

Rush Creek Project

FERC Project No. 1389

Conceptual Restoration Plans

October 8, 2024

Please hold, we will begin shortly. Thank you for your patience and for muting your microphone.

Meeting Purpose

- Collect input from stakeholders on proposed approach to restoration of the Rush Creek Project following implementation of Project facility modifications.
- Input collected will help inform development of the Conceptual Restoration Plans for the Project.

Meeting Agenda

- Introductions
- Safety Moment
- Restoration Plan Development
- Project Overview
- Restoration Areas (Agnew, Gem, Rush Meadows)
 - Existing Condition
 - Restoration Objectives
 - Proposed Restoration Approach/Rationale
- Next Steps

Relicensing Team Introductions

Relicensing Team

Matthew Woodhall, SCE Relicensing Manager

Martin Ostendorf, SCE Senior Manager

Julie Smith, Relicensing Project Manager (Stantec)

Janelle Nolan, Terrestrial Technical Lead (JNA Consulting)

Robyn Smith, Biologist (JNA Consulting)

Craig Addley, Aquatics Technical Lead (Kleinschmidt)

Julie Etra, Restoration Specialist (Western Botanical Services)

Safety Moment

Mental Health & Well-being Moment

October 10 is World Mental Health Day

Work-life balance

- Work-life balance is about finding a way to manage the demands of your work or study with your personal life and the things that 'top you up'
- A good work-life balance means you can be happy and productive at work and also have time for yourself and your family
- If you have a casual job or work from home, your days may not be clearly defined into work time and home time.
- If you are feeling stressed and overwhelmed at work or at home, acknowledge that this is not a sign of weakness and ask for help and support and explore ways to bring yourself fulfillment, joy, and balance

Excellent resource - WHO (World Health Organization)

[WHO guidelines on mental health at work](#)



Restoration Plan Development

Conceptual Restoration Plans

- Develop conceptual restoration plan for each site in consultation with Project stakeholders for inclusion in the Final License Application
- Conceptual plans will include an overall framework for restoration activities, including:
 - Identifying restoration objectives
 - Summarizing current site conditions (2024)
 - Defining the restoration approach and rationale at each restoration area
 - Summarizing potential restoration activities proposed for each area (pre-construction, restoration, and post-construction monitoring and reporting activities)

Restoration Plan Development

Detailed Restoration Plans

- Develop detailed restoration plan for each site in consultation with Project stakeholders following issuance of FERC's License Order and completion of final engineering design
- Detailed plans will include:
 - Restoration design details (engineering)
 - Description of site conditions (future conditions at the time of detailed restoration plan development)
 - Site-specific restoration activities
 - Site-specific BMPs based on final design
 - Detailed monitoring plan with specific performance criteria
 - Consultation requirements

Project Overview

- Project facilities include three dams and associated reservoirs; a water conveyance system; the Rush Creek Powerhouse; and ancillary facilities.
- The Proposed Action includes Project facility modifications including:
 - Partial removal of Rush Meadows Dam (such that it no longer impounds water) and associated ancillary support facilities
 - Partial removal of Agnew Dam (such that it no longer impounds water), associated ancillary support facilities, and above-ground sections of the Agnew flowline
 - Retrofitting Gem Dam to facilitate continued operation of the Project for power generation

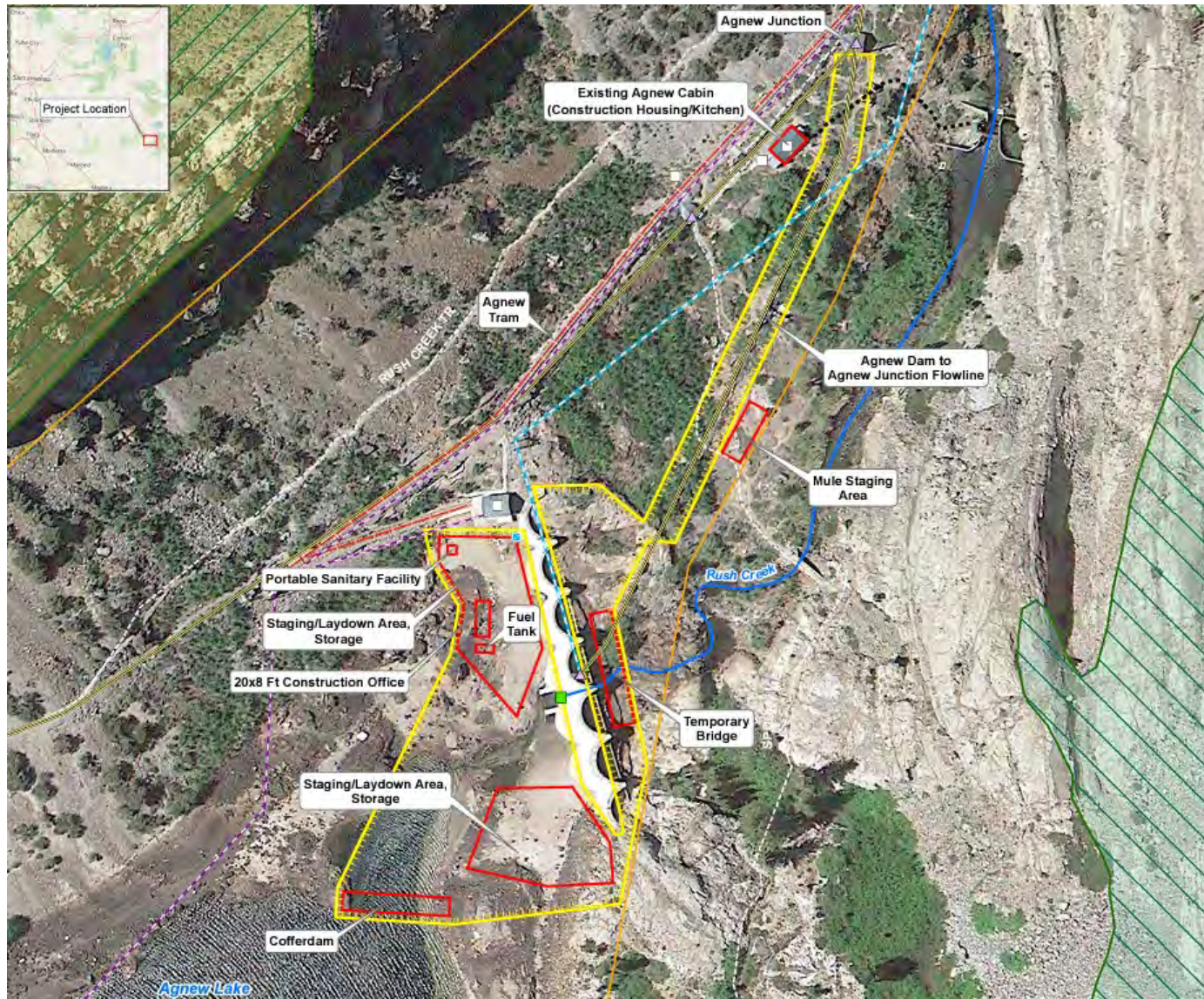


Agnew Area

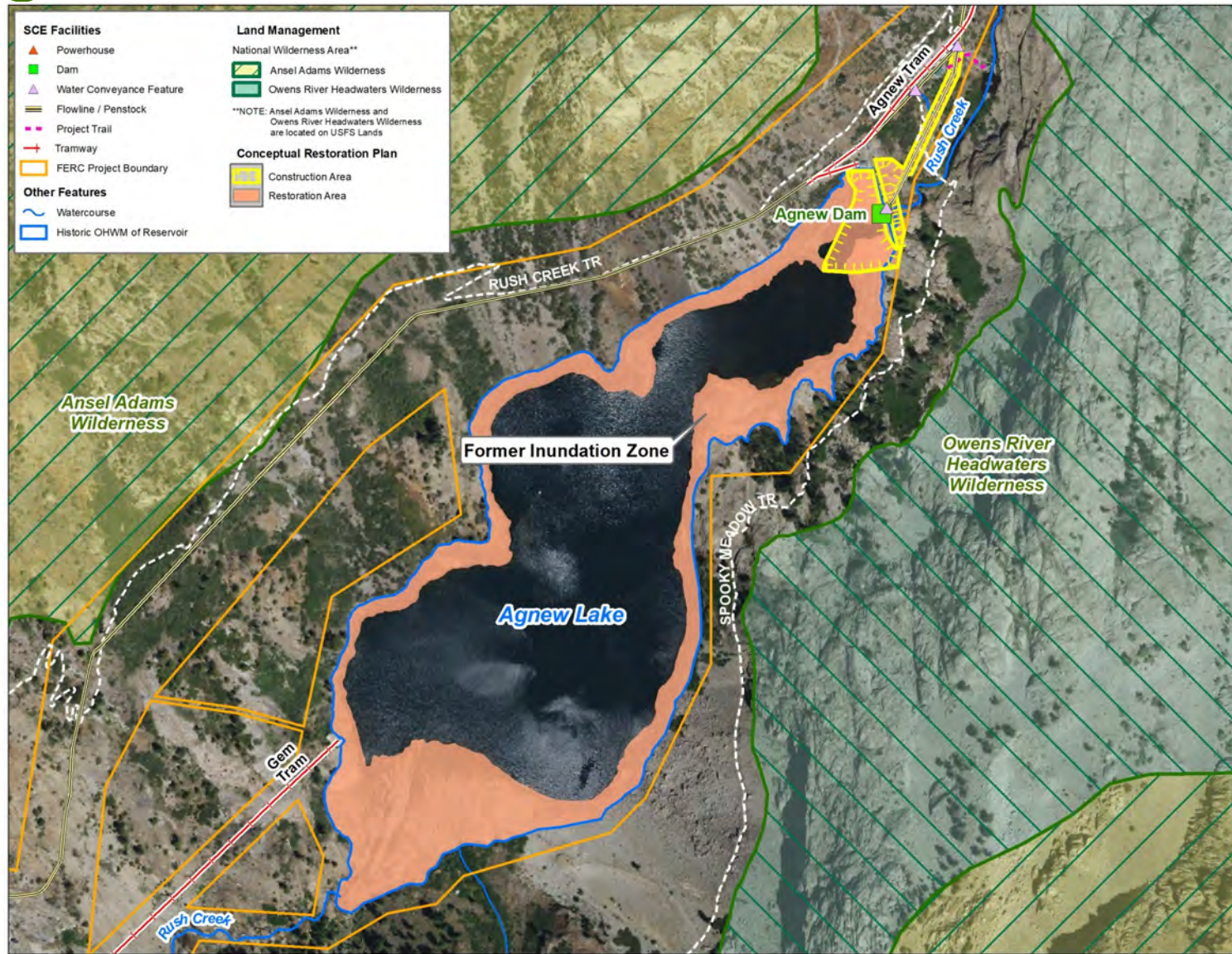
Restoration Area

- Construction work area, including areas immediately upstream and downstream of Agnew Dam disturbed by dam removal activities and areas where Project support facilities were removed (e.g., Agnew Flowline)
- Former inundation zone of Agnew Lake

Agnew – Construction Work Area



Agnew – Restoration Area



Agnew – Restoration Objectives

- Stabilization of areas upstream and downstream of the former dam site, as appropriate, to prevent erosion
- Restoration of the Agnew Dam construction work and staging areas, and areas where Project support facilities were removed
- Revegetation and stabilization of sediment in the former inundation zone, as necessary
- Reestablishment/stabilization of Rush Creek within the former inundation zone, as necessary

Agnew – Existing Condition

- TERR 1 – Vegetation Communities
 - Curleaf mountain mahogany and snowbrush on the north side, with extensive barren rock areas on the south side intermixed with lodgepole and Jeffrey pine forest
 - Whitebark pine (Federal Threatened) and quaking aspen (CDFW Sensitive Natural Community) are components of the forest community
 - Agnew Dam to Agnew Junction Flowline is located within a quaking aspen stand (CDFW Sensitive Natural Community)

Agnew – Existing Condition

- TERR 1 – Historic and Existing Botanical Resources within the Historical Inundation Zone
 - Four non-native invasive plant species (bull thistle, curly dock, woolly mullein, and cheatgrass) are present in the historic inundation zone
 - Based on historic stump analysis, Jeffrey pine, western juniper, and western white pine grew within the Lakebed
 - Natural re-vegetation has initiated within the historic inundation zone
 - 93% of species observed were native species
 - Moderate species richness of graminoids and herbs, high cover of willow shrubs in some areas
 - Willows growing in low-lying areas of sediment are already in medium age classes, indicating successful ecological succession since the seismic restriction

Agnew – Willow Re-establishment



Agnew – Photos



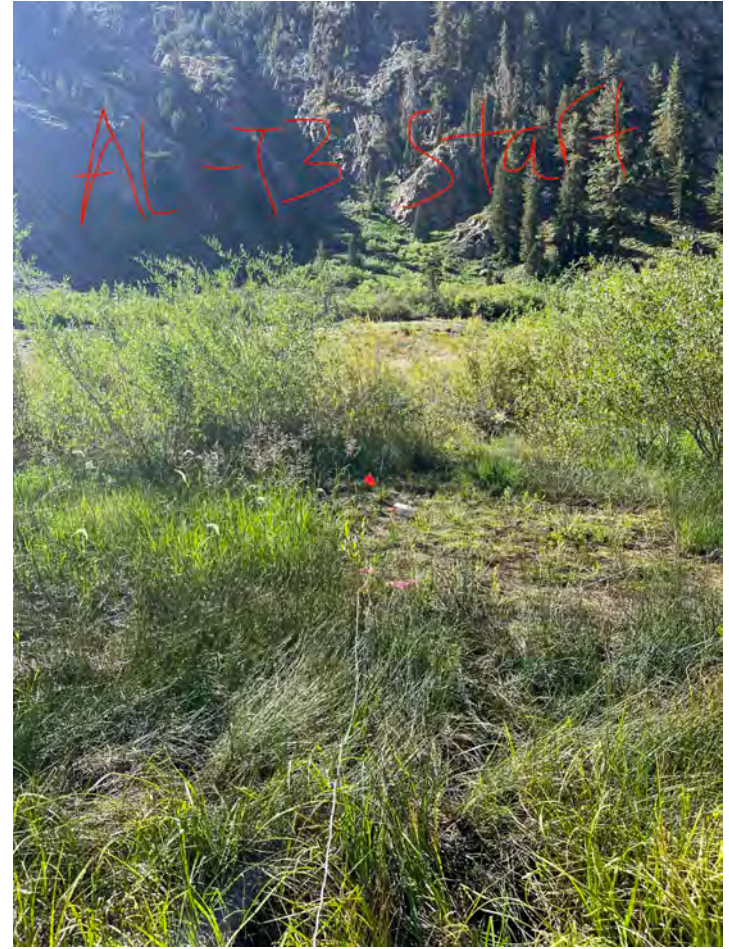
Agnew – Photos



Agnew – Photos



Agnew – Photos



Agnew – Proposed Restoration Approach

- Approach: Passive Restoration
 - Complete grading and earthwork to stabilize sediment in construction work areas
 - Allow quaking aspen to vegetatively resprout (revegetate) following flowline removal
 - Allow natural succession to occur in the former inundation zone of Agnew Lake following dam removal
 - Allow continued establishment of Rush Creek in the former inundation zone of Agnew Lake
 - Control of INF priority non-native invasive plant species in accessible areas

Agnew – Proposed Restoration Rationale

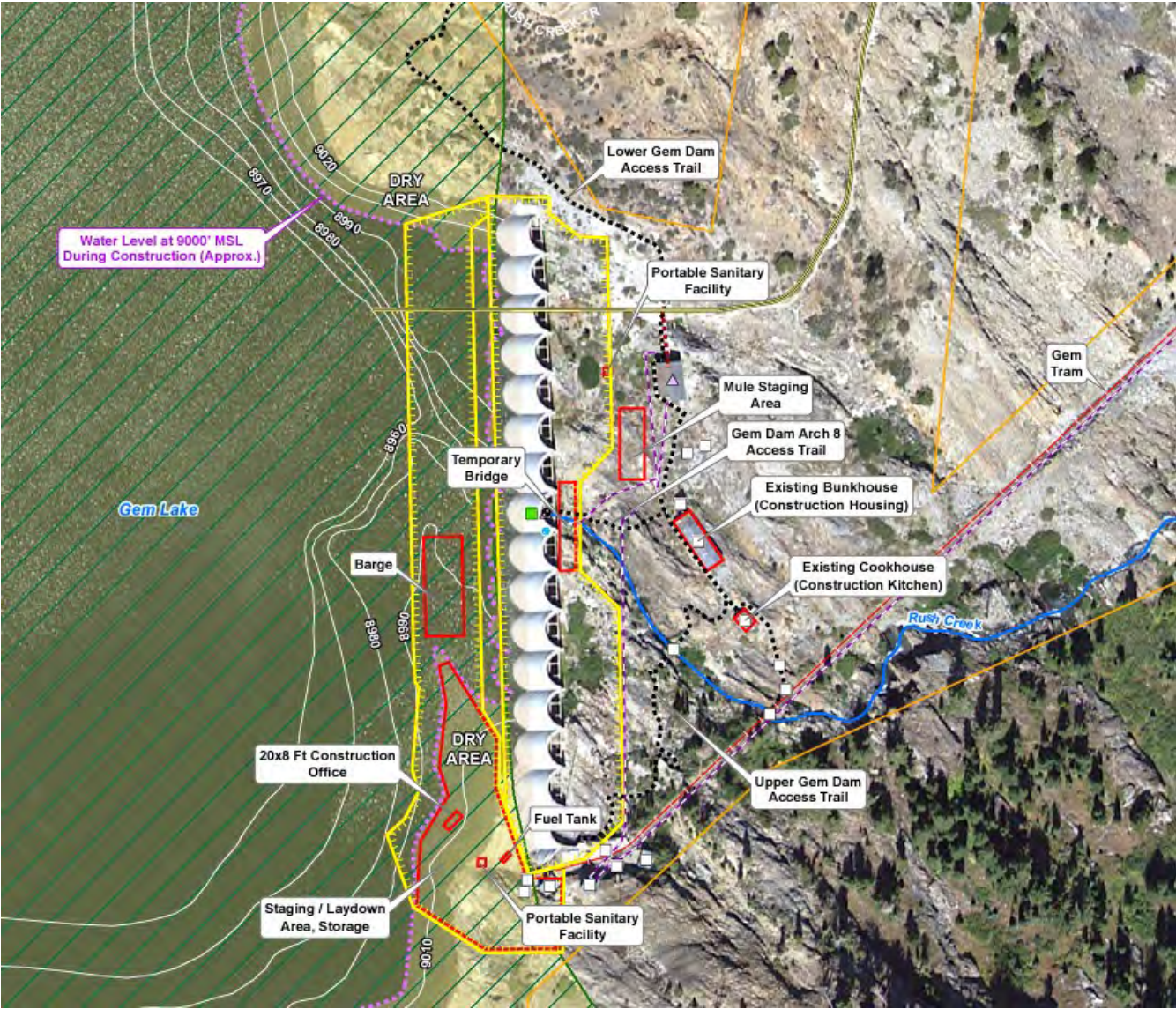
- Rationale:
 - Bedrock and talus slopes with limited erosion potential
 - Natural revegetation has initiated since implementation of seismic restrictions and has advanced beyond early succession state in some areas
 - Quaking aspen is a clonal species and primarily reproduces by sending up new stems from roots
 - Rush Creek has already established in the former inundation zone
 - Restoration area is a narrow band in close proximity to existing native vegetation
 - Accessible areas with INF priority weed species

Gem Area

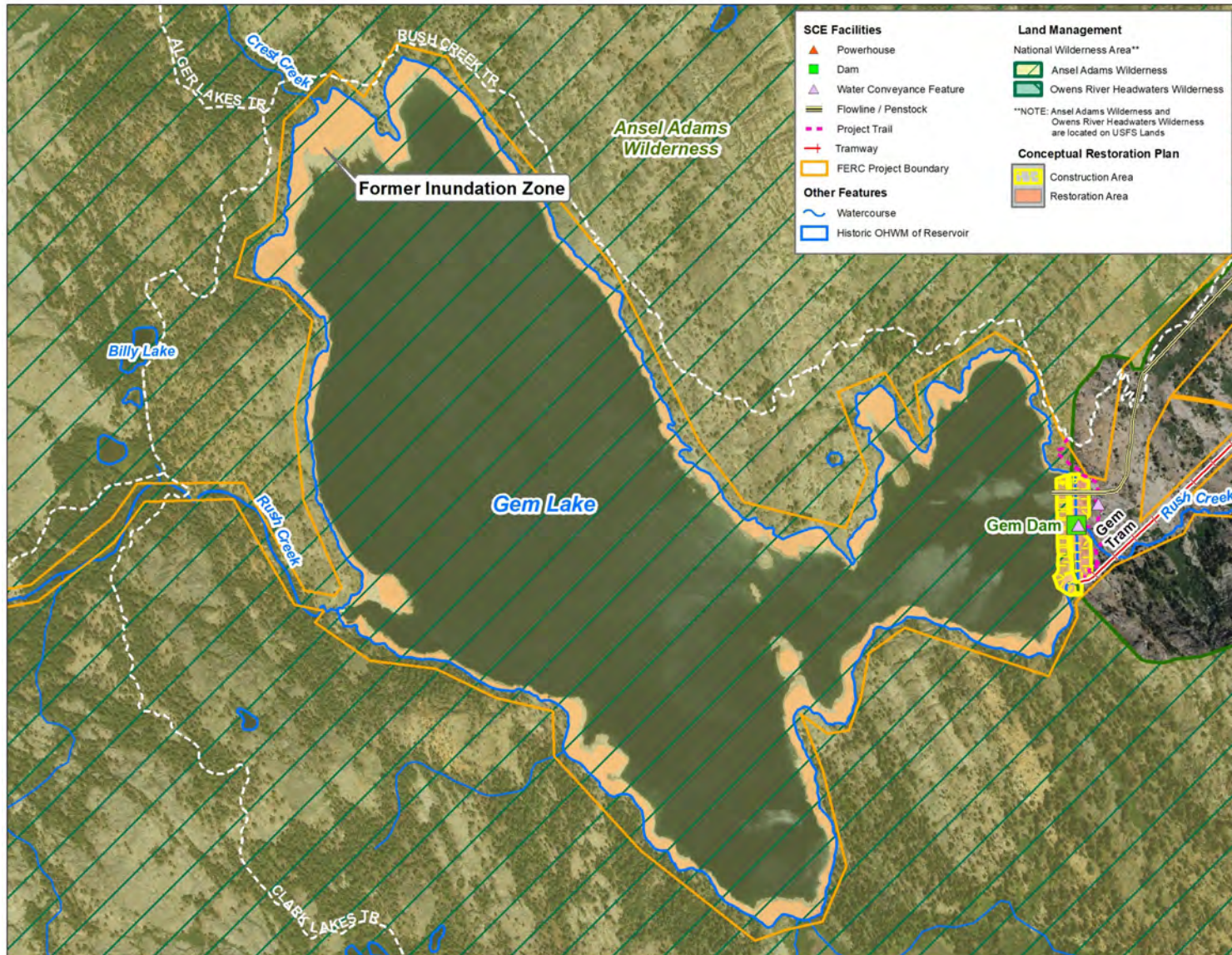
Restoration Area

- Construction work area, including areas immediately upstream and downstream of Gem Dam disturbed by dam retrofitting activities
- Former inundation zone of Gem Lake

Gem – Construction Work Area



Gem – Restoration Area



Gem – Restoration Objectives

- Restoration of the Gem Dam construction work and staging areas
- Revegetation and stabilization of sediment in the former inundation zone, as necessary
- Reestablishment/stabilization of Rush Creek within the former inundation zone, as necessary

Gem – Existing Condition

- TERR 1 – Vegetation Communities
 - Subalpine conifer and lodgepole pine forest with barren rock outcrops, western juniper, and low sagebrush intermixed
 - Whitebark Pine (Federal Threatened) and Aspen (CDFW Sensitive Natural Community) are components of the forest community

Gem – Existing Condition

- TERR 1 – Historic and Existing Botanical Resources within the Historical Inundation Zone
 - One non-native invasive plant species (curly dock) present in the historic inundation zone
 - Based on historic stump analysis, western juniper, lodgepole pine, Jeffrey pine, and mountain hemlock were present in the lakebed
 - Natural re-vegetation has initiated within the historic inundation zone
 - 98% of species observed were native species
 - Moderate species richness of graminoids and herbs, low cover of shrubs and trees
 - Willow saplings are establishing along tributary streams within the inundation zone

Gem – Photos



Gem – Photos



Gem – Photos



Gem – Photos



Gem – Proposed Restoration Approach

- Approach: Passive Restoration
 - Complete grading and earthwork to stabilize sediment in construction work areas
 - Allow natural succession to occur in the former inundation zone of Gem Lake following dam retrofitting
 - Allow continued establishment of Rush Creek in the former inundation zone of Gem Lake

Gem – Proposed Restoration Rationale

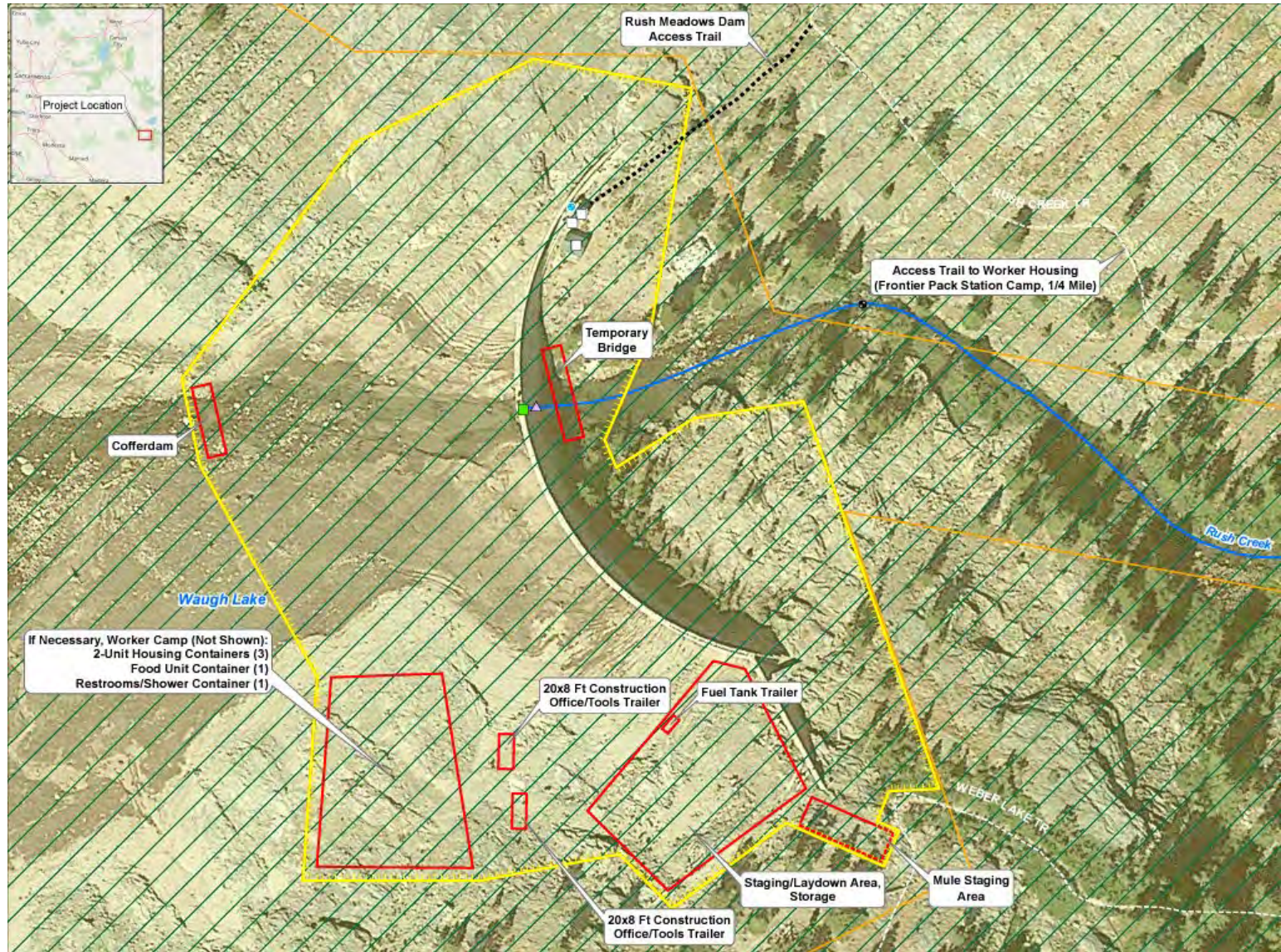
- Rationale:
 - Bedrock and talus slopes with limited erosion potential
 - Natural revegetation has initiated since implementation of seismic restrictions
 - Rush Creek has already established in the former inundation zone
 - Restoration area is a narrow band in close proximity to existing native vegetation

Rush Meadows Area

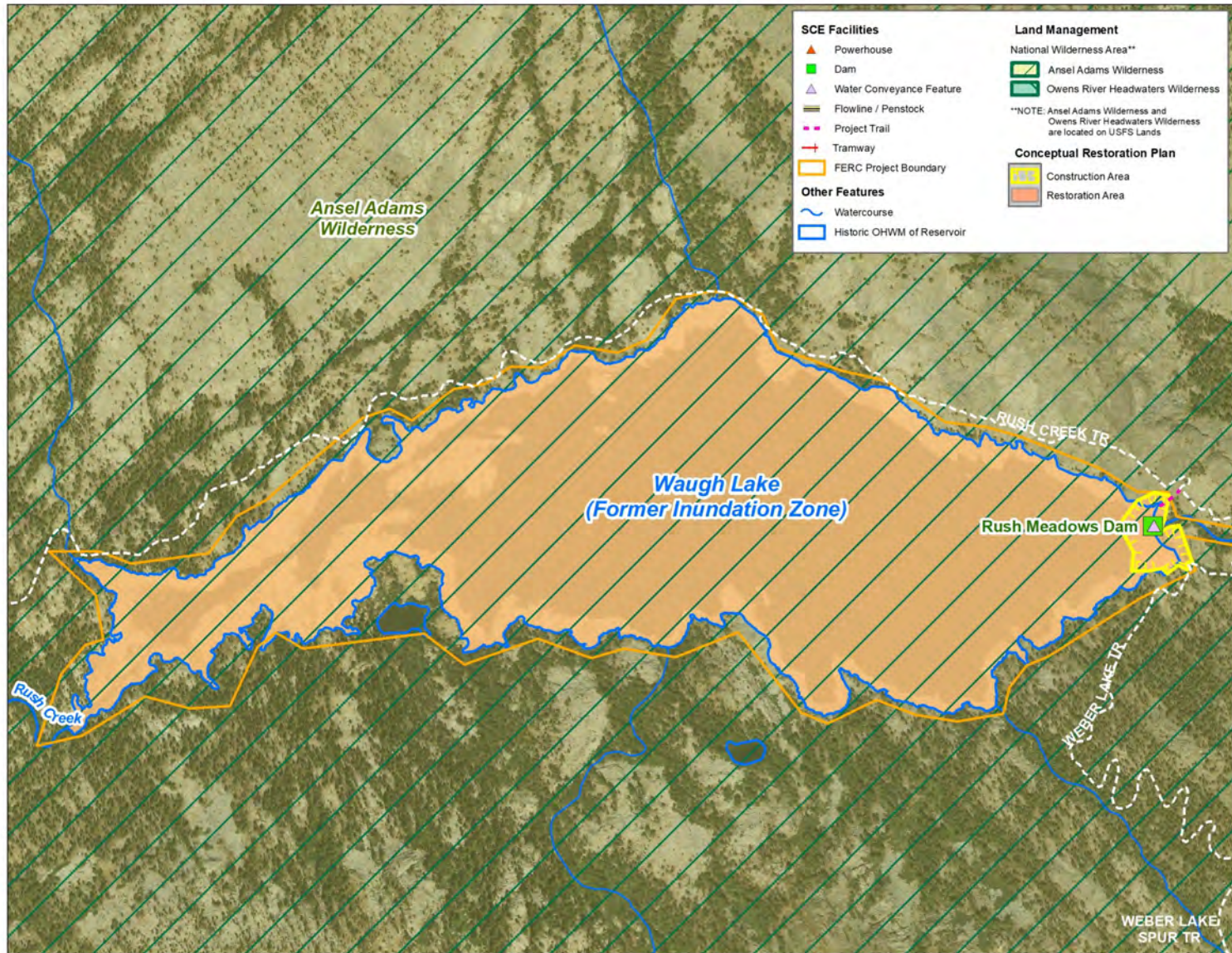
Restoration Area

- Construction work area, including areas immediately upstream and downstream of Rush Meadows Dam disturbed by dam removal activities and areas where Project support facilities were removed
- Former Waugh lakebed

Rush Meadows – Construction Work Area



Rush Meadows – Restoration Area

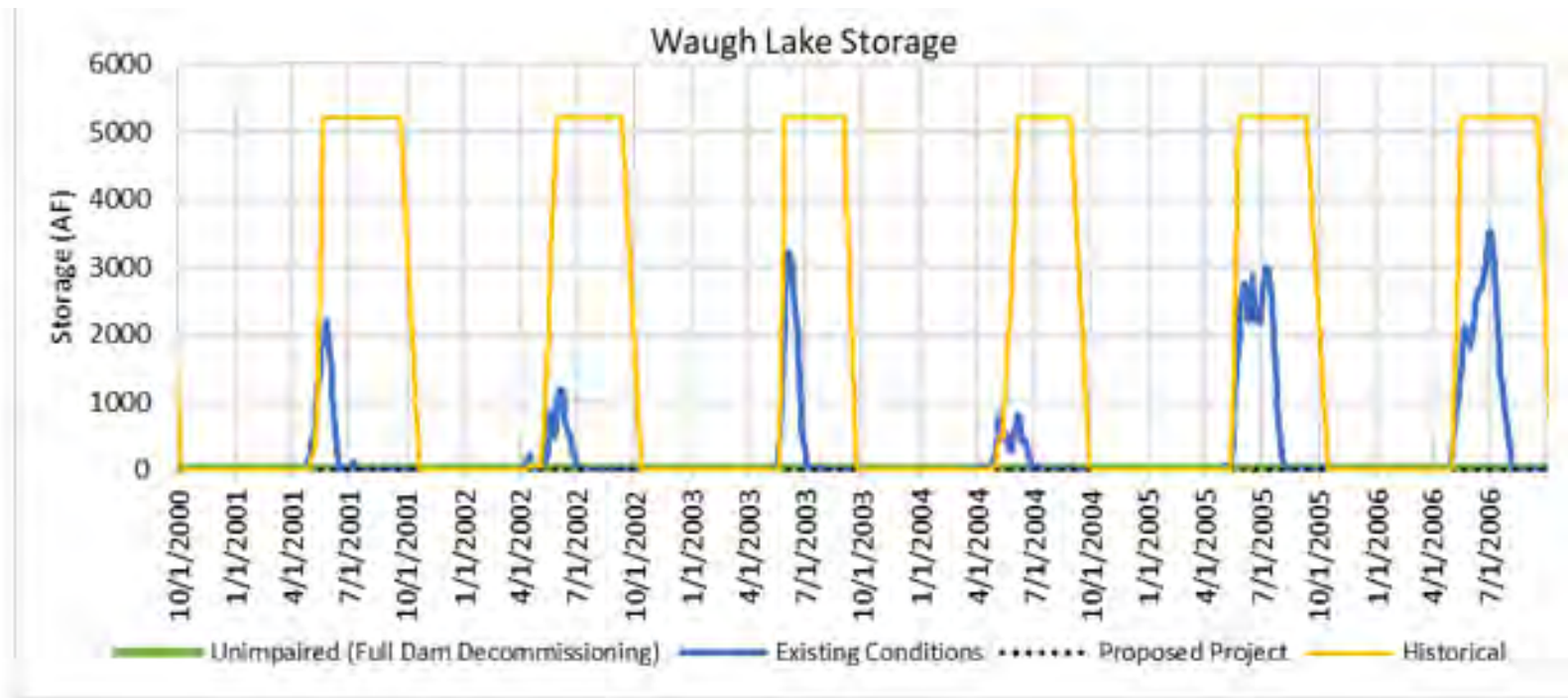


Rush Meadows – Restoration Objectives

- Stabilization of areas upstream and downstream of the former dam site, as appropriate, to prevent erosion
- Restoration of the Rush Meadows Dam construction work and staging areas, and areas where Project support facilities were removed
- Revegetation and stabilization of sediment in the former lakebed, as necessary
- Reestablishment/stabilization of Rush Creek within the lakebed, as necessary
- Restoration of the channel, and riparian and wetland vegetation in the former Waugh lakebed

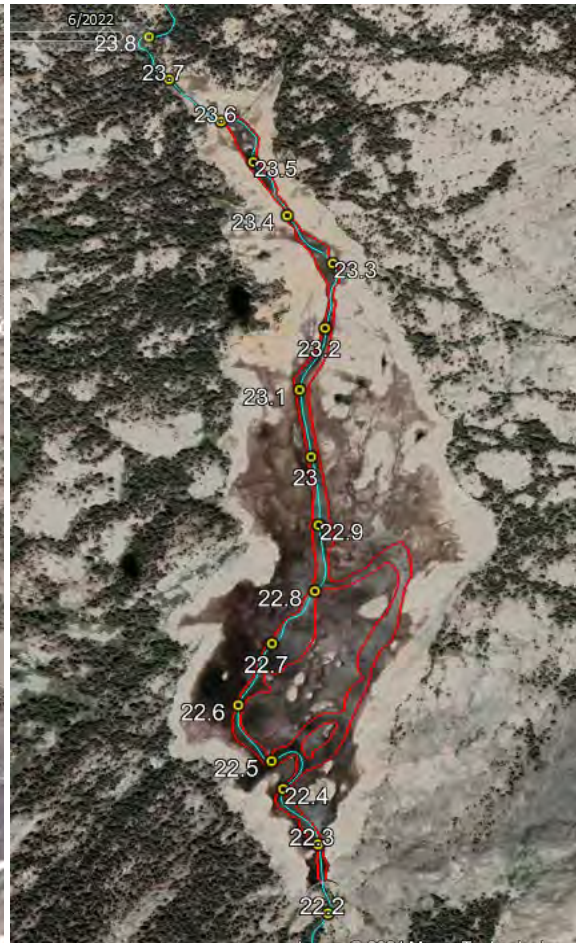
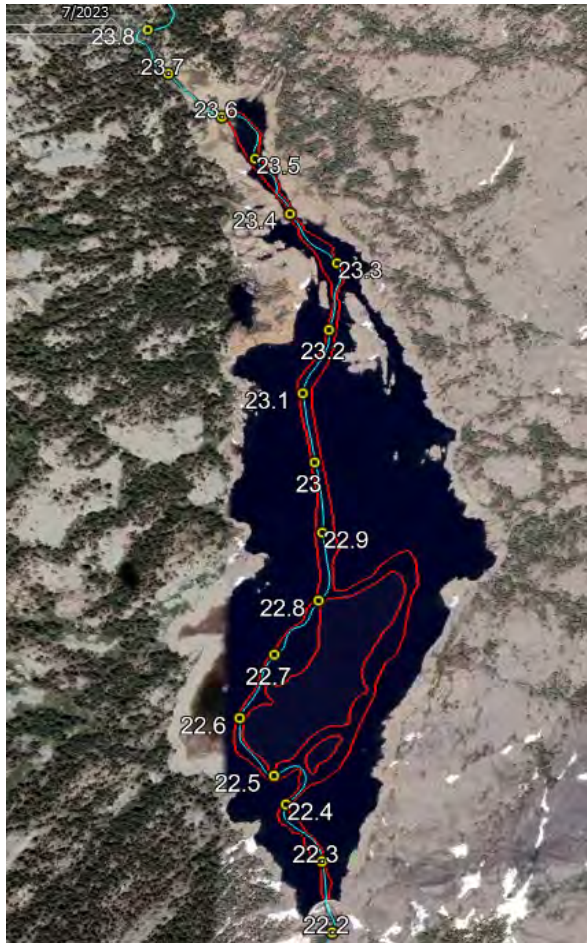
Rush Meadows – Existing Condition

- AQ 2 – Hydrology
 - Waugh lakebed seasonally inundated



Rush Meadows – Existing Condition

- AQ 2 – Hydrology
 - Waugh lakebed seasonally inundated



Rush Meadows – Existing Condition

- TERR 1 – Vegetation Communities
 - Subalpine conifer and lodgepole pine forest with alpine grasses and forbs
 - Whitebark pine (Federal Threatened) is abundant in the forest community

Rush Meadows – Existing Condition

- TERR 1 – Historic and Existing Botanical Resources within the Historical Inundation Zone
 - No non-native invasive plant species present in the historic inundation zone
 - Based on historic stump analysis, lodgepole pine, mountain hemlock, and unknown pine species were present in the lakebed
 - Natural re-vegetation has initiated within the historic inundation zone
 - 97% of species observed were native species, high diversity of graminoid species (rushes and sedges)
 - Inundation zone has high species richness of graminoids, low cover of shrubs and trees
 - Willow saplings are establishing along tributary streams within the inundation zone

Rush Meadows – Photos



Rush Meadows – Photos



Rush Meadows – Photos



Rush Meadows – Photos



Rush Meadows – Photos



Rush Meadows – Existing Condition

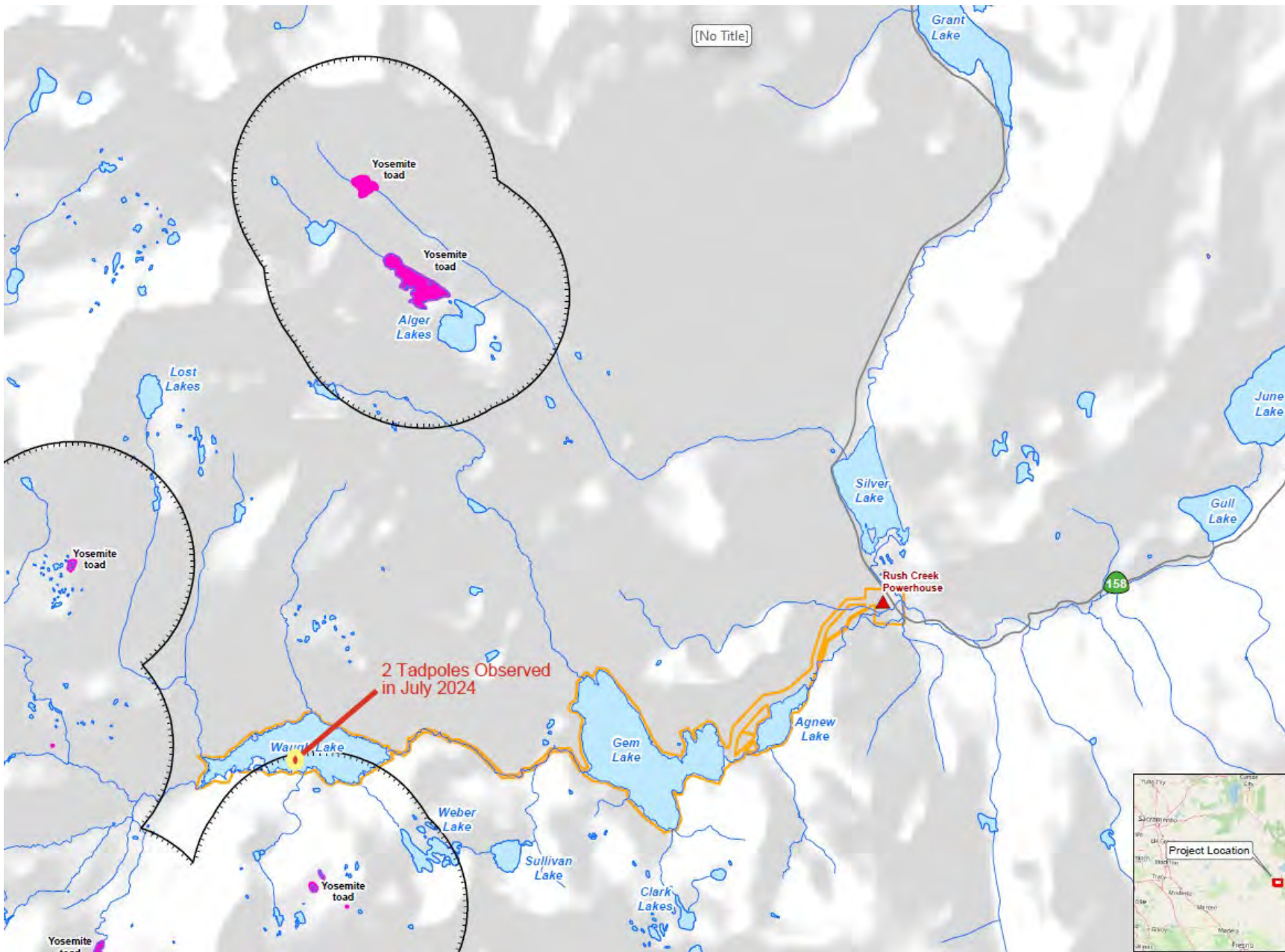
- AQ 7 – Special-status Amphibians
 - Waugh lakebed is within federally designated Critical Habitat for Sierra Nevada yellow-legged frog and Yosemite toad



Rush Meadows – Existing Condition

- AQ 7 – Special-status Amphibians
 - Two *Anaxyrus* tadpoles observed in Waugh lakebed
 - Consultation initiated with CDFW



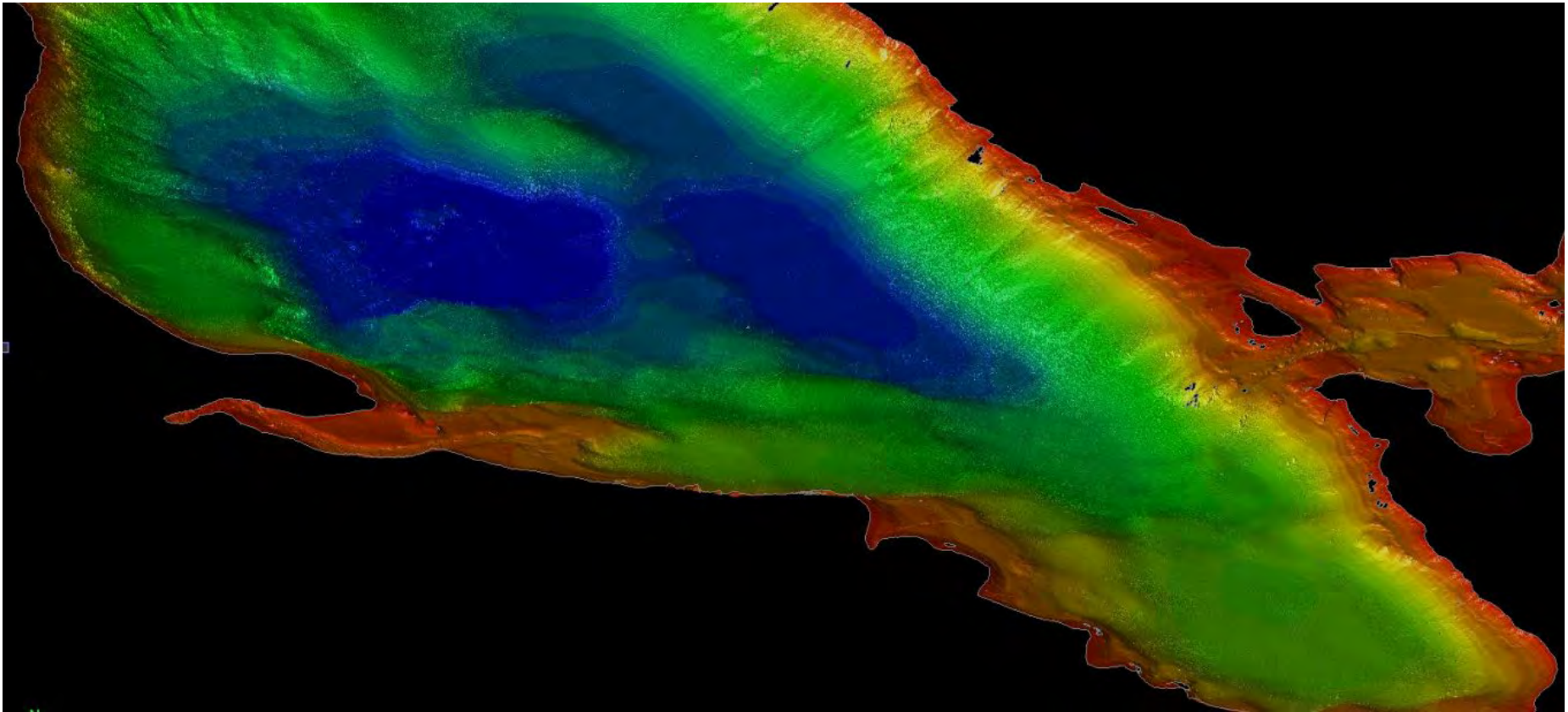


Rush Meadows – Proposed Restoration Approach

- Outstanding Study Components that will Inform Restoration Approach:
 - AQ 1 – Instream Flow
 - Detailed channel topography
 - HEC-RAS hydraulic and sediment transport model
 - AQ 5 – Geomorphology
 - LIDAR lakebed topography
 - Sediment characterization
 - AQ 7 – Special-status Amphibians
 - Special-status amphibian habitat mapping and surveys
 - DEC 1 – Decommissioning
 - Sediment characterization

Rush Meadows – Proposed Restoration Approach

- LIDAR data in process



Rush Meadows – Proposed Restoration Approach

- Information to be considered in selection of conceptual restoration approach
 - Lakebed topography
 - Channel topography
 - Type and quantity of sediments within the lakebed
 - Sediment transport modeling
 - Location of special-status amphibians and habitat
 - Location of archaeological sites

Conceptual restoration approach will be determined based on study results, agency consultation, and Wilderness Area restrictions

Next Steps

- Based on the discussion today, we welcome your input on restoration activities to be implemented for the Rush Creek Project
 - Submit comments via e-mail to julie.smith@stantec.com by October 31, 2024
- Comments received will be considered in development of the Conceptual Restoration Plans that will be submitted with the Final License Application.
- Stakeholders will have the opportunity to comment on the Conceptual Restoration Plans as part of FERC's NEPA process.