



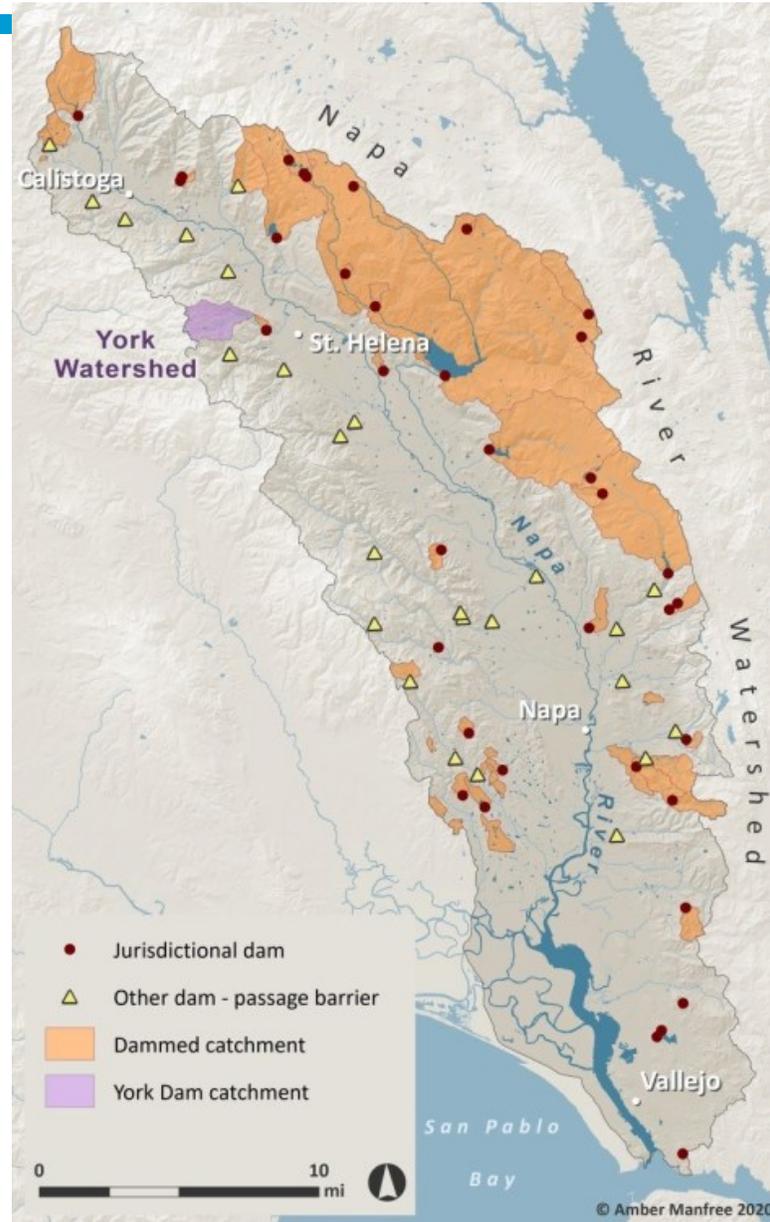
# CITY OF ST. HELENA UPPER YORK CREEK ECOSYSTEM RESTORATION AND AQUATIC HABITAT ENHANCEMENT PROJECT

Presentation to the Napa County Watershed Information & Conservation Council (WICC) by

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Director of Engineering and Project Manager, [jhyman@ekiconsult.com](mailto:jhyman@ekiconsult.com)

28 January 2021

# YORK CREEK WATERSHED

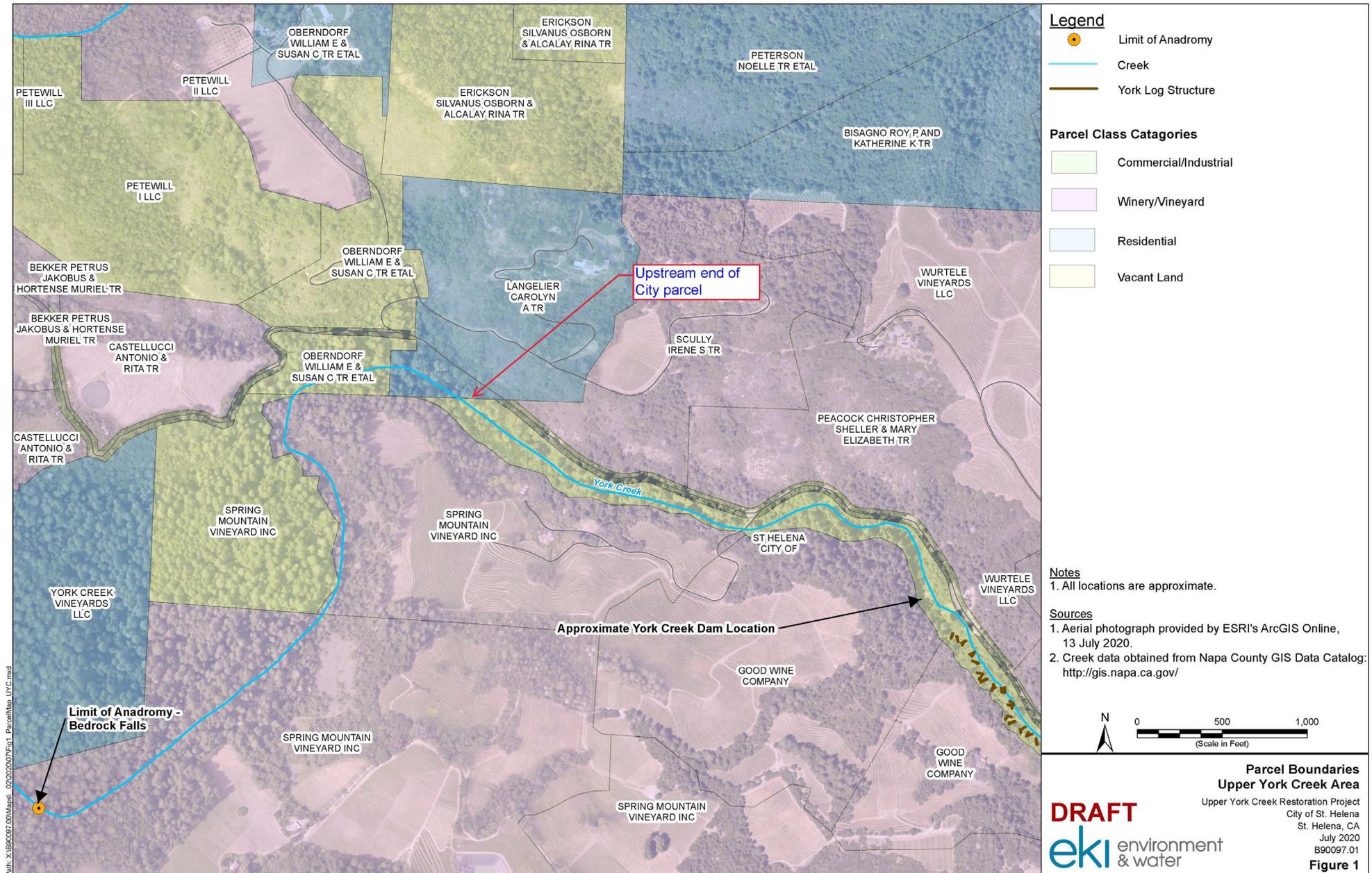


- Part of the Napa River Watershed
- Was one of several dammed catchments

Figure reference:  
Water Audit  
(<https://california-waterblog.com/2020/11/08/small-dam-big-deal-york-dam-removed-in-napa-valley/>)

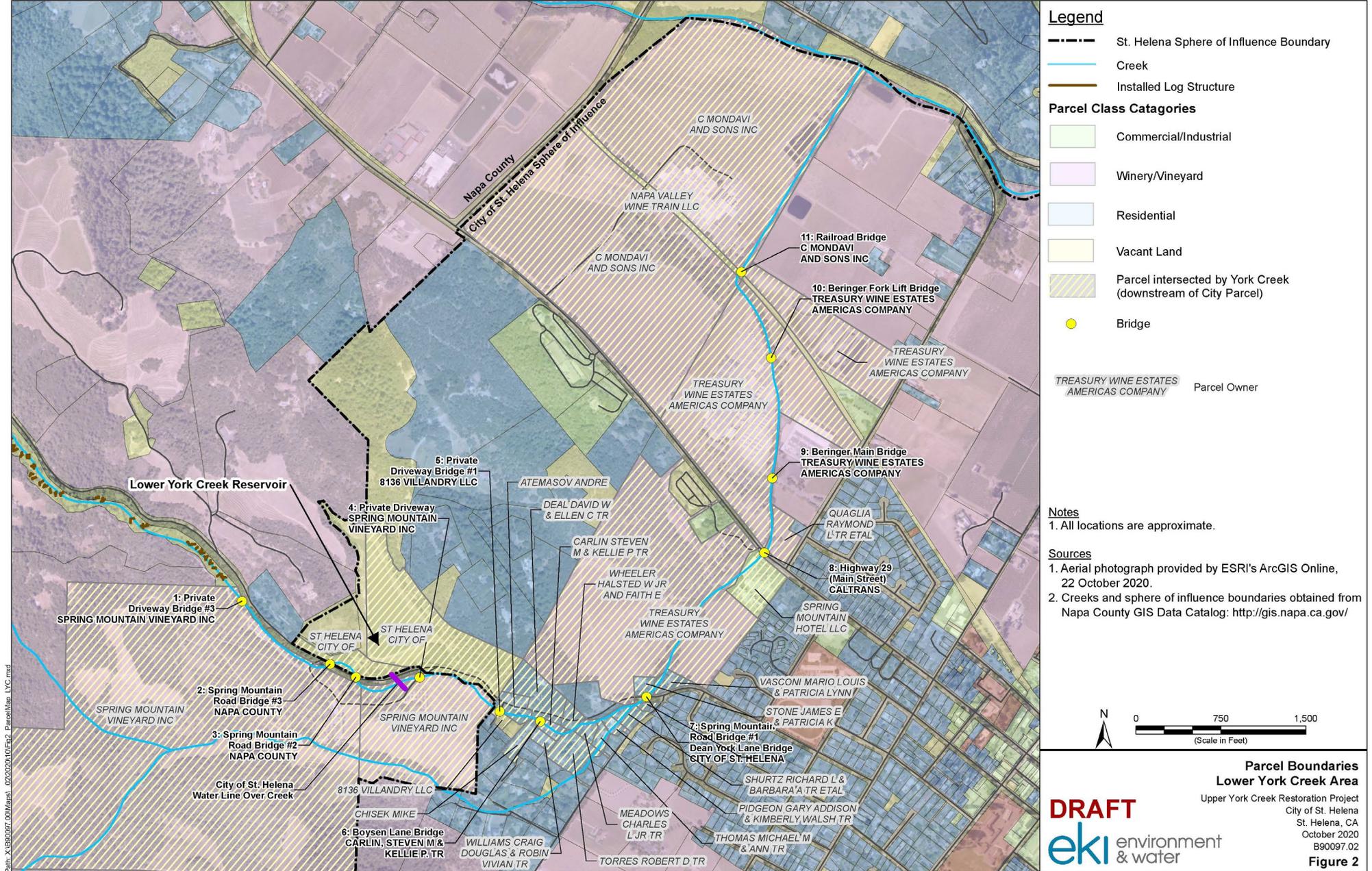
# UPPER YORK CREEK

- The City's dam blocked about 1.5 miles of steelhead habitat
- Primarily on property owned by the City of St. Helena and Spring Mountain Vineyard



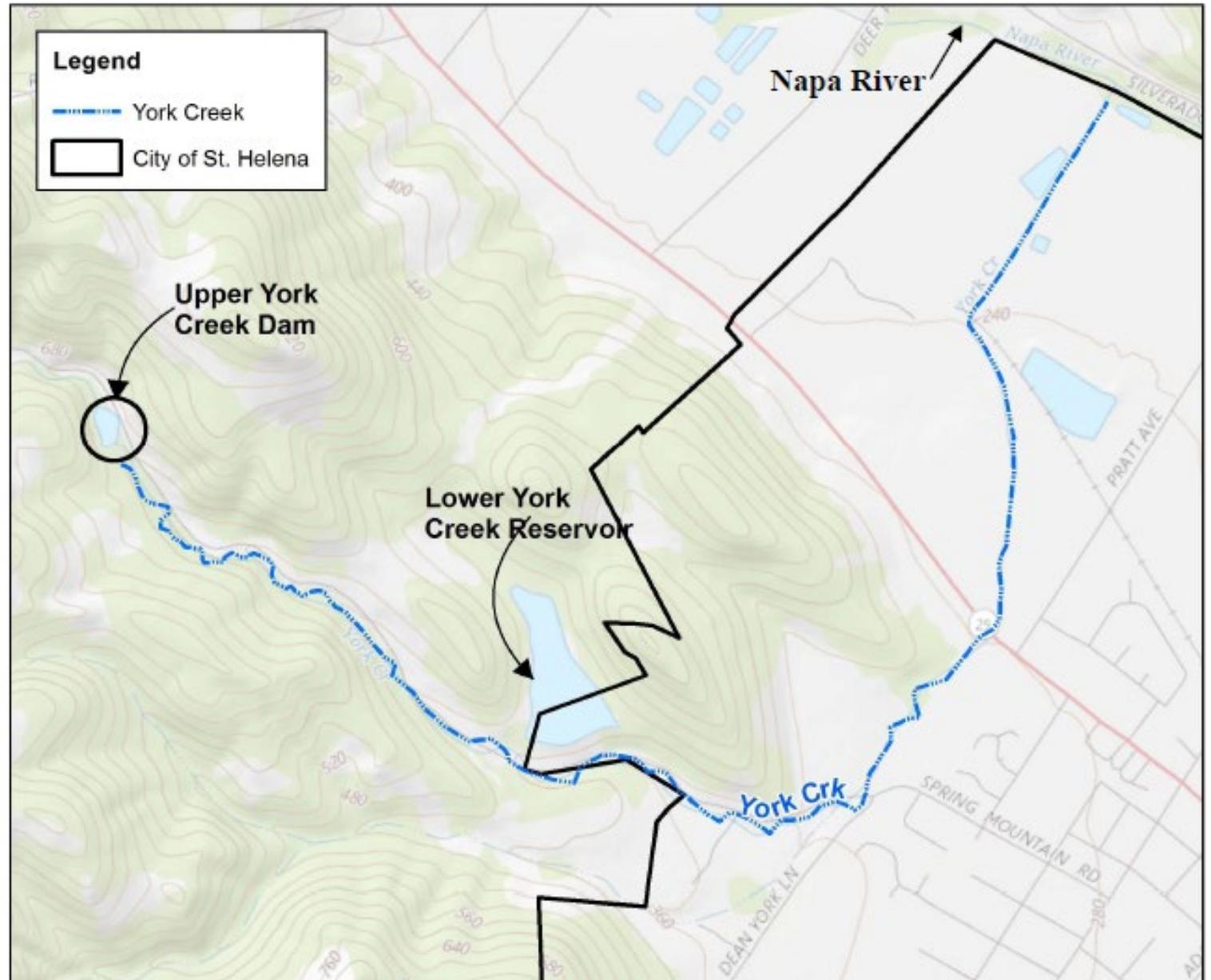
# LOWER YORK CREEK

- Alluvial plain
- Primarily on property owned by vineyards
- 11 bridges



# UPPER YORK CREEK DAM

- Constructed in 1900
- Downstream diversion dam removed in 1990s
- Sediment accumulated behind the dam, rendering the reservoir unusable without frequent dredging
- 1992 accidental release of sediment
- Downstream habitat degraded due to lack of sediment



## DAM REMOVAL PROJECT GOALS

- Restore ecological connectivity between downstream and upstream habitats
- Restore natural sediment transport in the creek
- Maintain the stability of Spring Mountain Rd.
- Allow the creek and vegetation to naturally restore

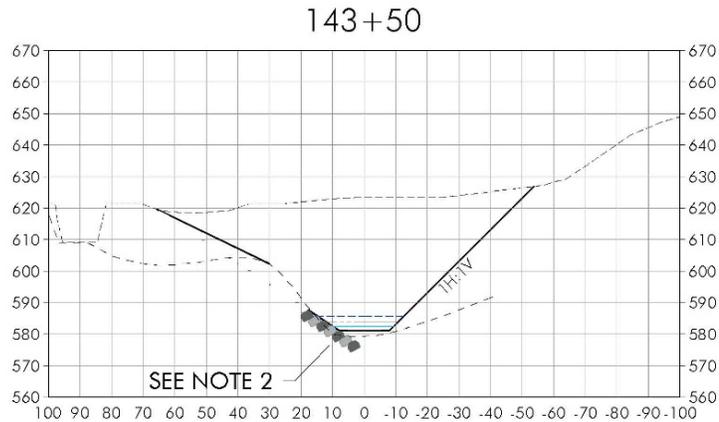


# PROJECT HISTORY

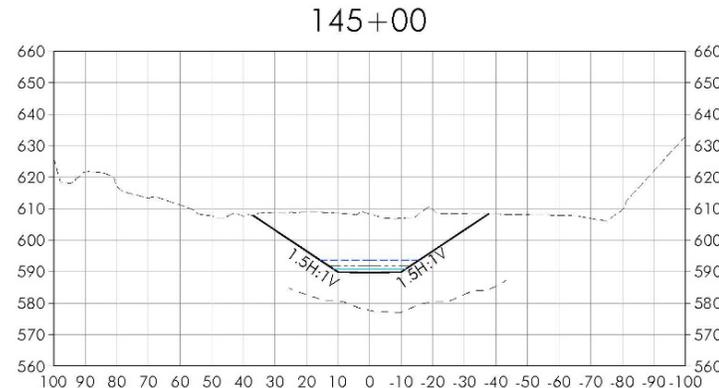
CENTRAL CA COAST STEELHEAD LISTED AS THREATENED SPECIES - 1997

ACTIVITY	APPROX. DATE
SCIENTIFIC STUDIES	1993- 2020
EIR	2007 – DRAFT, 2015 - FINAL
EKI/WRA PERMITTING/DESIGN	2019-2020
PREQUALIFY CONTRACTORS AND SOLICIT BIDS	JAN - APR 2020
CONSTRUCTION	JUNE - NOV 2020
10-YEAR POST-CONSTRUCTION MONITORING BY NC RCD	2020-2030

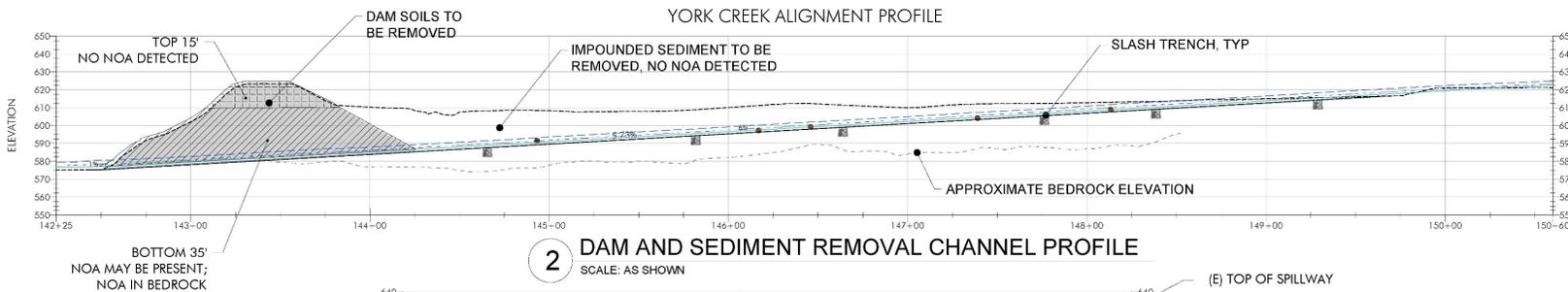
# KEY DESIGN ELEMENTS



Typical dam section

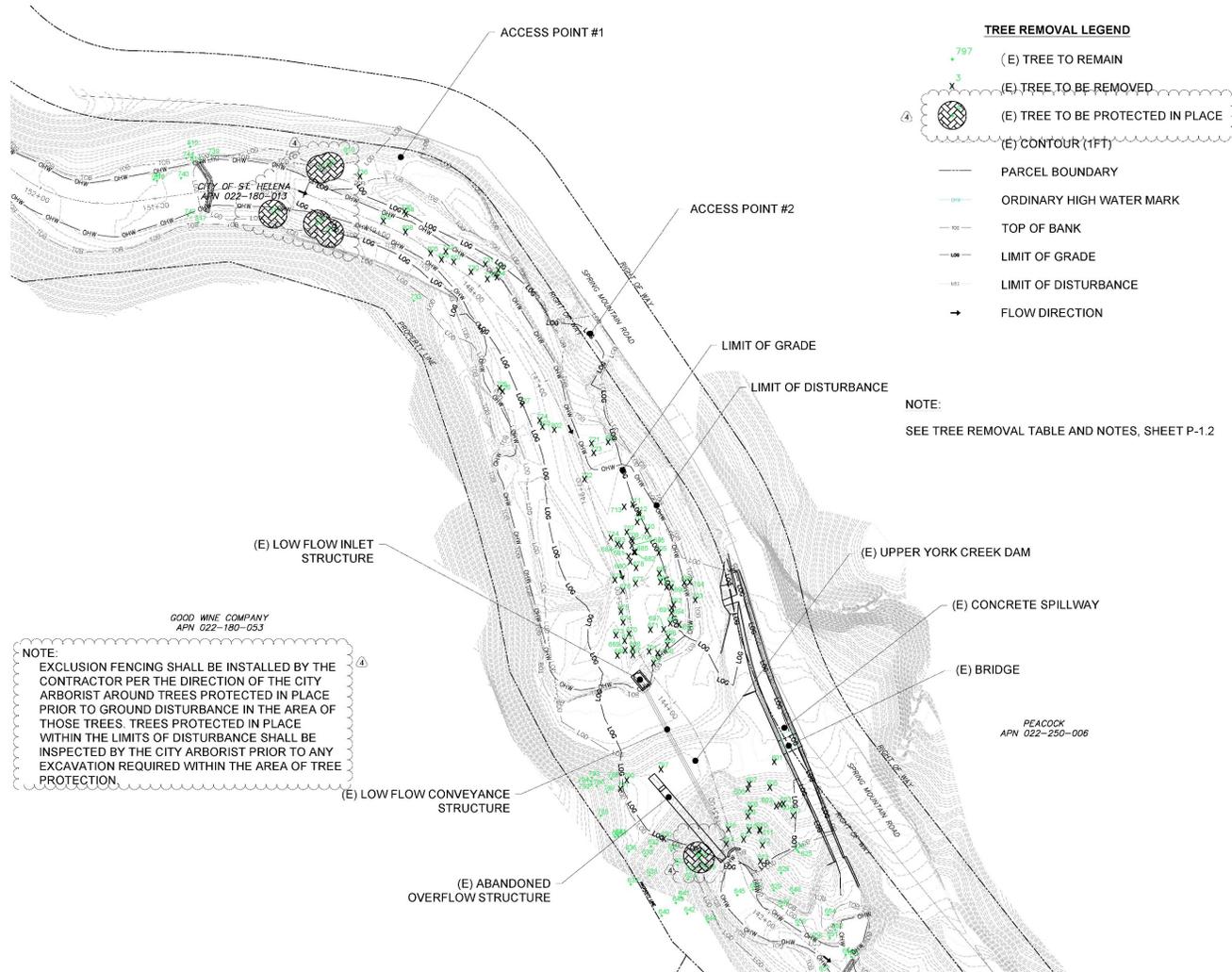


Typical channel section



- Remove most of the dam
- Remove about half of the sediment, leaving sediment behind to restore sediment-starved areas downstream
- Match slope of creek up and downstream
- Pilot channel in the sediment, allowing nature to sculpt the channel (“process-based design”)
- 36 new log structures
- Natural revegetation

# VEGETATION REMOVAL



- Detailed tree inventory
- Save selected trees for reuse in log structures
- Slash saved for reuse in Slash Trenches and Log Structures
- Initial clearing required continuous biologist monitoring

1 TREE REMOVAL PLAN VIEW  
SCALE: 1" = 40'

# VEGETATION REMOVAL – 3 STEP PROCESS



Cut down trees to grade



Cut down shrubs and plants to 8" height



Remove all plants and roots with a masticator under the watchful eye of a biological monitor

# CREEK BYPASS DURING EXCAVATION WORK

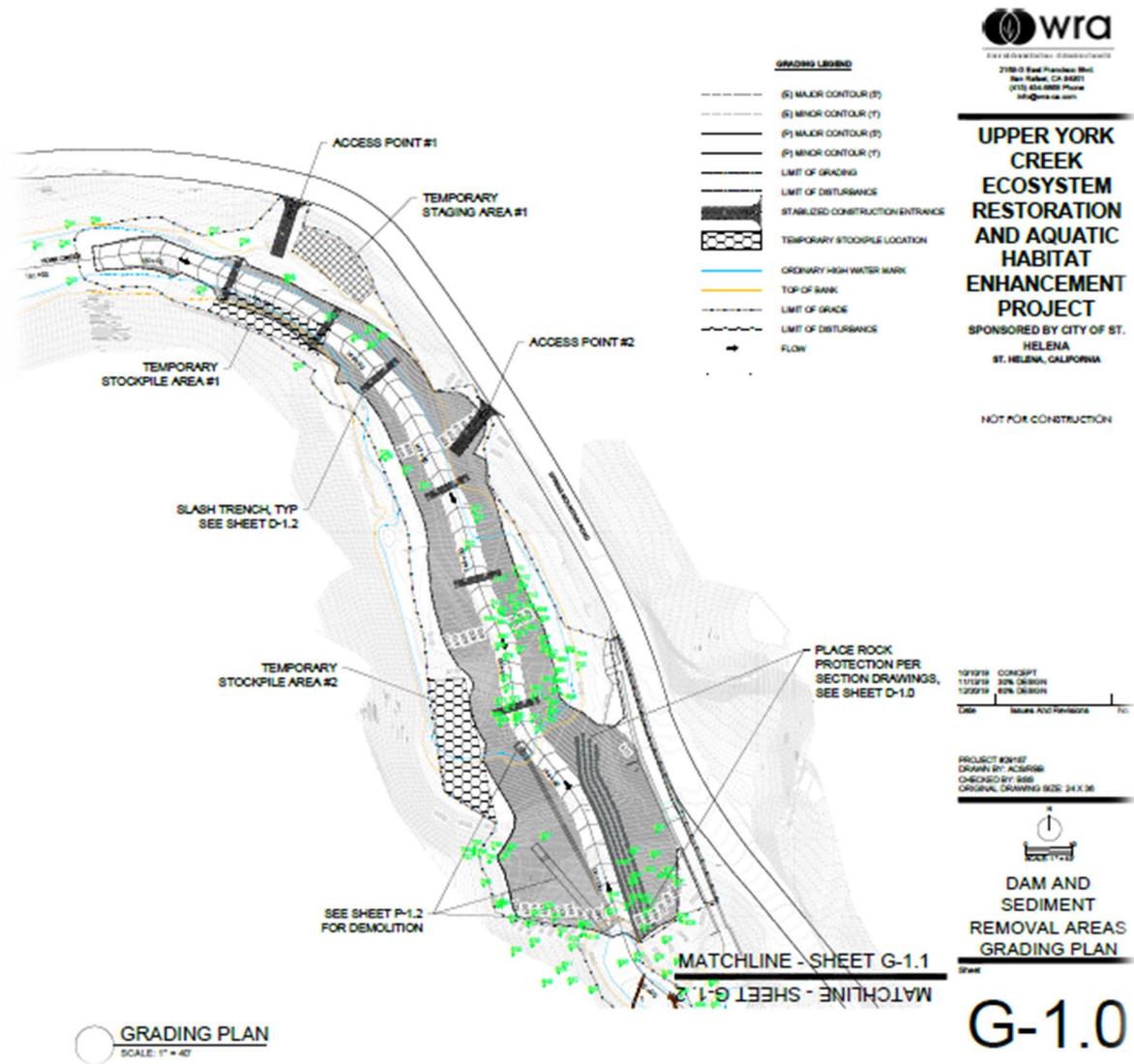
- Fish removal performed in advance of installation
- Sheet piles selected to capture below grade creek flow
- Optional bid item to remove bypass in case of an unexpected storm



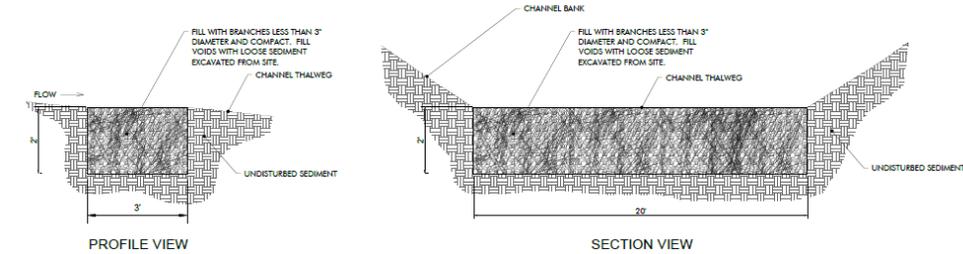
# CREEK BYPASS DURING EXCAVATION WORK



# DAM AND SEDIMENT REMOVAL



- Haul 22,000 cubic yards (CY) offsite
- 6 Slash Trenches
- Riprap along steep slope to protect road



Slash trench detail

# DAM AND SEDIMENT REMOVAL - CHALLENGES



View downstream from top of excavation

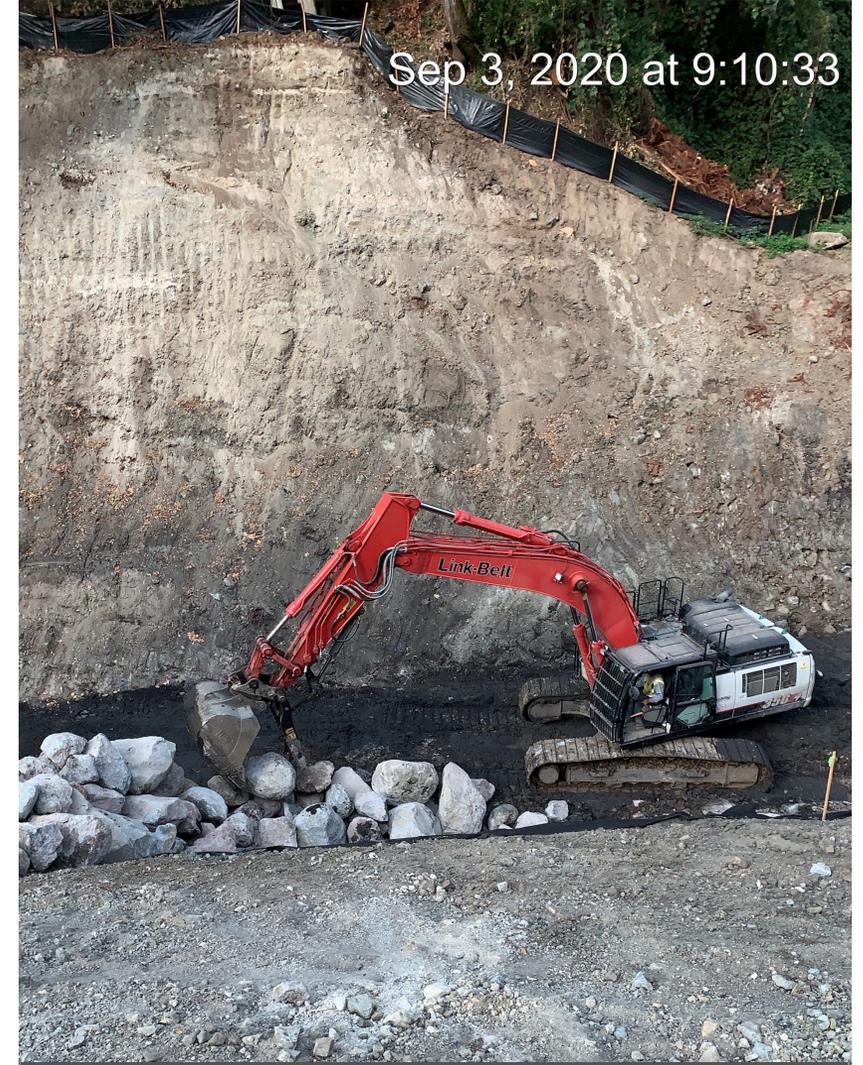


- **Narrow work window:** Contractor worked 12-hour days; 1,933 truck loads were hauled offsite over 6 weeks
- **Naturally-occurring asbestos:** required special air monitoring at 3 locations, plan and BAAQMD permit
- **Site access:** only possible at spillway; special bridge built
- **Traffic control:** one lane closed for a couple months on Spring Mountain Rd.

# DAM AND SEDIMENT REMOVAL



View from center of excavation towards dam



Placing riprap in the dam notch

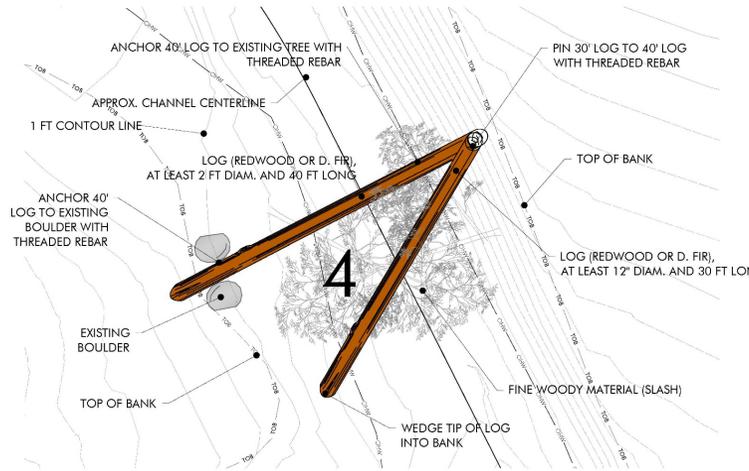
# DAM AND SEDIMENT REMOVAL

View upstream  
from base of dam

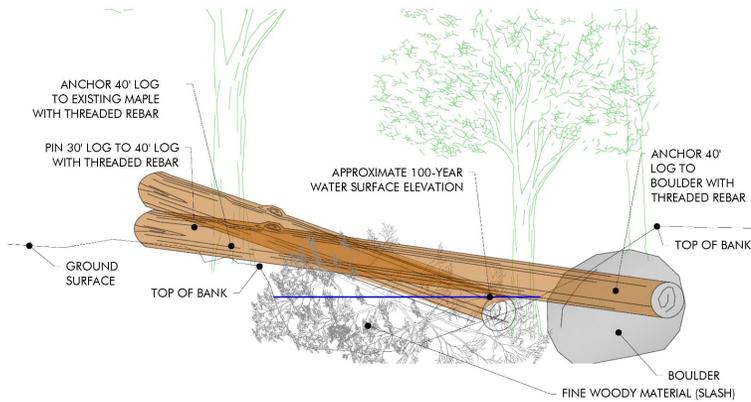


# 36 LOG STRUCTURES

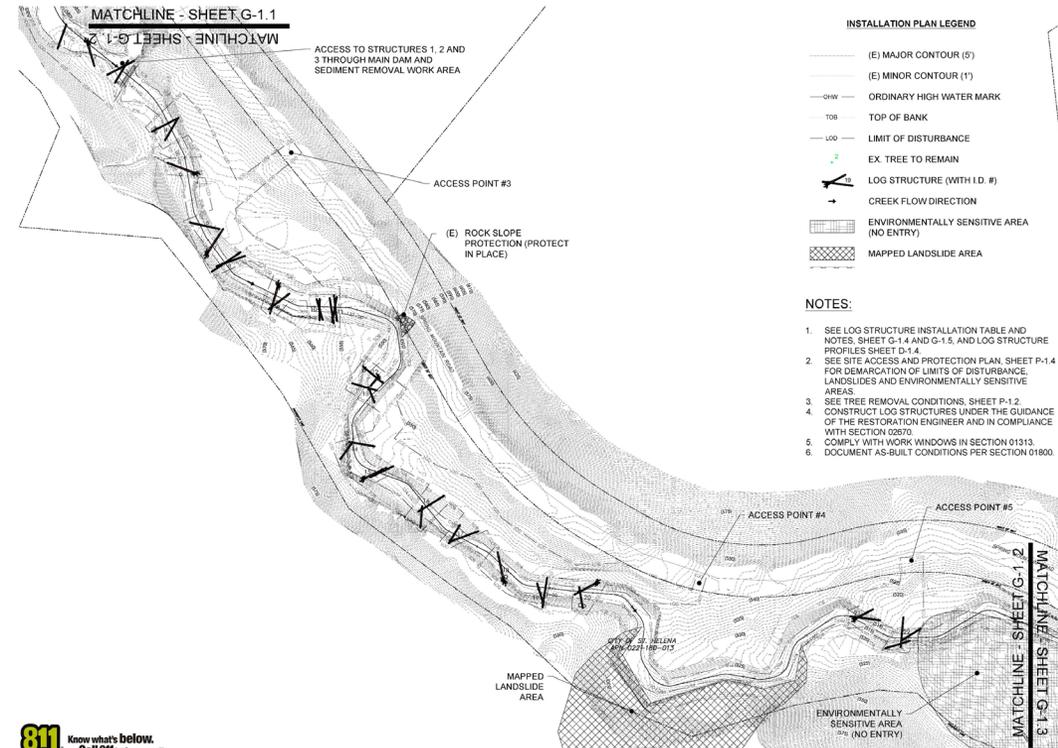
- Trap sediment and create habitat
- Logs donated by Spring Mountain Vineyard
- Anchored to trees



1 TYPICAL LOG STRUCTURE PLAN VIEW  
NOT TO SCALE



2 TYPICAL LOG STRUCTURE SECTION VIEW  
NOT TO SCALE



1 LOG STRUCTURE PLAN (1-22)  
SCALE: 1" = 40'

INSTALLATION PLAN LEGEND

- (E) MAJOR CONTOUR (5')
- (E) MINOR CONTOUR (1')
- OHW - ORDINARY HIGH WATER MARK
- TOB - TOP OF BANK
- LOD - LIMIT OF DISTURBANCE
- EX - TREE TO REMAIN
- LOG STRUCTURE (WITH I.D. #)
- CREEK FLOW DIRECTION
- ENVIRONMENTALLY SENSITIVE AREA (NO ENTRY)
- MAPPED LANDSLIDE AREA

- NOTES:
- SEE LOG STRUCTURE INSTALLATION TABLE AND NOTES, SHEET G-1.4 AND G-1.5, AND LOG STRUCTURE PROFILES SHEET D-1.4.
  - SEE SITE ACCESS AND PROTECTION PLAN, SHEET P-1.4 FOR DEMARCATION OF LIMITS OF DISTURBANCE, LANDSLIDES AND ENVIRONMENTALLY SENSITIVE AREAS.
  - SEE TREE REMOVAL CONDITIONS, SHEET P-1.2.
  - CONSTRUCT LOG STRUCTURES UNDER THE GUIDANCE OF THE RESTORATION ENGINEER AND IN COMPLIANCE WITH SECTION 02070.
  - COMPLY WITH WORK WINDOWS IN SECTION 01313.
  - DOCUMENT AS-BUILT CONDITIONS PER SECTION 01800.

**wra**  
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**UPPER YORK CREEK ECOSYSTEM RESTORATION AND AQUATIC HABITAT ENHANCEMENT PROJECT**  
SPONSORED BY CITY OF ST. HELENA, CALIFORNIA

10/10/19 CONCEPT  
11/13/19 30% DESIGN  
12/20/19 60% DESIGN  
01/22/20 80% DESIGN  
03/02/20 75% DESIGN  
04/15/20 100% DESIGN

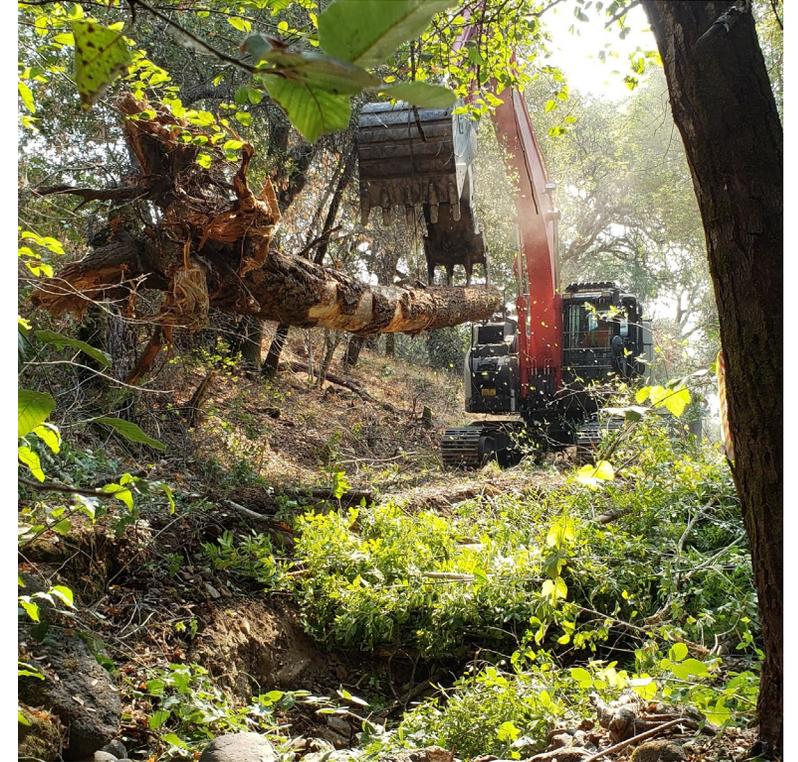
PROJECT #20197  
DRAWN BY: AC688B  
CHECKED BY: BSS  
ORIGINAL DRAWING SIZE: 24 X 36

LOG STRUCTURE INSTALLATION PLAN (1-22)

## G-1.2



# 36 LOG STRUCTURES



Challenges: Protect or avoid historic tribal artifacts;  
anchor logs so they do not float downstream



After

## GLASS FIRE PROJECT IMPACTS

- 6 Log structures and most of the slash burnt requiring repair
- Understory gone and most invasive species with it
- Increased concern regarding erosion, turbidity, debris



After

Log Structure I - Before



Log structure 34 post-fire



Log structure bolted to a tree



Sediment area post-fire



Dam notch and log structure | post-fire

# UPPER YORK CREEK: POST FIRE DRONE VIDEO

- <https://vimeo.com/4755372217ab76b3303>
- Questions?

## ACKNOWLEDGMENTS

- Erica Ahmann-Smithies, City of St. Helena  
Director of Public Works
- US EPA, granting agency
- CA DWR and ABAG, granting agencies
- Brian Bartell, WRA Project Manager
- McCullough Construction Inc., contractor



Plants resprouting after the fire