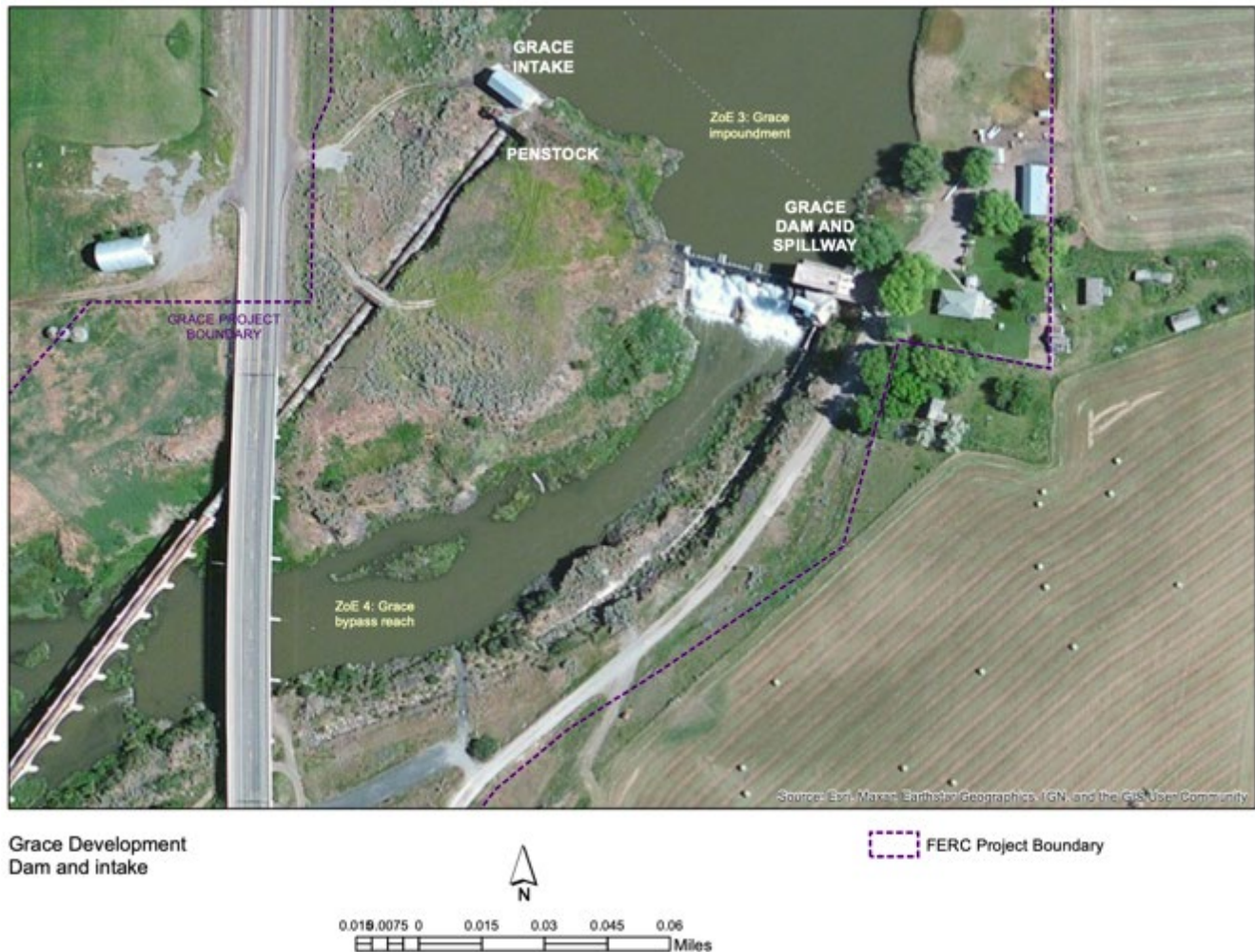


Figure 6. Aerial View of Grace Development and Features

Grace Dam is a rock-filled, timber-crib structure with a concrete core at the base of the structure. The structure stands approximately 51 feet high including the flashboards. The crest length is 180 feet 5.5 inches. A 52-foot-wide intake structure containing 18 screen sections (5-foot by 10-foot) is housed within a concrete stucco building, adjacent to the earth embankment section of the dam. A 26,000-foot-long 11-foot-diameter flowline consisting of 15,000 feet of steel and 11,000 feet of wood stave pipeline conveys water from the intake structure to the surge tanks. There are two surge tanks, one 10 feet in diameter and 38 feet high, located approximately 2.6 miles downstream of the diversion, and the other 30 feet in diameter and 132 feet high, located directly above the powerhouse.

Three 90-inch-diameter steel penstocks, equipped with two butterfly valves carry water from the surge tanks to the powerhouse. The powerhouse has three vertical Francis turbine generators rated at 11 MW each for a total plant capacity of 33 MW. Their total hydraulic capacity is 960 cfs. The

Grace tailrace includes a short concrete-lined section that transitions to an unlined open channel section approximately 350 feet from its confluence with the Bear River (Figure 7).



*Figure 7. The Grace Dam of the Bear River Hydroelectric Project*

The Grace reservoir covers 38 surface acres and has a total storage capacity of 320 acre-feet with 250 acre-feet of usable storage. At full pool, the forebay has an average depth of about 14 feet, and the surface elevation varies by about 0.3 foot in any one day and about eight feet over a typical operating year.

The Grace bypass reach, also known as the Black Canyon, is approximately 6.8 miles in length. Gentile Valley Irrigation Company owns an irrigation diversion located approximately 300 feet upstream of Grace powerhouse.

### **C. Oneida Development**

The Oneida development consists of the Oneida reservoir, a gravity dam and earth embankment, a spillway, three penstocks, and a powerhouse housing three turbine-generators with a total installed capacity of 30 MW. There is a bypass reach approximately 0.5 miles long between the gravity dam and powerhouse (Figure 8).

The Oneida development includes a 111-foot-high by 381-foot-long concrete gravity dam that includes a 118-foot-long uncontrolled auxiliary spillway, a 66-foot-long non-overflow gravity section, a 99-foot-long gated spillway containing five Tainter gates, and an 86-foot-long gravity section with ice sluices. The earth embankment dam portion is 40 feet high and 1,100 feet long.

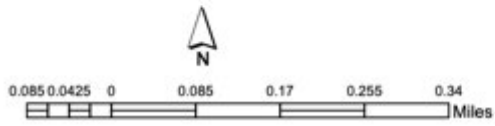
Oneida reservoir has a surface area of 480 acres at an elevation of 4,882.40 feet with a total storage of approximately 11,500 acre-feet and 10,880 acre-feet of active storage. A 50-foot-wide by 50-foot-high intake structure in the reservoir, contains six openings fitted with trashracks, that transitions to two, 16-foot-diameter circular outlets. A 16-foot-diameter, 2,240-foot-long steel flowline conveys water from the intake structure to a 40-foot-diameter, 142-foot-high surge tank. Three 12-foot-diameter, 120-foot-long steel penstocks extend from the surge tank to the powerhouse.

The Oneida powerhouse is 52-feet by 162-feet and contains three vertical Francis units each with an installed capacity of 10 MW and hydraulic capacities of 1,161, 1,161, and 968 cfs, respectively. The development has a 64-foot-wide by 118-foot-long rectangular channel tailrace (Figure 9).





Oneida Development  
 Dam, intake, and powerhouse



FERC Project Boundary

Figure 8. Aerial View of Oneida Development and Features



*Figure 9. The Oneida Reservoir, Dam, and Spillway*

Substations containing step-up transformers and circuit breakers are located adjacent to the powerhouses at Soda, Oneida, and Grace. The substations serve as the point of interconnection to the transmission grid system.

#### IV. ZONES OF EFFECT (ZoEs)

The Project has been divided into eight ZoEs (Table 1):

*Table 1. Descriptions of ZoEs in the Project*

<b>Description</b>	<b>River Mile at Upper and Lower Extent of Zone</b>
ZoE 1, Soda Impoundment	RM 190-185
ZoE 2, Soda, regulated riverine reach	RM 185-180
ZoE 3, Grace Impoundment	RM 180-179
ZoE 4, Grace bypassed reach	RM 179-172
ZoE 5, Grace regulated riverine reach	RM 172-148
ZoE 6, Oneida Impoundment	RM 148-143
ZoE 7, Oneida bypassed reach	RM 143-142
ZoE 8, Oneida regulated riverine reach	RM 142-66

Figure 10 depicts a conceptual diagram of the eight ZoEs of the Project, while Figures 11-18 provide an aerial view of each ZoE with the FERC project boundary.

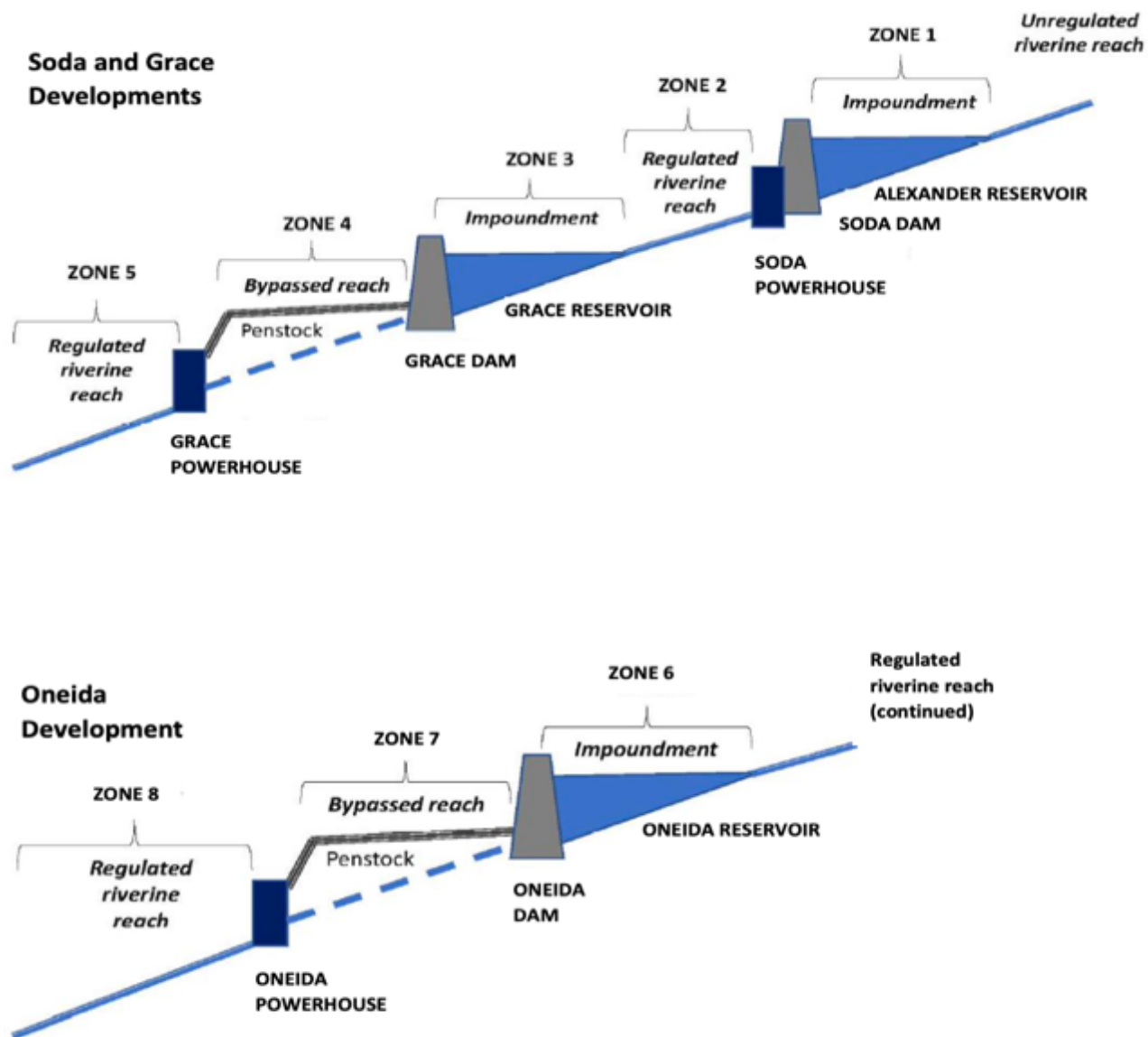
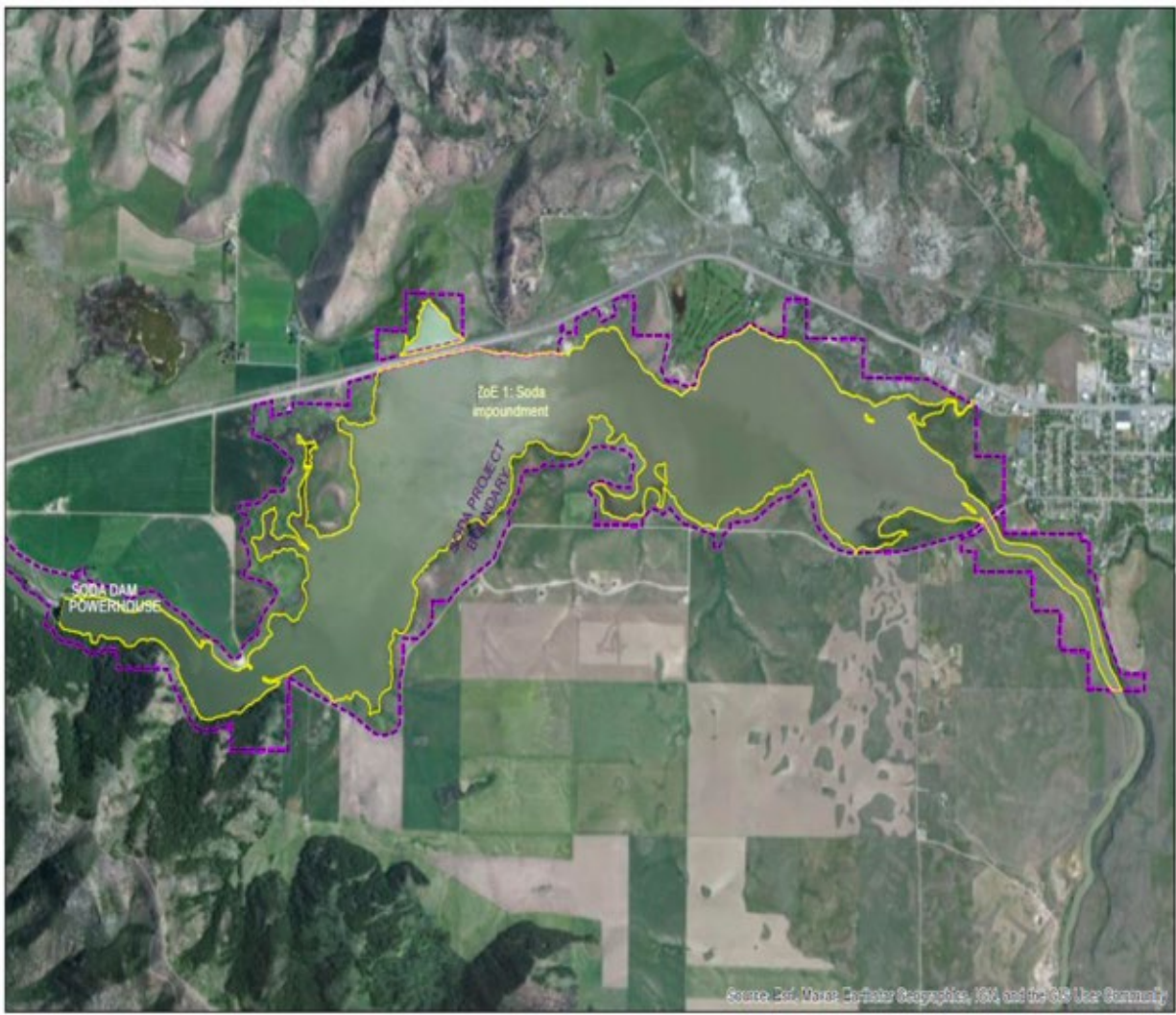
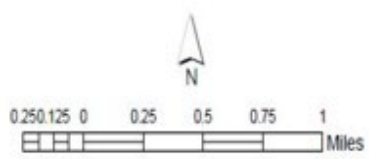


Figure 10. Zones of Effect conceptual diagram of the Bear River Project



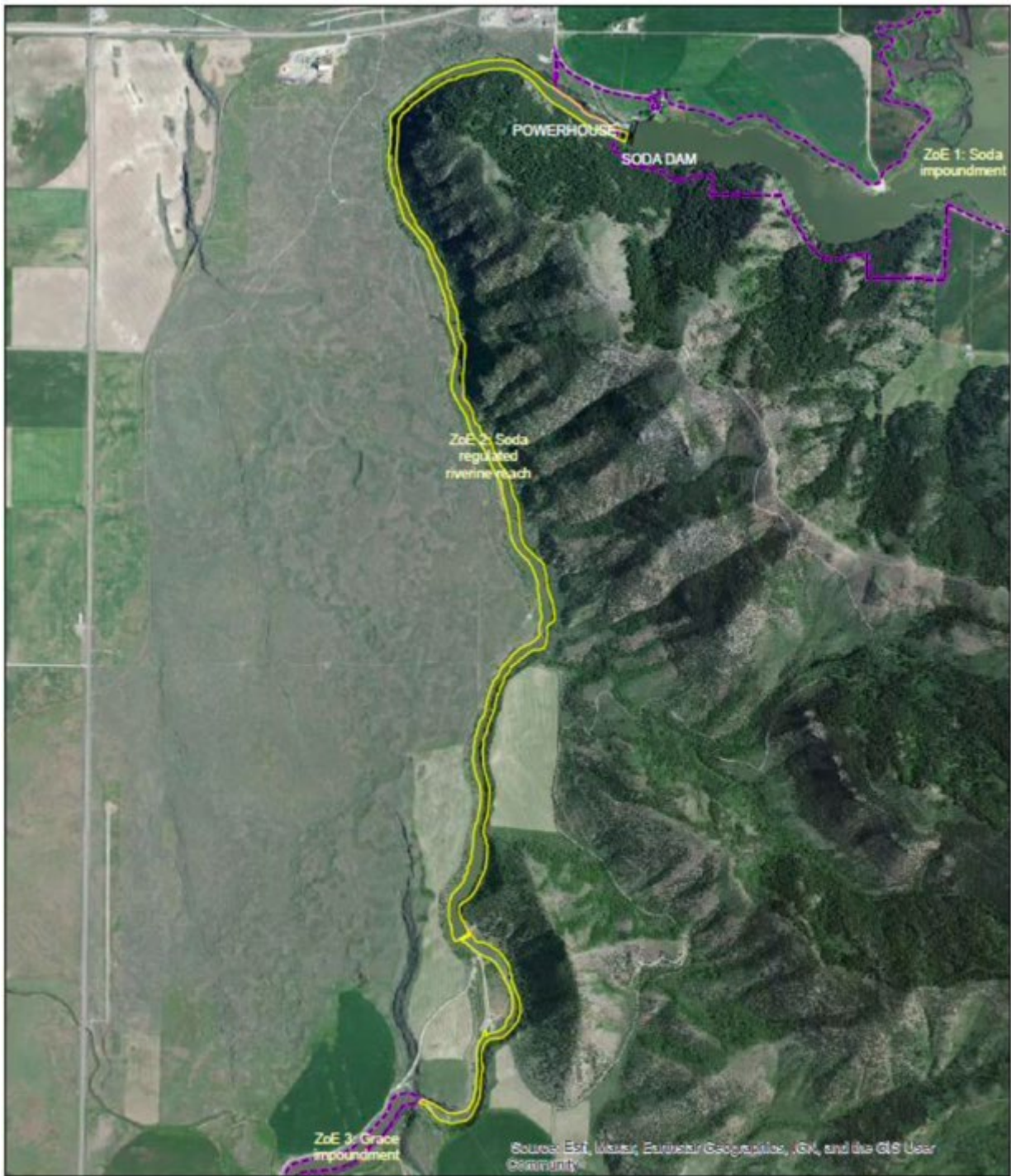


Zone of Effect 1:  
Soda Impoundment





- FERC Project Boundary
- ZoE 1: Soda Impoundment

Figure 11. Aerial Photo of ZoE 1, Soda Impoundment



Zone of Effect 2:  
Soda Regulated Riverine Reach



-  FERC Project Boundary
-  ZoE 2: Soda Regulated Riverine Reach

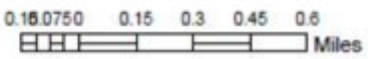
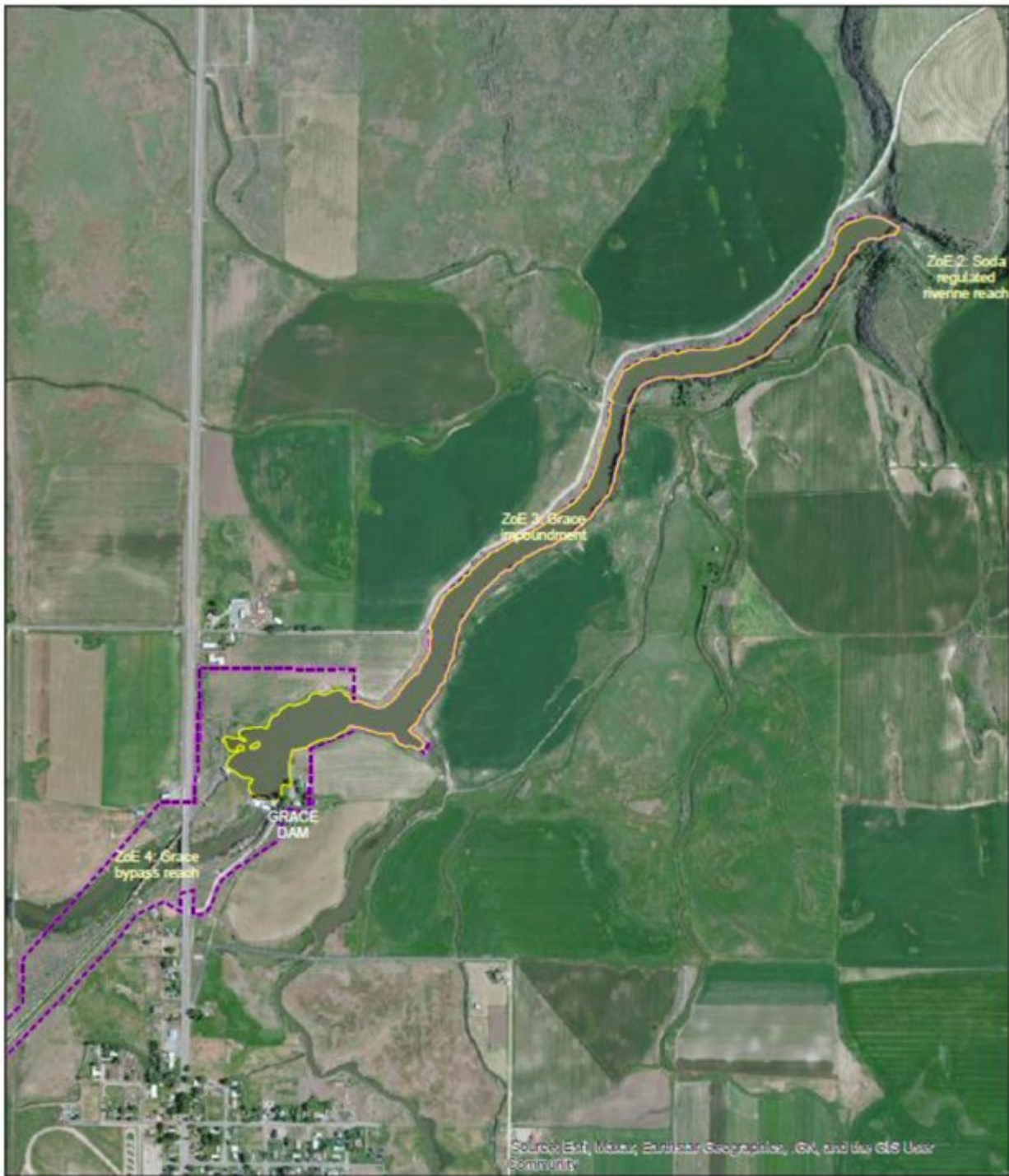


Figure 12. Aerial Photo of ZoE 2, Soda Regulated Riverine Reach





Zone of Effect 3:  
Grace Impoundment



- FERC Project Boundary
- ZoE 3: Grace Impoundment

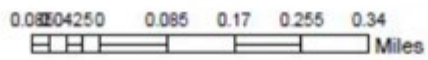
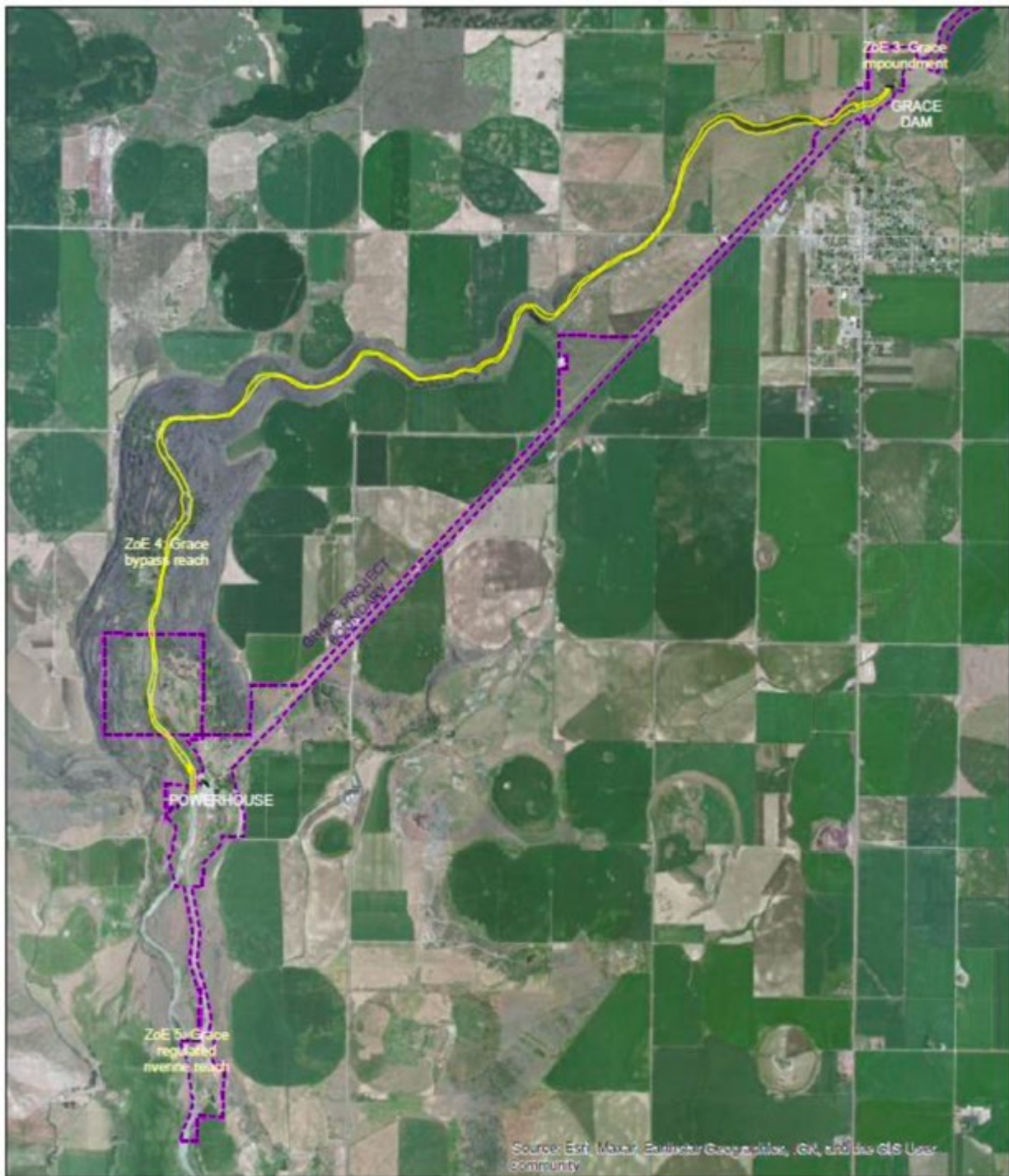
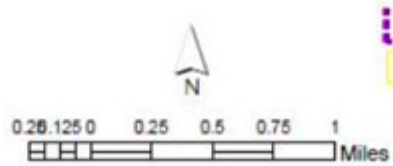


Figure 13. Aerial Photo of ZoE 3, Grace Impoundment



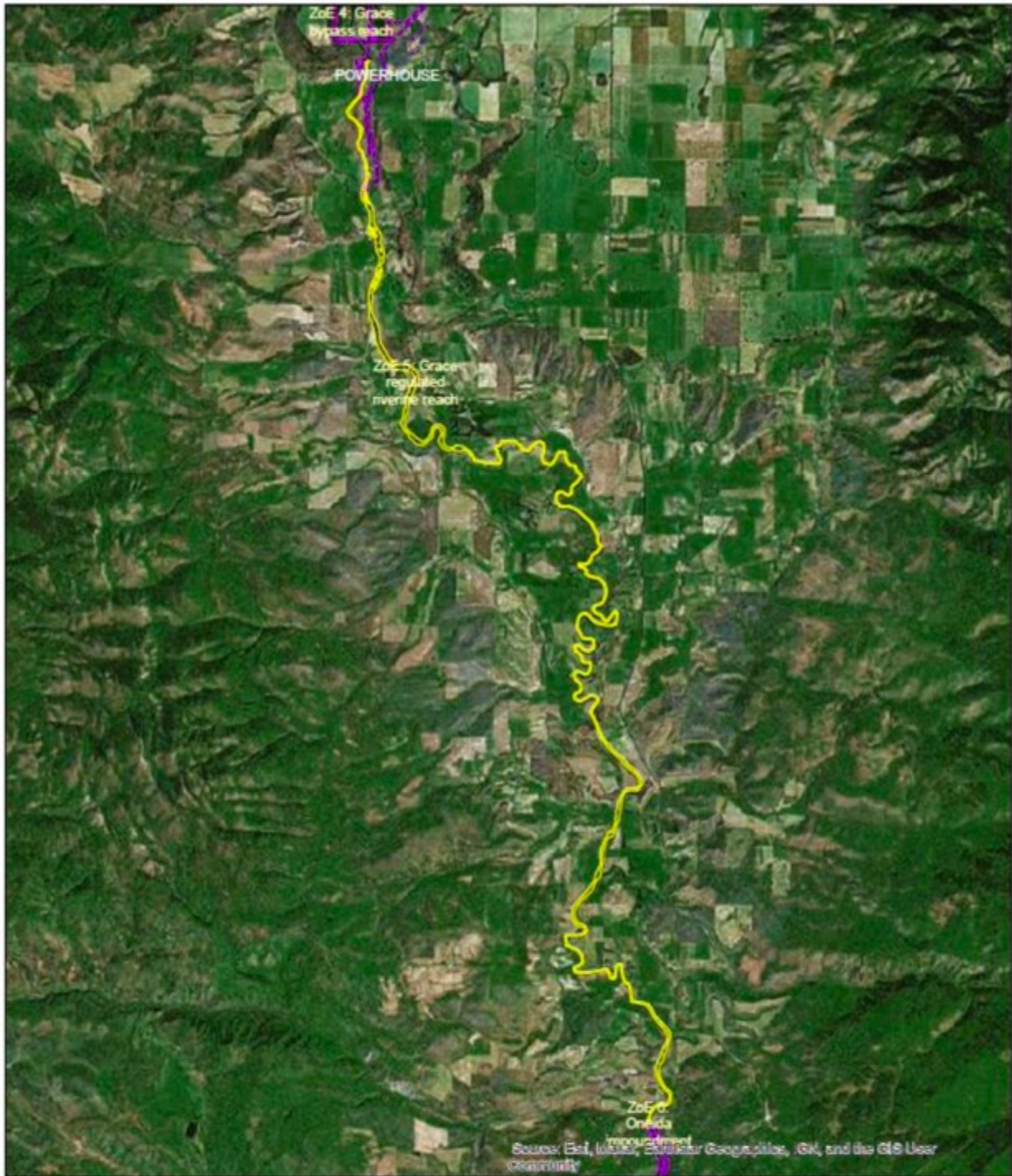
Zone of Effect 4:  
Grace Bypass Reach



 FERC Project Boundary  
 ZoE 4: Grace Bypass Reach

Figure 14. Aerial Photo of ZoE 4, Grace Bypass Reach





Zone of Effect 5:  
Grace Regulated Riverine Reach



-  FERC Project Boundary
-  ZoE 5: Grace Regulated Riverine Reach

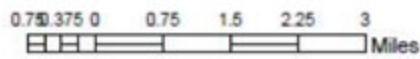
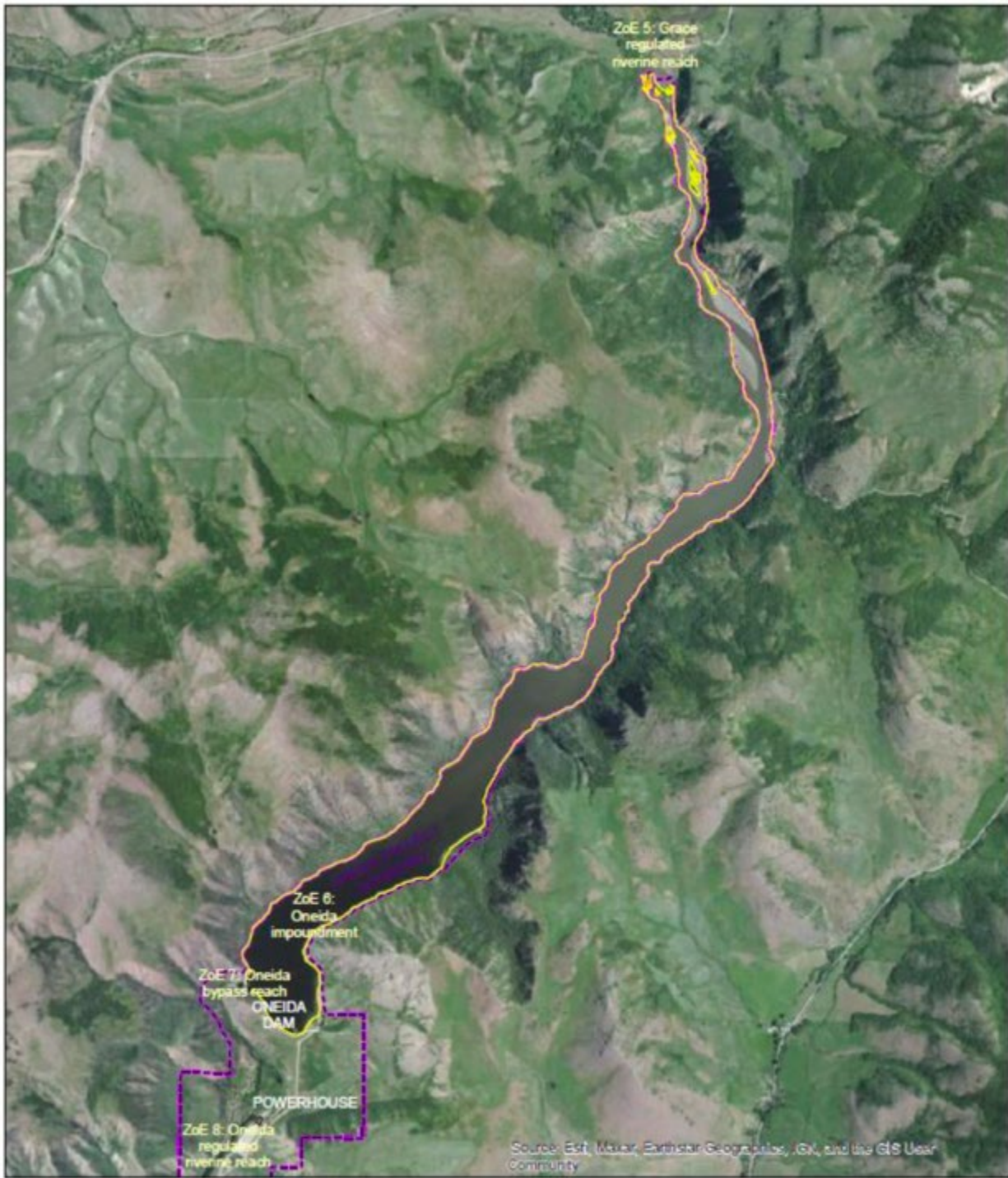


Figure 15. Aerial Photo of ZoE 5, Grace Regulated Riverine Reach





Zone of Effect 6:  
Oneida Impoundment



- FERC Project Boundary
- ZoE 6: Oneida Impoundment

Figure 16. Aerial Photo of ZoE 6, Oneida Impoundment





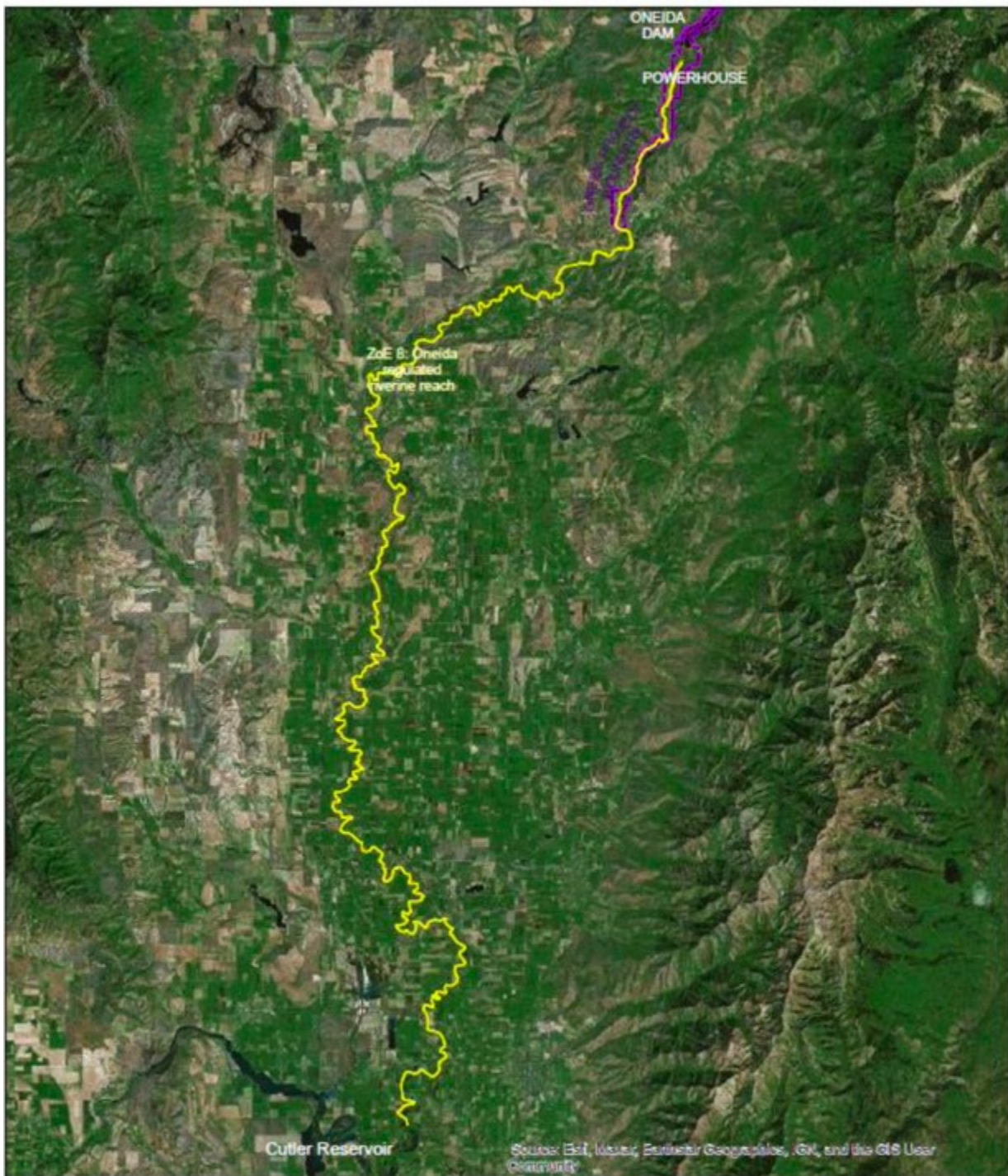
Zone of Effect 7:  
Oneida Bypass Reach



- FERC Project Boundary
- ZoE 7: Oneida Bypass Reach

Figure 17. Aerial Photo of ZoE 7, Oneida Bypassed Reach





Zone of Effect 8:  
Oneida Regulated Riverine Reach



- FERC Project Boundary
- ZoE 8: Oneida Regulated Riverine Reach

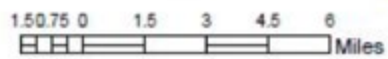


Figure 18. Aerial Photo of ZoE 8, Oneida Regulated Riverine Reach



The standards selected to satisfy the LIHI certification criteria in each of these ZoEs are identified in Table 3 along with PacifiCorp's standard selection. As part of my review, I checked and independently analyzed each criterion and standard to determine if the criteria were satisfied. As part of my review process, I checked and agreed with PacifiCorp's selections.

*Table 2. Zones of Effect and Ratings against LIHI Criteria and Standards*

<b>CRITERION and STANDARD SELECTED</b>								
<b>Zone Number and Zone Name</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
	<b>Ecological Flows</b>	<b>Water Quality</b>	<b>Upstream Fish Passage</b>	<b>Downstream Fish Passage</b>	<b>Shoreline and Watershed Protection</b>	<b>Threatened and Endangered Species</b>	<b>Cultural and Historic Resources</b>	<b>Recreational Resources</b>
1. Soda Impoundment	2	2	1	4	2-Plus	2	2	2
2. Soda regulated riverine reach	2	2	4	1	2-Plus	2	2	2
3. Grace Impoundment	2	2	1	4	2-Plus	2	2	2
4. Grace bypassed reach	2	2	4	1	2-Plus	2	2	2
5. Grace regulated riverine reach	2	2	1	1	2-Plus	2	2	2
6. Oneida Impoundment	2	2	1	4	2-Plus	2	2	2
7. Oneida bypassed reach	2	2	4	1	2-Plus	2	2	2
8. Oneida regulated riverine reach	2	2	1	1	2-Plus	2	2	2

*Source: PacifiCorp Application for LIHI Recertification, December 2022*

## V. REGULATORY AND COMPLIANCE STATUS

PacifiCorp has operated the Project in accordance with the State of Idaho's water quality certificate and the terms of the FERC license. There are no facility-specific conditions in the current LIHI Certificate for the Project. Nor have there been any material changes or compliance issues identified since LIHI last recertified the Project in 2014. The Project also remains in compliance based on the annual reviews.

### A. Water Quality Certificate

On June 23, 2003, the IDEQ issued water quality certification<sup>2</sup> of the project pursuant to Section 401 of the CWA with conditions consistent with the Settlement Agreement. The certification and conditions are attached as Appendix A to the FERC license. On August 9, 2023, PacifiCorp provided correspondence from IDEQ confirming that the 401 Certification issued in 2003 for the Bear River Hydroelectric Project is still valid, and all terms and conditions therein remain valid (See Appendix A).

### B. FERC Licensing Requirements

The FERC license for the Project includes 28 requirements or special articles intended to restore, protect, and enhance natural resources and improve public access and recreation. These articles, summarized below, enforce conditions in IDEQ's water quality certificate and the terms of the Settlement Agreement:

Article 401 – The licensee shall prepare a project implementation plan that sets forth a schedule for implementing the measures set forth in this license and shall file annual reports documenting the licensee's progress in implementing the requirements of this license.<sup>3</sup>

Article 402 – The licensee shall establish an Environmental Coordination Committee (ECC) composed of the signatories to the Settlement Agreement and that is consistent with the intent of Section 4.1 of the Settlement Agreement dated August 28, 2002.

Article 403 – The licensee shall prepare a Comprehensive Bonneville Cutthroat Trout (BCT) Restoration Plan, in consultation with the ECC. The Agreement and Strategy for Bonneville Cutthroat Trout (RCAS).<sup>4</sup> Comprehensive BCT Restoration Plan shall be consistent with the Range-wide Conservation.

Article 404 – The licensee, in consultation with the ECC, shall develop a plan, for FERC approval, for stocking of native BCT in the Action Area. Funding for this stocking plan is expected to cost no more than \$100,000 annually.

Article 405 – The licensee shall develop a plan for undertaking actions to benefit and restore aquatic and riparian habitat for BCT and other fish and wildlife resources in the Action Area. Funding for this habitat restoration plan is expected to cost no more than \$167,000 annually.

---

<sup>2</sup> Water Quality Certificate Letter <https://bit.ly/3qjvljf>

<sup>3</sup> See <https://bit.ly/43lcqa3>

<sup>4</sup> Utah Division of Wildlife Resources Publication No. 00-19 (signed by the U.S. Fish and Wildlife Service, the U.S. Bureau of Land Management, the USDA Forest Service, the Idaho Department of Fish and Game, and other federal, state and tribal parties).

Article 406 – The licensee shall develop, in consultation with the ECC, a plan for acquiring land and water rights, if available, in the Action Area. Funding for this acquisition plan is expected to cost no more than \$300,000 annually.

Article 407 – The licensee shall develop a plan to undertake creel surveys, Grace bypass reach telemetry studies, and macroinvertebrate sampling studies (hereinafter referred to as "monitoring"). Funding for this monitoring plan is expected to cost no more than \$35,000 annually.

Article 408 – The licensee shall maintain continuous minimum flows from the project developments as follows:

- (a) Below the Soda dam: a year-round minimum flow of 150 cfs, or inflow into Soda reservoir, whichever is less;
- (b) Grace bypassed reach: a year-round minimum flow of 80 cfs or inflow, whichever is less, in addition to current leakage from Grace dam;
- (c) Cove bypassed reach: a minimum flow of 10 cfs or inflow, whichever is less, from October 1 through March 31, and 35 cfs or inflow, whichever is less, from April 1 through September 30, in addition to current leakage from Cove dam;<sup>5</sup> and
- (d) Oneida reach below the powerhouse: a year-round minimum flow of 250 cfs or inflow, whichever is less, in addition to current leakage from Oneida dam.

Article 409 - The licensee, in consultation with the ECC, shall develop a plan to minimize fish stranding resulting from the operation of the Project developments. The plan shall be filed with the Commission for approval within 6 months after the issuance of the license.

Article 410 – The licensee, in consultation with the ECC, shall develop a plan to modify the flow from Kackley Spring to benefit the aquatic resources in the Bear River. The plan shall be filed with the Commission for approval within 1 year after the issuance of the license, or on an alternative schedule as determined by the Project Implementation Plan required under Article 401. Funding for this element is expected to cost no more than \$10,000.

Article 411 – The licensee, in consultation with the ECC, shall develop a plan to measure the leakage from each dam. The plan shall be filed with the Commission for approval within 6 months after the issuance of the license.

Article 412 – The licensee shall implement the following maximum ramping rates, associated with hydroelectric generation at the Bear River Project developments:

- (a) 1.2 feet per hour downstream of the Soda development, ascending and descending, as measured at USGS Gage No. 10075000; and

---

<sup>5</sup> The Cove development was decommissioned in 2006.



(b) 3.0 inches every 15 minutes on the descending arm of the ramp downstream of the Oneida powerhouse, as measured at USGS Gage No. 10086500.

PacifiCorp may increase the ramping rates described in this article in case of: (i) emergency or to avoid damage to life or property; (ii) compliance with historic practices, water rights and flood control accordance with the Settlement Agreement, and (iii) utilization of spinning reserve for the PacifiCorp Eastern System control area, in compliance with the Northern Energy Reliability Council guidelines.

Article 413 – The licensee shall file, for FERC approval, the water quality monitoring plans identified in Conditions 1(a) and 5 of the 401 Water Quality Certification that is attached in Appendix A of the FERC license. The licensee shall file the final water quality monitoring plan with FERC, within 30 days after its approval by IDEQ.

Article 414 – Authority is reserved by the FERC to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of, such fishways as may be prescribed by the Secretary of the Interior under Section 18 of the Federal Power Act.

Article 415 – The licensee shall develop and implement an Operations and Compliance Plan to monitor the minimum flows and ramping rates at the Soda, Grace-Cove, and Oneida developments, as required by Articles 408 and 412. The Operations and Compliance Plan shall be developed in consultation with the ECC and the US Geological Survey (USGS) and filed with FERC for approval.

Article 416 – The licensee shall prepare a revised recreation plan, in consultation with the ECC. The plan shall be filed for Commission approval, within six months of the date of issuance of this license, or pursuant to an alternative schedule as determined by the Project Implementation Plan required under Article 401. The plan shall address upgrading, construction, operation, and maintenance of existing and proposed recreation facilities at the project.

Article 417 – The licensee shall prepare a traffic safety plan for the Oneida Project Road, in consultation with the ECC, and file the proposed plan for Commission approval within six months of the date of issuance of the license.

Article 418 – The licensee, in consultation with the ECC, shall develop a plan to release whitewater boating flows from the Grace Dam. The flow release plan shall be filed with the Commission for approval within six months after the issuance of the license, or on an alternative schedule as determined by the Project Implementation Plan required under Article 401. The plan shall include, at a minimum, a description of the modification to the dam or additional structures that are proposed to facilitate the whitewater release flows.

Article 419 – The licensee shall discharge whitewater boating flows in accordance with the schedule identified below. Such releases shall occur between April 1 and July 15 each year, or on an alternative schedule as determined by the Project Implementation Plan required under Article 401.

Article 420 – The licensee, in consultation with the ECC, shall develop an operational regime that minimizes the frequency of river level fluctuations below the Oneida powerhouse. Pursuant to this goal flows below the powerhouse shall be greater than 900 cfs between Memorial Day and Labor Day, if available. This operational regime shall be filed with the Commission for approval within six months of license issuance, or on an alternative schedule as determined by the Project Implementation Plan required under Article 401.

Article 421 – The licensee, in consultation with the ECC, shall develop a plan to forecast and announce whitewater boating flows for each year. This forecast and announcement plan shall be filed with the Commission for approval within six months of license issuance, or on an alternative schedule as determined by the Project Implementation Plan required under Article 401.

Article 422 – The licensee shall provide a flow information website and a toll-free Flow Phone number, within four months after the issuance of the license, or on an alternative schedule as determined by the Project Implementation Plan required under Article 401.

Article 423 – The licensee shall implement the Programmatic Agreement Among The Federal Energy Regulatory Commission And The Idaho State Historic Preservation Officer For Managing Historic Properties That May Be Affected By A License Issuing To PacifiCorp For The Continued Operation and Maintenance Of The Soda Project (FERC No. 20), Grace-Cove Project (FERC No. 2401) And Oneida Project (FERC No. 472) In Caribou And Franklin Counties, Idaho, executed on February 25, 2003, and including but not limited to the Historic Properties Management Plan (HPMP) for the projects within the projects' area of potential effects.

Article 424 – The licensee, in consultation with the ECC, shall develop a Land Management Plan for the Project. The Land Management Plan shall define and describe the manner in which licensee-owned lands within the Project boundary shall be managed during the license term to minimize effects to natural resources, while providing for ongoing operations and maintenance activities for the Project, and subject to the rights of lessees under existing leases.

Article 425 – The licensee shall, in consultation with the ECC, prepare a shoreline buffer zone plan on licensee-owned lands along the Bear River and reservoirs and around wetlands and springs for each of the developments within the Project boundary, subject to the rights of lessees under existing leases.

Article 427 – The licensee shall expand the project boundary at the Grace-Cove and Oneida developments to ensure continued recreational access to the Bear River in the vicinity of these developments. At the Grace-Cove development, the expanded boundary shall include PacifiCorp lands on both sides of the bypassed reach upstream of Cove dam and the Grace powerhouse. At the Oneida development, the expanded boundary shall include all PacifiCorp and BLM lands from the existing downstream project boundary, below the powerhouse, to the proposed boater takeout at the cattle guard in Oneida Canyon, on the primary access roadside of the Bear River, between the road and the river or 200 feet from the river, whichever is greater.

Article 428 – In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters, and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval.

## **VI. LIHI PUBLIC COMMENTS**

### **A. Comment Letters**

On May 1, 2023, LIHI issued a notice on their website and via their email list that the public comment period for the application for recertification of the Bear River Hydroelectric Project had been opened. The notice stated, "LIHI is seeking comment on this application. Comments that are directly

ties to specific LIHI criteria (flows, water quality, fish passage, etc.) will be most helpful" but all comments will be considered. The deadline for comments was June 30, 2023 and no comments were received.

## **B. Agency Correspondence**

No agencies or other stakeholders comment on the recertification application. PacifiCorp's Project website provided most of the supporting documentation. LIHI staff did reach out to PacifiCorp seeking additional information and clarifications discussed in the sections below.

## **VII. DETAILED CRITERIA REVIEW**

This section contains my recertification review of the Project with regard to the LIHI criteria. As part of my review, I conducted a FERC eLibrary search to verify claims in the recertification application. My review concentrated on the period since the current certification term of the Project from 2013 to present, for FERC No. 20.

### **A. Ecological Flows**

PacifiCorp correctly selected Standard A-2 for all ZoEs. An A-2 **Agency Recommendation** means that flow regimes at the facilities were developed in accordance with a science-based resource agency recommendation. The goal of this criterion is to support habitat and other conditions that are suitable for healthy fish and wildlife resources in riverine reaches that are affected by the Project's operation.

The Bear River is a highly regulated system. The major headwater storage facility is Bear Lake, located approximately 45 miles upstream of the Soda Development in Idaho and Utah. Bear Lake is not part of the Project and was not required to be licensed.<sup>6</sup> The discharges from Bear Lake are primarily for irrigation and flood control.

PacifiCorp operates the three developments in a coordinated manner to meet irrigation demands and generate power. The Project generates power with whatever water is provided by upstream irrigation releases. Some variation of project discharges occurs, from Soda and Oneida reservoirs, based on downriver irrigation demand, with Oneida development varying releases to optimize power production.

River flows are generally higher than the natural conditions during the irrigation season (April through October) due to the irrigation releases from Bear Lake farther upstream (Figure 19). The three developments are usually operated in a modified run-of-river mode during the irrigation season. However, water stored in Soda and Oneida reservoirs may be used to satisfy short-term irrigation demand or to maintain water levels in Cutler reservoir, FERC No. 2420, located downstream of the Oneida development. Active USGS stream gages in the Project vicinity are: [#1007500 Bear River at Soda Springs ID](#) (upstream of Soda), [#10079500 Bear River at Alexandria ID](#) (between Soda and Grace), and [#10086500 Bear River BL UPL Tailrace at Oneida ID](#) (downstream of Oneida).

---

<sup>6</sup> See 324 F.3d 1071 (2003)



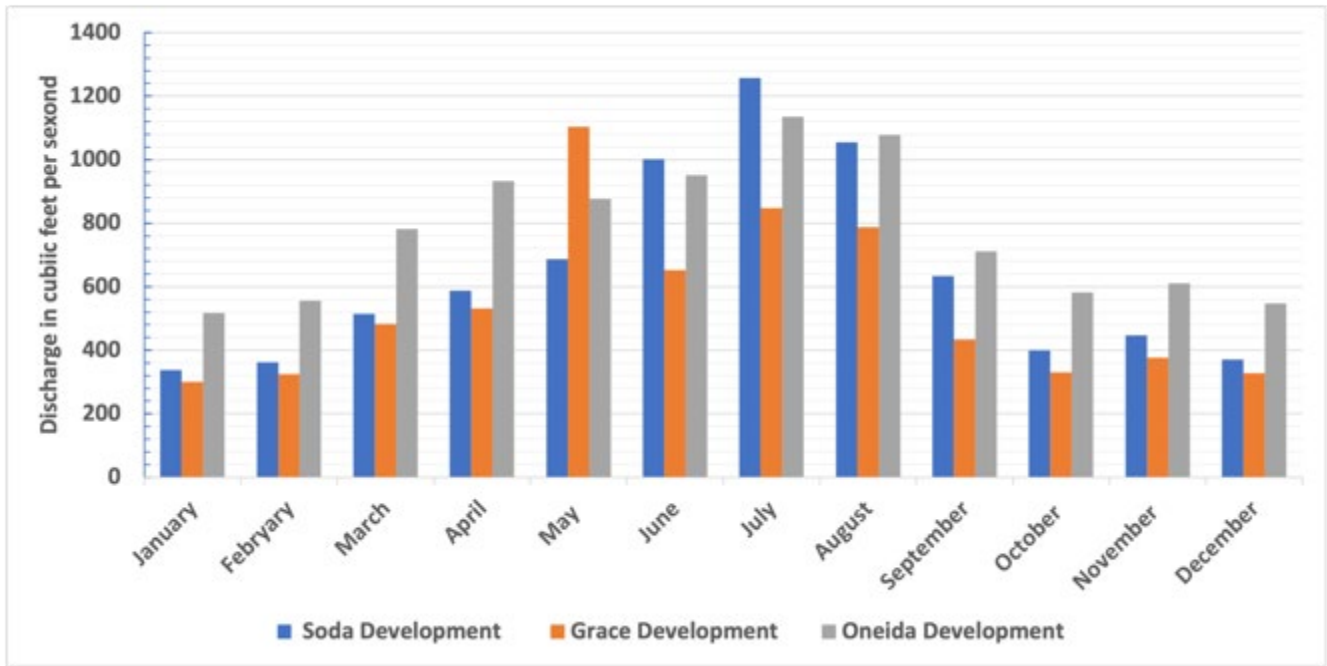


Figure 19. Average Monthly Discharges from the Bear River Project Developments

During the non-irrigation season, flow releases from Bear Lake are generally lower than natural conditions, and the river is regulated primarily to maintain downstream reservoir levels and minimum instream flows (Figure 19). Some releases may be made from Bear Lake during this season to meet spring flood control target elevations in Bear Lake reservoir. The three Project developments continue to generate power during the non-irrigation season, using available flows.

Reservoir Storage, Maximum Flows and Maximum Elevations

The characteristics of the three Project Developments are shown in Table 3.

Table 3. Generation and Reservoir information for each of the Project Developments  
 Generation and Reservoir information for each of the Project Developments

Development	Avg. Annual Generation (Mwh)	Reservoir Total Storage (ac-ft)	Reservoir Active Storage (ac-ft)	Normal Full Pool Elv. (feet msl)	Generator Nameplate kW	Turbine
<b>Soda</b>	28,660	16,300	16,300	5,720	14,000	2- Vertical Francis
<b>Grace</b>	135,063	320	250	5,555	33,000	3- Vertical Francis
<b>Oneida</b>	60,600	10,800	10,880	4,882.9	30,000	3- Vertical Francis
<b>Total</b>	317,610	40,620	40,630			

Source: PacifiCorp Application for LIHI Recertification, December 2022

The Settlement Agreement signed by PacifiCorp, federal and state agencies, Indian Tribes, environmental organizations and individuals<sup>7</sup> specifies minimum stream flows and ramping rates to protect fishery and wildlife habitats in the Project's eight ZoEs. It also required the establishment of an Environmental Coordination Committee (ECC), that includes representatives from each of the signatories. PacifiCorp has consulted the ECC as required by the FERC license in developing and implementing monitoring and adaptive management plans. All of the measures in the Settlement Agreement have been incorporated into license articles to allow FERC to enforce implementation and compliance with the terms of the license.

The instream flow measures included in Section 3.2 of the Settlement Agreement and license article 409 specify the minimum flows and ramping rates required below each development. These flows were developed through habitat mapping, instream flow studies using the USFWS Instream Flow Incremental Methodology (IFIM) and a Delphi team process.<sup>8</sup> Under the Settlement Agreement, after the tenth anniversary of the license, the ECC can prescribe increased minimum flows and the generation costs for any increased flows would be offset by commensurate decreases in funding for habitat restoration and land/water acquisition. To date, the ECC has not exercised this option. The minimum flow schedule requires PacifiCorp to maintain:

- Below the Soda dam, the lower of 150 cubic feet per second (cfs) or inflow;
- For the Grace bypass, 2 cfs leakage flow plus the lower of 63 cfs or inflow (modified by FERC order on May 23, 2006 as part of the Cove development decommissioning). The Grace bypass reach also receives approximately 40 cfs of inflow from natural springs; and
- Below the Oneida dam, leakage plus the lower of 250 cfs or inflow.

In addition, the Oneida bypass reach maintains 5-15 cfs in leakage flows from the dam as well as natural spring inflows which combined, support the limited fish population there. At the time of relicensing, the Delphi study participants determined that this level of flow should be maintained, although it is not specified in the FERC license or Settlement Agreement.

Exceptions to the required minimum flows are only allowed on a temporary basis for maintenance or emergencies, and after consultation with the ECC. Also, Article 410 of the FERC license required PacifiCorp to modify the location of discharges from Kackley Springs (natural springs located in the current regulated reach between Grace and Oneida, ZoE 5), which had discharged into the former Cove development's forebay. Flows were relocated to the Cove bypassed reach to enhance fishery resources along the Bear River.

The ramping rates included in the Settlement Agreement and license article 412 specify the maximum ramping rates required below the Soda and Oneida developments including provisions for annual maintenance and increasing the ramping rates. PacifiCorp is required to operate the Project based on the following ramping rates:

- 1.2 feet per hour in the Soda reach, ascending and descending; and

---

<sup>7</sup> The Agreement was executed on August 28, 2002, by PacifiCorp, U.S. Fish and Wildlife Service (FWS); U.S. Bureau of Land Management (BLM); the National Park Service (NPS); the Forest Service (FS); Shoshone-Bannock Tribes (Tribes); Idaho Department of Environmental Quality (IDEQ); Idaho Department of Fish and Game (IDFG); Idaho Department of Parks and Recreation (IDPR); Idaho Council of Trout Unlimited (ITU); Idaho Rivers United (IRU); Greater Yellowstone Coalition (GYC); American Whitewater (AW), and other individuals.

<sup>8</sup> See 09/1999 license application Volume II (FERC Accession Number [19990928-0336](#)) and Volume III (FERC Accession Number [19990928-0328](#)).

- 3.0 inches every 15 minutes on the descending arm of the ramp in the Oneida reach below the powerhouse.

PacifiCorp may also increase ramping rates for emergencies, to comply with legal constraints associated with water rights, for emergency power needs, and to comply with requirements of the downstream Cutler Project.

In 2012, PacifiCorp agreed to a 1-foot per hour down ramp target following boater flow releases in Grace bypass reach (ZoE 4). FERC suspended the Article 409 Fish Stranding Minimization Plan on October 17, 2012 after PacifiCorp consulted with and reached agreement with the ECC on ramping. Prior studies had quantified fish stranding and water quality in relation to implementation of feasible ramping rates for the whitewater boating flows required under Article 419. The ECC agreement served to balance competing resources and included additional studies of water quality and fisheries.

### Compliance

In the past 10 years, FERC did not issue any notices of violations pertaining to the Ecological Flows Standard. However, the following deviations from minimum stream flows or ramping requirements were reported to FERC:

- On October 30, 2013 a short (40-minute) deviation from the required 250 cfs hourly average downstream of the Oneida development occurred while conducting maintenance. There were no reports of fish stranding as a result. Procedures to ensure flows are greater than the minimum before performing maintenance and corrections to the automated low flow alarm programming have been implemented to avoid this situation. In a letter dated June 23, 2014, FERC concluded that the deviation was not considered to be a violation of Article 408 of the license.
- On October 4, 2019, a deviation from the ramp rate from the Oneida plant occurred during testing of new load control programming. The descending ramp rate was exceeded by 0.25-ft for one 15-minute interval. FERC was notified of the incident and that no adverse environmental effects were observed. In a letter dated December 17, 2019 FERC determined that this was not a violation of Article 412 of the license.
- On November 29, 2019, a short (approximately 1-hour) deviation from the minimum stream flow requirements occurred due to an imbalance on the transmission system that caused the Oneida plant to trip. FERC was notified on December 5. License Article 408 allows flows to be suspended on a temporary basis for unforeseen events that are beyond the licensee's control.

### **Summary**

My review of the FERC docket and License Article 401 Annual Summary of License Implementation and Compliance Reports indicate that over the current LIHI certification period, the Project has been operated in accordance with its ecological flow requirements and provides flows adequate to support aquatic habitat. Therefore, this LIHI criterion is satisfied.

## B. Water Quality

PacifiCorp correctly selected Standard B-2 in all ZoEs. A B-2 Agency Recommendation means the facility is in compliance with all water quality conditions contained in a recent state water quality certification or science-based resource agency recommendations providing reasonable assurance that water quality standards will be met for all waterbodies that are directly affected by the facility.

On August 9, 2023, PacifiCorp provided correspondence from IDEQ confirming that the 401 Certification issued in 2003 for the Project is still valid, and all terms and conditions therein remain valid (See Appendix A).

The Project's FERC license, water quality certification and settlement agreement required the implementation of measures to maintain and improve water quality for healthy fish and wildlife populations, human uses, and recreation. The State of Idaho water quality classification system, Section 303(d) listings, water quality certificate, mitigation measures and required monitoring in the FERC license are explained below.

### Water Quality Classification

The State of Idaho Administrative Code (IAC 58.01.02.100.03.b.c, 04, 05 and 160.02.03) assigns the following designated beneficial uses to the Bear River, including all ZoEs of PacifiCorp's Project: 1) Aquatic Life (a. Cold water and b. Salmonid spawning), 2) Recreation (a. Primary contact), 3) Water Supply (b. Agricultural and c. Industrial), 4) Wildlife Habitats, and 5) Aesthetics.<sup>9</sup>

Section 303(d) of the Clean Water Act (CWA) requires states to develop a list of waterbodies that do not meet water quality standards and to submit an updated list to EPA every two years. The 2022 Integrated Report describes the attainment status of Idaho's surface waters relative to their beneficial uses. The most recent 303(d) list is summarized in Table 4.

*Table 4. Idaho State Water Quality Use Categories and Criteria*

<ul style="list-style-type: none"><li>• <b>Category 1</b> - Waters are wholly within a designated wilderness or 2008 Idaho Roadless Rule "Wild Land Recreation" area and are presumed to be fully supporting all beneficial uses.</li></ul>
<ul style="list-style-type: none"><li>• <b>Category 2</b> - Waters are fully supporting those beneficial uses that have been assessed. The use attainment of the remaining beneficial uses has not been determined due to insufficient (or no) data and information.</li></ul>
<ul style="list-style-type: none"><li>• <b>Category 3</b> - Waters have insufficient (or no) data and information to determine if beneficial uses are being attained or impaired. Category 3 has an additional subcategory.</li></ul>

<sup>9</sup> (Source: <https://adminrules.idaho.gov/rules/2011/58/0102.pdf> pages 26-27, 137 and 139).



- **Category 4** - Waters do not support one or more beneficial uses, but they do not require development of a Total Maximum Daily Load (TMDL)<sup>10</sup> for specific pollutant.
  - Category 4a: Waters have a TMDL completed and approved by EPA.
  - Category 4b: Waters have had pollution control requirements other than a TMDL placed on them, and these waters are reasonably expected to attain the water quality standard within a reasonable period of time.
  - Category 4c: Waters failing to meet applicable water quality standards due to other types of pollution (e.g., flow alteration), not a pollutant.
- **Category 5** - Waters do not meet applicable water quality standards for one or more beneficial uses due to one or more pollutants; therefore, an EPA-approved TMDL is needed.

*Source: PacifiCorp Application for LIHI Recertification, December 2022*

The Bear River reaches upstream of Soda reservoir and between Soda dam and the Idaho/Utah boarder are classified as Category 5 (§ 303(d) list) as impaired for cold water aquatic life and salmonid spawning temperature. The Bear River Project area between Soda dam and Oneida reservoir is also listed as Category 4c for flow regime modification (2022 Integrated Report-Appendix A, page 259).

### Idaho TMDL plans

TMDLs have been developed for Total Phosphorous (TP) and Total Suspended Solids (TSS) for the Project reaches. The Bear River from Soda dam to Oneida Reservoir was not impaired for TSS (sediment) although existing loads approached the assimilative capacity of this reach during the summer season.<sup>11</sup> In general, sediment loading in the mainstem Bear River channel from Bear Lake to below Oneida Reservoir is believed to be reduced by the presence of reservoirs along this reach.

TP loads in water samples collected from the Bear River between Soda dam and Oneida Reservoir consistently exceeded levels recommended by IDEQ.<sup>12</sup> The TMDL assessment indicated that existing TP loads delivered to Oneida Reservoir must be reduced from a minimum of 7 kg/day (winter season) up to a maximum of 142 kg/day (late spring-early summer season). TP loads exceeding the assimilative capacity determined in the TMDL could contribute to excessive algae growth, low dissolved oxygen levels, and eutrophication of Oneida Reservoir.

In 2010 PacifiCorp completed 19 projects related to bank stabilization, removal of 39 confined animal feeding sites and barns from streamside areas and riparian fencing. Many more such projects will be completed during the remaining license period. An Addendum to the Bear River/Malad Subbasin Assessment and Total Maximum Daily Load Plan for HUCs 16010102, 16010201, 16010202, 16010204 states that many of the ECC projects for Bonneville cutthroat trout in the Project's FERC license are directly related to improving water quality.

Waste Load Allocations (WLA) are based on water quality data indicating phosphorus targets are generally being met in the ZoEs. IDEQ concluded that continued reductions in TP from the

<sup>10</sup> A TDML is a calculation of the maximum amount of a pollutant that a waterbody can accept and still meet the state's Water Quality Standards for public health and healthy ecosystems.

<sup>11</sup> ERI. 2005. *Draft Bear River/Malad Subbasin Assessment and Total Maximum Daily Load Plan for HUCs 16010102, 16010201, 16010202, 16010204*. Prepared for Idaho Department of Environmental Quality. Logan. January 2005.

<sup>12</sup> The Environmental Report for Cove decommissioning (Cirrus Ecological Solutions, LC. 2005. page 29) and the Bear River/Malad Subbasin Assessment and Total Maximum Daily Load Plan (ERI 2005).

aforementioned measures will ensure water quality sufficient to accommodate proposed WLAs will be maintained or improved in the future.

### Idaho DEQ TMDL Five-Year Review

The Final Bear River Basin TMDL Five-Year Review report dated January 2017 (IDEQ 2017, page 119) states: “The majority of PacifiCorp’s habitat enhancement projects required by the FERC license will help achieve TMDL targets. Many projects focus on sediment and nutrient reductions and take place on TMDL streams and all drain to the main stem Bear River, a TMDL water body. Efforts to recover Bonneville cutthroat trout will ultimately lead to improving Beneficial Use Reconnaissance Program scores through higher Stream Fish Index ratings. Additionally, projects aimed at improving fish passage often have additional benefits such as helping move streams towards appropriate sediment transport regimes and maintaining channel stability.”

### Water Quality Certificate and Monitoring

The Bear River Project is in compliance with the conditions in IDEQ’s Section 401 water quality certificate (WQC) issued on June 23, 2003. The WQC is included as Appendix A of the Project’s FERC license. On August 9, 2023, PacifiCorp provided correspondence from IDEQ confirming that the 401 Certification issued in 2003 for the Project is still valid, and all terms and conditions therein remain valid (see Appendix A). PacifiCorp was required by WQC conditions 1 and 5 and Article 413 of the FERC license to develop and implement Water Quality Monitoring Plans (WQMPs) for the Grace bypass reach and the Bear River downstream of the Oneida powerhouse. The purpose of the WQMPs was to characterize water quality conditions in the ZoEs and determine the nexus between Project facilities and water quality criteria exceedances. PacifiCorp monitored water temperature, dissolved oxygen, nutrients, specific conductance, and turbidity. The 401 WQC and Article 413 of the FERC license also require PacifiCorp to provide IDEQ with an annual Oneida Development Operations Report that demonstrates compliance with flows and ramping requirements. PacifiCorp has submitted this report to IDEQ every year since 2004.

PacifiCorp prepared the WQMPs completed on June 18, 2004 and FERC approved on September 15, 2004. Beginning in May 2004, PacifiCorp conducted extensive water quality monitoring in the Grace bypass and downstream of the Oneida powerhouse. Monitoring in the Grace bypass reach serves as the basis for evaluating both the Grace development and the Soda development’s effects on water quality.

PacifiCorp submitted the 2007 Water Quality Monitoring Report for the Grace-Cove Development to IDEQ in January 2008. IDEQ informed PacifiCorp in a letter dated January 20, 2009 that “PacifiCorp’s operations had not contributed to violations of State of Idaho water quality standards,” and that water quality monitoring at Grace can be discontinued two years before scheduled (see Appendix A in the LIHI application).

PacifiCorp submitted a final Oneida Water Quality Monitoring Report to the IDEQ on April 6, 2007. Supplemental reports and data also were provided to IDEQ in February, 2009. To ensure that water quality parameters did not exceed state criteria at Oneida, the company also included the elimination of peaking events and the establishment of a ramping rate based on bank stability. IDEQ informed PacifiCorp in a letter dated July 24, 2009, that the water quality monitoring downstream of the Oneida powerhouse demonstrates that the facility is not contributing to violations of State of Idaho water quality standards.

Water quality monitoring was also conducted during whitewater boating flow releases in the Black Canyon reach (ZoE-4) of the Bear River. A study plan was developed in 2008 by PacifiCorp and the IDEQ and studies were conducted during 2008, 2009, and 2010 whitewater releases. IDEQ continued to collect water quality monitoring data during boater flow events in 2012, 2013, and 2014 to inform potential future management decisions. A final Boater Flow Water Quality Report (Oasis Environmental 2011) was submitted to FERC. Findings were discussed by the ECC at a two-day whitewater boater flow meeting in February 2015. At that meeting, IDEQ stated that they believed that the goals for water quality had been met (Bear River Hydroelectric Project 2021 Annual Report. PacifiCorp. 2021. page 25).

## **Summary**

### **Soda, Grace, and Oneida impoundments (ZoEs 1, 3 and 6)**

The Soda and Oneida reservoirs do not appear on the § 303(d) list. The Grace reservoir (ZoE 3) is part of the riverine reach that is on the Category 5 § 303(d) list for impaired temperature for salmonid spawning and cold water aquatic life. Soda, Grace and Oneida reservoirs have approved TMDLs (Category 4a) for Aquatic Life TP and TSS parameters.

The Project is in compliance with the conditions in the Section 401 WQC issued by IDEQ on June 23, 2003. The 401 WQC conditions and FERC license required WQMP studies in the Grace and Oneida riverine reaches to assess the effects from the Project. From these studies, IDEQ determined that the Project did not contribute to violations of the State water quality standards (see below). There are no additional WQC requirements specific to the reservoirs. As discussed above, compliance with flow and ramping requirements is monitored and reported in annual Oneida Development Operations Reports. There have been no water quality violations issued to the Bear River Project.

### **Regulated riverine reaches and bypass reaches (ZoEs 2, 4, 5, 7 and 8)**

The river reach upstream of Soda reservoir and all of the riverine reaches from the Soda dam to the Idaho/Utah boarder (including Grace reservoir but not Soda and Oneida reservoirs) are on the 303(d) list as impaired for temperature for both salmonid spawning and cold water aquatic life. These riverine reaches have approved TMDLs (Category 4a) for TP and TSS.

In accordance with the 401 WQC and Article 413 of the Project license, PacifiCorp also prepared WQMPs for the Grace bypass reach and the Bear River downstream of the Oneida powerhouse to monitor temperature, dissolved oxygen, nutrients, specific conductance, and turbidity. The WQMPs were completed on June 18, 2004 and approved by FERC Order dated September 15, 2004.

Beginning in 2004, PacifiCorp performed the water quality monitoring per WQMPs for the Grace bypass and downstream of the Oneida powerhouse. Based on results from these studies, IDEQ informed PacifiCorp in a letter dated January 20, 2009, that PacifiCorp's operation has not contributed to violations of State of Idaho water quality standards in the Grace bypass (Appendix A-2.2-2 of the LIHI application). Likewise, for the Oneida development, IDEQ informed PacifiCorp in a letter dated July 24, 2009, that the water quality monitoring downstream of the Oneida powerhouse demonstrates that the facility is not contributing to violations of State of Idaho water quality standards (Appendix A-2.2-3 of the LIHI application).

Additional studies to assess the effects of the Black Canyon boater flows in ZoE 4 on water quality were conducted by PacifiCorp and IDEQ. Based on the results and further discussions with the ECC in a two-day meeting held in 2015, IDEQ stated that they believed that the goals for water quality had been met (Bear River Hydroelectric Project 2021 Annual Report. PacifiCorp. 2021. page 25).

My review of the FERC docket, LIHI application, License Articles 413 and the Annual Summary of License Implementation and Compliance Reports over the current LIHI certification period indicates that the Project has been operated in accordance with water quality requirements. Therefore, this LIHI criterion is satisfied.

### C. Upstream Fish Passage

PacifiCorp correctly selected the Standards in Table 5 with Standard C-1 in the impoundments and Standard C-4 in the two bypasses and the Grace regulated reach.

Table 5. Upstream Fish Passage Standards Matrix

Zone Name	River Mile at Upper and Lower Extent of Zone	Criterion C- Upstream Fish Passage
ZoE 1. Soda - impoundment	RM 190-185	1
ZoE 2. Soda - regulated riverine reach	RM 185-180	4
ZoE 3. Grace - impoundment	RM 180-179	1
ZoE 4. Grace - bypass reach	RM 179-172	4
ZoE 5. Grace - regulated riverine reach	RM 172-148	1
ZoE 6. Oneida - impoundment	RM 148-143	1
ZoE 7. Oneida - bypass reach	RM 143-142	4
ZoE 8. Oneida - regulated downstream reach	RM 142-66	1

Source: PacifiCorp Application for LIHI Recertification, December 2022

A C-1 standard indicates that the Project effects are **Not Applicable/De Minimis Effect**. The applicable Zone of Effect does not create a barrier to upstream passage, or there are no migratory fish in the vicinity of the facility and the facility did not contribute to extirpation of a species that was historically present. Impoundment zones can typically use this standard since once fish are above a dam there is usually no facility-related barrier to further passage.

A C-4 standard indicates that the Project has or is implementing **Acceptable Mitigation**. In the absence of science-based fish passage resource agency recommendations and in lieu of upstream passage provisions at the facility, the facility employs approved, alternative fish passage mitigation measures that support the species affected by the facility. These measures could be in-kind or out-of-kind mitigation.



## Fish Species Information

Anadromous species were never present in the southeast part of Idaho where the Bear River is located. The Bear River drainage flows into the Great Salt Lake that has no connection to the ocean.

The Bonneville cutthroat trout (BCT) (*Oncorhynchus clarki utah*) is an important species that may exhibit fluvial as well as resident life histories (Figure 20). Fluvial fish species spawn in tributary streams where the young rear from 1 to 4 years before migrating to a river system, where they grow to maturity. The BCT is a fish native to the Bear River basin that has been affected by habitat degradation and fish passage impediments.

In 2008, the US Fish and Wildlife Service (Service), responded to a petition to list the BCT as a threatened subspecies throughout its range in the US, pursuant to the Endangered Species Act of 1973, as amended. After a thorough review of all available scientific and commercial information, the Service found that listing the BCT as either threatened or endangered was not warranted.<sup>13</sup> The State of Idaho classified BCT as a species of special concern when the Project license was issued in 2003. The species is currently ranked S4 (not rare and apparently secure, but with cause for long-term concern) in the Idaho species diversity database.<sup>14</sup>



Figure 20. Bonneville cutthroat trout (Photo By/Credit: Clint Wirick/USFWS)

---

<sup>13</sup> See <https://bit.ly/43mFLkJ>

<sup>14</sup> See <https://bit.ly/3MlrE7>

<sup>14</sup> Utah Division of Wildlife Resources Publication No. 00-19 (signed by the U.S. Fish and Wildlife Service, the U.S. Bureau of Land Management, the USDA Forest Service, the Idaho Department of Fish and Game, and other federal, state and tribal parties).

Self-sustaining populations of BCT are present in Cottonwood Creek (upstream of Oneida reservoir) and Mink Creek (located downstream of the Oneida development), Birch Creek (a tributary of Mink Creek), and in tributaries to the Bear River further downstream. This species may also seasonally occur in the Grace bypass and in the Bear River to the upstream end of Oneida reservoir.

BCT populations in Cottonwood Creek and Mink Creek may be isolated from the mainstem due to irrigation dams and may be influenced by interbreeding with Yellowstone cutthroat and rainbow trout species (PacifiCorp 1999c, page ES-8). Protection and restoration of the BCT were key issues that were addressed in the Settlement Agreement and FERC license.

PacifiCorp was required by the Settlement Agreement and FERC license to develop and implement a BCT Restoration Plan outside the FERC Project boundary in an Action Area. The latter is defined as “the Bear River and land drained by the Bear River and its tributaries below the point of confluence of the Bear Lake Outlet Canal with the mainstem Bear River and above the Idaho-Utah border.”

The BCT Restoration plan includes a) funding for a BCT conservation hatchery program and habitat restoration for BCT, and b) acquisition for land and water rights for the benefit of BCT and other fish and wildlife resources in the Action Area.

FERC required PacifiCorp to implement fishery protection and enhancement measures in the Action Area as follows:

- Article 403 – develop the Comprehensive BCT Restoration Plan,
- Article 404 – develop a plan and funding for stocking native BCT,
- Article 405 – develop a plan for restoration of aquatic and riparian habitat for BCT and other fish and wildlife resources,
- Article 406 – develop a plan for acquiring land and water rights, and
- Article 407 – develop a plan for monitoring (creel surveys, Grace bypass telemetry studies, macroinvertebrate sampling) for seven years.

The Final Comprehensive BCT Restoration Plan (Shrier 2008) required by Article 403 is available on PacifiCorp’s website.<sup>15</sup>

### Fish Passage Mitigation

The Project license and Settlement Agreement do not provide upstream or downstream fish passage provisions due to the fact that there is little trout spawning habitat in the river within the Project reaches and limited areas that support a put and grow trout fishery. PacifiCorp was going to study fish passage at the Cove development, but FERC approved the decommissioning of the facility, and the Cove dam was removed. The Department of the Interior (Interior) did not prescribe any Federal Power Act section 18 fishways for the Bear River Project. However, by letter dated April 15, 2002, Interior requested reservation of authority to prescribe the construction, operation, and maintenance of fishways at the Bear River Project. Consistent with FERC’s practice, Article 414 reserves Interior’s authority to prescribe section 18 fishways in the future at the Project.

---

<sup>15</sup> See <https://bit.ly/3C4DOgy>

Monitoring and Adaptive Management are a key part of the Settlement Agreement and Project license. Article 402 provided for formation of the ECC that includes agency representatives and other stakeholders that oversee studies and determine how mitigation funds are allocated in the Action Area. The agencies are parties to the Settlement Agreement and therefore approved these measures and Standard C-4 Acceptable Mitigation applies to all these ZoEs.

The ECC continues to evaluate annually aspects of the BCT Restoration Plan and proposals for work under the Habitat Enhancement Fund and the Land and Water Conservation Fund. Where substantial benefits can be realized, the ECC has supported changes such as decommissioning of the Cove development which restored aquatic connectivity through the former Cove development to the Grace bypass reach.

## **Summary**

### **ZoEs 1, 3, and 6: Soda, Grace, and Oneida impoundments**

Standard C-1 De Minimis Effect applies to all three reservoirs. There are no facility-related barriers to upstream fish movements from within Soda, Grace, or Oneida reservoirs. There is a non-facility related irrigation intake in Grace reservoir located approximately 0.25 miles upstream from the Grace dam, but it is not a diversion dam that creates a physical barrier to movements out of the reservoir.

Upstream passage is not available at the Soda, Grace, and Oneida dams. The affected reaches that are immediately downstream of the dams include the Soda regulated riverine reach (ZoE 2), Grace bypass reach (ZoE 4), and the Oneida bypass reach (ZoE 7). As described above, alternative mitigation measures approved by agencies in the Settlement Agreement and Project license are applied to a larger Action Area and continue to provide out-of-kind mitigation that benefits BCT and other fish and wildlife. Therefore, Standard C-4 is appropriate for those zones and discussed below.

### **ZoE 2: Soda regulated riverine reach**

The Soda dam does not have upstream fish passage so alternative mitigation strategies provide out-of-kind mitigation that benefit BCT and other fish and wildlife in a wider Action Area.

For the Soda riverine reach and other downstream ZoEs, the BCT Plan states that the Dam Complex MU (the BCT management unit that encompasses all of the PacifiCorp Project areas) does not contain “conservation populations” (genetically important BCT populations identified from genetic sampling studies) or their spawning habitat so management actions within this area should only be considered after all other actions in the BCT Plan are completed or if BCT becomes listed by the USFWS (Shrier 2008, page 26).

### **ZoE 4: Grace bypassed reach**

Upstream movements of riverine fish in this reach are blocked at Grace dam. Implementing the BCT Plan provides alternative mitigation measures to improve BCT habitat and connectivity in tributaries to the Bear River within the Action Area.

The Project license required studies to assess potential effects from variable whitewater boating flow releases in the Black Canyon on aquatic resources. The resulting six-year study (Oasis Environmental 2011, pages 6-1 to 6-4) did not show a decline in measures of biotic integrity.

Minimum flows in the Grace bypass are protective of habitat while not adding a volume that excessively contributes to warming that would negate the potential benefits from the springs in this reach.

#### **ZoE 5: Grace regulated riverine reach**

There are no facility barriers to upstream fish movements within this reach and upstream into the Grace bypass reach.

The BCT Restoration Plan indicates several important measures that have been implemented within the Grace regulated riverine reach. The main diversion on Cottonwood Creek (a tributary to the Bear River between Grace powerhouse and Oneida reservoir) has been modified to allow safe upstream and downstream passage. This action, funded by the ECC and implemented by Trout Unlimited, may be the most significant activity that could have occurred in this drainage area (Shrier 2008, page 27). Access to the potential BCT spawning habitat in the Black Canyon Reach (Grace bypass) has also been restored as a result of the Cove Dam removal in 2006 (Shrier 2008, page 27).

The Kackley Springs habitat improvement project in this reach was modified by the ECC to reroute the channel of Kackley Springs further downstream to provide additional habitat for BCT. In this case, the ECC decision to extend the Kackley Springs channel is an example of directing the mitigation funds offsite for greater benefits than can be provided onsite.

#### **ZoE 7: Oneida bypass reach**

Standard C-1 was selected to meet this Criterion because there are no facility barriers to upstream fish movements from this reach into the Oneida bypass reach. Alternative mitigation strategies approved by agencies in the Settlement Agreement and Project license continue to provide out-of-kind mitigation that benefits BCT and other fish and wildlife. Measures specific to this reach include riparian fencing projects at Mink Creek. Mink Creek is a tributary to the Bear River that contains an important BCT population.

#### **ZoE 8: Oneida regulated riverine reach**

Upstream fish passage is blocked at Oneida dam. Alternative mitigation strategies provide out-of-kind mitigation. This short (0.5-mile) reach supports a naturally reproducing population of non-native brown trout as summarized in the Oneida license application (PacifiCorp 1999c, page ES-8). The brown trout in this reach benefit from the relatively cool water seeping from the lower section of the dam and little fishing pressure.

My review of the FERC docket, LIHI application and License Articles 403 through 407 and the Annual Summary of License Implementation and Compliance Reports over the current LIHI certification period indicates that the Project has been operated in accordance with upstream fish passage requirements and provides mitigation measures that meet or exceed the benefit that could be provided by fish passage measures. Therefore, this LIHI criterion is satisfied.



## D. Downstream Fish Passage

PacifiCorp correctly selected the Standards in Table 6 with Standard D-4 in the impoundments and Standard D-1 in the bypasses reaches and regulated reaches.

Table 6. Downstream Fish Passage Standards Matrix

Zone Name	River Mile at Upper and Lower Extent of Zone	Criterion C- Downstream Fish Passage
ZoE 1. Soda - impoundment	RM 190-185	4
ZoE 2. Soda - regulated riverine reach	RM 185-180	1
ZoE 3. Grace - impoundment	RM 180-179	4
ZoE 4. Grace - bypass reach	RM 179-172	1
ZoE 5. Grace - regulated riverine reach	RM 172-148	1
ZoE 6. Oneida - impoundment	RM 148-143	4
ZoE 7. Oneida - bypass reach	RM 143-142	1
ZoE 8. Oneida - regulated downstream reach	RM 142-66	1

Source: PacifiCorp Application for LIHI Recertification, December 2022

A D-1 standard indicates that the Project effects are *Not Applicable/De Minimis Effect*. The applicable Zone of Effect does not create a barrier to downstream passage, or there are no migratory fish in the vicinity of the facility. A D-4 rating indicates that the Project has and is implementing *Acceptable Mitigation*. In the absence of science-based fish passage resource agency recommendations and in lieu of downstream passage provisions at the facility, the facility employs approved, alternative fish passage mitigation measures that support the species affected by the facility. These measures could be in-kind or out-of-kind mitigation.

### Riverine/Resident Fish Species Information

A mixture of warmwater and cold-water species of fish occur in the Project area. Fish species found in the Bear River in the Project area during relicensing studies are listed in the Table 7 below from the Final EIS that FERC prepared when the project was licensed.

Self-sustaining populations of BCT are present in parts of the Bear River system, though mostly in tributaries that have suitable habitat and water quality, as noted under the upstream passage discussion above, these reaches are associated with the Oneida development. Other fish species that may exhibit local movements within a river include Brown Trout and Rainbow Trout. These two trout species have been introduced through stocking in the past. A self-sustaining population of Brown Trout exists in the Oneida bypass reach.

Mountain Whitefish, a native species, may also move locally within stream systems. This species was documented throughout the Project reaches.

Table 7. Fish Species Present in the Bear River Projects Vicinity

Species	Soda		Grace		Cove			Oneida		
	Reser- voir	Reach	Fore- bay	By- pass	Fore- bay	By- pass	Reach	Reser- voir	By- pass	Reach
Brown trout		X		X		X			X	X
Cutthroat trout*	X	X		X			X			X
Rainbow trout	X	X	X	X	X	X	X	X	X	X
Mountain whitefish	X	X		X			X	X	X	X
Common carp	X	X	X		X	X	X	X		X
Utah chub	X	X								
Longnose dace		X							X	X
Speckled dace		X							X	X
Redside shiner		X	X	X				X	X	X
Spottail shiner								X		
Utah sucker	X		X		X		X	X	X	X
Mountain sucker							X			
Brown bullhead									X	
Channel catfish	X							X		X
Black crappie	X									
White crappie	X									
Green sunfish	X							X	X	X
Bluegill	X							X	X	
Smallmouth bass	X	X	X	X		X		X		
Largemouth bass	X									
Yellow perch	X	X	X	X			X	X	X	
Sauger								X		
Walleye								X	X	X
Mottled sculpin		X		X			X		X	X
Piute sculpin		X		X			X		X	

\* Although the applicant's studies did not collect any Bonneville cutthroat trout in the project reaches, the species may seasonally occur within these reaches.

Source: PacifiCorp Application for LIHI Recertification, December 2022

Fishery Resources of Oneida Reservoir and Downstream

The Bear River Basin 5-Year Review (IDEQ 2017, pages 103-104) describes fish communities in Oneida reservoir and in the downstream river reach. In Oneida reservoir, the fishery is primarily composed of nonnative species including Walleye, Common Carp, Smallmouth Bass, Yellow Perch, and Green Sunfish. The only native fish present is the Utah Sucker, comprising <4% of the fish assemblage (Hardy et. al 2012 in IDEQ 2017). Downstream of the reservoir, Utah Suckers, Rainbow Trout, Smallmouth Bass, Mountain White Fish, Brown Trout, and Common Carp (5.1%) composed most of the fish sampled. Two native species of concern, BCT and Bluehead Suckers, were present during all surveys but were in low abundance.

In the reach just downstream of the canyon, Utah Suckers, Mountain White Fish, Rainbow Trout, Brown Trout, Common Carp, and Smallmouth Bass composed the majority of the fish assemblage. Downstream of Riverdale, the character of the fish community changes, with salmonid species becoming rare, and nonnative Common Carp dominating the fish community.

Nonnative Brown Trout were historically stocked downstream of Oneida Reservoir until 1998. Brown Trout density and biomass are higher closer to Oneida dam. Successful reproduction of Brown Trout downstream of Oneida Reservoir is indicated by the presence of juveniles. Rainbow Trout are currently stocked in the Bear River downstream of Oneida Reservoir by the IDFG to maintain a put-and-take fishery. Rainbow Trout are present in all river reaches, but densities are also higher in reaches near the Oneida dam. Overall, both native (BCT and Mountain White Fish) and nonnative (Brown Trout and Rainbow Trout) salmonids are most abundant from downstream of Oneida Reservoir to Riverdale (in ZoE 8 about 11 miles downstream of Oneida dam). Downstream of Riverdale, densities and relative abundance of salmonids precipitously decline.

## **Summary**

### **1) ZoEs 1, 3, and 6: Soda, Grace and Oneida Impoundments**

PacifiCorp selected Standard D-4 – Acceptable mitigation at the Soda, Grace, and Oneida impoundments (ZoE 1, 3, and 6).

The three dams do not have downstream fish passage facilities. The reservoirs support a mixture of warmwater and cold water fish species, most of which are not native. Downstream passage at the three dams is limited to passage over the spillways during high flows or through the facilities. During settlement negotiations, the parties determined, and FERC agreed that additional study and/or provision of passage facilities was not warranted since the potential benefits of passage were limited by poor water quality conditions in the Soda and Oneida reservoirs, and the lack of tributaries and potential spawning areas within the Soda reach.

Alternative mitigation strategies approved by federal and state agencies in the Settlement Agreement and Project license provide out-of-kind mitigation that benefits the native BCT and other fish and wildlife. These mitigation measures are implemented in the wider Action Area as described above.

### **2) ZoEs 4 and 7: Grace and Oneida Bypass Reaches**

The Grace bypass has a combination of minimum flows and seepage from the dam and discharge from springs in the lower part of that reach that provide enough flows to support aquatic habitat even after the irrigation diversion withdrawals. The short Oneida bypass reach does not have a minimum flow requirement but seepage from the dam provides enough cool water to support a self-sustaining population of brown trout.

### **3) ZoEs 2, 5, and 8: Soda, Grace and Oneida Regulated Riverine Reaches**

There are no facility-related barriers to downstream fish passage in the Soda, Grace and Oneida regulated riverine reaches. There is an irrigation diversion owned by the Last Chance Canal Company in the Soda regulated riverine reach (ZoE 2) and a few pumps and irrigation diversions downstream of the Oneida development (ZoE 8) that are not related to the Project.

My review of the FERC docket, LIHI application and License Articles 409 through 411 and the Annual Summary of License Implementation and Compliance Reports over the current LIHI certification period indicates that the Project has been operated in accordance with downstream fish passage and protection requirements and provides mitigation measures that meet or exceed the benefits that could be provided by fish passage measures. Therefore, this LIHI criterion is satisfied.

## **E. Shoreline and Watershed Protection**

PacifiCorp correctly selected Standard E-2 in all ZoEs. An E-2 standard means that shoreline and watershed protection measures are based on Resource Agency Recommendation. The facility is in compliance with all government agency recommendations in the license, water quality certificate, and or other authorization, such as an approved Shoreline Management Plan or equivalent for protection, mitigation or enhancement of shoreline surrounding the facility.

PacifiCorp also selected Standard E-Plus in all ZoEs. A Standard E-Plus means that to the extent the facility owner has direct or indirect ownership or control over lands surrounding the facility and its riverine zones, the facility has an approved and legally enforceable site-specific shoreline buffer or equivalent watershed land protection plan in which the buffer zone is dedicated for conservation purposes and vegetated similarly to adjacent natural lands. In addition, the buffer zone must include at least 50% of the undeveloped shoreline around the reservoir, or a reservoir shoreline equivalent along its riverine zones. Alternatively, the facility has established a watershed enhancement fund for land management within the facility's watershed that is designed to achieve the ecological and recreational equivalent of land protection that would have been achieved by dedicating an ecologically effective buffer zone around more than 50% the reservoir and/or river corridors.

### Land Use and Land Cover

The Bear River flows through developed and undeveloped lands. Agricultural use dominates the valleys along the mainstem and tributaries. The river is highly regulated for irrigation and flood control. A number of irrigation diversions are located in the Project reaches.

Land use in the Project area is mostly rural with areas of forest, mountains, valleys and open pastures, with widely dispersed homes and ranches and small towns. The Soda development is located at the upstream end of the Gem Valley, which consists of large dry-farms and some irrigated farmlands. The southern part of the Gem Valley, south of the Grace development, is called Gentile Valley. The next valley south is Mound Valley, and at its southern extreme, the Bear River enters an 11-mile-long canyon known as the Oneida Narrows.

Federal lands occur around and within the Project boundary. These areas are managed by the Bureau of Land Management (BLM) and US Forest Service (USFS) under their resource management plans. A small corner of USFS land is located near Soda reservoir approximately 0.5 miles east of the dam. There are larger parcels of land managed by the BLM near the dam. There are also parcels of USFS and BLM land upstream of Grace reservoir. Small parcels of BLM land are also located near the Grace powerhouse and near the former Cove development. The Oneida development (reservoir and downstream Oneida Narrows reach) is mostly on land managed by the BLM. The BLM Oneida Narrows Research Natural Area is designated as an Area of Critical Environmental Concern (ACEC). The Oneida Narrows road which is in the FERC Project boundary is included in that ACEC.

### Land Management Plan



The Project license required PacifiCorp to develop a Land Management Plan (LMP) for company owned lands within the FERC Project boundary. PacifiCorp developed the LMP in compliance with the Settlement Agreement and license article 424. The LMP also complied with Article 425 and 426 and included a Shoreline Buffer Zone Plan and a Cove Bypass Reach Buffer Zone Plan, respectively. All measures related to shorelines, wetlands, and riparian areas were compiled into the LMP to provide overall management guidance related to wetland and riparian habitats on PacifiCorp-owned land within the FERC Project boundary.

The LMP was revised in 2011 to include important protection measures (e.g., fencing) installed on PacifiCorp lands that are outside of the Project boundary and to address the decommissioning of the Cove development. The 2011 LMP was prepared in consultation with the ECC and was approved by FERC on July 17, 2014.<sup>16</sup>

The LMP required creation of Site Plans for the Project developments. Site Plans were completed for four planning areas: Soda, Grace Dam and Last Chance, Grace-Cove, and Oneida. The Last Chance Hydroelectric Project Development, located between the Soda and Grace developments, is owned by PacifiCorp but is not part of the Bear River Hydroelectric Project. Lands associated with the Last Chance Development are included in the LMP for the purpose of consolidating all PacifiCorp land management guidance into one document.

## Summary

All LMP Site Plans have been implemented. Site Plans contain maps and tables showing the land use classifications, baseline conditions, desired future conditions, and corrective measures for specific areas to protect, mitigate or enhance the condition of soils, vegetation, and ecosystem functions on shoreline and watershed lands associated with the facility. Corrective actions such as installation of fences to protect riparian areas from grazing or vehicles, reseeding damaged areas with native grasses and forbs, and renegotiating agricultural leases have been implemented where appropriate to aid restoration of the desired future conditions set forth in the Site Plans.

Annual compliance and performance tracking monitoring is being undertaken as scheduled at all Bear River developments and site-specific results are presented in the appendices of the annual reports which summarize accomplishments during the prior year and plans for the upcoming year.

## Standard E – PLUS is applicable to all ZoEs.

PacifiCorp has established the Land and Water Conservation Fund and the LMP to implement watershed protection and enhancement measures that were agreed to by the parties to the Settlement Agreement. Together, these funds and protection measures provide the ecological and recreational equivalent of land protection value of an ecologically effective buffer zone of 50% or more around the undeveloped shorelines. The acreage of conservation land provided by the Land and Water Conservation Fund and the LMP is much greater than the watershed protection acreage that would be provided through a buffer around 50% of the undeveloped shorelines. In 2015, the LIHI board agreed and granted an extra three years of certification under the 1<sup>st</sup> Edition of the LIHI Handbook.

As of 2021, PacifiCorp has provided over \$4.75 million through the Land and Water Conservation Fund for land acquisition for watershed protection and an additional \$3.1 million has

---

<sup>16</sup> See <https://bit.ly/3C90LPI>

been provided for habitat enhancement projects. Funding of up to \$467,000 (in 2002 dollars) is provided annually for the term of the FERC license and any funds remaining at that time remain in the funds.

My review of the FERC docket, LIHI application and License Articles 424, 425, 426 and 427 and the Annual Summary of License Implementation and Compliance Reports over the current LIHI certification period indicates that the Project has been operated in accordance with Standard E2 and satisfies the Plus Standard for all ZoEs. Therefore, this LIHI criterion is satisfied, and I recommend an extra three years of certification for satisfying the PLUS standard.

## **F. Threatened and Endangered Species Protection**

PacifiCorp correctly selected Standard F-2 for all ZoEs. An F-2 standard indicates a ***Finding of No Negative Effect*** from the Project. There are or may be listed species in the facility area, but the facility has been found by an appropriate resource management agency to have no negative effect on them; or habitat for the species does not exist within the facility's affected area or is not impacted by facility operations.

As discussed above for the Upstream Fish Passage criterion, in 2008 the Service found that listing the Bonneville Cutthroat Trout as either threatened or endangered was not warranted. FERC's 2003 Final Environmental Impact Statement (EIS) for the Project license application and the 2006 Environmental Analysis (EA) for the Cove decommissioning discuss the threatened, endangered, and sensitive species that may occur or pass through the Project area. These included the bald eagle, Canada lynx, Ute ladies'-tresses, yellow-billed cuckoo, gray wolf, and Canada lynx.

The LIHI application did not include a current US Fish and Wildlife Service online IPaC report. LIHI staff generated reports for the Project reaches and identified the following species that are or may be present in all or portions of the Project:

- Canada lynx (threatened)
- North American wolverine (proposed threatened)
- Ute ladies' tresses (threatened)
- Yellow-billed cuckoo (threatened)
- Monarch butterfly (candidate species)

In addition, bald eagles and other migratory birds protected under the Bald and Golden Eagle Protection Act or Migratory Bird Treaty Act may be present at certain times of the year.

The state of Idaho maintains a list of fish and wildlife for classification purposes, but it does not have an endangered species act law. The state list is a compilation of various federal lists including species listed under the Endangered Species Act, listed by the US Bureau of Land Management, or by US Forest Service.

Canada lynx generally occurs in boreal and montane regions dominated by coniferous or mixed forest with thick undergrowth, but also sometimes enters open forest, rocky areas, and tundra to forage for abundant prey. The IDFG database<sup>17</sup> contains several possible Canada lynx sightings in Caribou

---

<sup>17</sup> Sources: query of species observations in Caribou Co. and Franklin Co. from IDFG, Idaho Fish and Wildlife Information System <https://bit.ly/3NchbNx> and <https://bit.ly/3qoEjfk>

County and one in Franklin County. The Project area does not contain typical Canada lynx habitat and although they may pass through the area, it is unlikely that they are permanent residents. Critical habitat for this species has been designated but not within the Project area.

The wolverine (proposed for federal listing) is a species that inhabits alpine and arctic tundra, boreal and mountain forests (primarily coniferous), usually in areas with snow on the ground in winter. There are observations of wolverine in the mountain ranges to the north and west of the Project. The wolverine may travel through the Project area but is not likely to be a permanent resident.

Ute ladies' tresses have not been documented in the Project area. Field surveys were conducted for Ute's ladies' tresses from August 31 to September 4, 1997, but no populations were located (PacifiCorp 1999b, page E3-67; FERC 2003a, page 82). The Project contains riparian and wetland habitats in which this species may occur. This species is known from approximately 76 sporadic occurrences in lower-elevation wet, herbaceous-dominated habitats, none of which are within the Project's counties.<sup>18</sup> No critical habitat for this species has been designated.

The yellow-billed cuckoo occurs in riparian habitat in scattered locations in Idaho but not within the Project's counties.<sup>19</sup> The yellow-billed cuckoo may occur or disperse through the Project area. Critical habitat for this species has been designated but not within the Project area.

## Summary

As a signatory to the Settlement Agreement, USFWS stated that it anticipated that the operation of the Project, with the provisions of the Settlement Agreement, would have no effect on, or is not likely to adversely affect, the bald eagle, nor did USFWS anticipate adverse impacts to other listed species. In the EIS, FERC staff concluded that current and proposed Project operations would not affect the bald eagle or any other listed or candidate species (FERC 2003a).

PacifiCorp indicated via email on June 14, 2023 that lands managed under the Land Management Plan for habitat are subject to noxious weed control annually, and a 40-foot-wide fire break is mowed along the Project border with the City of Soda Springs. The only tree cutting is minor trimming along roads, fence lines and parking areas.

My review of the FERC docket, LIHI application and other publicly available information indicates that the Project's operations or maintenance activities are unlikely to adversely affect any listed species, even if present. Therefore, this LIHI criterion is satisfied.

---

*Spreadsheet of rare and sensitive species by county from IDFG Idaho list at [https://idfg.idaho.gov/sites/default/files/species\\_counties\\_09012017\\_bycounty.xlsx](https://idfg.idaho.gov/sites/default/files/species_counties_09012017_bycounty.xlsx)*

<sup>18</sup> IDFG database map <https://idfg.idaho.gov/species/taxa/40218>

<sup>19</sup> IDFG database map <https://idfg.idaho.gov/species/taxa/19476>

## G. Cultural and Historical Resource Protection

PacifiCorp correctly selected Standard G-2 for all ZoEs. A G-2 rating, *an Approved Plan*, indicates that the facility is in compliance with approved state, federal, and recognized tribal plans for protection, enhancement, or mitigation of impacts to cultural or historic resources affected by the facility.

Article 423 of the FERC license required PacifiCorp to implement the “Programmatic Agreement with FERC and the Idaho State Historic Preservation Officer (SHPO) for Managing Historic Properties that may be affected by the continued operation and maintenance of the Soda Project (FERC No. 20), Grace-Cove Project (formerly FERC No. 2401) And Oneida Project (formerly FERC No. 472). PacifiCorp executed the Programmatic Agreement on February 25, 2003.<sup>20</sup> The Programmatic Agreement generally identifies the cultural and historic resources on the Project. As previously noted, the Soda, Oneida, and Grace facilities were subsequently licensed as one project under FERC No. 20.

Consistent with the Programmatic Agreement, PacifiCorp filed a draft Historic Properties Management Plan with FERC on March 29, 2005. The SHPO had comments on the draft that were reconciled in a subsequent draft with which SHPO concurred on July 16, 2007. The final Historic Properties Management Plan (HPMP) was approved and made part of the license by FERC Order dated June 17, 2008.<sup>21</sup>

The Programmatic Agreement also required PacifiCorp to prepare an annual report of activities implemented pursuant to the HPMP and file it with FERC, the SHPO, the Shoshone Bannock Tribes, and the BLM. The first report was filed on January 22, 2010. HPMP reports have been filed annually since then and FERC has approved them.

Activities in most years since 2010 have consisted of annual cultural awareness training presentations to Project operations staff, monitoring of archaeological sites, and submittal of annual HPMP reports per the Programmatic Agreement. In 2020 and 2021, meetings were held remotely, and self-study training was presented to staff. Activities implemented to date have been summarized in the Project’s annual reports.<sup>22</sup>

The HPMP requires development of a public education and interpretive program. Interpretive panel artwork that was finalized during 2011, was manufactured and installed in 2012, except those covering Native American use of the area. Eight signs that covered historical information on the Grace, Cove and Oneida developments in addition to Doc Kackley, the Oneida Plant Disaster, and Bonneville cutthroat trout, were installed at that time. A consultation meeting and field trip were held with the Shoshone Bannock Tribe concerning traditional cultural properties and interpretive signs. The signs were designed in consultation with the Tribe and were installed in 2015.

### Summary

The Soda, Grace, and Oneida developments are in compliance with the Programmatic Agreement and approved HPMP and have completed activities and annual reporting discussed above.

---

<sup>20</sup> See <https://bit.ly/3qijjBj>

<sup>21</sup> See <https://bit.ly/3OUFWzm>

<sup>22</sup> See <https://bit.ly/43lcqa3>



The HPMP practices are applicable to portions of the ZoEs that are within the FERC Project boundary. The HPMP identifies specific cultural and historic resources present on PacifiCorp property and practices to protect them. In the approving order for the HPMP dated June 17, 2008, FERC staff concluded that the final HPMP incorporates the requirements of license article 423 and it provides for the identification, management, and protection for the Historic Properties within the area of potential effect of the Soda, Grace, and Oneida Developments.

The Cove development was decommissioned in 2006. The dam and flowline were removed, and the powerhouse was preserved in place. An MOA was executed between PacifiCorp and the SHPO that identified measures to mitigate the impacts of decommissioning on historic resources. Measures included documentation of features that were removed, provisions for interpretive signage, and implementation of discovery protocols if previously unidentified archaeological resources were discovered during decommissioning activities. The 2011 and 2012 Annual HPMP reports, filed with FERC on January 20, 2012 and January 14, 2013, respectively, confirmed completion of all mitigation measures.

My review of the FERC docket, LIHI application and License Articles 423 and the Annual Summary of License Implementation and Compliance Reports over the current LIHI certification period indicates that the Project has been operated in accordance with standard G2 for all ZoEs. Therefore, this LIHI criterion is satisfied.

## H. Recreational Resources

PacifiCorp correctly selected Standard H-2 for all ZoEs. A H-2 rating, *Agency Recommendation*, indicates that the facility demonstrates compliance with resource agency recommendations for recreational access or accommodation (including recreational flow releases), or any enforceable recreation plan in place for the facility.

FERC required PacifiCorp to implement numerous measures to protect and enhance Recreation Resources in accordance with the Settlement Agreement:

- a. Article 412 (ramping rates),
- b. Article 416 (Recreation Plan),
- c. Article 417 (Traffic Safety Plan),
- d. Article 418 and 419 (develop plan to release whitewater boater flows at Grace Dam)
- e. Article 419 (release whitewater boater flows at Grace Dam),
- f. Article 420 (operational regime to minimize the frequency of river level fluctuations below the Oneida powerhouse),
- g. Article 421 (develop a plan to forecast boating flows), and
- h. Article 422 (provide flow information website/phone).

PacifiCorp developed a detailed Recreation Management Plan that included Traffic Safety (Recreation and Traffic Safety Plan)<sup>23</sup> that FERC approved on October 11, 2005.<sup>24</sup> FERC amended and approved the Recreation and Traffic Safety Plan to increase public safety and security around project works on September 26, 2018.<sup>25</sup>

---

<sup>23</sup> See <https://bit.ly/3oCUIQB>

<sup>24</sup> See <https://bit.ly/3Caky1f>

<sup>25</sup> See <https://bit.ly/3OWSmXh>

The Project is in compliance with the recreational conditions in the FERC license. Documentation of monitoring, funding, and progress on implementation measures by license article is provided in the Annual Reports.

The last FERC Environmental and Recreation inspection was conducted on August 6 and 7, 2015. PacifiCorp received a letter from FERC dated August 11, 2015 in which FERC reported that two Part 8 signs and a traffic bollard that needed repair. By letter dated November 12, 2015, FERC acknowledged that all the repairs were completed.<sup>26</sup>

**a) Recreational Resources for ZoE 1: Soda reservoir**

There are two main recreation facilities on Soda reservoir. The first is the Oregon Trail Park and Marina, located on the north shore, which is owned by Caribou County (Figure 21). This facility provides a boat ramp, floating dock, picnic tables, two picnic shelters, trash receptacles, playground, parking for approximately 30 vehicles, two vault toilets with one that is ADA accessible.

The Second Bridge Boat Launch, located on PacifiCorp land on the north shore of Soda reservoir approximately 0.75 miles east of the Soda dam, provides a boat ramp, floating dock, trash receptacles, two portable toilets, and parking for approximately 30 vehicles. This facility is on PacifiCorp property that is maintained by Caribou County under agreement with funding by PacifiCorp.

In accordance with Article 416 of the license, PacifiCorp has made annual payments of up to \$3,000 to Caribou County for management of both recreational sites at the Soda (Alexander) reservoir.



*Figure 21. Recreational Facilities at the Oregon Trail Park and Marina*

---

<sup>26</sup> See <https://bit.ly/3WLKSn>

**b) Recreational Resource for ZoE 2: Soda Regulated Riverine Reach**

There are two recreation areas near the Soda powerhouse. The Soda Powerhouse Day Use Area, located on PacifiCorp land north of the Soda dam, provides a concrete hand-launch boat ramp, floating swim dock, picnic shelter, picnic tables, sandy beach area, drinking fountain, gravel parking area for approximately 15 vehicles, a restroom in an adjacent building, trash receptacles, large irrigated lawn, and four interpretive panels. The South Shore Access Area also provides a gravel parking area for approximately four vehicles.

**c) Recreational Resource for ZoE 3: Grace Reservoir**

There are no agency recommendations for recreational resources at the Grace impoundment in the Project license.

**d) Recreational Resource for ZoE 4: Grace Bypass Reach**

In 2005, in accordance with Article 416 of the Project license, PacifiCorp improved the boater put-in and take-out access points in the Grace bypass reach. The two recreation access areas in the bypass reach include:

- The Black Canyon Put-in, located on PacifiCorp land approximately 0.12 miles downstream from Grace dam, provides a hand-launch boat ramp, gravel parking area for approximately 15 vehicles including two ADA spaces, a portable restroom, and two interpretive panels.
- The Black Canyon Take-out, located on PacifiCorp land approximately 0.5 miles upstream from Grace powerhouse, provides a hand-launch boat ramp, fish stocking access, gravel parking area for approximately 15 vehicles including two ADA spaces, a portable restroom, angler access bridge, and three interpretive panels (Figure 22).

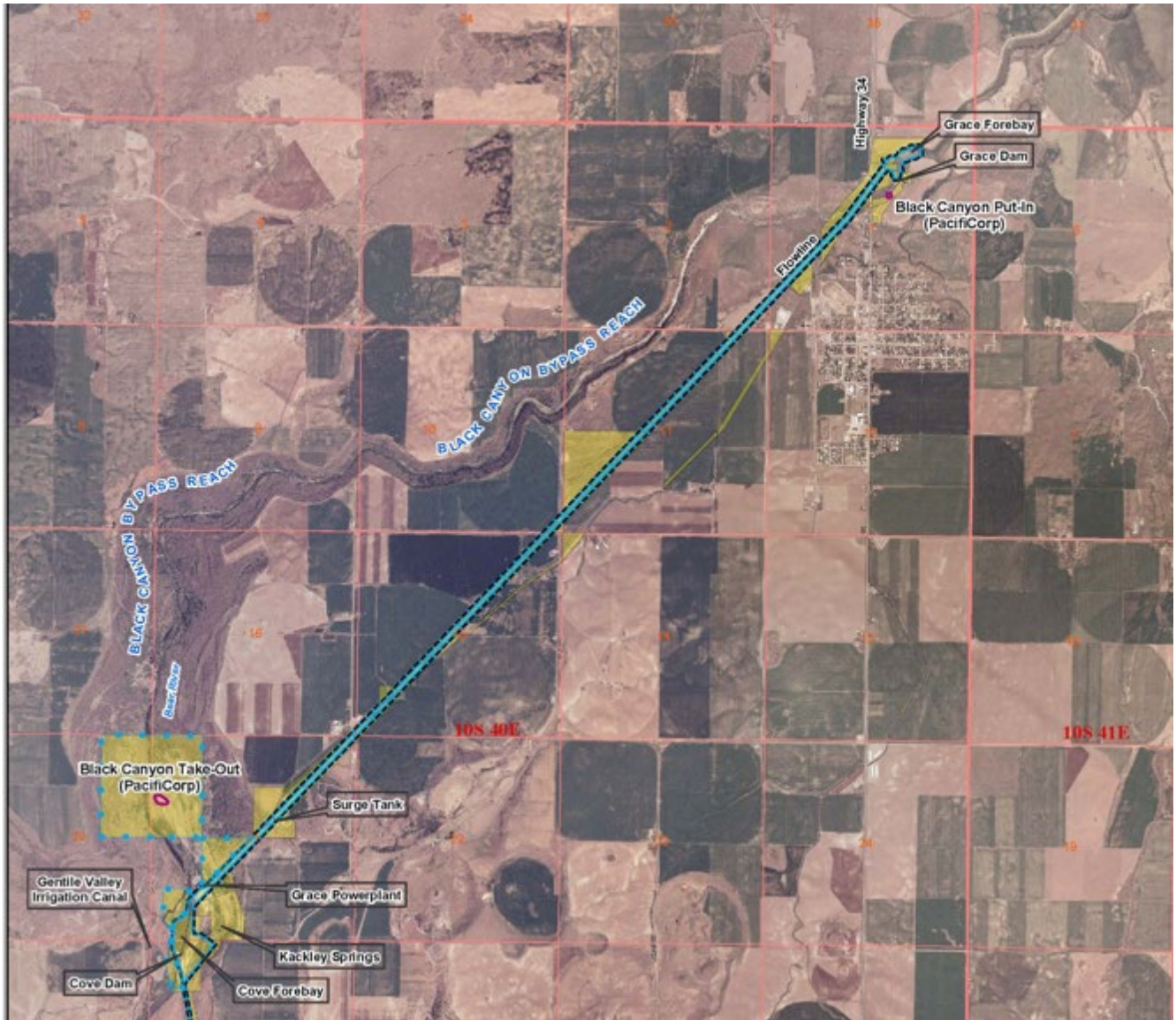


Figure 22. Aerial Photo of Black Canyon Bypass Reach and Whitewater Take-in and out Facilities

In addition, per Article 418 of the Project license, PacifiCorp installed a spill gate in Grace dam to facilitate whitewater releases required under Article 419 (Figure 23). The facility has been releasing the flows pursuant to Article 419 since 2008. Annual whitewater release calendars are prepared in consultation with American Whitewater and approved by the ECC. The first release calendar was submitted to FERC in 2008. PacifiCorp has also made river flow information for the Grace bypass reach available through a website and toll-free phone number.





*Figure 23. Whitewater boater in Black Canyon Bypassed Reach ZoE-4*

In accordance with Articles 421 and 422 of the Project license, PacifiCorp provides river flow information for the Grace bypass reach through:

- a toll-free PacifiCorp Flow Phone: (800) 547-1501
- the Bear River Implementation website and at Grace Dam at <https://bit.ly/3C9gKxd>

**e) Recreation Resources for ZoE 5: Grace Regulated Riverine Reach**

There are two recreation areas in this reach:

- The Cove Access Site, located on PacifiCorp land approximately 1.5 miles downstream of Grace powerhouse, provides a gravel parking area for approximately five vehicles and three interpretive panels.
- The Kackley Access Site, located on PacifiCorp land approximately 0.25 miles downstream of Grace powerhouse, provides a gravel parking area for approximately 10 vehicles.

**f) Recreation Resources for ZoE 6: Oneida Impoundment**

There are two recreation areas on the Oneida reservoir:

- Oneida Day Use Area, located on PacifiCorp property on Oneida reservoir near the dam, contains a boat ramp, floating dock, 10 picnic sites, a portable toilet, parking for approximately 35 vehicles, and two interpretive panels.

- Maple Grove campground located on BLM land on the east shore of Oneida reservoir, is managed by BLM with PacifiCorp funding. The campground contains 12 campsites, a boat ramp, floating dock, parking for approximately four vehicles, and two ADA accessible vault toilets.

In accordance with Article 416 of the Project license, PacifiCorp has provided \$50,000 to the BLM to upgrade the Maple Grove and Redpoint (ZoE 8) campgrounds. Annual payments of \$10,000 (in 2002 dollars escalated annually) to the BLM for management of these campgrounds are ongoing per the terms of the Project license.

#### **g) Recreation Resources for ZoE 7: Oneida bypass**

There are no agency recommendations for the Oneida bypass in the Project license.

#### **h) Recreation Resources for ZoE 8: Oneida regulated riverine**

In 2005, in accordance with Article 416 of the Project license, PacifiCorp improved the boater put-in and take-out access points in the Oneida reach downstream of the powerhouse. Each of the access points now includes a hand-launch boat ramp, gravel parking area, and portable restroom.

There are four recreation areas downstream of the Oneida powerhouse:

- The Oneida Narrows Put-in, located approximately 0.25 miles downstream of the Oneida Powerhouse on PacifiCorp land, provides a gravel hand-launch boat ramp, parking area for approximately 30 vehicles including two ADA spaces, and a portable restroom.
- The Oneida Narrows Take-out, located approximately 3.5 miles downstream of Oneida Powerhouse on BLM land, provides a gravel hand-launch boat ramp, parking area for approximately 40 vehicles, and a portable restroom.
- The Redpoint Campground, located partly on BLM and partly on PacifiCorp land approximately 2.25 miles downstream of Oneida powerhouse, provides 10 developed campsites with one ADA accessible site, one double vault toilet, day use picnic sites, non-motorized boater access, and
- An additional Bear River Access Site provides a gravel parking area for approximately 10 vehicles.

Funding is provided to BLM for Redpoint Campground. Annual payments of \$3,000 are provided to the Franklin County Sheriff for law enforcement assistance in the Oneida Canyon. In accordance with Articles 421 and 422 of the Project license, PacifiCorp provides river flow information for Oneida reach through a toll-free phone number (800) 547-1501 and websites.<sup>27</sup>

My review of the FERC docket, LIHI application, relevant license articles, and the Annual Summary of License Implementation and Compliance Reports over the current LIHI certification period indicates that the Project has been operated in accordance with standard H-2 for all ZoEs. Therefore, this LIHI criterion is satisfied.

---

<sup>27</sup> See <https://bit.ly/3oCUIQB>

## VIII. RECOMMENDATION

My review of the recertification application and supporting documentation, and a search of the FERC docket and PacifiCorp website shows that the Project continues to satisfy the LIHI criteria as discussed in the sections above. PacifiCorp is operating and maintaining the Project in accordance with the Settlement Agreement, the IDEQ water quality certificate and the FERC license. Also, PacifiCorp's mitigation measures throughout and beyond the Project boundary enhance water quality and habitat for BCT, an important fish species for the Service and IDEQ, as well as other aquatic and terrestrial species and their habitats.

PacifiCorp's compliance record with the FERC license is excellent. In the past 10 years, FERC did not issue any notices of violations pertaining to the Ecological Flow criterion or other license requirements. However, PacifiCorp self-reported three deviations with respect to minimum instream flows and ramping rates. In all instances, FERC concluded that the deviations were not considered to be a violation of Article 408 of the license.

My recommendation is to unconditionally recertify the Project for a thirteen (13)-year term including the PLUS standard for shoreline and watershed protection, in accordance with LIHI's *Low Impact Hydropower Certification Handbook, 2nd Edition* (Revision 2.05: January 1, 2022). The current LIHI certification does not include any conditions and I do not recommend any conditions in the new LIHI recertification.

## **IX. APPENDIX A**



**From:** [Stenberg, Mark \(PacifiCorp\)](#)  
**To:** [Maryalice Fischer](#)  
**Cc:** [Olson, Todd \(PacifiCorp\)](#)  
**Subject:** RE: Bear 401 Cert. Verification  
**Date:** Wednesday, August 9, 2023 7:14:29 PM

---

Hello Maryalice, Please see note below from Idaho DEQ concerning the Bear River Hydro Project's 401 Cert.

Mark Stenberg, MBA  
(208) 339-9552

---

**From:** Jennifer Cornell <Jennifer.Cornell@deq.idaho.gov>  
**Sent:** Wednesday, August 9, 2023 3:58 PM  
**To:** Stenberg, Mark (PacifiCorp) <Mark.Stenberg@pacificorp.com>  
**Subject:** [INTERNET] RE: Bear 401 Cert. Verification

**THIS MESSAGE IS FROM AN EXTERNAL SENDER.**

Look closely at the **SENDER** address. Do not open **ATTACHMENTS** unless expected. Check for **INDICATORS** of phishing. Hover over **LINKS** before clicking. [Learn to spot a phishing message](#)

Hi, Mark,

IDEQ confirms the 401 Certification issued in 2003 for PacifiCorp's Bear River Hydroelectric Projects is still valid and all terms and conditions therein remain valid.

Thank you,

Jen

**Jennifer Cornell [CPM](#)<sup>®</sup> | Surface Water Quality Manager**

Idaho Department of Environmental Quality  
Pocatello Regional Office  
444 Hospital Way #300  
Pocatello, ID 83201  
Office: (208) 239-5021  
Cell: (208)339-3556  
[www.deq.idaho.gov](http://www.deq.idaho.gov)

*Our mission is to protect human health and the quality of Idaho's air, land, and water.*

---

**From:** Stenberg, Mark (PacifiCorp) <[Mark.Stenberg@pacificorp.com](mailto:Mark.Stenberg@pacificorp.com)>  
**Sent:** Tuesday, August 8, 2023 7:07 AM  
**To:** Jennifer Cornell <[Jennifer.Cornell@deq.idaho.gov](mailto:Jennifer.Cornell@deq.idaho.gov)>  
**Cc:** Olson, Todd (PacifiCorp) <[Todd.Olson@pacificorp.com](mailto:Todd.Olson@pacificorp.com)>  
**Subject:** Bear 401 Cert. Verification

**CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.**

---

Hi Jenn, Just following up on previous email,Are you able to provide simple email that our CWA 401 Cert. is valid for the Bear River Project? We need a simple confirmation for the Low Impact Hydro Institute that is reviewing our renewal application. I'm around today if you need to discuss. Thanks.

Mark Stenberg, MBA  
Senior Operations Project Manager  
PacifiCorp – Renewable Resources  
(208) 339-9552