

Rush Creek Project

FERC Project No. 1389

Welcome

Relicensing Kick-off Meeting
October 19, 2021

Agenda

- Safety Moment
- Relicensing Team Introductions
- FERC Relicensing Process Overview
- Existing Project Description
- Proposed Project Alternatives
- Participation Opportunities
- Action Items

Introductions

| SCE Team | Cardno Team |
|-----------------------------------------|------------------------------|
| Matt Woodhall, Relicensing PM | Ed Bianchi, Project Director |
| Martin Ostendorf, Senior Manager | Julie Smith, Project Manager |
| Seth Carr, Bishop Operations | |
| Lyle Laven, Bishop Operations | |
| Nicolas von Gersdorff, Dam Safety | |
| Audry Williams, Cultural Technical Lead | |

Relicensing Goals

- Meet all regulatory requirements and deadlines
- Provide safe, reliable, and economic sources of electric generation for our customers
- Achieve sound environmental stewardship
- Seek collaborative solutions that achieve a balance of beneficial uses

Relicensing Goals

- Engage stakeholders in an open, inclusive process
- Achieve mutual understanding of the interests of all stakeholders
- Promote mutual respect between and among participants

Meeting Goals

- Provide clear information about the relicensing process
- Provide an overview of the existing and proposed Project facilities
- Inform stakeholders about opportunities to provide input

Meeting Ground Rules

- All participants have been muted
- Please submit questions in the chat area
- If time allows, questions will be answered during the meeting
- All questions/responses and action items will be documented in a meeting summary that will be distributed following the meeting
- Questions/comments can also be submitted via e-mail to matthew.woodhall@sce.com

Rush Creek Project

FERC Project No. 1389

Relicensing Process Overview

Relicensing Kick-off Meeting October 19, 2021

Relicensing Process Overview

- Purpose of relicensing
- Relicensing process and schedule
- Where to find out more about relicensing

Purpose of Relicensing

- Process of an applicant obtaining a new license from the Federal Energy Regulatory Commission (FERC) to continue operating an existing hydroelectric project after the end of the project's current license term
- Establishes new license conditions which balance the beneficial uses of project-affected resources consistent with current social priorities

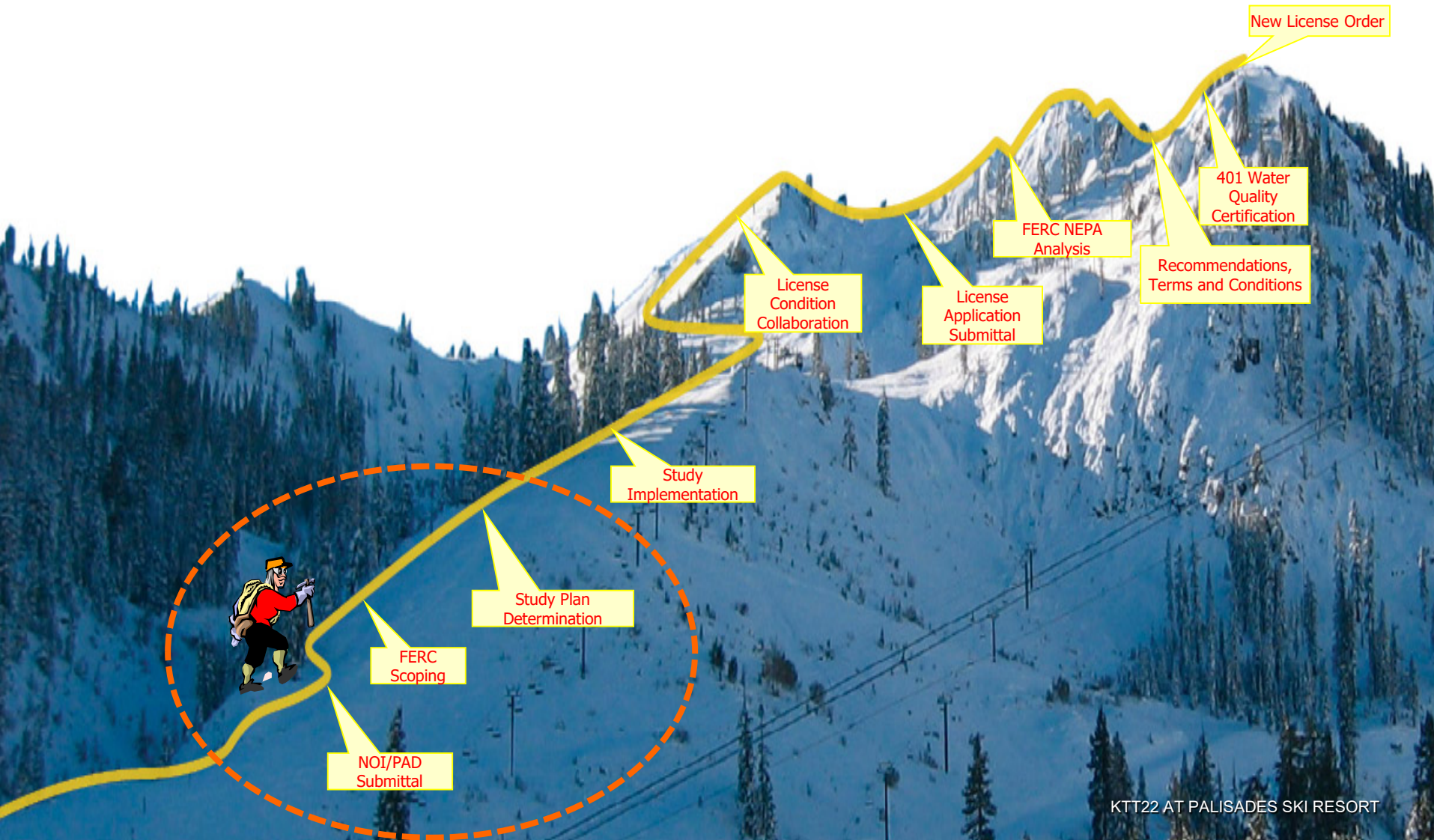
Relicensing Process and Schedule

- The relicensing process and requirements are codified in the Federal Power Act and other laws
- The environmental review process is under FERC jurisdiction
 - Other state and federal agencies and Tribes have key roles
- Relicensing takes a statutory minimum of five years to complete

Relicensing Process and Schedule

- Before formal start of relicensing proceeding, the Applicant:
 - Identifies interested parties
 - Sends out Project Information Questionnaire
 - Compiles, reviews, and summarizes existing, relevant, and reasonably available information
 - Identifies potential issues
 - Develops potential technical studies
 - Prepares Notice of Intent (NOI) and Pre-Application Document (PAD)
- Formal initiation of relicensing proceeding:
 - When the Applicant files NOI and PAD with FERC

Relicensing Process and Schedule



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Relicensing Process and Schedule

- SCE selected FERC's Integrated Licensing Process (ILP) to relicense the Rush Creek Project
- NOI/PAD filing deadline is no later than January 31, 2022
- Final License Application deadline is no later than January 31, 2025
- Current license expires on January 31, 2027

Relicensing Process and Schedule

- **Year 1:** PAD and NOI filed, FERC performs NEPA scoping, Applicant and Relicensing Stakeholders collaborate on study plans, FERC issues Study Plan Determination, and Applicant may begin performing studies
- **Year 2 & 3:** Applicant gathers information, performs studies, and prepares and files license application with input from Relicensing Stakeholders
- **Year 4 & 5:** FERC and State perform environmental analyses (NEPA and CEQA), regulatory agencies file recommendations and mandatory conditions, Federal fish and wildlife agencies may issue Biological Opinion under ESA, and SHPO completes Section 106 compliance
- **Year 5+:** FERC issues new license with updated conditions

Relicensing Process and Schedule

- Key Characteristics of the ILP
 - Developed to streamline the licensing process by providing a predictable, efficient, and timely process
 - Early issue identification and resolution of studies
 - Integration of resource agency and Tribal consultation processes, including:
 - State Water Board 401 Certification
 - USFWS ESA consultation
 - SHPO Section 106 consultation

Relicensing Process and Schedule

- PAD Contents
 - Relicensing process plan and schedule
 - Existing Project description
 - Proposed Project alternatives
 - Description of existing environment resources
 - Preliminary issues, identification of data gaps, and potential studies
 - Existing and proposed measures
 - Relevant comprehensive plans
 - Consultation documentation

Relicensing Process and Schedule

- Study Plan Development
 - Critical element of ILP
 - Important to ensure timely and informed decisions
 - FERC-defined study criteria
 - Based on information provided in the PAD and during scoping

Relicensing Process and Schedule

- Draft Technical Study Plan Contents
 - Potential Resource Issues
 - Project Nexus
 - Relevant Information
 - Potential Information Gaps
 - Potential License Conditions
 - Study Objectives
 - Extent of Study Area
 - Study Approach
 - Schedule

Relicensing Process and Schedule

Draft Technical Study Plans

Aquatic Resources

- AQ 1 – Instream Flow
- AQ 2 – Hydrology
- AQ 3 – Water Temperature
- AQ 4 – Water Quality
- AQ 5 – Geomorphology
- AQ 6 – Fish Population and Passage
- AQ 7 – Macroinvertebrates
- AQ 8 – Special-status Amphibians

Cultural Resources

- CUL 1 – Built Environment
- CUL 2 – Archaeology
- CUL 3 – Tribal

Land Resources

- LAND 1 – Aesthetic
- LAND 2 – Noise

Recreation Resources

- REC 1 – Recreation Opportunities

Terrestrial Resources

- TERR 1 – Botanical
- TERR 2 – Wildlife

Relicensing Process and Schedule

SCE Files NOI / PAD



January 2022

FERC Scoping Process

FERC Issues:

- Notice of Commencement of Proceeding
- Scoping Document 1

April 2022

FERC Conducts:

- Public Scoping Meeting and Site Visit

May 2022

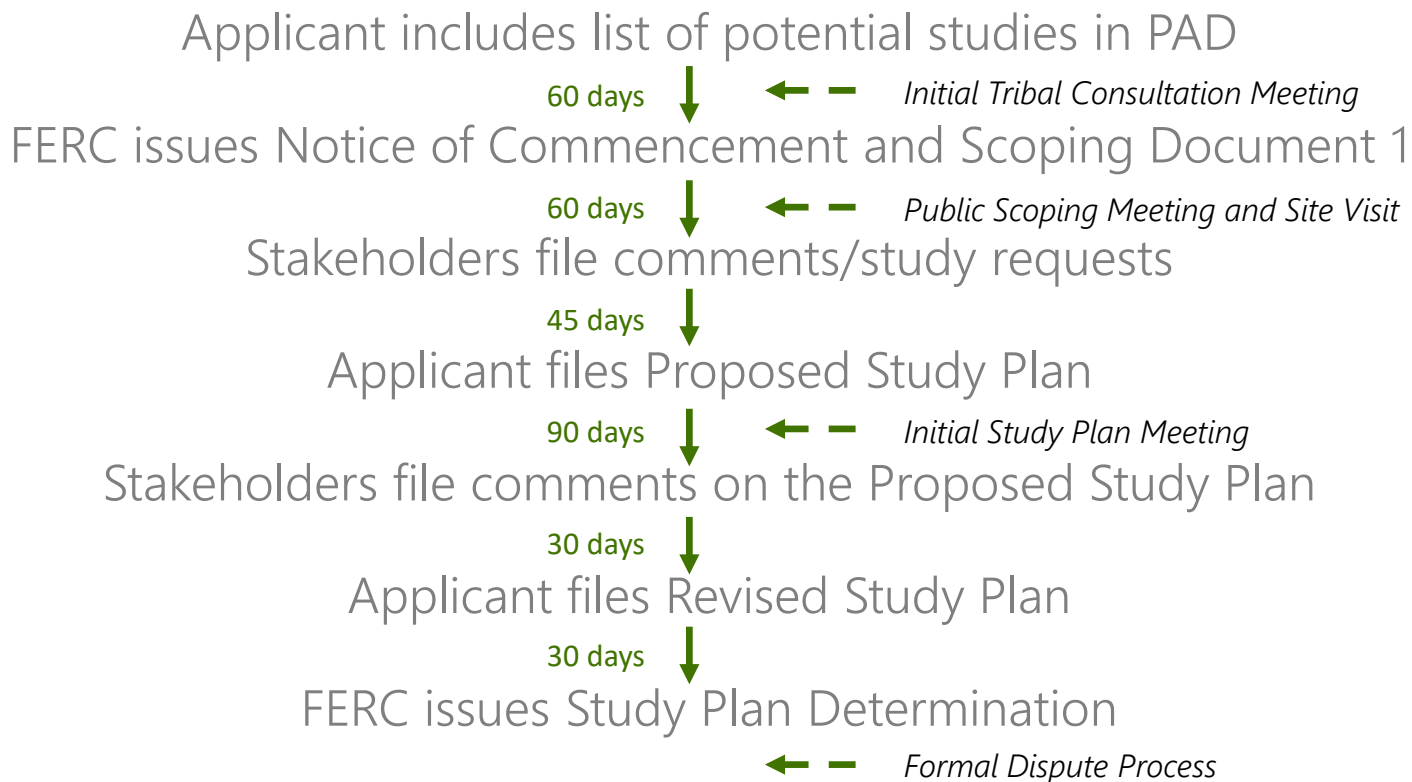
Stakeholder Comments Due on:

- PAD
- Scoping Document 1
- Study Requests

June 2022

Relicensing Process and Schedule

FERC Study Plan Development Process



Process takes approximately 10-14 months

Where to Find More Information

FERC website: <https://www.ferc.gov/industries-data/hydropower/licensing/licensing-processes/integrated-licensing-process-ilp>

FERC

- Industries & Data
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Hydropower

Overview

Licensing

Licensing Processes

Administration and Compliance

Dam Safety and Inspections

[HOME](#) > [INDUSTRIES DATA](#) > [HYDROPOWER](#) > [LICENSING](#) > [LICENSING PROCESSES](#) > [INTEGRATED LICENSING PROCESS \(ILP\)](#)

Integrated Licensing Process (ILP)

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The Integrated Licensing Process is intended to streamline the Commission's licensing process by providing a predictable, efficient, and timely licensing process that continues to ensure adequate resource protections. The efficiencies expected to be achieved through the ILP are founded in three fundamental principles:

- Early issue identification and resolution of studies needed to fill information gaps, avoiding studies post-filing.
- Integration of other stakeholder permitting process needs.
- Established time frames to complete process steps for all stakeholders, including the Commission.

Under the ILP, a federal or state agency, or Tribe with mandatory conditioning authority may request that a study dispute be referred to a dispute resolution panel. The three-member panel would consist of FERC staff, the agency or tribal representative referring the dispute, and a third person from the Panel Members' List below, selected by the other two panelists.

Related Links

- [ILP Effectiveness Evaluation](#)
- [ILP Tutorial](#)
- Integrated Licensing Processes
 - [Pre-Application Activity](#)
 - [Post-Filing Activity](#)
- [How to Apply to Become a Third Panel Member](#) (updated October 30, 2018)
- [Third Panel Members' List for Study Dispute Resolution by Resource Expertise](#)
- [Requests for Study Dispute Resolution](#)

Quick Links

- [A Guide to Understanding and Applying the Integrated Licensing Process Study Criteria](#)
- [Enforcement Hotline](#)
- [Hydroelectric Licensing Rulemaking \(Order No. 2002\)](#)

Contact Information

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Rush Creek Project

FERC Project No. 1389

Existing Project Description

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Project Location

- Eastern slope of the Sierra Nevada in Mono County
- Approximately four miles southwest of June Lake and 14 miles upstream of Mono Lake
- Majority of Project facilities occupy federal lands within the Inyo National Forest
 - Portion of the Project (Rush Meadows Dam, Waugh Lake, Gem Lake, and upstream side of Gem Dam) within Ansel Adams Wilderness
 - 135-foot-long section of the 4 kV powerline from the powerhouse to Agnew Dam crosses the Owens River Headwaters Wilderness
 - Project construction completed in the early 1900s, prior to the formation of both wilderness areas

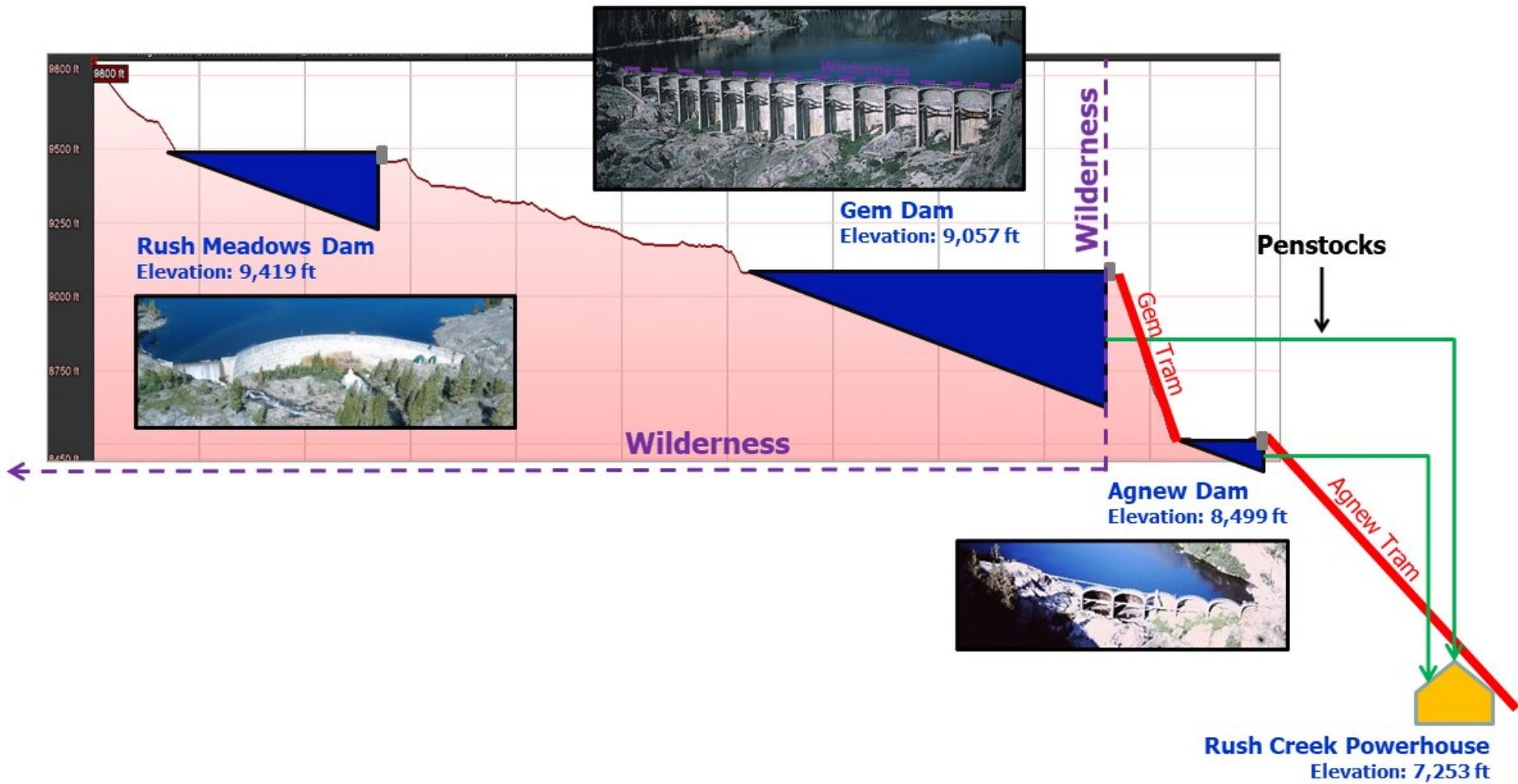
Project Location



Project Overview

- Primary Project facilities include:
 - Three dams and associated reservoirs
 - Water conveyance system
 - Powerhouse
 - Trams
- Rush Meadows Dam completed in 1918, raised in 1924/1925
- Gem Dam completed between 1915 and 1917, additional gravity section added in 1924
- Agnew Dam completed between 1915 and 1917

Project Overview



Seismic Restrictions

- Project dams classified by FERC as high hazard
 - Nearby Silver Lake Fault identified as a potential safety concern in 2007
- Reservoir operations restricted by FERC in 2012
 - Waugh Lake - 9,392.1 feet
 - Gem Lake - 9,027.5 feet
 - Agnew Lake - natural lake level

Project Modifications

- 2016/2017 Rush Creek Watershed experienced 230% of the average snowpack – high runoff conditions
- SCE determined restricted reservoir levels could not be maintained through normal operations
- Emergency actions and interim structural modifications were taken to maintain restricted reservoir levels

Project Modifications

Emergency Actions (2017) – Installed a temporary pumping system to remove water from Agnew Lake, and modified the Gem and Agnew flowlines to manage lake elevations



Project Modifications

Interim Structural Modifications – Notched the base of Agnew Dam (2017) and Rush Meadows Spillway (2018) to pass higher flows downstream and passively comply with the seismic restrictions

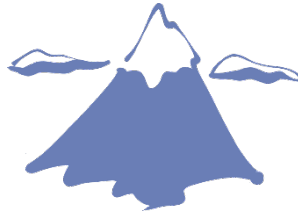


Project Modifications

Structural Modifications (2020-2021) – Retrofitted the existing Gem Dam Arch 8 outlet valve to improve hydraulic characteristics of the valve and increase flow releases at the Arch 8 outlet

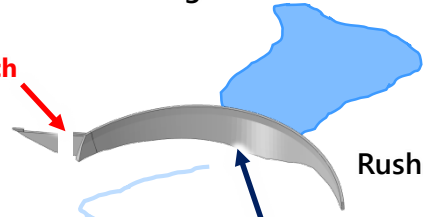


Sierra Nevada Mountains



Waugh Lake

Notch



Rush Meadows Dam

Low Level Outlets

Gem Lake



Gem Dam

Arch 8 Outlet & MIF Release

Bypass Valve

SCE Rush Creek Hydroelectric System

Water Release Features

Previously Existing Feature
New or Modified Feature
Currently Non-functional Feature

Agnew Lake

Agnew Dam

Notches

Pressure Relief Valve (PRV)

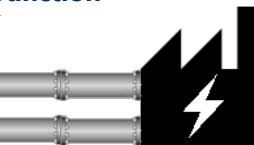
18" Valve

Penstock Cuts

MIF Release

Drain Valve

Agnew Junction



Rush Creek Powerhouse

Rush Meadows Development



| Facility Specifications | Original Design (Pre-2012) | With Seismic Restriction (Post-2012) |
|-------------------------|----------------------------|--------------------------------------|
| Surface Area (acres): | 185 | 130 |
| Gross Capacity (ac-ft): | 5,277 | 1,555 |
| Max WSE (ft): | 9,416 | 9,392 |

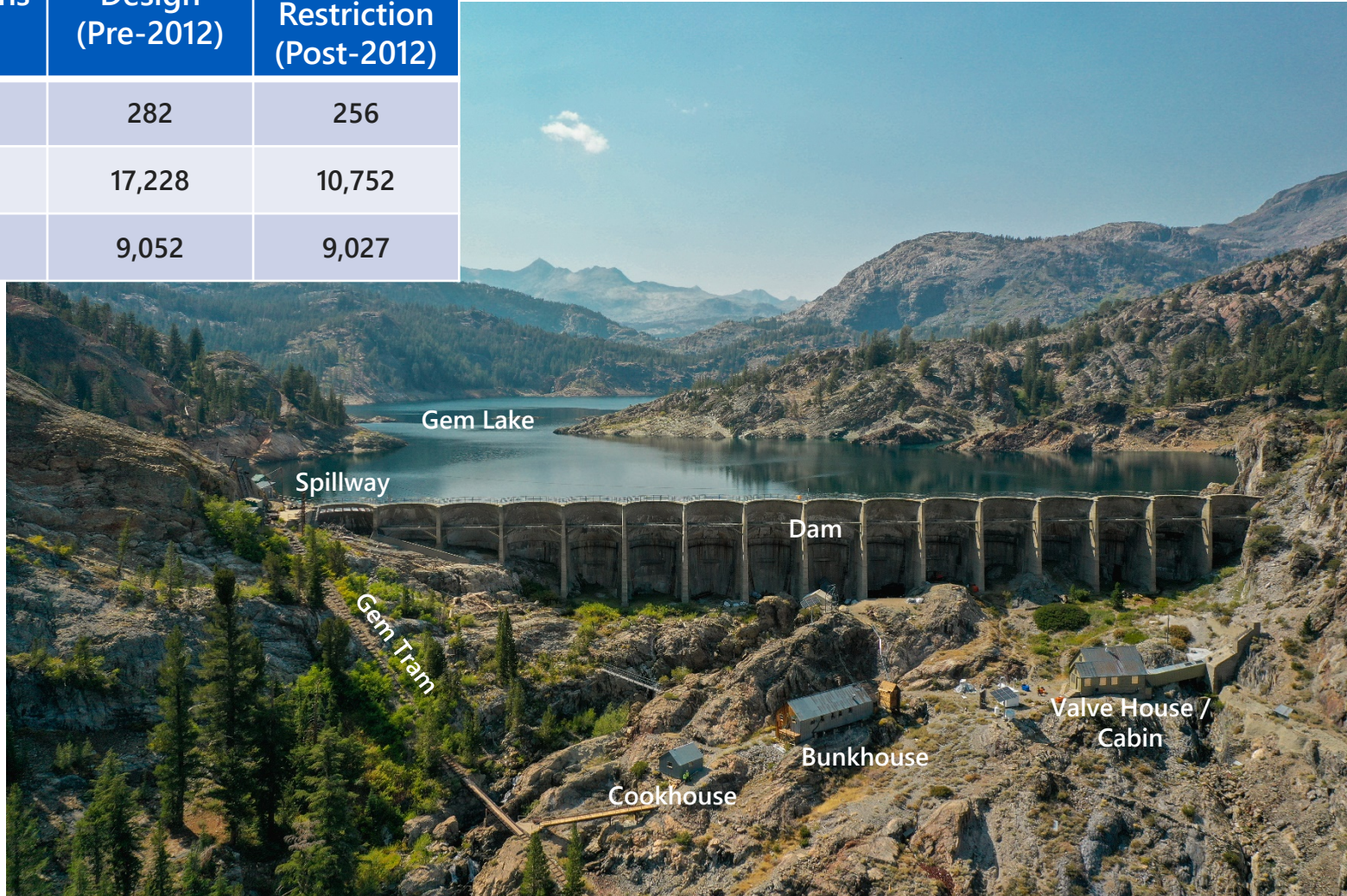
Rush Meadows Development



| Facility Specifications (Original Design) | |
|----------------------------------------------|-----------------------------------------------------------------|
| Dam | |
| Type: | Concrete, radial-arch dam |
| Length: | 463 ft |
| Height (max): | 50 ft |
| Elevation: | 9,419.0 ft |
| Geomembrane: | Upstream face of dam |
| Outlet: | 24-in and 30-in pipes; 9,368 ft elevation |
| Spillway | |
| Description: | Concrete overflow side channel that is 55-ft long by 3-ft deep* |
| Elevation: | 9,415.6 ft |

Gem Lake Development

| Facility Specifications | Original Design (Pre-2012) | With Seismic Restriction (Post-2012) |
|-------------------------|----------------------------|--------------------------------------|
| Surface Area (acres): | 282 | 256 |
| Gross Capacity (ac-ft): | 17,228 | 10,752 |
| Max WSE (ft): | 9,052 | 9,027 |



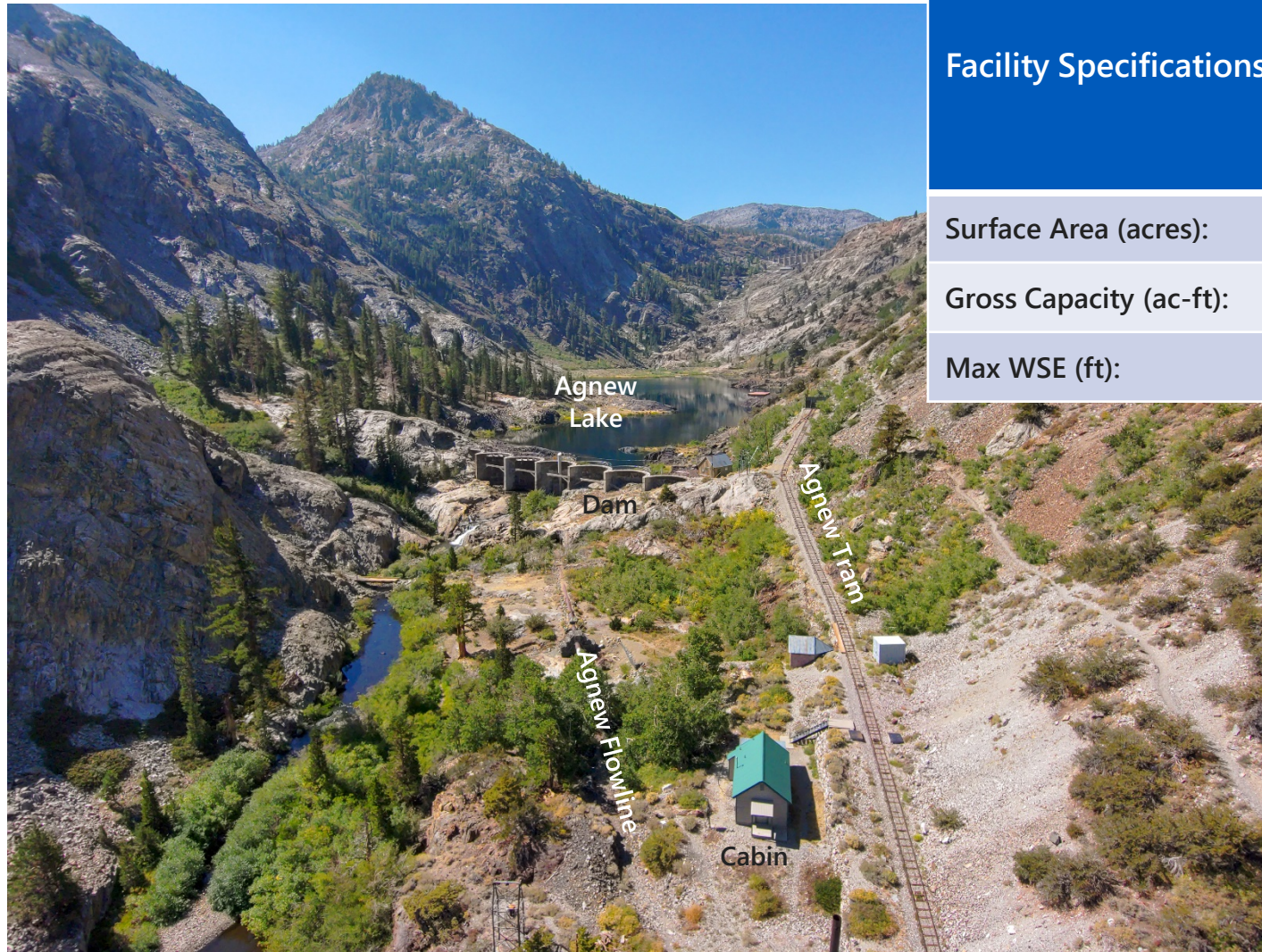
Gem Dam Development

Facility Specifications (Original Design)

| | |
|---------------|-------------------------------------------------------------------------------------------------------|
| Dam | |
| Type: | Concrete, multiple arch (16 complete, 2 partial arches with a concrete gravity section) |
| Length: | 688 ft |
| Height (max): | 84 ft |
| Elevation: | 9,057.5 ft |
| Geomembrane: | Upstream face of dam |
| Outlet: | 36-in pipe; 8,985 ft elevation* |
| Spillways | |
| Description: | Upper: Five openings each 5-ft long by 2-ft high Lower: Eight openings each 5-ft long by 2-ft high |
| Elevation: | Upper: 9,053.6 ft Lower: 9,051.6 ft |



Agnew Dam Development



| Facility Specifications | Original Design (Pre-2012) | With Seismic Restriction (Post-2012) Natural Lake Level |
|-------------------------|----------------------------|---------------------------------------------------------|
| Surface Area (acres): | 40 | 23 |
| Gross Capacity (ac-ft): | 1,379 | 569 |
| Max WSE (ft): | 8,496 | 8,470 |

Agnew Dam Development

Facility Specifications (Original Design)

Dam

| | |
|---------------|--------------------------------------------------------|
| Type: | Concrete, multiple arch (5 complete, 2 partial arches) |
| Length: | 278 ft |
| Height (max): | 30 ft |
| Elevation: | 8,498.9 ft |
| Geomembrane: | Upstream face of dam |
| Outlet: | 30-in pipe; 8,470 ft elevation* |

Spillway

| | |
|--------------|-----------------------------------------------------|
| Description: | 16 rectangular openings each 5-ft long by 2-ft high |
| Elevation: | 8,495.88 ft |



Agnew Tram

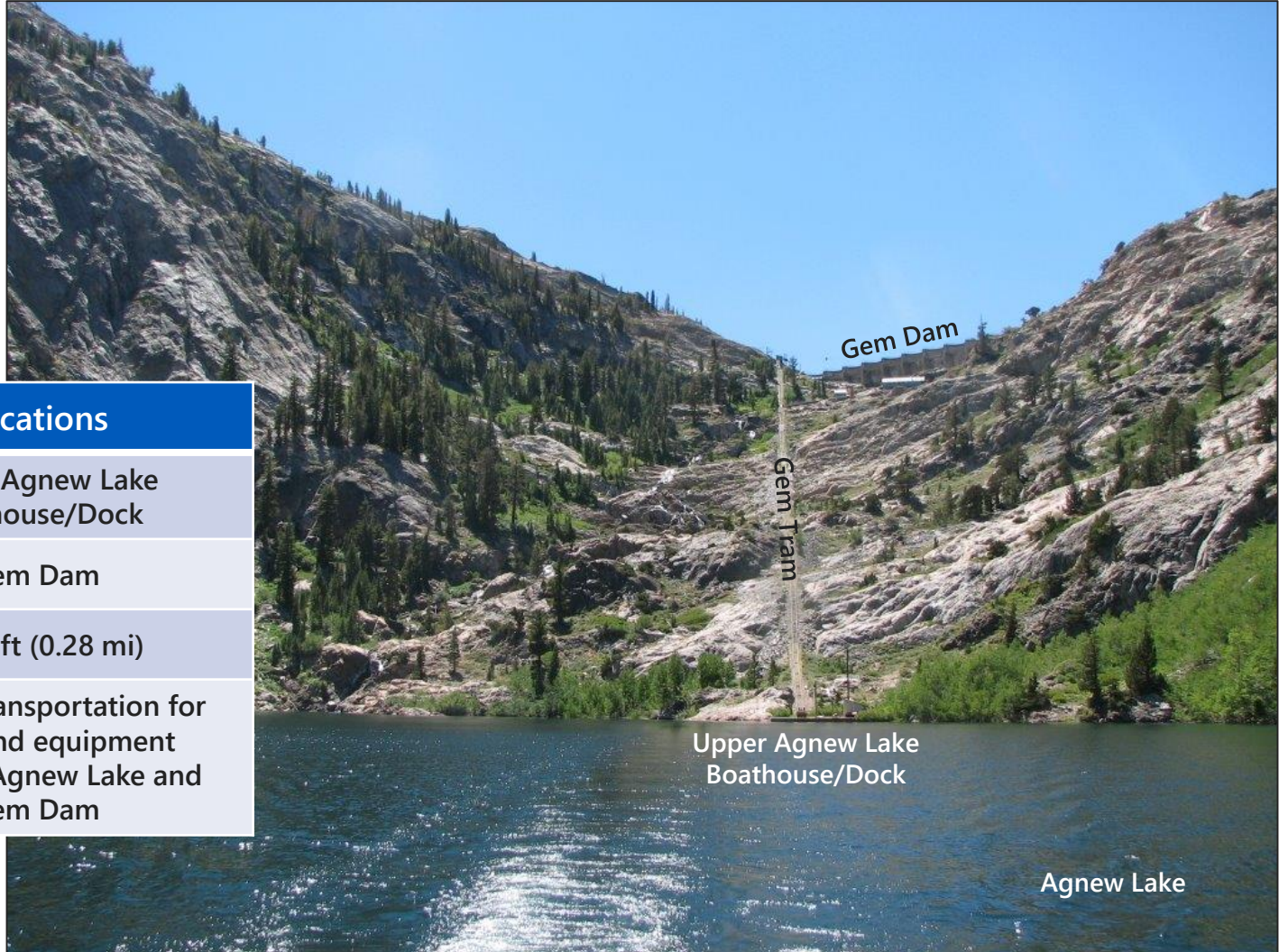


Facility Specifications

| | |
|----------|-------------------------------------------------------------------------------------|
| Begin: | Rush Creek Powerhouse |
| End: | Agnew Dam |
| Length: | 4,280 ft (0.81 mi) |
| Purpose: | Provide transportation for crews and equipment between the powerhouse and Agnew Dam |

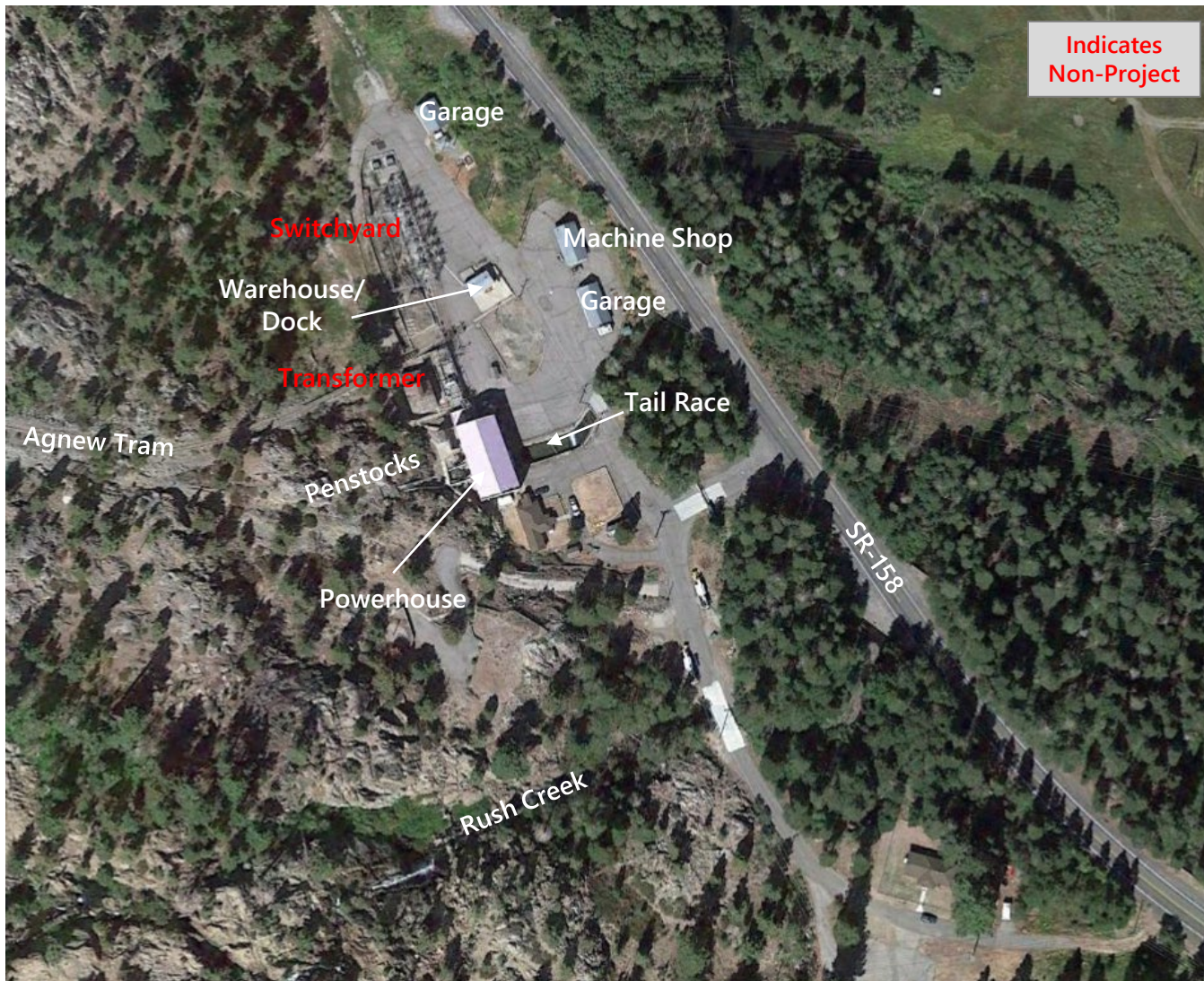


Gem Tram



| Facility Specifications | |
|-------------------------|-------------------------------------------------------------------------------|
| Begin: | Upper Agnew Lake Boathouse/Dock |
| End: | Gem Dam |
| Length: | 1,490 ft (0.28 mi) |
| Purpose: | Provide transportation for crews and equipment between Agnew Lake and Gem Dam |

Rush Creek Powerhouse



Rush Creek Powerhouse

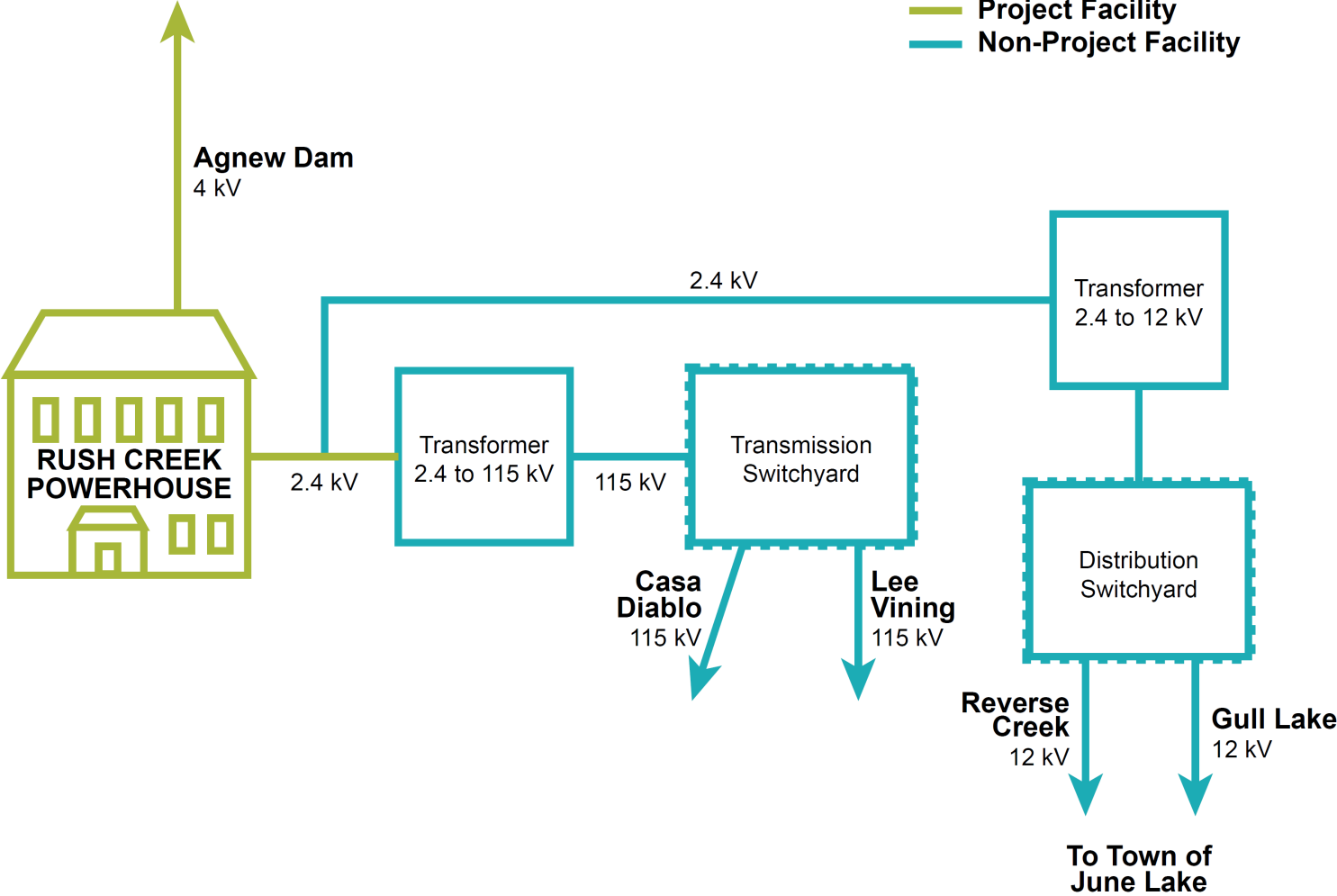
Remotely controlled by a supervisory system from the Eastern Hydro Operations Center



Facility Specifications

| | |
|---------------------------|----------|
| Total Installed Capacity: | 13.01 MW |
| Unit 1 | |
| Installed Capacity | 5.85 MW |
| Hydraulic Capacity (max) | 55 cfs |
| Unit 2 | |
| Installed Capacity: | 7.16 MW |
| Hydraulic Capacity (max): | 55 cfs |

Transmission System



Rush Creek Powerhouse

- Historical Operations (WY 1990–2011)
 - Average annual energy production= 46,017,944 kWh
 - Monthly average flows= 34.7 to 62.5 cfs
 - Highest flows in June/July and lowest flows in winter/early spring
- Current Operations (WY 2012–2020)
 - Average annual energy production = 33,825,683 kWh
 - Monthly average flows= 17.5 to 65.9 cfs
 - Highest flows in June/July and lowest flows in fall, winter, and early spring

Historic Project Operations

- Project reservoirs provided storage for lake recreation during the summer and allowed for electricity generation in the fall/winter
- Storage maintained consistent with license requirements for water surface elevation and minimum instream flows
- Reservoirs lowered in the fall/winter in preparation for spring runoff

Current Project Operations

- Waugh Lake
 - Storage is maintained below the seismic restrictions
 - During the winter and early spring the reservoir is completely drained (the low-level outlet is left open)
 - Since approximately 2017, the low-level outlet has generally been left open year-round
 - The notching of the spillway in 2018 facilitates compliance with the FERC-mandated restricted reservoir elevation

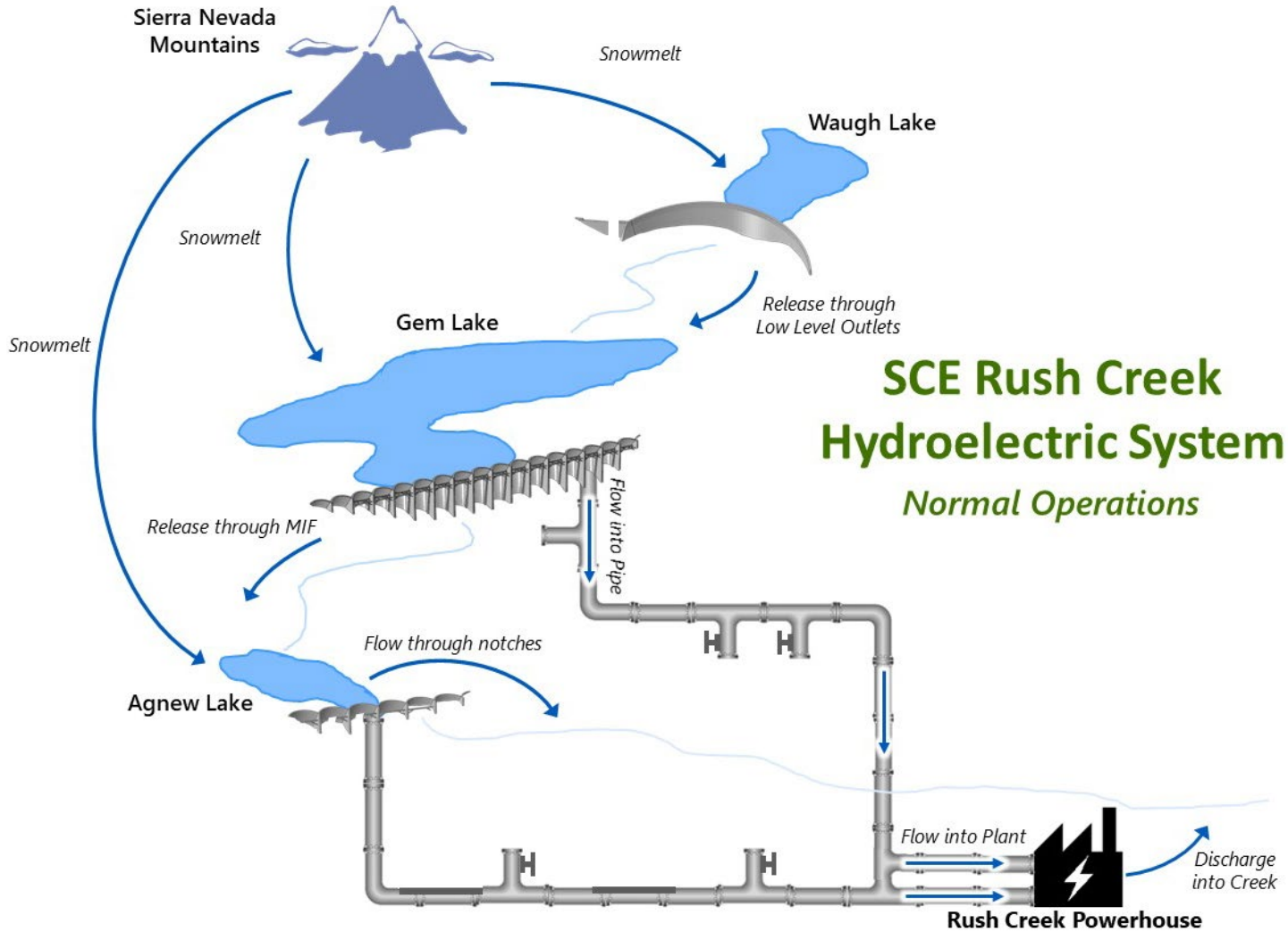
Current Project Operations

- Gem Lake
 - Lake fills up to the maximum seismic restriction capacity of approximately 10,752 ac-ft (9,027.5 feet elevation) and maintains storage through the summer
 - A majority of the storage is released in the fall and the reservoir remains low until spring high flows trigger refill the following year

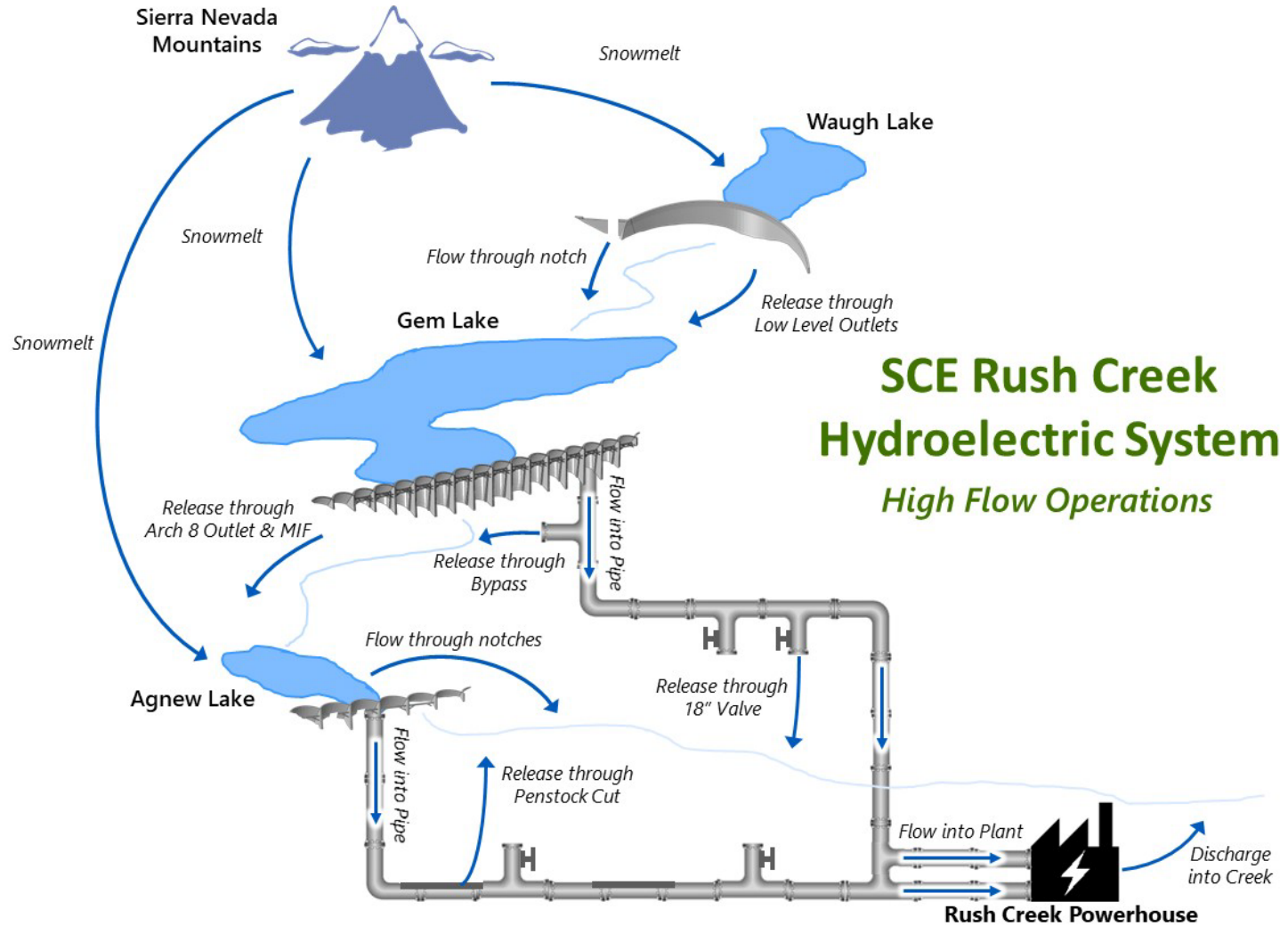
Current Project Operations

- Agnew Lake
 - No longer used for storing water or power generation
 - A pre-Project natural lake is present with a maximum elevation of 8,470 feet and gross storage of 569 ac-ft
 - Water entering the lake passes through the two notches in the bottom of the dam and flows into Rush Creek eventually entering Silver Lake

Current Normal Operations



Current High-Flow Operations





Rush Creek Project

FERC Project No. 1389

Proposed Project Alternatives

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October 19, 2021

Proposed Project Alternatives

- Development of alternatives
- Considerations
- Proposed Project alternatives
- Proposed implementation schedule

Development of Alternatives

- Over the last few years, several engineering firms with different expertise were utilized to develop approaches for removal/retrofitting of the Rush Creek Project dams
- The following alternatives, supported by SCE Dam Safety, were selected for consideration in the relicensing:
 - Agnew Dam (full and partial dam removal)
 - Rush Meadows Dam (full and partial dam removal)
 - Gem Dam (dam modification - retrofitting)

Considerations

- Alternatives for Rush Meadows and Agnew dams will be included in the PAD to bookend the analysis, facilitate stakeholder collaboration, and represent different priorities, including:
 - Disturbance to the local community (helicopter and truck use)
 - Conformity to the Wilderness Act (Rush Meadows)
 - Stakeholder acceptability
 - Visual footprint

Considerations

- Final Project Alternatives will be identified based on agency and stakeholder input and will be provided in the Final License Application (January 2025)
- Construction will not begin until issuance of the new license, approval of the final engineering plans by FERC and DSOD, and acquisition of regulatory permits (estimated 2029)

Proposed Project Alternatives

- Agnew Dam and Rush Meadows Dam Disposition

Objectives

- Address seismic concerns by modifying/removing the dams such that no water is impounded under the Probable Maximum Flood (PMF)
- Remove dams from FERC jurisdiction

Proposed Project Alternatives

- Agnew Dam and Rush Meadows Dam Disposition

Approach – Full Dam Removal

- Demolition of the entire dam
- All concrete/debris transported via helicopter to June Mountain Ski Area Parking Lot for transport to an approved disposal site



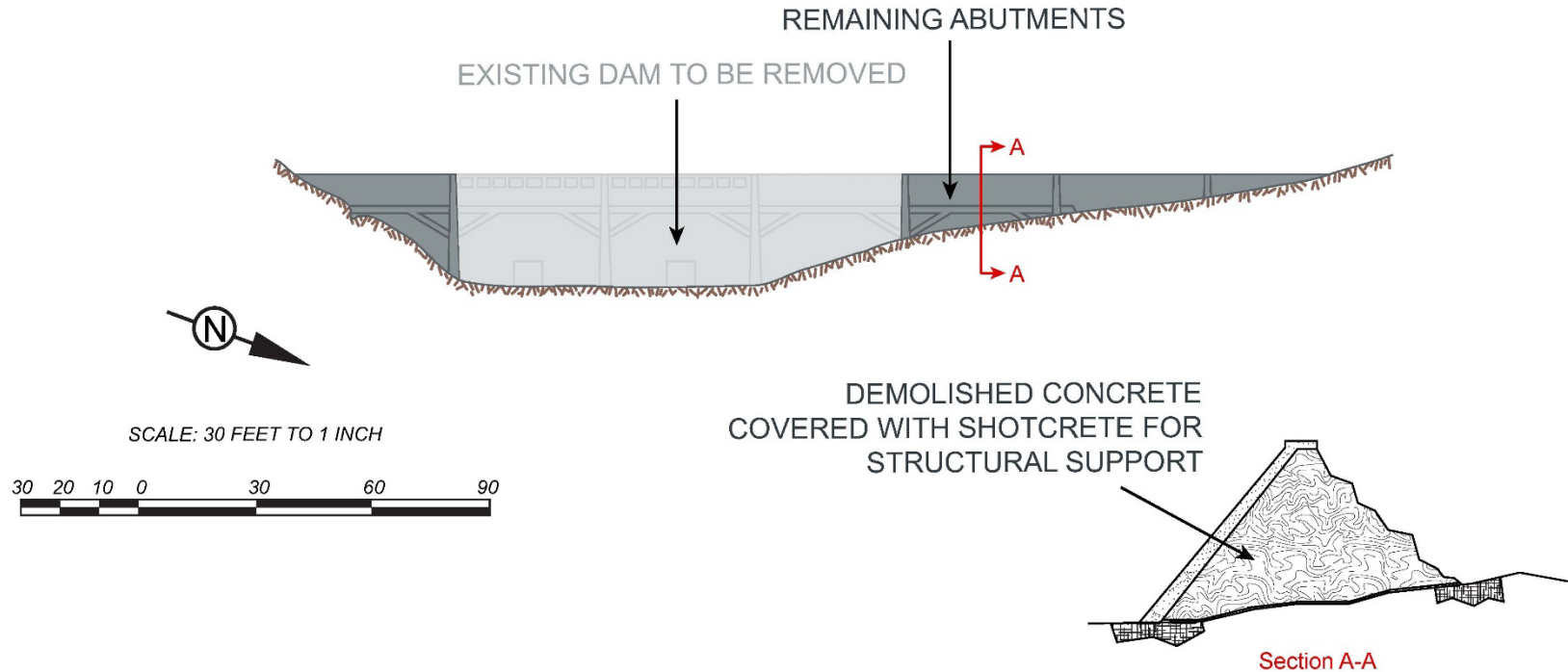
Proposed Project Alternatives

- Agnew Dam Disposition

 - Approach – Partial Dam Removal

 - Demolish the three center dam arches (Arches 4-6) to pass the PMF
 - Reuse the demolished concrete as fill material on the inside of the remaining arches (Arches 1-3, 7) to provide stabilizing support – leave in place
 - Limited transport of material off-site

Agnew – Partial Dam Removal



Proposed Project Alternatives

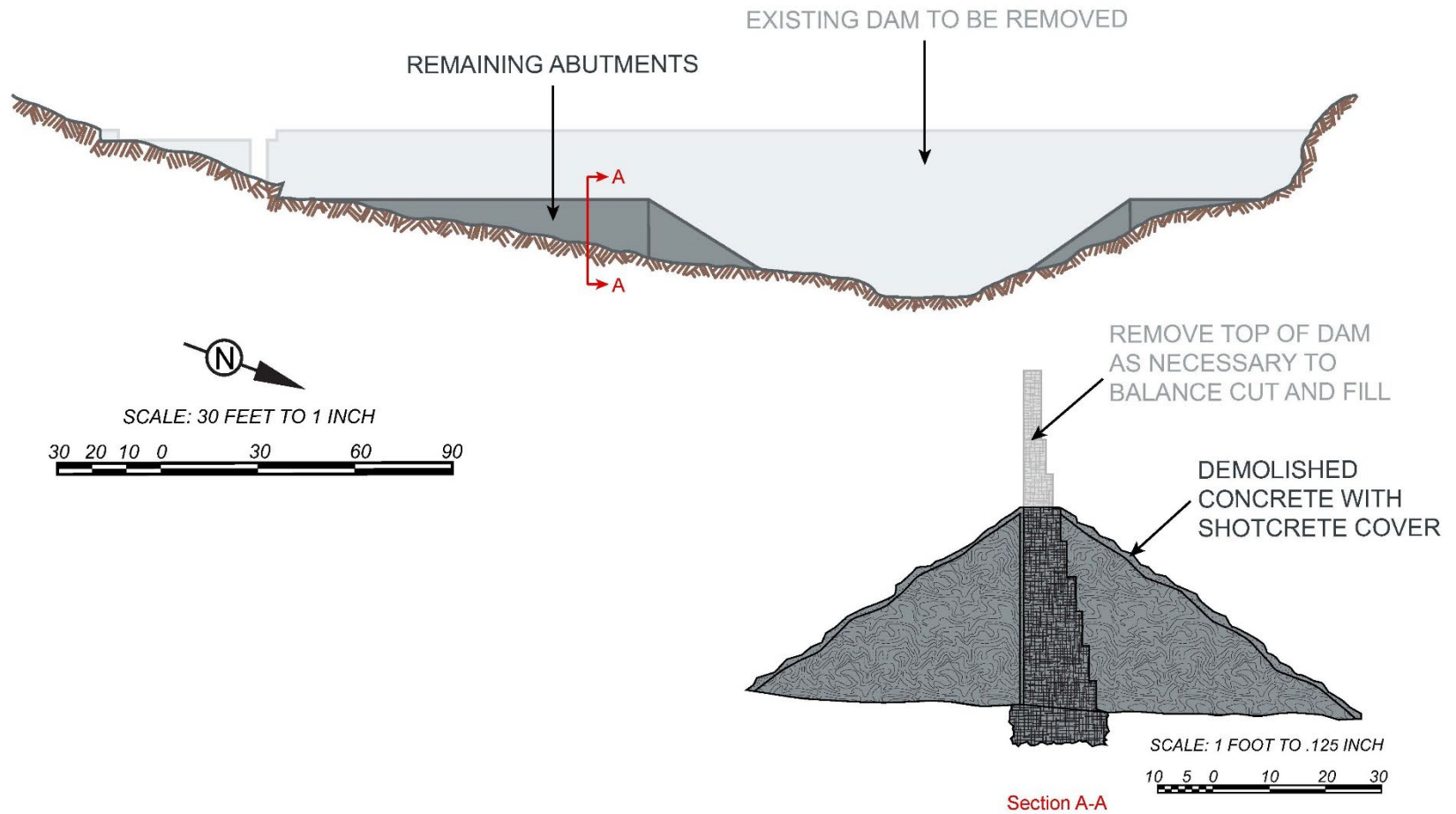
- Rush Meadows Dam Disposition



Approach – Partial Dam Removal

- Construct a 140 foot wide notch in the center of the dam to pass the PMF
- Remove the top 15 feet of the remaining dam sections – leave in place
- Reuse the demolished concrete as fill material on the upstream and downstream sides of the remaining abutments to provide stabilizing support
- Limited transport of material off-site

Rush Meadows – Partial Dam Removal



Proposed Project Alternatives

- Gem Dam Retrofitting

Objective

- Retrofit the dam to meet seismic restrictions under PMF and allow for continued operations of the Project under FERC jurisdiction



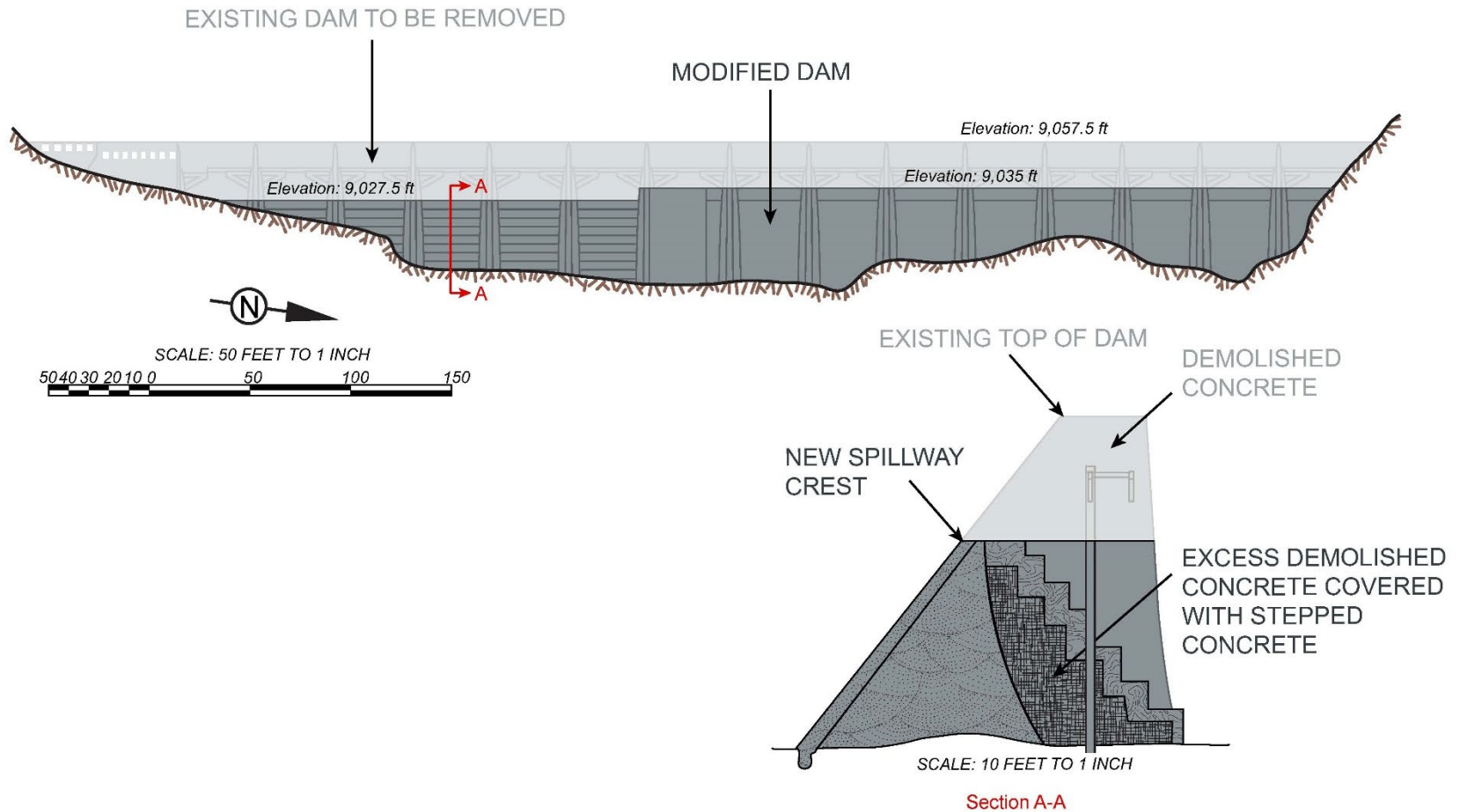
Proposed Project Alternatives

- Gem Dam Retrofitting

Approach

- Remove the upper portions of Arches 10-14 to develop new ungated spillway to pass PMF with crest elevation corresponding to top of existing gravity infill sections (9,027.5 feet – seismic restriction elevation)
- Remove the top 22 feet of the remaining arches (1-9) and top 10 feet of the vertical piers
- Use demolished concrete as fill in Arches 10-14 to support new spillway chute
- Majority of removed material reused on-site (limited transport)

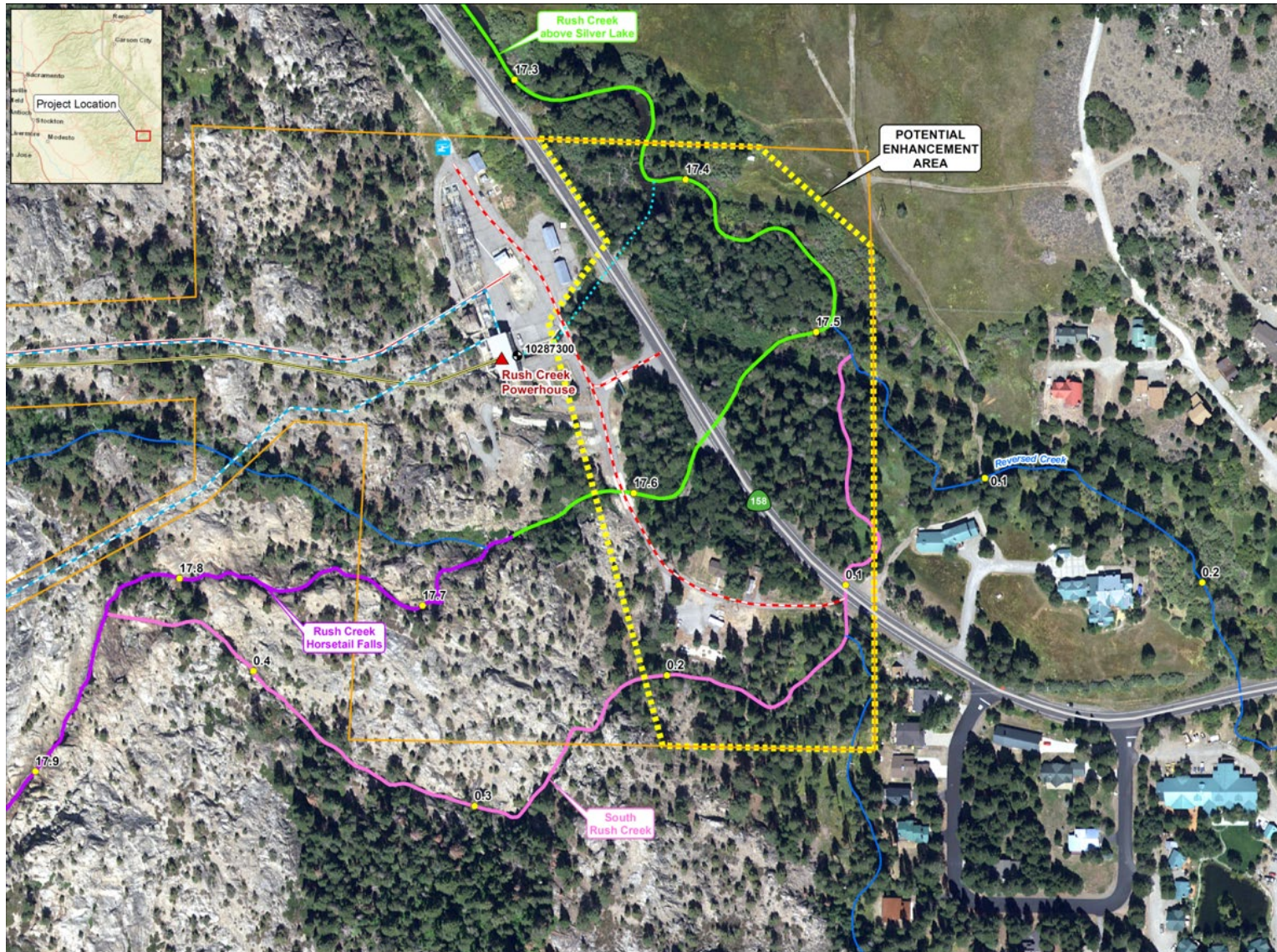
Gem – Dam Retrofit



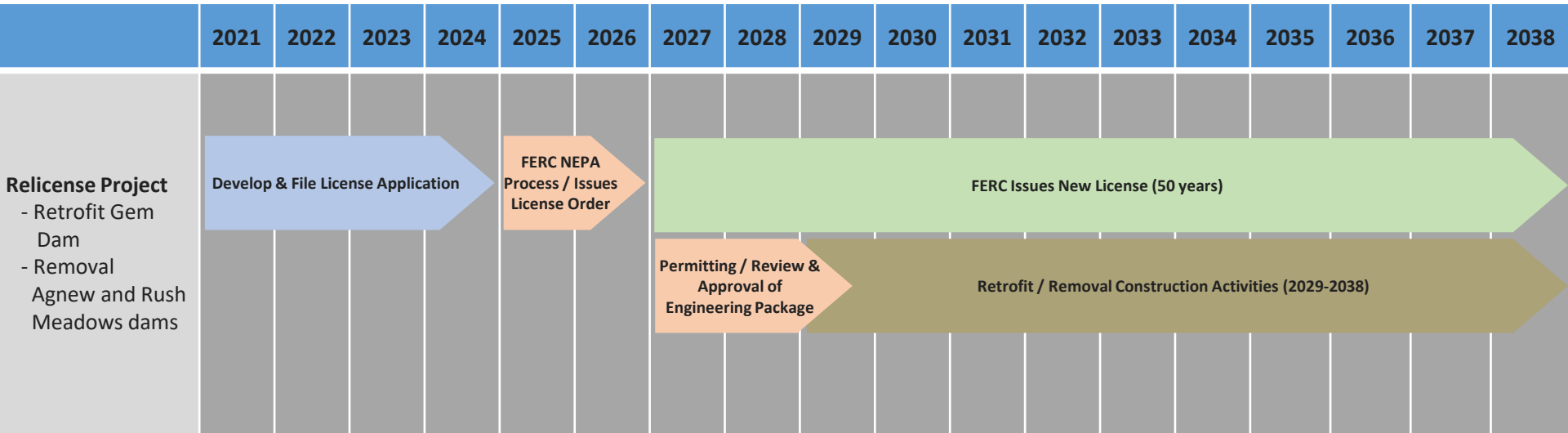
Rush Creek Channel Evaluation

- Proposed Project includes evaluation of the Rush Creek channel to assess local flooding near SR-158 during high-runoff events
- An enhancement plan, if appropriate based on technical study results, will be developed in collaboration with stakeholders for inclusion in the Final License Application

Rush Creek Channel Evaluation



Proposed Schedule



Rush Creek Project

FERC Project No. 1389

Participation Opportunities

Relicensing Kick-off Meeting October 19, 2021

Participation Opportunities

- Near-term schedule
- Participation opportunities
- Contacts

Near-Term Schedule

- SCE files NOI/PAD (January 2022)
- SCE convenes Technical Working Groups (TWG) to collaborate on review of Technical Study Plans (~January to June 2022)
- FERC conducts Tribal consultation meeting (~March 2022)
- FERC issues Notice of Commencement of Proceeding, Scoping Document 1, and study requests (~April 2022)
- FERC conducts public scoping meeting and site visit (~May 2022)
- Public comments on the PAD, Scoping Document 1, and study requests are due (~June 2022)
- Formal study plan determination process (~June 2022 to November 2022)
- FERC study plan determination (~December 2022*)
 - *Assumes no formal dispute resolution process is needed

Participation Opportunities

- Visit the Project website to register to be added to SCE's general distribution list or to sign up for Technical Working Group meetings
 - www.sce.com/rushcreek
- Register with FERC online to be notified via e-mail about new Rush Creek Project filings and issuances
 - <https://www.ferc.gov/ferc-online/overview>
 - Go to e-subscription
 - Docket No. P-1389

Participation Opportunities

- Visit SCE's relicensing website for Project information, documents, and events
- Attend future FERC/Licensee sponsored meetings
- Submit timely written comments on relicensing documents

Contacts

| SCE Team | Cardno Team |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
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Closing Remarks

- Submit any additional questions/comments to Matt Woodhall at matthew.woodhall@sce.com by October 27, 2021 to be included in the meeting summary

Adjourn

