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"Ensuring resilient wild fish in healthy waters for a better California."

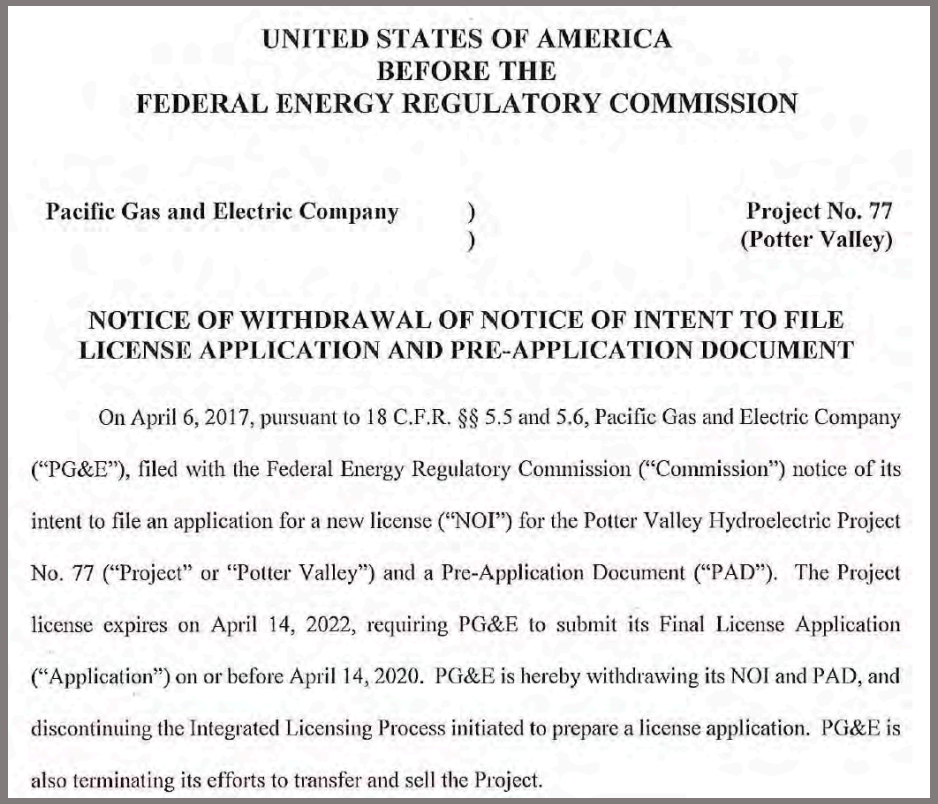
The Eel River Dams, the PG&E Potter Valley Project, and the Two-Basin Partnership

Darren Mierau, North Coast Director

FERC Project #77

- **LICENSE EXPIRES on APRIL 14, 2022**
- On April 6, 2017, PG&E filed its Application to FERC to Relicense the Potter Valley Project
- License sale and transfer
- On January 25, 2019, PG&E withdrew its Application to Relicense the Project

- How do WE respond to PG&E's withdrawal from the Project?
- Will PG&E decide to engage with us, or will they take the pathway toward Surrender and Decommissioning?



UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Pacific Gas and Electric Company	)	**Project No. 77**
	)	**(Potter Valley)**

NOTICE OF WITHDRAWAL OF NOTICE OF INTENT TO FILE LICENSE APPLICATION AND PRE-APPLICATION DOCUMENT

On April 6, 2017, pursuant to 18 C.F.R. §§ 5.5 and 5.6, Pacific Gas and Electric Company ("PG&E"), filed with the Federal Energy Regulatory Commission ("Commission") notice of its intent to file an application for a new license ("NOI") for the Potter Valley Hydroelectric Project No. 77 ("Project" or "Potter Valley") and a Pre-Application Document ("PAD"). The Project license expires on April 14, 2022, requiring PG&E to submit its Final License Application ("Application") on or before April 14, 2020. PG&E is hereby withdrawing its NOI and PAD, and discontinuing the Integrated Licensing Process initiated to prepare a license application. PG&E is also terminating its efforts to transfer and sell the Project.

Presentation Outline

- Eel River and PG&E Potter Valley Project
- Huffman Ad Hoc Committee
- Two-Basin Solution and The PROJECT PLAN
- What Comes Next…

The Eel River

- Third Largest Watershed *ENTIRELY* in CA - 3,682 mi2
- 5.8 million acre feet annual yield
- 412,000 acre feet annual inflow into Lake Pillsbury (7% of total basin)

Threatened Salmonids:

- SONCC Coho Salmon
- CA Coastal Chinook Salmon
- NC Winter Steelhead
- NC Summer Steelhead (?)

7 Sub-basins Listed Impaired (CWA) for Sediment and Water Temperature

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Salmonid Abundance

Yoshiyama and Moyle (2010)

- 1857-1921: 93,000 salmon caught per year on average
- Peak abundance: 585,000 salmon caught in 1877
- Pre 1850: 100,000 to 800,000 unexploited salmon

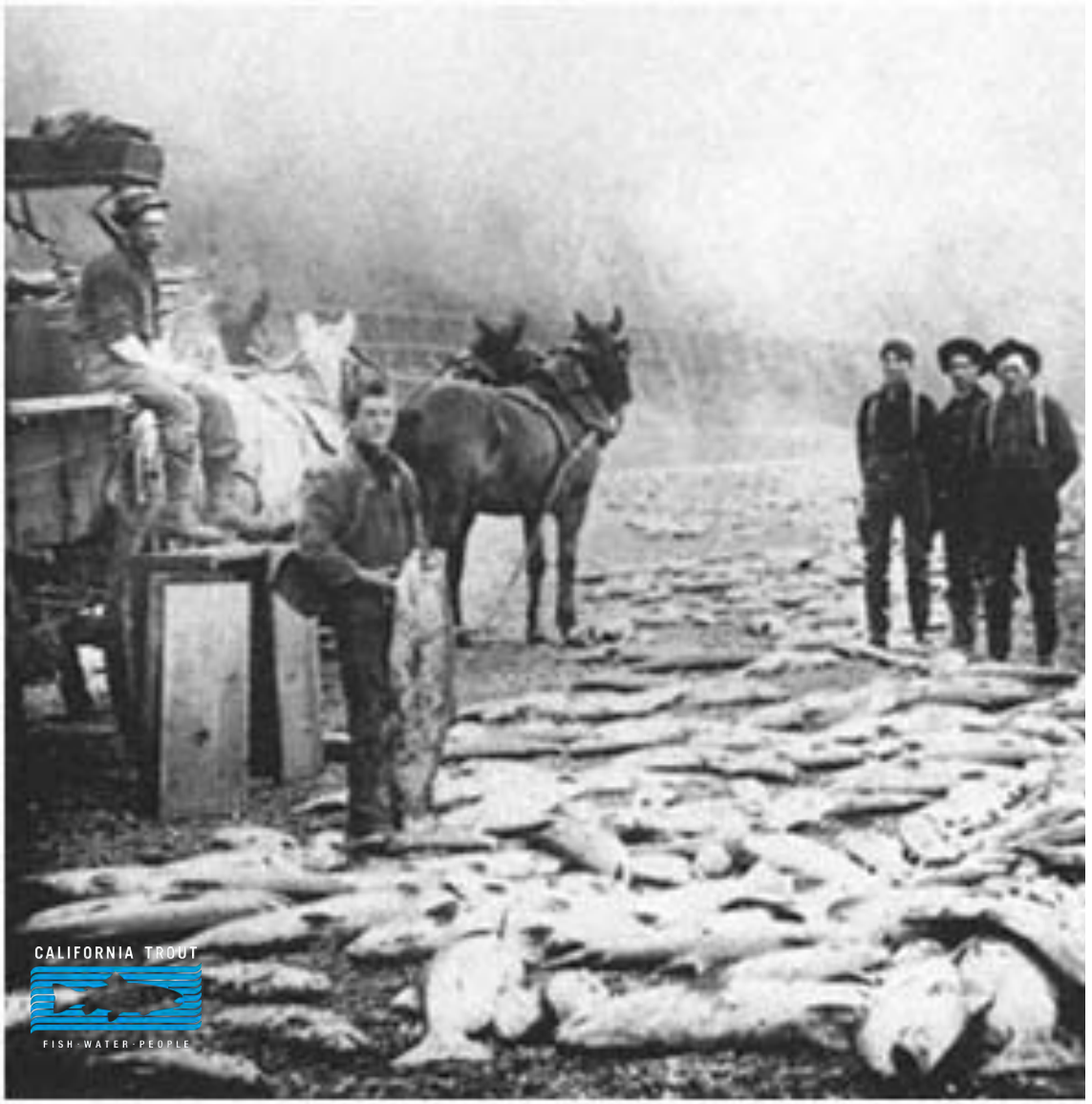
NMFS (2014, 2016) Recovery Targets

- Chinook: 20,600
- Coho: 26,100
- Steelhead: 59,700

Sonar Monitoring

	2018-19	2019-20
Chinook:	7,582	6,324
Coho:	1,980	276
Steelhead:	3,382*	7,201**

*SF Eel only; ** Preliminary Data



Supplemental Information

NMSF Recovery Targets (for the entire Eel River basin)

Chinook: 20,600
- Larabee + Van Duzen = 2,900
- Upper Eel =10,400
- Lower Eel (includes SF) = 7,300

Coho: 26,100 + occupancy
- SF = 9,300
- Mainstem = 2,600
- Lower Eel + Van Duzen = 7,900
- NF = 80% of available IP habitat must be occupied in years following spawning of brood years with high marine survival
- MF = 80% of available IP habitat must be occupied …
- Middle mainstem = 6,300
- Upper mainstem = 80% of available IP habitat must be occupied …

Steelhead: 59,700
- Lower Mainstem Eel River Tributaries = 996 - 1,995
- SF = 19,000
- Larabee = 2,600
- MF = 9,400
- NF = 6,300
- Upper mainstem = 6,400
- Van Duzen = 6,200
- Lower Interior Diversity Stratum (Woodman, Outlet, Tomki, etc.) = 8,800

2018-19 Sonar Monitoring

- Chinook: SF=3831 (3738 in master table); main=3844; total = 7582
- Coho: SF=1980 (redd survey est)
- Steelhead: SF=3382; main=N/A

2019-20 Sonar Monitoring

- Chinook: SF=2093; main=4231; total=6324
- Coho: SF=276 (redd survey est)
- Steelhead: SF=3169*(prelim); main=4032 (through March 20); total = 7201

The Potter Valley Project

- 288 mi2 watershed above Scott Dam
- Scott Dam (1921) Max Storage – 75,000 af*
- 12 mile Reach
- Cape Horn Dam (1907) Diversion Facility – 194 af
- 150 miles to Pacific Ocean
- Van Arsdale Fish Station (Fish Ladder)
- Tunnel – 300 cfs Max Capacity (Constrained by Fish Screen)
- PG&E Powerhouse – 9.4 MW Max Capacity
- East Branch Russian River (11 miles)
- Lake Mendocino and Russian River

- Flow Releases (E11) - NMFS 2002 Biological Opinion "RPA"
- Average Annual Diversion –78,100 af/yr (20%)
- ~15 kaf Water Right to PVID

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Congressman Huffman's Ad Hoc Committee

- Convened August 2017
- Met ~20 times
- Principles and Co-Equal Goals
  - Fish Passage above Scott Dam
  - Water Supply Reliability to Russian River

- Two Working Groups [7/2018 – 12/2019]
  - **Fish Passage**
    [*Fish Passage Profiles Evaluation Report; December 2019]

  - **Water Supply**
    [*Results of Initial Water Supply Modeling for Potter Valley Project and Russian River Alternatives; May 2019, Updated February 2020]

- Website: https://pottervalleyproject.org

Congressman Jared Huffman
Potter Valley Project Ad Hoc Committee
08.01.2018

Proposed Goals and Principles for a Two-Basin Solution

We as interested parties in the Potter Valley Project Ad Hoc Committee are committed to joint problem solving and working toward an outcome of the PVP relicensing process that reflects the following goals and principles:

- Co-equal goals:
  - Improve fish passage and habitat on the Eel River sufficient to support recovery of naturally reproducing, self-sustaining and harvestable native anadromous fish populations including migratory access upstream and downstream at current project dam locations; and
  - Minimize or avoid adverse impacts to water supply reliability, fisheries, water quality and recreation in the Russian River and Eel River basins
- Other goals:
  - Respect tribal rights and their traditional connections to aquatic life, water and cultural resources in both basins
  - Minimize and mitigate adverse impacts to Lake County, including Lake Pillsbury businesses and residents
  - Ensure accountable governance and financially viable operations, including addressing potential liabilities
  - Jointly pursue public funding based on environmental and water supply benefits
  - Ensure that implementation of fish passage improvements in the Eel River basin happens in parallel and ideally simultaneously with water supply solutions in the Russian River basin

Fish Passage Working Group

- Enlisted Expertise of State/Federal Agency and Consultants
- 20 month effort (3/18 – 12/19)
- Described and evaluated nine different passage options to meet three objectives:
  1. Population viability of Upper Eel River anadromous fishes
  2. Access to abundant high quality habitat
  3. Functional fish passage
- Dismissed other options as infeasible (e.g., Whoosh, "Salmon Cannon")
- Toured sites in PNW (e.g., Clackamas River)
- Quantitative scoring approach based on set of criteria
- Vetted results with Ad Hoc Committee

- Craig Addley (Consultant to PG&E)
- Joshua Fuller (NMFS)
- Damon Goodman (USFWS)
- Paul Kubicek (PG&E)
- Jon Mann (CDFW)
- David Manning (Sonoma Water)
- Scott McBain (Consultant to RVIT)
- Darren Mierau (CalTrout)
- Allen Renger (CDFW)
- Steve Thomas (NMFS)
- Larry Wise (PG&E)

	1 Fishway at Existing Scott Dam Options	2 Trap & Haul	3 Partial Scott Dam Removal	4 Remove Scott Dam and Modify Cape Horn Dam
Options	1.1 Semi-Natural, Low-Gradient Bypass Channel 1.2 Original Mead & Hunt (M&H) Fish Ladder 1.3 Modified M&H Fish Ladder	2.1 Trap & Haul, Van Arsdale to Scott Dam 2.2 Trap & Haul, at Scott Dam	3.1 Lower Scott Dam to 80' – Meet PVID demand and environmental flows 3.2 Lower Scott Dam to 50' – Retain accumulated sediment	4.1 Remove Scott Dam and Modify Cape Horn Dam 4.2 Remove both Scott Dam and Cape Horn Dam 1) With Diversion (provides another baseline for flows and fish) 2) No Diversion

Fish Passage Working Group – Scoring Results

(Average of Scoring Committee)

Habitat and Biological Feasability Catagories	Juvenile Steelhead								
	Low Grad ByPass	M&H Fish Ladder	Mod M&H Fish Ladder	Trap&Haul 1 (VAFS to SD)	Trap&Haul 2 (SD)	Partial Dam Removal - Water	Partial Dam Removal - Sediment	No Scott & Modify CHD	Rem Dams, Alt Div
Biological Feasibility for Upstream Passage	4	3	3	3	3	4	4	8	9
Reservoir navigability	3	3	3	3	3	3	5	9	10
Passage efficiency (fishway, etc.)	5	4	5	4	4	5	5	8	9
Predation	2	2	2	3	3	3	4	7	8
Biological Feasibility for Downstream Passage	3	4	4	4	4	4	6	8	9
Reservoir navigability	4	4	4	4	4	4	6	9	10
Passage efficiency (fishway, etc.)	5	5	5	5	5	5	6	8	10
Predation	2	3	3	3	3	3	4	7	8
Habitat and Water Quality	6	6	6	6	6	6	6	7	7
Habitat upstream of Scott Dam	7	7	7	7	7	8	8	9	9
Water quality within reservoir	5	5	6	5	5	4	5	8	8
Habitat downstream of Scott Dam	7	7	7	7	7	7	7	8	8
Water quality below reservoir	5	6	6	6	6	5	4	5	5
Hydrologic Implications	5	5	5	5	5	6	7	8	9
Biological Viability (Spatial structure & Diversity)	5	6	6	4	5	6	6	9	10
Average (all rows)	5	5	5	5	5	5	5	8	8
Average Blue Headings	5	5	5	5	5	5	6	8	9
Average Sub-Headings	5	5	5	5	5	5	5	8	8
Difference (Blue Headings - Sub-Headings)	0	0	0	0	0	0	0	0	0

Habitat and Biological Feasability Catagories	Smolt Steelhead								
	Low Grad ByPass	M&H Fish Ladder	Mod M&H Fish Ladder	Trap&Haul 1 (VAFS to SD)	Trap&Haul 2 (SD)	Partial Dam Removal - Water	Partial Dam Removal - Sediment	No Scott & Modify CHD	Rem Dams, Alt Div
Biological Feasibility for Upstream Passage	##	##	##	##	##	##	##	##	##
Reservoir navigability	##	##	##	##	##	##	##	##	##
Passage efficiency (fishway, etc.)	##	##	##	##	##	##	##	##	##
Predation	##	##	##	##	##	##	##	##	##
Biological Feasibility for Downstream Passage	5	5	5	5	5	6	7	9	9
Reservoir navigability	6	5	5	6	5	6	8	10	10
Passage efficiency (fishway, etc.)	6	6	6	6	6	6	8	9	10
Predation	4	5	5	5	5	5	6	8	8
Habitat and Water Quality	7	7	7	7	7	7	7	8	9
Habitat upstream of Scott Dam	7	8	8	7	7	8	8	9	9
Water quality within reservoir	8	7	8	8	8	8	8	9	9
Habitat downstream of Scott Dam	7	8	8	8	8	8	8	9	9
Water quality below reservoir	7	7	7	7	7	7	7	8	8
Hydrologic Implications	6	6	6	5	5	6	7	9	9
Biological Viability (Spatial structure & Diversity)	6	6	6	5	6	6	7	9	10
Average (all rows)	6	6	6	6	6	7	7	9	9
Average Blue Headings	6	6	6	6	6	6	7	9	9
Average Sub-Headings	6	6	7	7	7	7	7	9	9
Difference (Blue Headings - Sub-Headings)	0	1	0	1	1	0	0	0	0

Habitat and Biological Feasability Catagories	Adult Winter-Run Steelhead								
	Low Grad ByPass	M&H Fish Ladder	Mod M&H Fish Ladder	Trap&Haul 1 (VAFS to SD)	Trap&Haul 2 (SD)	Partial Dam Removal - Water	Partial Dam Removal - Sediment	No Scott & Modify CHD	Rem Dams, Alt Div
Biological Feasibility for Upstream Passage	7	6	7	7	7	7	8	9	10
Reservoir navigability	7	7	7	9	8	7	9	10	10
Passage efficiency (fishway, etc.)	7	6	7	7	8	7	8	9	10
Predation	7	7	7	8	8	7	7	9	9
Biological Feasibility for Downstream Passage	6	5	6	5	5	6	8	9	10
Reservoir navigability	6	6	6	6	6	7	8	10	10
Passage efficiency (fishway, etc.)	6	5	5	5	5	6	8	9	10
Predation	5	5	5	7	7	6	6	8	9
Habitat and Water Quality	8	8	8	8	8	8	8	9	9
Habitat upstream of Scott Dam	8	9	9	9	9	9	9	9	9
Water quality within reservoir	8	9	9	9	9	9	9	10	10
Habitat downstream of Scott Dam	8	8	8	8	8	8	8	9	9
Water quality below reservoir	8	8	8	8	8	8	8	9	9
Hydrologic Implications	7	7	7	6	6	7	7	9	9
Biological Viability (Spatial structure & Diversity)	7	7	7	5	6	8	8	9	10
Average (all rows)	7	7	7	7	7	7	8	9	9
Average Blue Headings	7	7	7	6	6	7	8	9	9
Average Sub-Headings	7	7	7	8	7	7	8	9	9
Difference (Blue Headings - Sub-Headings)	0	0	0	1	1	0	0	0	0

Habitat and Biological Feasability Catagories	Adult Summer (Spring)-Run Steelhead Migration								
	Low Grad ByPass	M&H Fish Ladder	Mod M&H Fish Ladder	Trap&Haul 1 (VAFS to SD)	Trap&Haul 2 (SD)	Partial Dam Removal - Water	Partial Dam Removal - Sediment	No Scott & Modify CHD	Rem Dams, Alt Div
Biological Feasibility for Upstream Passage	6	5	7	7	7	7	8	9	10
Reservoir navigability	6	6	7	8	7	7	8	10	10
Passage efficiency (fishway, etc.)	6	5	7	7	8	7	8	9	10
Predation	6	7	7	8	8	7	7	9	9
Biological Feasibility for Downstream Passage	6	5	6	6	6	6	7	9	9
Reservoir navigability	6	6	6	6	6	7	8	10	10
Passage efficiency (fishway, etc.)	6	5	6	6	6	6	7	9	10
Predation	5	6	6	7	7	6	7	8	9
Habitat and Water Quality	7	7	7	7	7	7	7	8	8
Habitat upstream of Scott Dam	7	8	8	7	8	8	8	9	9
Water quality within reservoir	7	7	7	7	7	7	7	8	8
Habitat downstream of Scott Dam	7	7	7	7	7	7	7	8	8
Water quality below reservoir	7	7	7	7	7	7	7	7	7
Hydrologic Implications	6	6	6	6	6	6	7	8	9
Biological Viability (Spatial structure & Diversity)	6	6	6	5	5	7	7	9	9
Average (all rows)	6	6	7	7	7	7	7	9	9
Average Blue Headings	6	6	6	6	6	6	7	9	9
Average Sub-Headings	6	6	7	7	7	7	7	9	9
Difference (Blue Headings - Sub-Headings)	0	1	0	1	1	0	0	0	0

Habitat and Biological Feasability Catagories	Adult Summer (Spring)-Run Steelhead Holding								
	Low Grad ByPass	M&H Fish Ladder	Mod M&H Fish Ladder	Trap&Haul 1 (VAFS to SD)	Trap&Haul 2 (SD)	Partial Dam Removal - Water	Partial Dam Removal - Sediment	No Scott & Modify CHD	Rem Dams, Alt Div
Biological Feasibility for Upstream Passage	##	##	##	##	##	##	##	##	##
Reservoir navigability	##	##	##	##	##	##	##	##	##
Passage efficiency (fishway, etc.)	##	##	##	##	##	##	##	##	##
Predation	##	##	##	##	##	##	##	##	##
Biological Feasibility for Downstream Passage	##	##	##	##	##	##	##	##	##
Reservoir navigability	##	##	##	##	##	##	##	##	##
Passage efficiency (fishway, etc.)	##	##	##	##	##	##	##	##	##
Predation	##	##	##	##	##	##	##	##	##
Habitat and Water Quality	5	5	5	5	5	5	5	6	6
Habitat upstream of Scott Dam	7	7	7	7	7	7	8	8	8
Water quality within reservoir	4	4	4	4	4	3	3	6	6
Habitat downstream of Scott Dam	5	5	5	6	5	5	5	6	6
Water quality below reservoir	5	5	5	5	5	3	3	3	4
Hydrologic Implications	5	5	5	6	5	5	6	8	9
Biological Viability (Spatial structure & Diversity)	5	5	5	5	5	6	6	9	9
Average (all rows)	5	5	5	5	5	5	5	6	7
Average Blue Headings	5	5	5	5	5	5	6	8	8
Average Sub-Headings	5	5	5	5	5	5	4	6	6
Difference (Blue Headings - Sub-Headings)	0	0	0	0	0	-1	-2	-2	-2

Habitat and Biological Feasability Catagories	Juvenile Chinook								
	Low Grad ByPass	M&H Fish Ladder	Mod M&H Fish Ladder	Trap&Haul 1 (VAFS to SD)	Trap&Haul 2 (SD)	Partial Dam Removal - Water	Partial Dam Removal - Sediment	No Scott & Modify CHD	Rem Dams, Alt Div
Biological Feasibility for Upstream Passage	##	##	##	##	##	##	##	##	##
Reservoir navigability	##	##	##	##	##	##	##	##	##
Passage efficiency (fishway, etc.)	##	##	##	##	##	##	##	##	##
Predation	##	##	##	##	##	##	##	##	##
Biological Feasibility for Downstream Passage	4	4	4	4	4	5	6	8	9
Reservoir navigability	4	4	4	4	4	5	6	9	10
Passage efficiency (fishway, etc.)	5	5	6	6	6	6	7	9	10
Predation	3	4	4	5	5	5	5	7	8
Habitat and Water Quality	6	6	6	6	6	6	8	9	9
Habitat upstream of Scott Dam	7	7	7	7	7	8	8	9	9
Water quality within reservoir	7	7	7	7	7	7	7	9	9
Habitat downstream of Scott Dam	7	7	7	8	7	7	8	9	9
Water quality below reservoir	6	6	6	6	6	5	7	7	8
Hydrologic Implications	5	5	5	5	5	6	7	9	9
Biological Viability (Spatial structure & Diversity)	6	6	6	5	6	7	7	9	10
Average (all rows)	6	6	6	6	6	6	7	8	9
Average Blue Headings	5	5	5	5	5	6	7	9	9
Average Sub-Headings	6	6	6	6	6	6	7	8	9
Difference (Blue Headings - Sub-Headings)	0	0	0	1	1	0	0	0	0

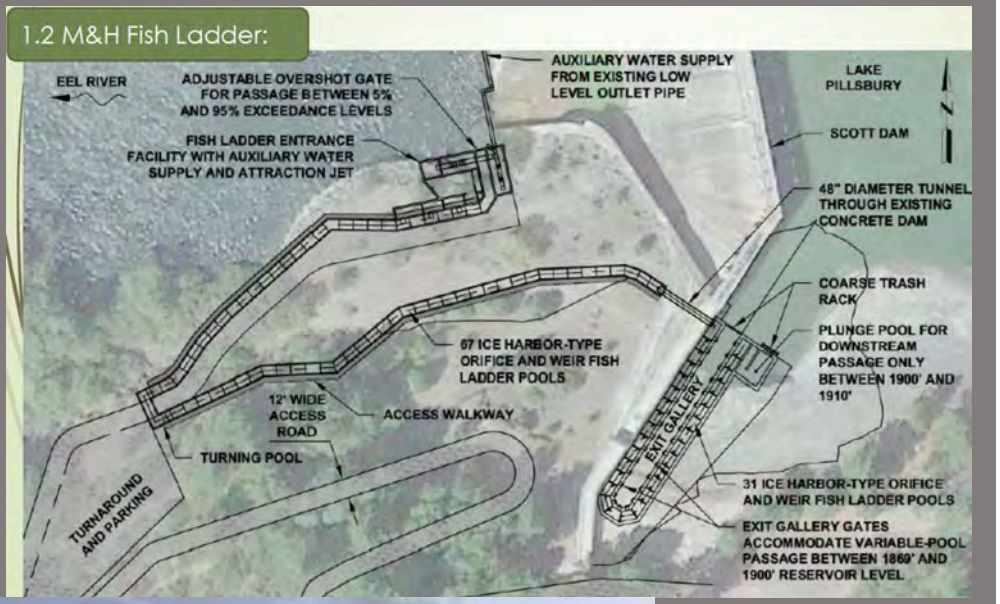
Habitat and Biological Feasability Catagories	Adult Fall-Run Chinook								
	Low Grad ByPass	M&H Fish Ladder	Mod M&H Fish Ladder	Trap&Haul 1 (VAFS to SD)	Trap&Haul 2 (SD)	Partial Dam Removal - Water	Partial Dam Removal - Sediment	No Scott & Modify CHD	Rem Dams, Alt Div
Biological Feasibility for Upstream Passage	6	6	6	7	7	6	7	9	10
Reservoir navigability	7	6	6	8	8	6	7	10	10
Passage efficiency (fishway, etc.)	6	5	6	7	8	6	7	9	10
Predation	6	6	6	8	8	6	6	8	9
Biological Feasibility for Downstream Passage	##	##	##	##	##	##	##	##	##
Reservoir navigability	##	##	##	##	##	##	##	##	##
Passage efficiency (fishway, etc.)	##	##	##	##	##	##	##	##	##
Predation	##	##	##	##	##	##	##	##	##
Habitat and Water Quality	7	7	7	7	7	7	8	9	9
Habitat upstream of Scott Dam	8	8	8	7	7	8	8	9	9
Water quality within reservoir	8	8	8	8	8	8	8	9	9
Habitat downstream of Scott Dam	8	8	8	8	8	8	8	8	9
Water quality below reservoir	7	7	7	7	7	7	7	8	8
Hydrologic Implications	6	6	6	5	5	6	7	8	9
Biological Viability (Spatial structure & Diversity)	6	7	7	5	6	7	8	9	9
Average (all rows)	7	7	7	7	7	7	7	9	9
Average Blue Headings	7	7	7	7	7	7	7	9	9
Average Sub-Headings	7	7	7	8	8	7	7	9	9
Difference (Blue Headings - Sub-Headings)	0	0	0	1	0	0	0	0	0

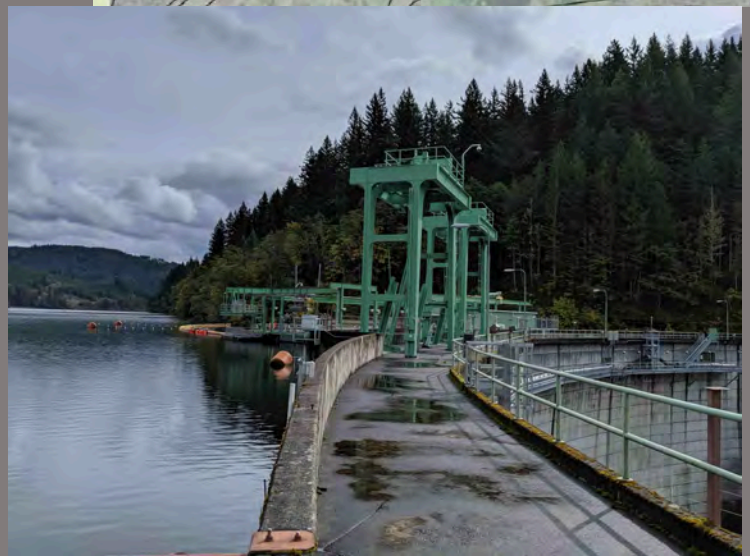
Habitat and Biological Feasability Catagories	Pacific Lamprey								
	Low Grad ByPass	M&H Fish Ladder	Mod M&H Fish Ladder	Trap&Haul 1 (VAFS to SD)	Trap&Haul 2 (SD)	Partial Dam Removal - Water	Partial Dam Removal - Sediment	No Scott & Modify CHD	Rem Dams, Alt Div
Biological Feasibility for Upstream Passage	6	6	6	6	6	6	7	8	9
Reservoir navigability	6	6	6	6	6	6	7	10	10
Passage efficiency (fishway, etc.)	7	6	6	6	6	6	7	9	10
Predation	6	6	6	7	6	6	6	8	9
Biological Feasibility for Downstream Passage	4	4	4	4	4	4	6	9	9
Reservoir navigability	4	4	4	3	3	3	5	9	10
Passage efficiency (fishway, etc.)	5	5	5	4	4	5	6	9	10
Predation	5	5	5	4	4	5	5	8	8
Habitat and Water Quality	7	7	7	8	8	7	8	9	9
Habitat upstream of Scott Dam	9	8	8	8	8	8	9	9	9
Water quality within reservoir	7	7	7	7	7	8	8	9	9
Habitat downstream of Scott Dam	7	7	7	8	8	7	8	9	9
Water quality below reservoir	7	8	8	8	8	8	8	9	9
Hydrologic Implications	6	6	6	6	6	7	7	9	9
Biological Viability (Spatial structure & Diversity)	6	6	6	5	5	6	7	9	10
Average (all rows)	6	6	6	6	6	6	7	9	9
Average Blue Headings	6	6	6	6	6	6	7	9	9
Average Sub-Headings	6	6	6	6	6	6	7	9	9
Difference (Blue Headings - Sub-Headings)	0	0	0	1	0	0	0	0	0

Habitat and Biological Feasability Catagories	Sacramento Sucker/other Native Fish								
	Low Grad ByPass	M&H Fish Ladder	Mod M&H Fish Ladder	Trap&Haul 1 (VAFS to SD)	Trap&Haul 2 (SD)	Partial Dam Removal - Water	Partial Dam Removal - Sediment	No Scott & Modify CHD	Rem Dams, Alt Div
Biological Feasibility for Upstream Passage	5	4	4	4	4	5	6	8	9
Reservoir navigability	5	5	5	5	5	5	7	9	10
Passage efficiency (fishway, etc.)	5	4	4	5	5	4	5	8	10
Predation	5	5	5	5	5	5	5	8	9
Biological Feasibility for Downstream Passage	4	4	5	5	5	5	6	8	9
Reservoir navigability	3	4	4	4	3	4	6	9	10
Passage efficiency (fishway, etc.)	5	4	5	5	5	4	6	8	10
Predation	4	4	4	5	5	5	5	7	8
Habitat and Water Quality	8	8	8	7	7	8	8	9	9
Habitat upstream of Scott Dam	7	8	8	7	7	8	8	9	9
Water quality within reservoir	7	7	7	7	7	7	8	8	8
Habitat downstream of Scott Dam	8	8	8	8	8	8	8	9	9
Water quality below reservoir	8	8	8	8	8	8	8	9	9
Hydrologic Implications	6	7	7	7	7	7	7	8	9
Biological Viability (Spatial structure & Diversity)	6	6	6	5	5	6	7	9	9
Average (all rows)	6	6	6	6	6	6	7	8	9
Average Blue Headings	6	6	6	6	6	6	7	8	9
Average Sub-Headings	6	6	6	6	6	6	7	8	9
Difference (Blue Headings - Sub-Headings)	0	0	0	0	0	0	0	0	0

Summary

- Upstream passage with Trap and Haul or Ladders is feasible, but expensive ($50-100 million in capital costs, high O&M)
- Non-Volitional passage options may not be acceptable to Agencies
- The biological feasibility for downstream passage were a primary concern:
  - Challenges with juvenile passage through reservoir
  - Difficulties for fish finding the “fish collector facilities”
  - high probability of predation on juvenile fish by non-native fish
- **Full Scott Dam Removal was best option for Fish Passage**





Fish Passage Preliminary Takeaways

Supplemental Information

- Removal of both Scott and Cape Horn Dams greatly benefits all species and life stages evaluated. However, dam removal without alternative diversion infrastructure or other water supply options challenges a two-basin solution. Loss of Scott Dam would also eliminate the ability to store water for controlled releases into the Eel River.
- Various upstream passage options are available for adult salmonids and lamprey with varying degree of meeting long-term biological viability, but success is likely achievable.
- Fish Passage Working Group members had different perspectives on the value of Scott Dam releases during the dry season and associated water quality conditions downstream (i.e., temperature).
- Significant challenges exist for downstream passage of both salmonids and other species of interest (e.g., lamprey), and will likely be the most limiting factor when considering fish passage options that retain Scott Dam.
- Significant concerns exist with navigation, predation, and water quality within Lake Pillsbury relevant to fish passage, environmental cues, and habitat conditions for focal fish species.
- Engineering a successful fish passage facility on aging infrastructure will potentially be challenging and require special consideration.
- All passage scenarios and subsequent options assume that Cape Horn Dam/ Van Arsdale Fish Station will meet current NMFS/CDFW fish passage standards. Existing Cape Horn Dam infrastructure will need to be properly evaluated during future fish passage investigations, but as stated above it is likely that the existing Cape Horn Dam will require significant modifications to meet these current fish passage standards.

Water Supply Working Group

- Enlisted Expertise of State/Federal Agency and Consultants
- Updated, Calibrated, and Validated a HEC-ResSim Model for existing conditions:
  - Lake Pillsbury Storage
  - Eel River Releases
  - Diversions to Potter Valley
- Calibration/Validation Time Series: WY2007-2017
- Used RPA flows for simulated compliance below Cape Horn Dam
- Scenario 2 used Run-of-River Winter Diversions up to 300 cfs
- Simulation Time Series: WY1911-2017

- Craig Addley (Consultant to PG&E)
- Chris Delaney (Sonoma Water)
- Jared Emery (Consultant to PG&E)
- Michelle Lent (PG&E)
- Scott McBain (Consultant to RVIT)
- John Mendoza (Sonoma Water)
- Peter Pyle (Consultant to RVIT)
- Don Seymour (Sonoma Water)
- Andres Ticlavilca (Contractor to NMFS)

Modeling Scenarios Updated 4/16/19		**Russian River & Lake Mendocino Alternatives**		
		Current Operations	Lake Mendocino FIRO (Hybrid) with Fish Flow EIR Operations[5]	Raise Coyote Valley Dam[6]
Potter Valley Project Alternatives	Current Operations[1]	Baseline: Existing Climate (n=1) Baseline FC: Future Climate (n=4)		
	PVP Revised Operations[2]	Scenario 4: Existing Climate (n=1)		
	Run-of-the-River[3]		Scenario 2: Existing Climate (n=1) Scenario 2FC: Future Climate (n=4)	
	PVP Decommission[4]	Scenario 1: Existing Climate (n=1)	Scenario 3: Existing Climate (n=1)	Scenario 5: Preliminary analysis with Existing Climate

Supplemental Information

Eel River Assumptions

- Daily Time Step
- Existing Hydrology by Western Hydrologics and Cardno
  - 07-years: WY1911 – WY2017
  - Unimpaired inflow calculations
  - Downstream tributary accretions between Scott Dam and Cape Horn Dam
- Lake Pillsbury Storage
  - 2016 PG&E Bathymetric Survey (76,876 ac-ft)
- Current PVP Operations
  - 2002 Biological Opinion RPA flows (as implemented post-2006) for Eel River and EBRR
  - Block Water
    - Based on 2017 blockwater release
    - 2017 blockwater release hydrograph occurs after April 1 when E-11 flows drop below 250 cfs
  - Discretionary diversions: Simulates current operational practices
    - Storage > Target Storage Curve
    - Maximum diversion=170 cfs based on model calibration process mass balance
    - Diversions turned off when E-11 flows exceed 7,000 cfs
  - Drought, equipment testing, and maintenance variance releases excluded
  - Buffer Flows: 5-20 cfs on Eel River (E-11), 5 cfs on EBRR (E-16)
  - Gate closure

Russian River Assumptions

- Daily Time Step
- Existing Hydrology by USGS flow data
  - 107-years: WY1911 – WY2017
  - Unimpaired inflow calculations from USGS Basin Characterization Model
- Lake Mendocino Storage
  - 2001 Bathymetric Survey (111,000 ac-ft)
- Current Lake Mendocino Operations
  - 2008 Biological Opinion RPA and 1986 Decision 1610, with 5-20 cfs buffers
  - Minimum flood control release based on existing ACOE rule curve (no FIRO)
  - PVID water supply met by PVP diversions
  - Assumes 8,600 ac-ft of losses between E-16 to Calpella (riparian diversions), none from Calpella to Lake Mendocino
  - Uses Lake Pillsbury inflow as flow index rather than Russian River

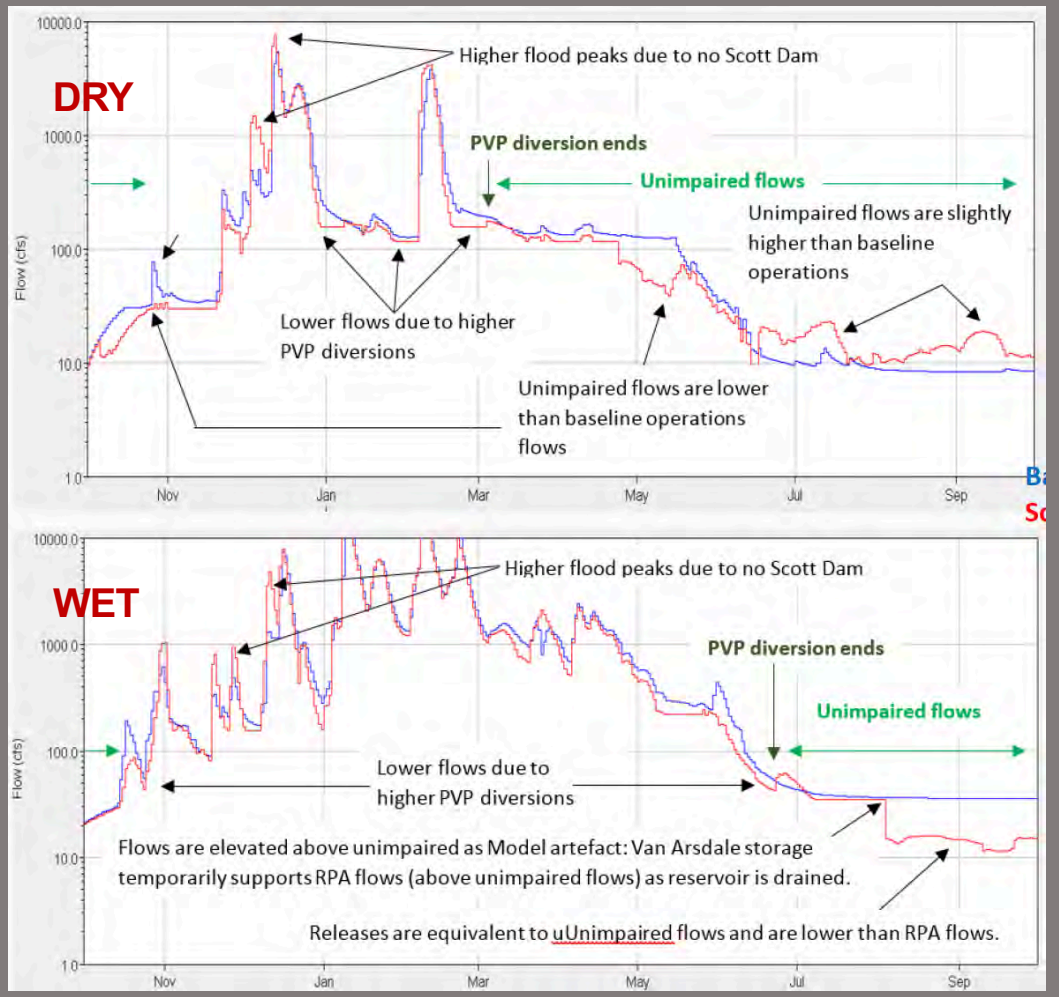
Modeling Scenario 2

Scott Dam Removed + Run-of-River Winter Diversion at Cape Horn Dam

- Modeling results available for Eel River below CHD, PVP diversion, Lake Mendocino, and Russian River
- Average Eel River flow release volumes below CHD match current conditions (~330,700 af or 80 % of unimpaired)
- Average annual water diversion volumes exceeded current conditions:

  78,100 af -> 82,800 af
- Lake Mendocino and Russian River operations matched or performed better than current conditions

IT WORKS !!



Planning Agreement Partnership

- May 21, 2019:

  PLANNING AGREEMENT TO UNDERTAKE FEASIBILITY STUDY OF A POTENTIAL LICENSING PROPOSAL FOR THE POTTER VALLEY PROJECT

  - CalTrout, Sonoma Water, Mendocino County Inland Water and Power
  - Humboldt County and Round Valley Indian Tribe
- June 2019 FERC Filing: Pre-Application Document (PAD) & Notice of Intent (NOI)
  - FERC Issued Notice of Continuation of Relicensing

TWO-BASIN PARTNERSHIP

EEL·RUSSIAN

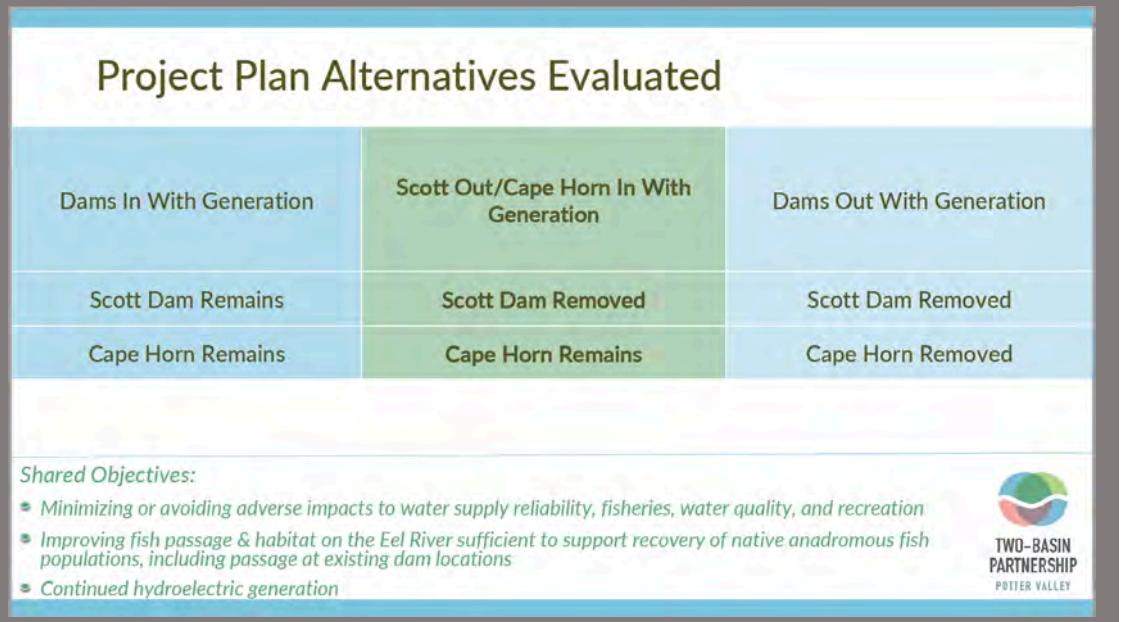
Sonoma Water

CALIFORNIA TROUT

Feasibility Study Phase I

October 2019– May 2020

- Solicitation (RFQ) and Consultant Selection
  - Regional Entity
  - Project Plan
  - Restoration Plan
  - FERC ILP Study Plan
  - Finance Plan
- Draft Technical Memos in March 2020
- Currently being revised for public release (~October 1)
- Helped inform the NOI Parties' submittal of Feasibility Study Report
- Feasibility Study Report - Submitted to FERC May 13, 2020.



https://www.twobasinsolution.org/reports/

Project Plan

- FERC Project Plan Elements
  - Scott Dam Removal
  - Lake Pillsbury Sediment Management
  - Lake Pillsbury Vegetation Management
  - Cape Horn dam Fish Passage Modifications
  - Van Arsdale Diversion Modifications
  - Revised Operations Plan
- Non-FERC Element
  - PVID Water Supply

TWO-BASIN PARTNERSHIP

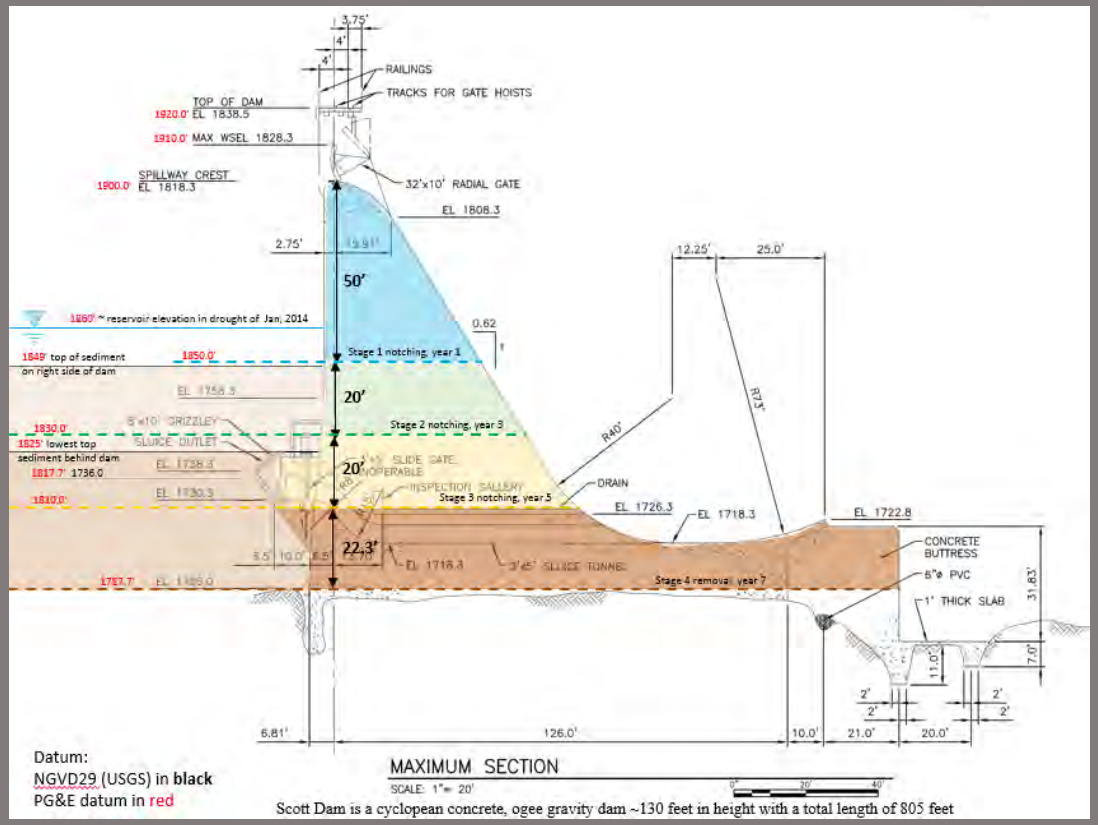
EEL · RUSSIAN

CALIFORNIA TROUT

FISH · WATER · PEOPLE

Phase 2: Feasibility Study

May 2020 – June 2021

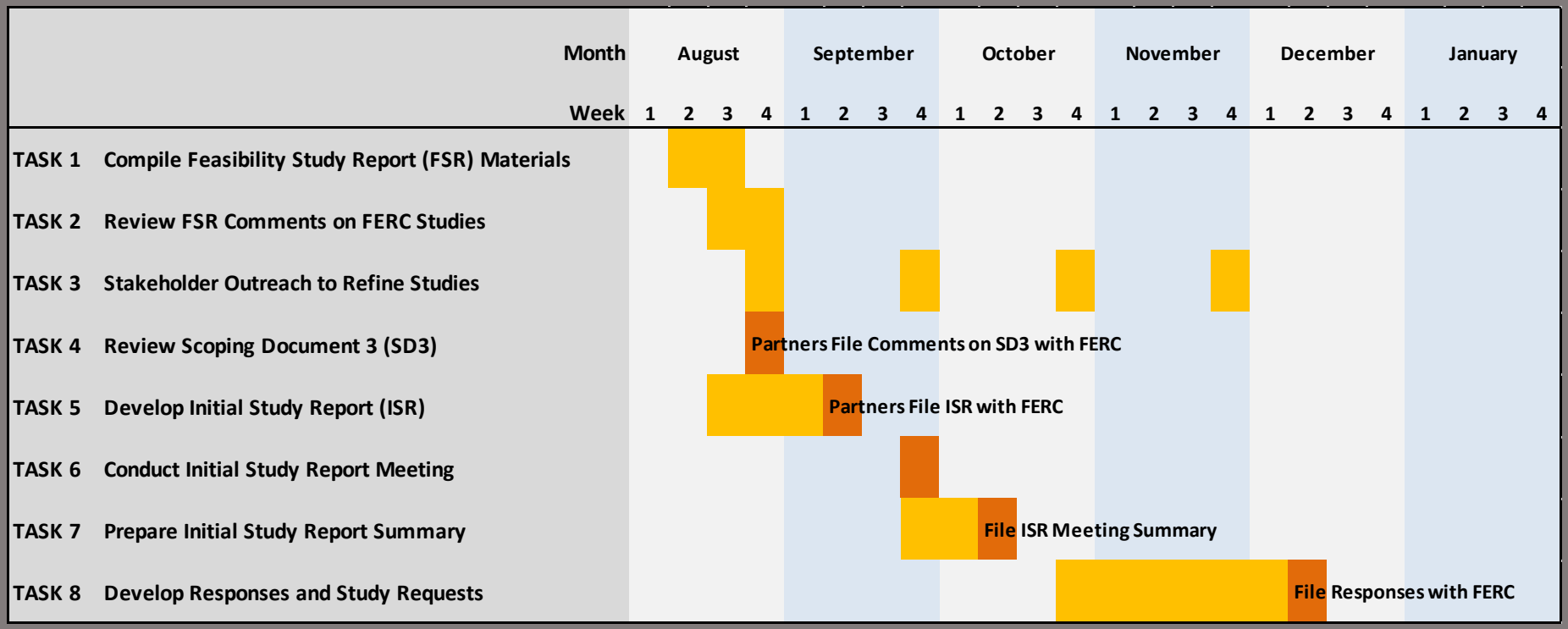


Scott Dam is a cyclopean concrete, ogee gravity dam ~130 feet in height with a total length of 805 feet

- Release technical information from Phase 1
- Analyze Project Plan
  - Scott Dam removal as best outcome to achieve fish passage
  - Run-of-River winter diversions to achieve water supply reliability
  - Minimize impacts of sediment
  - Modify Cape Horn Dam fish passage
  - Improve Van Arsdale flow bypass and fish screens
- Refine cost estimates for infrastructure modifications
- Fisheries Restoration Plan

FERC Integrated License Process (ILP)

August 2020 – License Application



Still to Come

- Development of a Cooperative Agreement among the Partners
- Negotiations with PG&E for funding and asset transfer
- Form Regional Entity
- Develop Finance Plan
  - Relicensing Costs
  - Scott Dam Removal
  - Sediment Management
  - Cape Horn Dam Modifications
  - Powerhouse Upgrades
  - Potter Valley Water Supply

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Questions?