

Technical Proposal - Rancheria Creek Flow Enhancement and Restoration Project

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Table of Contents

Technical Proposal - Rancheria Creek Flow Enhancement and Restoration Project	1
Table of Contents	1
Executive Summary	2
Project Summary	2
Performance Measures	5
Evaluation Criteria	6
Project Budget	29
Environmental and Cultural Resources Compliance.....	30
Required Permits or Approvals	32
Overlap or Duplication of Effort Statement	33
Conflict of Interest Disclosure Statement.....	33
Uniform Audit Reporting Statement	33
Disclosure of Lobbying Activities	33
Letters of Support.....	33
Letter of Partnership	33
Documents Authorizing the Study, Design, or Construction of a Dam Removal Project	33

Executive Summary

Date: 05/31/2023

Applicant Name: Dry Creek Rancheria Band of Pomo Indians

Location: Geyserville, California (Sonoma County)

Category A Applicant: Federally Recognized Indian Tribe

Task Area B: Construction

The Dry Creek Rancheria Band of Pomo Indians, a federally-recognized Indian tribe, will restore stream habitat supporting endangered and threatened salmonids in Rancheria Creek and the Russian River in Sonoma County, California. The tribe is seeking to participate in regional restoration and management efforts for Rancheria Creek and the Russian River. Rancheria Creek, once a perennial tributary providing salmon for the tribe, has become intermittent due to spring diversions and sedimentation. This project includes planting a native riparian barrier, replacing 2 fish passage barrier culverts, and expanding existing stormwater detention pond to improve degraded salmonid habitat, enhance flow, control erosion, improve salmonid passage, and increase water quality. This project will help mitigate the effect of agricultural land use on the vineyard reach of Rancheria Creek and open up additional habitat by enabling fish passage where current barriers exist. This project aligns with the tribe's Dry Creek Rancheria Climate Adaptation Plan.

Project Timeline: The proposed project is estimated to be completed within 2 years. The estimated completion date is December, 2025.

Federal Involvement: The proposed project focuses on tribal land owned by the Dry Creek Rancheria Band of Pomo Indians.

Project Summary

Project Location

The proposed project, Rancheria Creek Flow Enhancement and Restoration Project, is located in Sonoma County, California. It is situated approximately 3 miles southeast of Geyserville. The project's geographic coordinates are 38.696009° N and -122.858480 °W. Please refer to the

accompanying map for a visual representation of the project location.

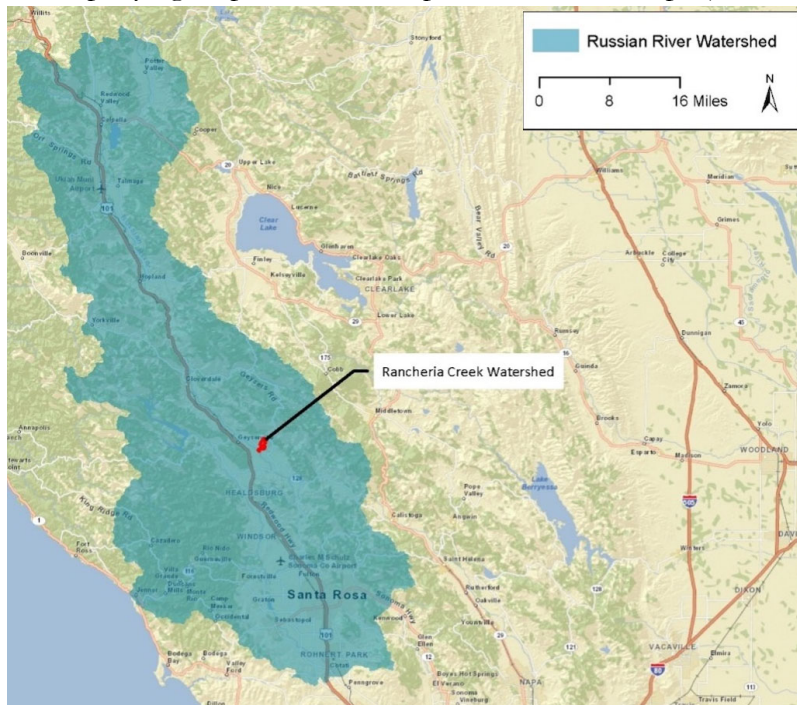


Figure 1 Map of Russian River Watershed and project location, Rancheira Creek Watershed, marked in red.

Project Description

The project falls under Task B Construction and consists of the following five key actions. The initial study and design activities have been completed and all of these actions have at least 60% design packages.

Plant native riparian buffer

A native riparian buffer will be established along the reach of Rancheira Creek which passes through the vineyard. This buffer will be created by planting native riparian plants selected for their cultural significance by tribal members. The buffer will cover 1.2 acres on both sides of Rancheira Creek, providing a buffer against agricultural runoff and contributing to habitat enhancement and temperature reduction. Native plants will be collected on the Rancheira and propagated in the Tribe's native plant nursery. This task will include enhancements of the existing nursery and a budget for propagation, planting, and care of native plants.

To select and develop planting palette and plan we will utilize Traditional Ecological Knowledge (TEK). TEK is commonly defined as the evolving knowledge acquired by indigenous and local peoples over hundreds or thousands of years through direct contact with the environment¹. TEK is specific to individual tribes and their ancestral areas. TEK includes the relationships between plants, animals, natural phenomena, landscapes and timing of events that are used by native people for

¹ Rinkevich, S., K. Greenwood, & C. Leonetti. 2011 Traditional Ecological Knowledge for Application by Service Scientists. U.S. Fish and Wildlife Service Native American Program, Arlington, VA, February. <https://www.fws.gov/sites/default/files/documents/TEK-Fact-Sheet.pdf>

hunting, fishing, trapping, agriculture, and forestry. TEK is an accumulating body of knowledge and handed down through generations by cultural transmission². TEK has spanned centuries or millennia and reveals innovative ways to combat destructive insects, weeds, and diseases; offer innovative uses of native flora and fauna; and provide insights into advancing ecology. TEK is important for practitioners to understand the intricacies and mechanics of how and why Native Americans shaped ecosystems with fire and sophisticated and complex hunting-gathering strategies. Integrating TEK into management will give them a richer inventory of interpretations and management methods and they will be in a better position to make informed, historically based decisions³. Some native species evolved under both natural and indigenous disturbance patterns and maintaining biodiversity requires both patterns⁴. To capture TEK for the Dry Creek Rancheria we will collaborate with Sherrie Smith, Dry Creek Rancheria Band of Pomo Indians, Tribal Elder. All permitting is acquired for this project and the design is in the final stages. The design package is described in E1.2. Funding would go to identifying culturally significant native plant species, preparation of native plants in the Tribe's nursery, and the planting process. The irrigation system is already in place on-site but will need some adaptations with the new planting.

Replace SR 128 culvert with an embedded bridge

The existing Rancheria Creek SR 128 concrete box culvert, which hinders fish passage, will be replaced with a larger open-bottom Conspan arch precast concrete culvert designed to mimic a natural streambed. The gradient upstream and downstream of the culvert will be regraded to eliminate the scour pool at the base of the existing culvert. Grade control rock will be placed at the downstream end of the culvert to protect against erosion. The channel will be regraded to a shallower slope, ensuring improved connectivity to the upstream and downstream reaches. The construction period is estimated to be around 4 weeks, with traffic temporarily diverted through the use of a filled channel downstream of the culvert and a temporary roadway. This action has 90% design/permitting complete. The design package is described in E1.2. Funding will be used for construction, construction management, and fulfilling permitted requirements.

Replace Rancheria Rd culvert with an open-bottom concrete arch culvert

The undersized Rancheria Road culvert will be removed and replaced with a larger open-bottom Conspan arch precast concrete culvert. Grade control rock will be placed at the downstream end of the culvert to safeguard against erosion. The channel will be regraded to achieve a shallower slope, improving connectivity with the upstream and downstream reaches of the stream. 100% of the design and permitting is complete for this action. The design package is described in E1.2. All

² Rinkevich, S., K. Greenwood, & C. Leonetti. 2011 Traditional Ecological Knowledge for Application by Service Scientists. U.S. Fish and Wildlife Service Native American Program, Arlington, VA, February. <https://www.fws.gov/sites/default/files/documents/TEK-Fact-Sheet.pdf>

³ Stewart, O. C. 2009. *Forgotten Fires: Native Americans and the Transient Wilderness*. Lewis H. T. and M. K. Anderson editors. 384 pages, University of Oklahoma Press, February. ISBN-13: 978-0806140377

⁴ Stewart, O. C. 2009. *Forgotten Fires: Native Americans and the Transient Wilderness*. Lewis H. T. and M. K. Anderson editors. 384 pages, University of Oklahoma Press, February. ISBN-13: 978-0806140377

permitted applications have been submitted and all discussions are being finalized with agencies. Funding will be used for construction, construction management, and fulfilling permitted requirements.

Expand the existing stormwater detention pond

The existing stormwater detention pond will be excavated with an excavator to remove the accumulated sediment and expand the capacity of the pond to operate under higher flows. The downstream end of the detention basin will be reinforced with compacted native fill and rock protection. An outlet pipe will release flows from the detention pond into a biofiltration swale. The excavation volume would be approximately 790 cubic yards and the stormwater detention pond would have the capacity to detain 159,560 gallons. This action has 60% design/permitting complete. The design package is described in E1.2. CEQA permitting is done but will still need to acquire a 404 permit from the Army Corps of Engineers and need to do a consultation with USFWS. Funding for this action will be used to finish design and permitting and then for construction, construction management, and fulfilling permitted requirements.

Bank Enhancement

The incised reach of Rancheria Creek upstream of SR128 to the Rancheria Road culvert (800 feet) and from the Rancheria Road Culvert to the bridge adjacent to the Public Works and Environmental Department office (1,000 ft) will be restored with bioengineered treatments. A series of boulder step-pool weirs will be constructed to re-establish the channel grade. An inset floodplain bench with an average width of ten feet will be constructed from streambed material where feasible. Existing unstable streambanks will be repaired with bioengineered bank stabilization techniques. Where pre-existing hard-armored banks are protected by old car bodies, tires, or concrete rubble, the armoring will be removed and repaired. Banks requiring protecting will be stabilized with boulders or large woody debris will be placed along the toe of the bank to protect the bank from erosion. The slopes will be covered with biodegradable coir erosion control fabric held in place with wooden stakes and revegetated with native seeding to develop roots that will strengthen the banks. This action has 60% design complete but we would need additional permitting. Funding for this action will be used to finish design and permitting and then for construction, construction management, and fulfilling permitted requirements.

These actions collectively aim to restore and enhance the ecological conditions and geomorphic processes within the project area, specifically targeting Rancheria Creek and its confluence with the Russian River. By implementing these measures, the project will to improve habitat quality, reduce pollution, and contribute to the overall resilience of the ecosystem.

Performance Measures

This project will use the following performance measures to determine the relative effectiveness of restoration efforts and the overall effectiveness of the project:

1. Air and water temperature on Rancheria Creek
 - a. The DCR currently has a USEPA Clean Water Act (CWA) 106 Grant and has been tracking water quality in Rancheria Creek since 2005. This comprises multiple years' worth of baseline and background water quality data. DCR monitors DO, pH, the temperature in the creek, and all monitoring data is publically accessible at the USEPA's Water Quality Exchange (WQX). DCR water quality data is available at: http://www.waterqualitydata.us/Station/search?organization=DCRBPI_+WQX&imeType=csv&zip=yes&sorted=no
2. Flow on Rancheria Creek
 - a. There are existing flow gages located within the project reach that can be used to establish a baseline condition and used to measure effectiveness of proposed actions.
3. Water Quality on Rancheria Creek
 - a. Same as 1a
4. Depth and Velocity Measurements on Rancheria Creek at existing fish barriers
 - a. Take depth and velocity measurements at rancheria creek before and after removal of fish barriers to ensure depths and velocities are suitable for steelhead and chinook passage.

Dry Creek Rancheria has existing data related to each of the above metrics and will use existing data to define the baseline condition to compare performance measures. Most monitoring needed to quantify performance measures is collected routinely by the Tribe as part of existing funding as described in the Monitoring Plan Appendix A. The Quality Assurance Project Plan (QAPP) developed by DCR outlines the existing water quality monitoring conducted on the Dry Creek Rancheria on an annual basis. As part of this project, additional depth and velocity measurements would be taken at the fish passage barriers.

Evaluation Criteria

E.1.1. Evaluation Criterion A- Project Benefits

What are the critical issues of concern in the watershed?

The critical issues of concern in the Russian River include:

Water Scarcity and Drought: The Russian River watershed experiences periodic droughts, which can lead to water scarcity issues for both human consumption and ecological needs. Drought conditions can negatively impact water availability, water quality, agriculture, and aquatic ecosystems. Data and analysis on water scarcity and drought impacts in the Russian River watershed are available in studies conducted by the Sonoma County Water Agency (SCWA) and the Russian River Watershed Association (RRWA). March 2023, Governor Newsom declared a drought emergency due to extremely dry conditions in the Russian River watershed.⁵

⁵ California State Water Resources Control Board. "Russian River Drought Response." *SWRCB.Gov*, www.waterboards.ca.gov/drought/russian_river/

Streamflow, Water Quality, and Aquatic Ecosystem Health: Streamflow alterations, including water diversions, can have detrimental effects on aquatic ecosystems, such as reduced habitat availability, changes in temperature and water chemistry, and impacts on fish populations, including endangered species like coho salmon and steelhead trout. Additionally, the Russian River watershed faces challenges related to water pollution, including sedimentation, nutrient runoff, and contamination from various sources such as agriculture, urban development, and wastewater treatment plants. These pollutants can degrade water quality, harm aquatic life, and impair recreational activities. The Russian River has been designated as a site of special interest for NOAA Fisheries⁶ while the North Coast Regional Water Quality Control Board has included the Russian River watershed on the 303(d) list for temperature and sediment⁷.

Habitat Loss and Degradation: Urbanization, agriculture, and land-use practices have resulted in the loss and degradation of habitat in the Russian River watershed. Riparian zones, wetlands, and floodplains, which are critical for the ecosystem and wildlife, have been impacted by development and alteration. This critical issue has been studied in literature⁸ and from work done by the Sonoma Land Trust developing Habitat Assessments⁹.

Explain how your project will benefit aquatic ecosystems, including benefits to plant and animal species, fish and wildlife habitat, riparian areas, and ecosystems.

The project provides water quality improvements, fish passage, native riparian vegetation restoration, restoration of downstream coastal watersheds, and habitat improvements for aquatic and riparian species. Restoration of the riparian corridor has been identified as a critical element for sustainable improvements to Rancheria Creek and climate adaptation for Dry Creek Rancheria. The proposed restoration actions will improve near-stream plant diversity and endemic species re-population, as well as promote local habitats. Planting of a riparian buffer along the vineyard reach of Rancheria Creek will improve water quality by filtering fertilizer, herbicides, and pesticides from vineyard operations and shading on the creek from this riparian vegetation will reduce stream temperatures compared to the existing exposed channel. Passage for anadromous fish will be restored by culvert replacement at Highway 128 and Rancheria Road and excavation of sediment that has filled the active channel and is trapped in the vineyard reach. Restoration of fish passage will allow a connection between the Russian River and critical cold water holding habitat in the upper reaches of Rancheria Creek. Stormwater detention basins will reduce the peak discharge in the

⁶ "Russian River, California." *NOAA Habitat Blueprint*, 25 June 2020, www.habitatblueprint.noaa.gov/habitat-focus-areas/russian-river-california/

⁷ California State Water Resources Control Board. "North Coast Regional Water Quality Control Board." *Russian River | California Northcoast Regional Water Quality Control Board*, www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/russian_river/

⁸ Davies, Marina, "Effects of Land Use on Riparian Corridors in Sonoma County" (2020). Master's Projects and Capstones. 1036. <https://repository.usfca.edu/capstone/1036>

⁹ Russian River Subwatershed Conservation Assessment - Sonoma Land Trust, sonomalandtrust.org/wp-content/uploads/2022/08/SLT-Russian-River-Subwatershed-Brochure.pdf

channel and reduce channel incision and bank erosion that simplifies habitat and increases sediment delivered to the sediment-impaired Russian River.

Does the project affect water resources management in 2 or more river basins?

Yes. This project affects water resources in the Middle Russian River HUC-10 level river basin and the Lower Russian River HUC-10 level river basin. This project is providing direct benefits to the Middle Russian River providing cold water and reducing sediment flowing into the river from Rancheria Creek. This clear cold water will affect temperatures and turbidities in the Lower Russian River basin as well, making it a better habitat for migrating and rearing Steelhead and Chinook. Connecting Rancheria Creek will connect upstream cold water pools that can be used as habitat for Steelheads and Chinook in the greater Russian river basin. Please refer to figure 2 below for map of watersheds.

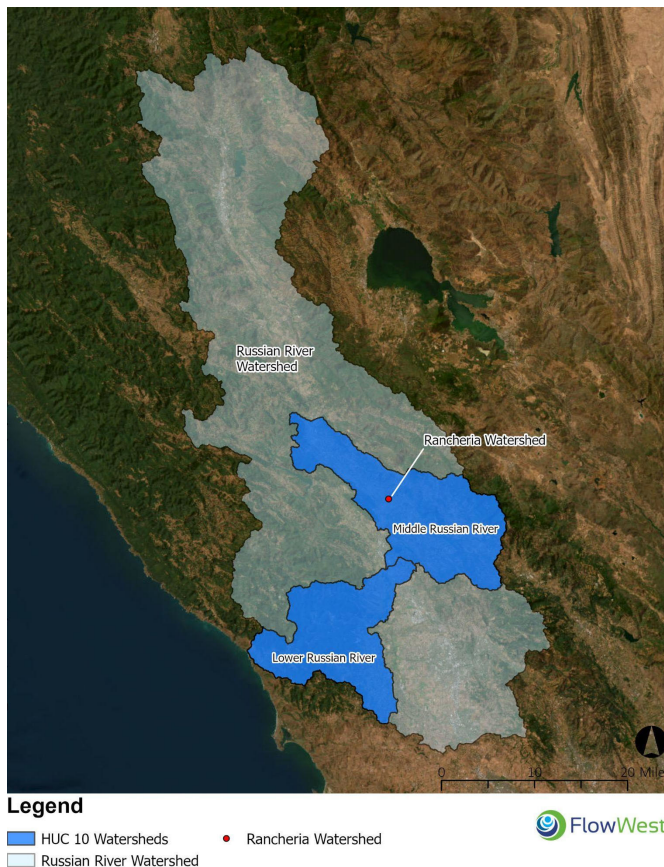


Figure 2 Map of Russian River Watershed HUC 10 watersheds, and project location, Rancheria Creek Watershed, in red.

Does the project provide regional benefits, in addition to fish or habitat restoration, including:
This project will support tribal, environmental, and municipal water needs and provide job creation. Removal of invasive *Arundo* and plating of the native riparian corridor will increase the flow in the Russian River and benefit riparian species as well as downstream municipal water supplies. The construction of proposed project actions will create job opportunities for communities in the surrounding area.

Is this project a component of a broader strategy or plan to replace aging facilities with alternate facilities providing similar benefits? Describe how this project fits within the strategy or plan and how it will continue to provide benefit.

The 5 actions proposed in this project are part of a broader suite of actions described in the Dry Creek Rancheria Water Resources Climate Adaptation Plan. The Dry Creek Rancheria Water Resource Climate Adaptation Plan is an assessment of the watershed and aquatic and riparian species, water resource needs, and uses of treated wastewater from Dry Creek Rancheria (DCR) facilities reflective of current and potential future climate change impacts. The recommendations developed in the Adaptation plan embody a focus on strategies effective in the near and long-term and consider DCR within the broader landscape and watershed contexts. The proposed restoration and water reuse actions will help DCR adapt to climate change by efficiently managing water resources, improving wildlife habitat, and adaptively managing projects. The Dry Creek Rancheria Water Resources Climate Adaptation Plan is attached in Appendix B.

Describe the status of the species and/or habitat that will benefit from the project:

This project would benefit the following threatened and endangered species: bald eagle (*Haliaeetus leucocephalus*), steelhead central California coast DPS (*Oncorhynchus mykiss irideus*), and chinook salmon California coastal ESU (*Oncorhynchus tshawytscha*). This project focuses on enhancing flows and restoring habitat for listed anadromous fish - steelhead and salmon, but will also improve the habitat for bald eagle.

Steelhead and Salmon are subject to [Final Coastal Multispecies Recovery Plan for California Coastal Chinook Salmon, Northern California Steelhead and Central California Coast Steelhead](#) recovery plan developed by NOAA in 2016. Critical habitat was designated in 2005. This project impacts critical habitat by restoring access to coldwater pools on Rancheria Creek for populations of steelhead and salmon migrating up the Russian River. Additionally, the Russian River has been designated as a site of special interest for NOAA Fisheries.

What are the types and quantities of aquatic ecosystem benefits provided?

Table one summarizes the ecological quantitative benefit of each proposed action.

Table 1 Quantification of ecological benefits anticipated from each flow enhancement or restoration action

#	Flow Enhancement or Restoration Action	Ecological Benefit
1	Plant native riparian vegetation in the vineyard reach	1,600 feet of channel, 1.2 acres, 15-20 degree F temperature decrease from shading Rancheria Creek
2	Replace SR 128 culvert	Remove listed fish passage barrier and provide access to 3,800 ft of stream.

3	Replace Rancheria Road culvert	Remove another fish passage barrier between the existing restoration project and the Russian River and provide access to 3,200 ft of stream.
4	Stormwater detention pond	Capacity of 159,559 gallons, 0.5 acre feet
5	Bank Stabilization	1,800 feet of incised channel restored

Species and Habitat Benefits: Any projected increases in species populations or species health projected to result from your project?

This project will remove a fish passage barrier so it is anticipated that chinook will return to Rancheria Creek and that steelhead will come in larger numbers. The Tribes foundational documents describe Chinook salmon in Rancheria Creek. The Russian River watershed, with Rancheria Creek being a tributary, historically supported numerous anadromous fish, including Coho salmon, Chinook salmon, and Steelhead trout. The Russian River watershed has been designated as impaired by temperature and sediment under the Clean Water Act Section 303(d). This project is anticipated to improve conditions for anadromous fish which is anticipated to increase populations.

To what extent will the project improve habitat through restoration activities or improved fish passage?

The removal of 2 fish barriers will open up 3,800 ft of Rancheria Creek to migration and habitat for Salmon and Steelhead on Rancheria Creek. This habitat contains coldwater pools which are critically needed for anadromous fish populations on the Russian River. Connecting this channel will also improve downstream habitat by decreasing temperature and increasing water quality. Provide support for your response, including citations to relevant studies and statistics, or other support.

Watershed Benefits: Any anticipated improvement of water quality?

Temperature Improvements

Planting of the native riparian barrier will provide a 15-20 degree F temperature decrease from shading Rancheria Creek. Figure 3 below shows high temperatures in the vineyard reach in comparison to the upper rancheria pools and the floodplain areas below. Planting a native riparian barrier will provide shade to cool that section of the river. Furthermore, reestablishing connectivity will allow cooler water from upstream pools into that reach and into downstream sections of

Rancheria Creek and the Russian River.

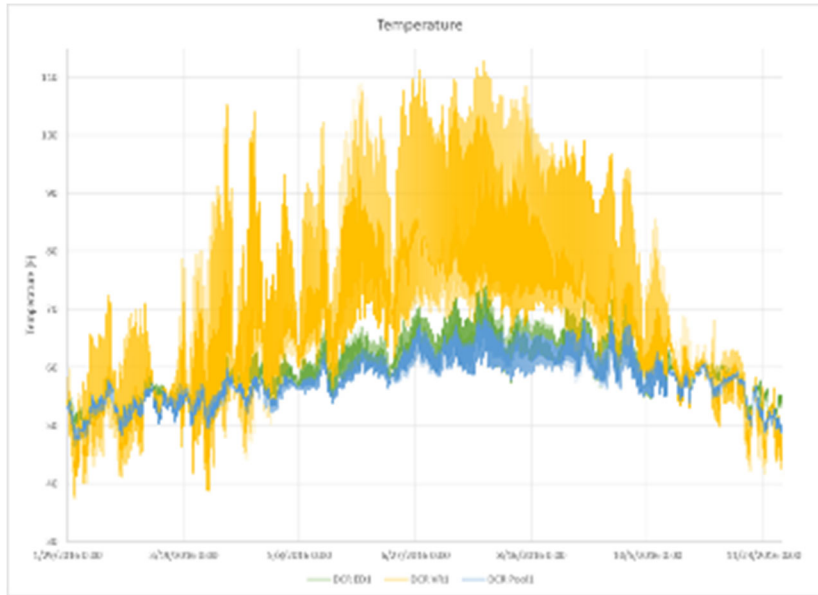


Figure 3 Comparison of temperature data from the upper, middle, and lower reach of Rancheria Creek

All temperature analyses were done as part of the Dry Creek Rancheria Water Resource Climate Adaptation Plan (appendix B).

Water Quality Improvements: To what extent will the project benefit ecological function?

This project will benefit ecological function by improving sediment transport. The Russian River watershed is listed as impaired for sediment and temperature. Rancheria Creek actively transports sediment from the steep hills to the Russian River. Upstream of State Route 128, Rancheria Creek is severely incised. Sediment the scoured from the bed of the channel and transported from frequent landslide inputs has been deposited in the channel downstream of State Route 128 and has decreased the conveyance of the channel and flow becomes subsurface.

Bank stabilization will stabilize the banks of 1,800 feet of incised channel reducing sediment from erosion of that section of river. Revegetation of the riparian corridor in the vineyard reach will also act as a riparian buffer on 1,600 feet of channel from the active vineyard (slow velocity of overland flow from the vineyard to the creek, deposition of fine sediment in riparian buffer area instead of in Rancheria Creek, filter pesticides, herbicide, and fertilizer). Riparian Buffer zones trap sediment and filter pollution¹⁰.

Water Quality Improvements: To what extent will the project build ecosystem resiliency?

This project helps build ecosystem resilience through the reduction of impacts of climate change, removing invasive species, restoration of native species, improvement of habitat fragmentation, and assistance in helping aquatic ecosystems recover from disturbances such as floods, wildfire, or

¹⁰ Wu, S., Bashir, M. A., Raza, Q., Rehim, A., Geng, Y., & Cao, L. (2023). Application of riparian buffer zone in agricultural non-point source pollution control—A review. *Frontiers in Sustainable Food Systems*, 7. <https://doi.org/10.3389/fsufs.2023.985870>

drought. The actions proposed in this project specifically reduce impacts of climate change by decreasing temperature by 15-20 degrees on 1,600 feet of channel and 1.2 total acres through the restoration of native species. The actions will also remove fish barriers improving habitat fragmentation and helping provide connectivity in times of drought. See additional information in the Climate Adaptation Plan (appendix B).

Water supply benefits to the Stream Flow Enhancement and Restoration Project include: Construction and operation of a million gallon storage tank in conjunction with the existing on site wastewater treatment plant to increase flows in the creek during extended dry conditions to maintain holding habitat in pools for the steelhead and other native fish species, and Removal of arundo that consumes significantly more water than native riparian vegetation. Small increases in the amount of water released into Rancheria Creek (1.0 to 0.1 cfs) will have a significant impact on base flows during the summer when the lower reaches of the creek go dry.

Discharge to Rancheria Creek from the existing wastewater treatment plant will increase summer baseflows in Rancheria Creek and to a lesser degree flows in the Russian River. The maximum capacity of the wastewater treatment plant is 0.3 cfs or 219.7 acre feet per year. Release of treated wastewater stored in the million gallon tank can add an additional 0.1 cfs over 15 days or 1.5 cfs over 1.5 days into Rancheria Creek. When Rancheria Creek is at summer base flow, a 0.3 to 1.8 cfs increase in flows will significantly increase the flow in the creek and is expected to provide passage for steelhead and salmon from the confluence with the Russian River to the upper Rancheria Creek watershed where the creek is dry during the summer under current conditions.

Base flows in the Russian River range from 50 cfs to 60 cfs for monthly mean discharge at the Russian River near Healdsburg gage (USGS # 11464000) under recent drought conditions during the driest months of the year. Reduction of shallow groundwater extraction from arundo removal as part of this project could save 58,001,478 gallons per year or 178 acre feet per year (California Invasive Plant Council, 2011). The water saved from arundo removal could increase discharge in the Russian River by 0.25 cfs mean daily discharge.

E.1.1.1. Evaluation Criterion B- Prior Restoration Planning and Stakeholder Involvement and Support (30 or 40 points)

Describe the planning effort that supports your proposed project, i.e., planning that took place before you submitted your proposal.

Planning for this project has been completed during the development of the Dry Creek Climate Adaptation Plan Appendix B and through the WCB Streamflow Enhancement project. Initial design drawings and specifications for this project were developed as part of the Dry Creek Climate Adaptation Plan. Significant planning, design, and permitting was completed during the WCB Streamflow project including 60% - final design materials, permitting from Sonoma County and from resource agencies including:

Significant permitting has been completed for this project. See [permit section](#) for more details.

DCR also purchased and installed monitoring equipment to identify timing for flow augmentation and assess future restoration actions that will improve the hydrograph in Rancheria Creek. They installed a total of eight pressure transducers at four locations in Rancheria Creek to measure stage and water temperature, which will also be used to assess water quality conditions for steelhead and coho. At the stream gage locations (except for the upstream pool), permanent end pins were installed to stretch a tape for velocity measurements during different flow events. Air temperatures were measured at each monitoring location. All project sites were documented with digital photographs looking at each bank and upstream and downstream. Baseline vegetation was surveyed in the vineyard reach and on the Russian River floodplain.

Describe the specific planning, strategy, study, and design document(s) (plan(s)) that support your project. Explain when the plan was prepared and for what purpose.

The DCR Water Resource Climate Adaptation Plan completed the initial study, planning, and strategy for the five actions proposed in this project. This plan proposed a larger suite of actions making up a Climate Adaptation Plan. Continued planning was completed as part of the WCB streamflow enhancement project on Dry Creek, including design documents and permitting of these actions.

Additional, Dry Creek Rancheria prepared the following documents as part of the planning process:

- In 2018, Dry Creek Rancheria completed a Stream Flow Enhancement and Restoration Biological Assessment for the U.S Fish and Wildlife Service, National Marine Fisheries Service, and the California Department of Fish and Wildlife.
- In 2016, Dry Creek Rancheria submitted a Mitigated Negative Declaration to Sonoma County to assess project effects on the environment.. Based on the attached Initial Study, the project described above will not have a substantial adverse impact on the environment, provided that the mitigation measures identified in the Initial Study are included in the project.

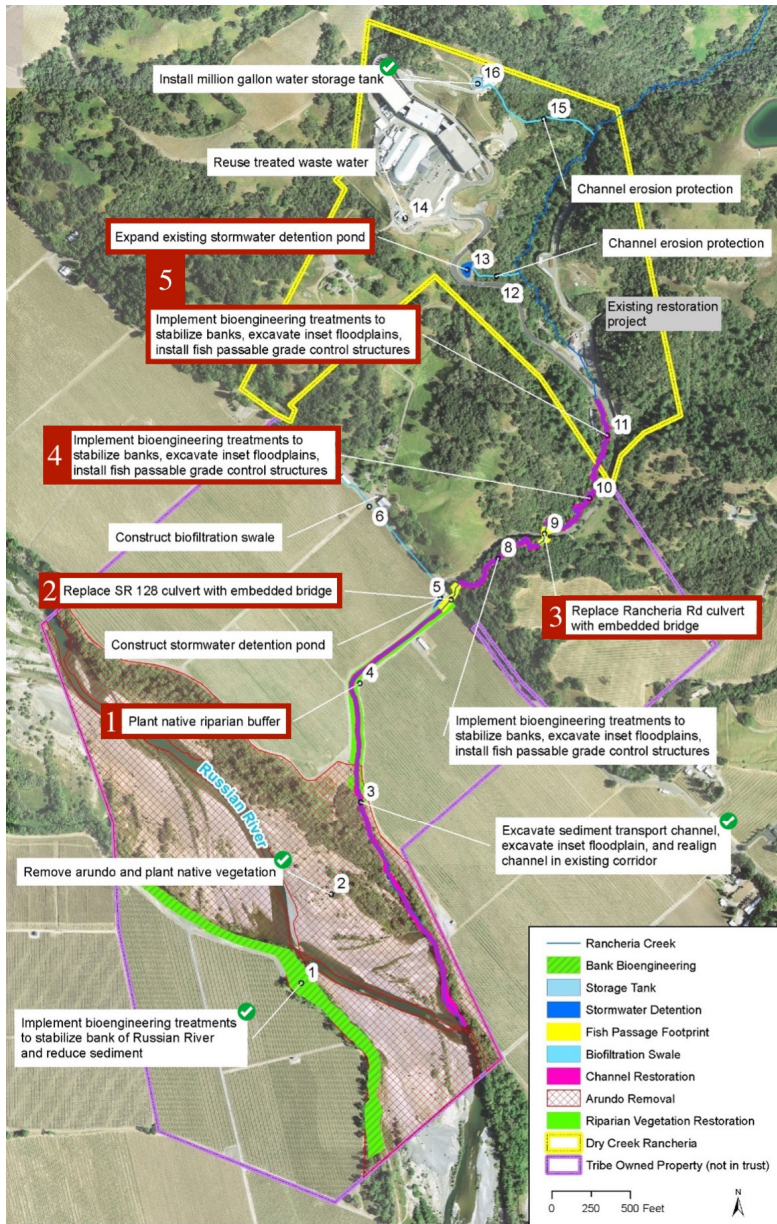


Figure 4 Location of all flow enhancement and restoration actions on the Dry Creek Rancheria and adjacent Tribe-owned property. The actions proposed for this project are outlined in red. Completed actions marked with a green check.

1 Plant native riparian buffer

Preliminary study and planning were completed for native riparian buffer as part of the DCR Climate Adaptation Plan. Final designs and permits were completed as part of the WCB streamflow enhancement project.

Permits have been acquired for this action from all appropriate agencies. Please refer to [full permitting list above](#) to see specifics on all permits.

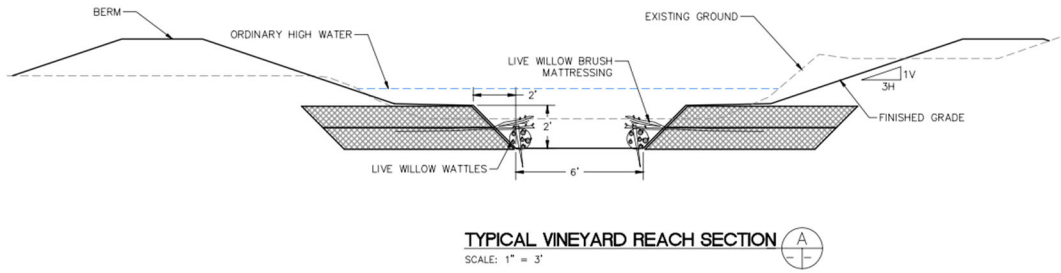


Figure 5 Typical Vineyard reach section detail from final design of Riparian Native Buffer Planning.

2 Replace SR 128 culvert with embedded bridge

Preliminary study and planning was completed for SR 128 culvert replacement as part of the DCR Climate Adaptation Plan. 90% designs were completed as part of the WCB streamflow enhancement project.

Permits have been acquired for this action from all appropriate agencies. Please refer to [full permitting list above](#) to see specifics on all permits.

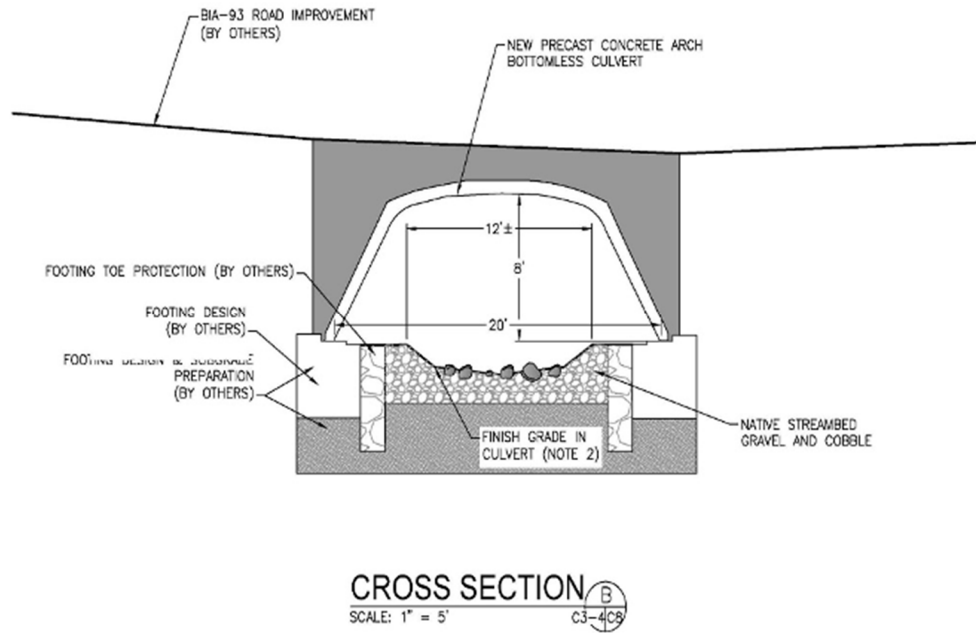


Figure 6 Embedded bridge detail for Rancheria Road

3 Replace Rancheria Rd culvert with open-bottom concrete arch culvert

Preliminary study and planning was completed for SR 128 culvert replacement as part of the DCR Climate Adaptation Plan. 90% designs were completed as part of the WCB streamflow enhancement project.

Permits have been acquired for this action from all appropriate agencies. Please refer to [full permitting list above](#) to see specifics on all permits.

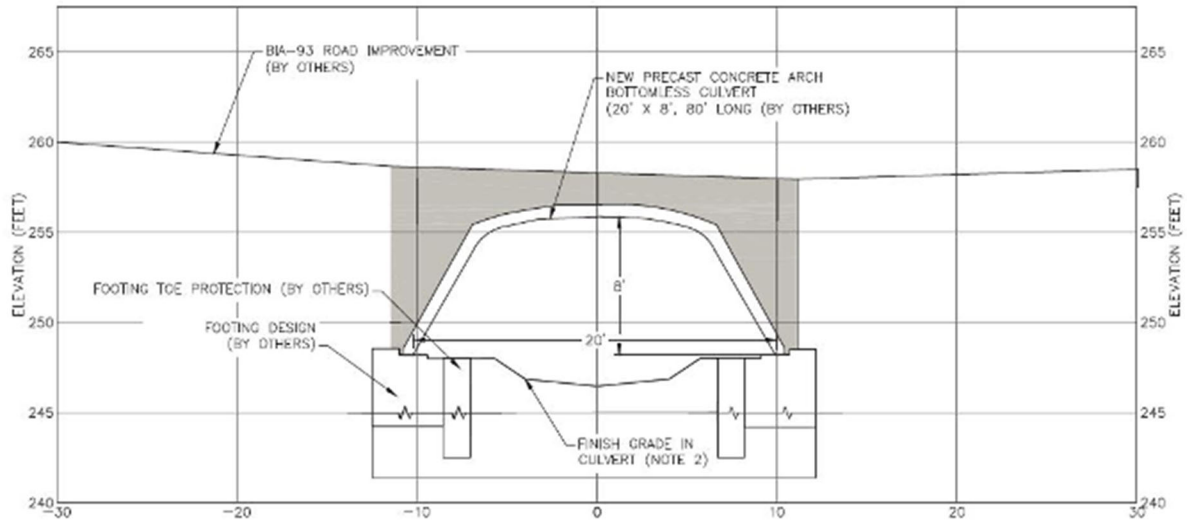


Figure 7 Design detail of the arched natural bottom culvert planned for installation under Rancheria Road.

4 Expand the existing stormwater detention pond

Preliminary study and planning was completed for the expansion of the existing stormwater detention plan as part of the DCR Climate Adaptation Plan. 60% designs were completed as part of the WCB streamflow enhancement project.

Permits are in process for this action from all appropriate agencies. Please refer to [full permitting list above](#) to see specifics on all permits.

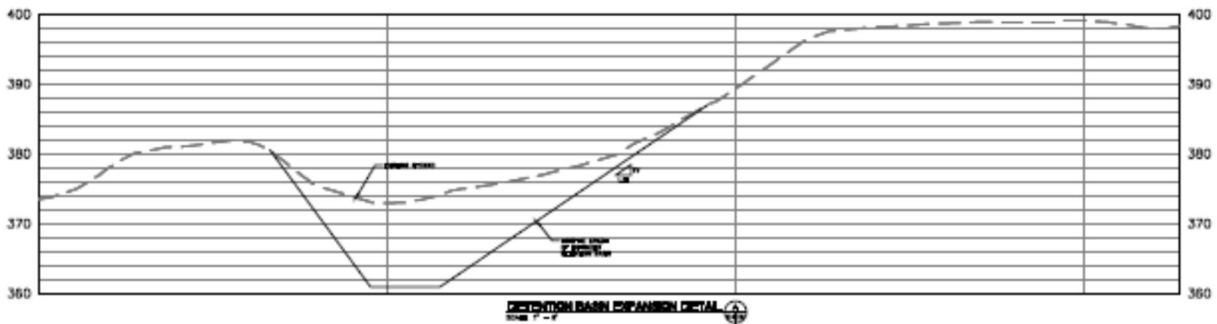


Figure 8 Cross Section of detention basin expansion

5 Bank Enhancement

Preliminary study and planning was completed for bank enhancement as part of the DCR Climate Adaptation Plan. 60% designs were completed as part of the WCB streamflow enhancement project. Permits are in process for this action from all appropriate agencies. Please refer to [full permitting list above](#) to see specifics on all permits.

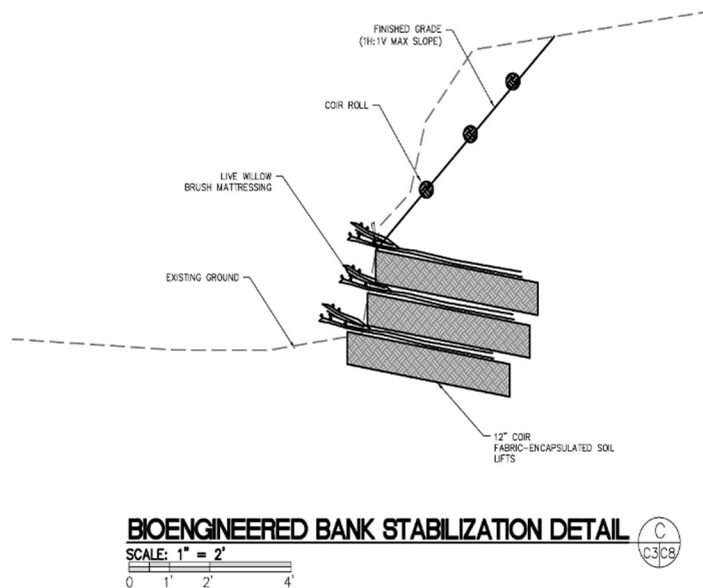


Figure 9 Example background bank stabilization detail

See Appendix C for additional design documents.

Does the proposed project contribute to a regional or watershed scale fish passage or aquatic ecosystems strategy or priority restoration efforts?

This project contributes directly to the Dry Creek Rancheria Water Resource Climate Adaptation Plan. It also is consistent with the following State and Federal Plans:

The project is consistent with the following tasks in the *Updated Statewide 2013 Task List for the Steelhead Restoration and Management Plan for California* (DFG 1996) specifically addressing steelhead habitat in the Russian River watershed:

- Task # CC-02-201-01: Remove and/or modify barriers to steelhead migration throughout the Russian River watershed.
- Task # CC-12-201-01: Develop designs for barrier removal or modification.

The project is also consistent with the following goals and recommendations outlined in the Recovery Plan for Evolutionarily Significant Unit (ESU) of Central California Coast Coho Salmon Final Plan (2012): Within the Riparian task (8.1), this project supports the following sub-tasks:

- Task # cccc-CCC-8.1.1: Improve riparian condition
- Task # cccc-CCC-8.1.1.1: Promote growth of larger diameter trees inadequately sized buffers where appropriate.
- Task # cccc-CCC-8.1.1.2: Protect and manage existing riparian areas for site potential composition and structure such that trees are allowed to mature, provide canopy, die and recruit to streams naturally.
- Task # cccc-CCC-8.1.1.3: A comprehensive evaluation and monitoring program should be implemented to determine areas where poor canopy conditions are producing water temperatures limiting salmonid survival.
- Task # cccc-CCC-8.1.1.4: Forestry, agricultural, and grazing practices should allow riparian zones to maintain a full range of natural vegetative characteristics, i.e., characteristics

occurring in watersheds with natural disturbance regimes. Riparian zones should ideally be wide enough to fulfill all functions necessary for maintaining aquatic productivity

- Task # cccc-CCC-8.2.1.1: Develop adequately sized riparian setbacks/buffers where they do not currently occur, and enforce requirements of local regulations where they do.

Within the Roads/Railroads task (23.1), this project supports the following sub-tasks:

- Task # cccc-CCC-23.1.1: Prevent impairment to watershed hydrology
- Task # cccc-CCC-23.1.1.1: Size culverts to accommodate flashy, debris-laden flows and maintain trash racks to prevent culvert plugging and subsequent road failure.
- Task # cccc-CCC-23.1.2: Prevent impairment to instream substrate/food productivity
- Task # cccc-CCC-23.1.2.7: Evaluate stream crossing for their potential to impair natural geomorphic processes. Replace or retrofit crossings to achieve more natural conditions that meet sediment transport goals.

Within the Severe Weather Patterns task (24.1), this project supports the following sub-tasks:

- Task # cccc-CCC-24.1.1: Prevent impairment to watershed processes due to climate change
- Task # cccc-CCC-24.1.1.5: Promote and support policies that explicitly maintain instream flow by limiting water withdrawals, enhancing floodplain connectivity by opening historically flooded areas where possible, removing anthropogenic barriers for fish passage, and riparian forest to increase habitat resilience.
- Task # cccc-CCC-24.1.1.7: Minimize anthropogenic increases in water temperatures by maintaining well-shaded riparian areas. Work to encourage and incorporate climate change vulnerability assessments and climate change scenarios in consultations, permitting, and restoration projects to assess the impacts on coho salmon.
- Task # cccc-CCC-24.1.1.9: Maximize connectivity, and increase diversity, of instream habitats to allow a full range of opportunities for salmon to exploit as environmental conditions shift.

The project is aligned with many of the nearly 3,000 identified recovery action steps described in the Recovery Plan for the ESU of Southern Oregon/Northern California Coast Coho Salmon (September, 2014). The recovery actions that mirror the restoration actions in this project fall under the following recovery target areas: Hydrology; Monitor; Passage; Riparian; Sediment; and Water Quality..

- Hydrology: Improve flow timing or volume: Maintain flow gage annually (Step ID: SONCC-UKR.3.1.74.2)
- Monitor: Track habitat condition: Measure indicators for spawning and rearing habitat. Conduct a comprehensive survey (Step ID: SONCC-GutC.27.2.5.1)
- Passage: Improve access: Upgrade culverts to accommodate fish passage at all life stages (Step ID: SONCC-ElkC.5.1.34.1)
- Riparian: Improve wood recruitment, bank stability, shading, and food subsidies: Remove invasive species which are inhibiting establishment of native riparian vegetation (Step ID: SONCC-ElkC.7.1.35.1)
- Sediment: Reduce delivery of sediment to streams: Treat priority sediment source sites, guided by the plan (Step ID: SONCC-GutC.8.1.24.2)

- Water Quality: Reduce pollutants: Implement strategy to minimize pollution runoff to streams (Step ID: SONCC-HBT.10.2.16.2)

The project is also supports recovery action steps described in the California Coastal Chinook Salmon ESU (October, 2015). The recovery actions for chinook salmon supported by this project, that were not previously described in the coho salmon recovery plans are described below:

- ESU-CCCh-25.2.1: Prevent or minimize impairment to watershed hydrology (Water Diversion/Impoundments)
- ESU-CCCh-23.1.2.2: Bridges associated with new roads or replacement bridges (including railroad bridges) should be free span or constructed with the minimum number of bents (i.e., pilings) feasible in order to minimize drift accumulation and facilitate fish passage. (Roads/Railroads)
- ESU-CCCh-14.1.1: Prevent or minimize reduced density, abundance, and diversity based on biological viability criteria (Disease/Predation/Competition)
- ESU-CCCh-11.1.1: Increase abundance, spatial structure and diversity (Viability)

This project also supports county-level and regional integrated restoration and resource management plans, including the North Coast Integrated Regional Water Management Plan (NCIRWMP) developed by the North Coast Resource Partnership. Specifically, this project addresses the following NCIRWMP Objectives:

- (#5) conserve, enhance, and restore watersheds and aquatic ecosystems;
- (#6) enhance salmonid populations by conserving, enhancing, and restoring required habitats and watershed processes; and

Rancheria Creek restoration is also aligned with the objectives defined by the Russian River Watershed Adaptive Management Plan (RRWAMP) developed by Mendocino County Resource Conservation District, including:

- (Goal I; Objective 10) restore degraded upland and riparian habitats and processes utilizing peer-reviewed stream corridor protection and watershed management methods, including but not limited to: (1) approaches that restore or enhance functional processes; (2) invasive species removal and management; (3) sensitive species enhancement; and (4) habitat enhancement and native plant revegetation;
- (Goal III; Objective 31) address other identified water quality problems, such as stormwater, sediment, nutrient, pathogen, and toxic contamination of surface water and groundwater in the Russian River watershed;
- (Goal IV; Objective 38) maintain and enhance salmonid population levels to allow for the resumption of Tribal, recreational, and commercial fisheries; and
- (Goal IV; Objective 39) increase resiliency of sensitive habitats and populations to climate change through enhancement of biodiversity, habitat connectivity, and ecological function.

What was the scope of the planning effort that supports your project? Describe the geographic extent and types of issues.

The Dry Creek Rancheria Water Resource Climate Adaptation Plan focused on a Primary Reach of 1.5 river miles with upstream River Mile GPS Coordinates of 38.705222, -122.851577 and downstream River Mile GPS Coordinates of 38.688289, -122.857806.

The Dry Creek Rancheria Water Resource Climate Adaptation Plan is an assessment of the watershed and aquatic and riparian species, water resource needs, and uses of treated wastewater from Dry Creek Rancheria (DCR) facilities reflective of current and potential future climate change impacts. The recommendations developed herein embody a focus on strategies effective in the near and long-term and consider DCR within the broader landscape and watershed contexts. The proposed restoration and water reuse actions will help DCR adapt to climate change by efficiently managing water resources, improving wildlife habitat, and adaptively managing projects. The planning effort included a focus on water quantity, water quality, water and air temperature, habitat access, and benefits to anadromous fish and other species within Rancheria Creek and the Russian River. This project is also consistent with additional state and federal plans listed above with larger scopes.

What stakeholders were involved in preparing the plan and do they represent diverse interests? What process was used to solicit and incorporate stakeholder input?

Stakeholder involvement from Tribal members was solicited for this project during tribal meetings. Additional stakeholders in this process include the USFWS which served as the lead agency for environmental review under NEPA for the Phase I restoration project (landslide stabilization, culvert replacement, and channel restoration), and Sonoma County as the lead for environmental review under CEQA for this project. In addition to these stakeholders, CDFW has provided fisheries support for steelhead relocation.

This project is also supported by local, state, federal, and regional environmental protection organizations such as: USFWS, Sonoma County Permit and Resource Management Department, Sonoma County Supervisor James Gore, US Army Corps of Engineers, California Department of Fish and Wildlife (CDFW), Russian Riverkeeper, Trout Unlimited, The Center for Social and Environmental Stewardship, and West Coast Watershed. Please see attached letters of support in Appendix D for a detailed description of this project's significance to these groups.

If the plan was prepared by an entity other than the applicant, explain why it is applicable.

This plan was developed by Dry Creek Rancheria.

Please describe the process for stakeholder involvement and comment on the planning and design effort supporting your project. Describe how comments were requested, the types of comments received, and how they were considered.

Dry Creek Rancheria and FlowWest engaged with regulatory agencies early in the design process to obtain input on planning and design. Multiple components of the project were shaped by collaboration with stakeholders. Key components of the restoration design that were developed in collaboration with stakeholders includes:

- Bank enhancement along the Russian River - USFWS & NOAA
- Rancheria Creek sediment delta reconfiguration - USACE
- Floodplain fine sediment water quality enhancement basins - NOAA
- Floodplain revegetation - Russian River Keeper

Feedback on the planning and design was a collaborative effort and the USACE, NOAA, USFWS, and Russian River Keeper provided recommendations that were included in the conceptual design and CEQA document. USFWS provided guidance on Beaver Dam Analogs (BDAs) that were implemented along the West bank of the Russian River. The Rancheria Creek sediment delta was developed during a pre-consultation meeting the USACE. Bank enhancement design and floodplain fine sediment water quality enhancement basins were developed during discussions with NOAA. Lastly, the Russian River Keeper provided guidance on natural recruitment for native revegetation on the floodplain.

Describe how the plan provides support for your proposed project. Does the proposed project address a goal or need identified in the plan? Describe how the proposed project is prioritized in the referenced plan.

The Dry Creek Rancheria Water Resource Climate Adaptation Plan directly describes all 5 actions proposed in this project as priority actions to build ecosystem resilience and improve conditions on Rancheria Creek.

Potential management actions were prioritized based on the following criteria for water quantity and quality-based goals for sustaining aquatic species:

- Flow enhancement
- Water quality improvement
- Habitat impact
- Sediment reduction
- Construction costs

All actions proposed in this project were considered high priority based on above criteria.

Describe the process you used to compare alternatives.

A consultant conducted an opportunity analysis for each of the alternatives. They used the constraints and opportunities criteria to rank and prioritize the adaptation actions. Additionally, they identified compatible and incompatible adaptation actions along with actions that in combination will provide positive or negative feedback for project objectives. Lastly, they recommended the preferred project alternative(s).

Did you compare the benefits of different project alternatives?

A consultant prioritized each of the adaptation actions, they developed criteria in conjunction with DCR to optimize natural resource management and climate adaptation. The first criteria in the ranking matrix qualifies flow enhancement. Flow enhancement during critically dry periods was identified as the primary adaptation action and only adaptation actions that enhanced stream flow or had no decrease on streams flows were considered. Adaptation actions that increase the amount of flow in Rancheria Creek were considered an improvement, while actions that are unlikely to decrease the flow in Rancheria Creek were considered to have no or low impact. The next criteria they used to prioritize climate adaptation actions was water quality improvement. From a water quality perspective, our primary concerns are temperature and sediment. Climate adaptation actions were evaluated by the degree to which they reduce instream water temperatures and reduce the amount of fine sediment produced. Currently, they are no know water contaminate or pollution concerns, but agricultural runoff and stormwater runoff from road and impervious services were also included in

our evaluation. They then filtered each of the projects by the impact or improvement to habitat. Alternatives that improve habitat conditions after the project is completed were categorized as good or improved, alternatives with limited to no change on the quality of habitat were categorized as no impact or no change, and alternatives that decreased the quality of the habitat after implementation were categorized as expensive or poor. They assessed sediment management and categorized sediment reduction as small, medium, and high. Reduction of the short-term sediment supply rate or managed by each alternative. Management of sediment was given a higher priority than capture of sediment and removal from the watershed. In general, alternatives designed to restore physical processes were given a higher ranking. Lastly, DCR has limited financial resources for adaptation actions and expensive projects will require leveraging DCR resources to apply for implementation grants. Estimated construction costs were categorized as expensive, medium, and inexpensive.

Using these criteria, they qualitatively summarized each adaptation action into a table using symbols for easy comparison between the different alternatives. A “+” symbolizes a positive outcome from implementation of an adaptation action, a “=” represents a medium or unchanged outcome from implementation of an adaptation action, and a “-“ represents a negative change or impact from the implementation of an adaptation action.

Based on the rankings, they recommend the a series of projects including the proposed actions described in this proposal: Plant native riparian buffer, Replace SR 128 culvert with embedded bridge, Replace Rancheria Rd culvert with open-bottom concrete arch culvert, Expand the existing stormwater detention pond, and Bank Stabilization. The criteria used in the ranking of the adaptation actions were not equally weighted. Ultimately, projects were selected by balancing the criteria presented in Table 4 of the DCR Water Resource Climate Adaptation Plan (Appendix B) and management objectives for Dry Creek Rancheria and Rancheria Creek.

Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the project? This project to enhance flows and restore Rancheria Creek has been developed as part of a broader plan to reestablish more historic hydrologic conditions and the riparian corridor in the Russian River watershed. Therefore, this important work is encouraged and supported by various stakeholder groups in the Alexander Valley, and throughout the state and region. This project is also a part of the restoration implementation within the broader scope of the DCR’s Climate Adaptation Plan which aims to improve resilience of water resource management under more variable climatic ecosystem drivers. Moreover, the creek restoration is not only viewed by the community as a positive in terms of the improved physical environment but is also held as a critical cultural asset, providing habitat for species of vital significance to the Pomo Indians and the broader community. These efforts aim to save resident steelhead in Rancheria Creek and to fulfill the DCR’s vision of a restored riparian corridor from the Russian River to the headwaters of Rancheria Creek. Stakeholders in this process include the USFWS that served as the lead agency for environmental review under NEPA for the Phase I restoration project (landslide stabilization, culvert replacement, and channel restoration) and Sonoma County as the lead for environmental review under CEQA for this project. In addition to these stakeholders, CDFW has provided fisheries support for steelhead relocation.

Dry Creek Rancheria has developed a broad coalition of partners for projects in the Alexander Valley and along the Russian River that includes farmers, agencies, and non-profits. Partners include local farmers – Jackson Family Wines, Constellation, Foley Family Wines, Rodney Strong, Vino Farms, Silverado, Robert Young; agencies - DWR FloodMAR, the North Bay Water District, National Marine Fisheries Service (NMFS), Sonoma County Farm Bureau, North Coast Regional Water Quality Control Board, Sonoma County, and Sonoma Water; and nonprofits - Trout Unlimited, Sonoma Alliance for Viticulture and the Environment. All of these partners are dedicated to creating sustainable water resources with benefits to local fisheries, agriculture, and communities.

Dry Creek Rancheria is developing a land and water resource management agency to formalize the collaboration structure and provide a mechanism for local resources management for the Alexander Valley Floodplain Managed Aquifer Recharge Program that was funded by DWR, California Department of Conservation, and the BIA for \$11 million. The Alexander FloodMAR project includes developing a governance strategy to create On Farm Recharge (OFR) Districts. In addition to leveraging local farms and their infrastructure, the FloodMAR project also includes the development of a regional conveyance system to deliver water to those farms. As the sponsor of the grant, and as a public agency, the Dry Creek Rancheria will oversee these new regional assets.

This project is also supported by local, state, federal, and regional environmental protection organizations such as: USFWS, Sonoma County Permit and Resource Management Department, Sonoma County Supervisor James Gore, US Army Corps of Engineers, California Department of Fish and Wildlife (CDFW), Russian Riverkeeper, Trout Unlimited, The Center for Social and Environmental Stewardship, and West Coast Watershed. Please see attached letters of support (Appendix D) for a detailed description of this project’s significance to these groups.

DCR has received support through grant funding from the U.S. Environmental Protection Agency (USEPA) and U.S. Fish and Wildlife Service (USFWS) and the Wildlife Conservation Board (WCB), cost share for this project, to fund other actions defined in the DCR Climate Adaptation Plan. The DCR anticipates further support from these agencies to continue restoration efforts.

Is there opposition to the proposed project effort? If so, describe the opposition and explain how it will be addressed. The opposition will not necessarily result in fewer points.

There is no know opposition to this project effort.

E.1.2. Evaluation Criterion C— Project Implementation and Readiness to Proceed (15 points)

Describe the implementation plan for the proposed construction project.

A proposed timeline for implementation is shown in figure 10 below. This project would begin in Jan 2024 with some finalizing of planning and permitting. Native plants would be propagated and cared for in the nursery beginning in early 2024 to allow for time for them to grow before planting

in the ground. Construction would begin summer of 2024, beginning with the two culvert replacement projects. Culvert replacement would happen in the summer when the creek is dry. These projects would be installed by end of 2024. Planting of the native riparian barrier would be completed in spring 2025. Planting would occur in spring to give plants the best chance of success. Irrigation would be set up in the vineyard reach in the spring to provide water to the native plant barrier in the first few summers while the plants get established. In the summer of 2025, the final permitting and construction of the stormwater detention pond and bank stabilization efforts would be completed. These efforts would occur in the summer while the downstream reach of the creek is dry.

Proposed Action	2024				2025			
	Q1 (Jan - Mar)	Q2	Q3	Q4	Q1 (Jan - Mar)	Q2	Q3	Q4
Plant native riparian buffer								
Replace SR 128 culvert with embedded bridge								
Replace Rancheria Rd culvert with open-bottom concrete arch culvert								
Expand the existing stormwater detention pond								
Bank Stabilization								
Key								
Final Planning & Permitting								
Establish plants in nursery								
Construction Implementation								

Figure 10 Proposed timeline

Describe any additional efforts planned to engage with regional stakeholders during the final planning and construction phase of your project.

The tribe will continue to be engaged through tribal meetings.

Identify and describe all engineering and design work that has been performed in support of the proposed project to date. The construction project must include a list of all products in the design package for the project.

List of products in the design package for the project:

- Engineering and Design drawings
 - 100% design drawings have been completed for the Phase I portion of the project. The Phase II restoration actions contain 60 - 100% design drawings

- Highway 128 Culvert replacement with embedded bridge - 95% design drawings
 - Rancheria Road culvert replacement with embedded bridge - 100% design drawings
 - Detention pond expansion - 70% design drawing alternatives
 - Bank enhancement - 60% typical design drawings
- Environmental Assessment and Planning
 - Dry Creek Rancheria Water Resource Climate Adaptation Plan - outlining key project analysis and findings (Attachment B)
 - Biological Assessment for the U.S Fish and Wildlife Service, National Marine Fisheries Service, and the California Department of Fish and Wildlife - completed for the Stream Flow Enhancement and Restoration Project.
 - Permitting
 - CEQA permitting
 - Permitting is completed or underway for all components of the project
 - Permits described in greater detail below
 - Construction cost estimate documents
 - Engineers cost estimates and specifications have been completed for the Rancheria Road culvert replacement component
 - Engineers cost estimate in development for the Highway 128 culvert replacement project
 - Cost estimates have not been developed for other components, but bank enhancement components will be similar to work completed during Phase I

Describe any permits and agency approvals that will be required, along with the process and timeframe for obtaining such permits or approvals.

Most permits and agency approvals have been obtained. Below is the full list of permits and agency approvals that will be needed for this project and current permitting status.

- US Army Corps of Engineers Section 404 Nationwide Permit (Highway 128 Bridge - 95% complete, Rancheria Road Bridge - 95% complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- Regional Water Quality Control Board Section 401 Water Quality Certification For Trust land - Dry Creek Rancheria Environmental Department, for Fee land - EPA, (Highway 128 Bridge - 95% complete, Rancheria Road Bridge - 95% complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- California Department of Fish and Wildlife Section 1601 Streambed Alteration Agreement (Highway 128 Bridge - complete, Rancheria Road Bridge - complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- US Fish and Wildlife Service Biological Opinion and Incidental Take Permit - Covered under NOAA consultation

- NOAA Fisheries Biological Opinion and Incidental Take Permit - Covered under programmatic permit (Highway 128 Bridge - complete, Rancheria Road Bridge - complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- State Water Resources Control Board Storm Water Pollution Prevention Plan (SWPPP) For Trust land - Dry Creek Rancheria Environmental Department, for Fee land - State Board (Highway 128 Bridge - 95% complete, Rancheria Road Bridge - 95% complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- Sonoma County Grading and Use Permit (Highway 128 Bridge - submitted, Rancheria Road Bridge - submitted, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- Sonoma County Water Agency Revocable License for impacts to the Russian River - Complete for work performed on the Russian River, not applicable for Rancheria Creek
- Caltrans Encroachment (Highway 128 Bridge - 90% complete, Rancheria Road Bridge - NA, outside of right-of-way, Vineyard Reach - NA, outside of right-of-way, Bank Enhancement - NA, outside of right-of-way)
- Northern Sonoma County Air Pollution Control District. Will be completed before implementation

If applicable, describe the projects impact on any contractual water or power supply obligations, Indian trust responsibilities, or water rights settlements.

Not Applicable

Please include a description of and a timeframe for obtaining any required easements or permits. All project components are on Dry Creek Rancheria land. No easements or permits will be needed for access.

Does the applicant have access to the land or water source where the project is located? Has the applicant obtained any easements that are required for the project? All project components are on Dry Creek Rancheria land. No easements or permits will be needed for access.

Identify whether the applicant has contacted the local Reclamation office to discuss the potential environmental and cultural resource compliance requirements for the project and the associated costs. Has a line item been included in the budget for costs associated with compliance?

The applicant has not directly contacted Reclamation but has accounted for costs associated with compliance. A contractor will be responsible for construction management for compliance.

Describe any unresolved issues.

Currently no unresolved issues.

E.1.3. Evaluation Criterion D—Presidential and Department of the Interior Priorities (15 points)

If applicable, describe how the project addresses climate change and increases resiliency?

The proposed project flow enhancement and restoration actions were identified and developed as part of the Dry Creek Rancheria Climate Adaptation Plan funded by the Bureau of Indian Affairs Office of Trust Services, through the 2015 Tribal Cooperative Landscape Conservation Program. The objectives of the climate adaptation plan were to 1) study the physical and biological processes in the watershed, 2) identify further restoration and water reuse opportunities, 3) prioritize and develop a framework for future restoration and water reuse projects, and 4) develop conceptual designs for the highest priority projects for climate adaptation in the watershed. The climate adaptation plan identified regional climate predictions that include more frequent and longer lasting droughts, more concentrated precipitation events, and warmer temperatures. These conditions will make access to cool water refugia for steelhead and other native fish critical for survival. Enhancing flows and providing passage from the Russian River to the cool water pools in the upper reach of Rancheria Creek will become crucial for steelhead survival under climate change scenarios

This project is a direct response to climate change and addresses the most critical climate change vulnerabilities related to Rancheria Creek. This project will be informed by and implemented in parallel with the aforementioned Climate Adaptation Plan and therefore has planned, specific, and measurable methods to address climate change impacts on Rancheria Creek. The climate adaptation plan consists of several actions which will support the goals and long-term resilience of the proposed restoration project, including vulnerability assessments, data analysis, and monitoring of restoration implementation. Vulnerability assessments will be conducted for key aquatic species and water needs for tribal facilities. Broad categories of water resource components vulnerable to climate change in Rancheria Creek have been identified as:

- Instream flows
- Riparian vegetation
- Fish passage

Analysis of physical processes impacting these components was conducted during the development of the climate adaptation plan to understand the drivers for climate change resiliency and to guide the best water resource management and restoration actions for Rancheria Creek. The Climate Adaptation Plan analyzed existing water and biological data collected by DCR Department of the Environment and this data will serve as a baseline to evaluate the effectiveness of the restoration project actions.

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?

This project will help build resilient access to habitat and thermal refugia for a variety of species to support anadromous populations in times of drought. This is described in detail in the Dry Creek Rancheria Water Resources Climate Adaptation Plan (Appendix B).

Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation? Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution

Planting of native riparian vegetation will reduce greenhouse gasses by sequestering carbon in soils, grasses, trees, and other native vegetation. The expansion of the stormwater detention pond and the riparian native planting buffer will provide reduce contaminants from runoff improving water quality.

Disadvantaged or Underserved Communities: E.O. 14008 and E.O. 13985 affirm the advancement of environmental justice and equity for all through the development and funding of programs to invest in disadvantaged or underserved communities.

The Project is not located in a disadvantaged community but is located just southeast of the disadvantaged community of Geyserville, which DCR uses as it's mailing address, and to the north a few disadvantaged communities in Healdsburg. The project will provide benefits to both of these disadvantaged areas. Geyserville is the closest community to the Dry Creek Rancheria and local businesses and residents provide many services to the Dry Creek Rancheria. During the construction phase of the project the community of Geyserville will see many direct benefits from construction workers. This project will also provide benefits to The City of Healdsburg, which contains several disadvantaged community block groups, is not a member of the Sonoma County Water Agency, and instead draws its drinking water from wells supplied by the Russian River. Rancheria Creek is a tributary to Russian River, and restoration efforts in that watershed will improve downstream quantity and quality of water for the Healdsburg community.

Tribal Benefits: If applicable, describe how the project directly serves and/or benefits a Tribe, supports Tribally led conservation and restoration priorities, and/or if the project incorporates or benefits Indigenous Traditional Knowledge and practices.

This project directly impacts the Dry Creek Rancheria Band of Pomo Indians through the restoration of their land, habitat improvements for culturally significant fish populations, and increased job opportunities. Even in its degraded current state, Rancheria Creek plays an important role in Pomo culture and heritage. Originally, the Rancheria Creek was envisioned as the life-sustaining component for the Rancheria that would provide salmon for the Tribe. The Tribe also views restoration actions as an opportunity for tribal environmental job training and environmental education to continue the culture heritage between the Tribe and Rancheria Creek and the Russian River.

This project incorporated Indigenous Traditional knowledge and practices. All native plants used in the native riparian buffer will be selected for cultural significance by tribal members, collected on the Rancheria, and propagated in the Tribes' native plant nursery.

E.1.4. Evaluation Criterion E—Performance Measures (10 points)

What are the desired conditions that this project contributes to and how will outcome objectives and project success be measured?

This project contributes to the following desired conditions:

- 1) Decreased air and water temperature on Rancheria Creek in the vineyard reach. This will be measured by a change in temperature from baseline conditions. Baseline temperature modeling has been done and has identified that there is a 15-20 degree Fahrenheit increase in air temperature in the completely exposed channel in the vineyard reach compared to the middle reach that is shaded by riparian vegetation.
- 2) Improved water quality. This will be measured by a change in water quality from baseline conditions. Water quality parameters measured include: turbidity, pH, temperature, dissolved oxygen. Extensive water quality monitoring has been and will continue to be done at multiple sites on Rancheria Creek and on the Russian River.
- 3) Increased habitat for anadromous fish. Depth and velocity measurements will be taken at culvert replacement sites and compared for habitat suitability to existing conditions.

Describe the performance measures that will be used to quantitatively or qualitatively define actual project benefits upon completion of the project.

This project will focus on the following four performance measures to quantitatively define actual project benefits: (1) Air and water temperature on Rancheria Creek, (2) Flow on Rancheria Creek, (3) Water Quality on Rancheria Creek, and (4) Depth and Velocity Measurements on Rancheria Creek at existing fish barriers.

These 4 performance metrics were chosen because they are direct measurements of habitat enhancements produced by project actions. Furthermore, DCR has extensive baseline monitoring of these performance metrics which enables us to directly measure the success of these actions. Action 1 Riparian native planting should decrease air and water temperature on Rancheria Creek and increase water quality in Rancheria Creek and downstream in the Russian River. Action 2 & 3 should change depth and velocity in Rancheria Creek above existing fish barriers increasing salmon habitat. Action 4 should increase water quality on Rancheria Creek and downstream in the Russian River. All actions should improve flow conditions in Rancheria Creek. Action 5 should improve flow and water quality on Rancheria Creek.

Please describe the plan to monitor the benefits over a five-year period once the project has been completed. Provide detail on the steps to be taken to carry out the plan.

Details on monitoring are provided in the monitoring plan provided in Appendix A.

Project Budget

Table 2. Summary of Non Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
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Non-Federal Entities	
WCB - California Stream Flow Enhancement Program	\$ 3,467,000.00
Non-Federal Subtotal	\$ 3,467,000.00
REQUESTED RECLAMATION FUNDING	\$ 4,913,371.00

Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

- The project is within the jurisdiction of the Northern Sonoma County Air Pollution Control District (NSCAPCD). The NSCAPCD does not have an adopted air quality plan because the District is in attainment for all state and federal criteria pollutants. The project will require temporary use of construction equipment, but long term state of the project will not. Therefore the effect on air quality will be limited to the project construction period and would be less than significant with the following mitigation measures incorporated into the project. The use of diesel equipment will be minimized by turning machinery off when not in use, and equipment will be properly maintained. All portable equipment with independent generation capacity on site will be registered with the California Air Resources Board.
- The project will have no long-term effect on PM10, because all surfaces will be paved or landscaped, and dust generation will be insignificant. However, construction dust control is recommended. There could be a significant short-term emission of dust (which would include PM10) during construction. These emissions could be significant at the project level, and would also contribute to a cumulative impact. The following dust control measures will be included in the project: i. Water or alternative dust control method shall be sprayed to control dust on construction areas, soil stockpiles, and staging areas during construction as directed by the County. ii. Trucks hauling soil, sand and other loose materials over public roads will cover the loads, or will keep the loads at least two feet below the level of the sides of the container, or will wet the load sufficiently to prevent dust emissions.iii. Paved roads will be swept as needed to remove soil that has been carried onto them from the project site.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

- Listed species of special concern within the proposed project area include the following: federally endangered (California freshwater shrimp), California species of special concern (Russian River tule perch, Navarro roach), federally threatened (coho salmon central California coast ESU, steelhead central California coast ESU, chinook salmon California coast ESU), federally threatened and California species of special concern (California red-

legged frog), California species of special concern (Foothill yellow-legged frog, Northwestern pond turtle, burrowing owl, Sonoma tree vole). The project would be scheduled to avoid impacts to these species. Vegetation removal would not occur between February 15 and September 1 to avoid impacts to migratory birds. Long term implementation of the project will result in benefits to listed species of concern.

- The list of species of special concern was compiled through multiple environmental assessments completed on the Rancheria specific to the watershed and through the NEPA procedures followed for the Tribe's current creek restoration project - a landslide stabilization and channel restoration project on the Rancheria Creek within the boundary of the Dry Creek Rancheria. A list of the technical reports for the project is provided in the Sources section under Other Technical Reports following the Initial Study.
- Impacts to any listed species would be reduced to less than significant with the following mitigation measures incorporated into the project.
 - In addition to conservation measures and conditions for required permits, the project includes limitations on construction periods to avoid impacts to sensitive habitats. Vegetation removal shall not occur between February 15 and September 1 to avoid impacts to migratory birds. No heavy equipment shall be allowed in the Russian River until June 15. All large woody debris shall be redwood with rootball intact and rootballs shall be sterilized to remove any New Zealand Mud Snail following the guidance developed by NOAA. In addition, the Tribe would monitor Rancheria Creek, including the pools located on Dry Creek Rancheria (tribal trust land), to prevent poaching of all three federally-listed species of salmonids as a condition of approval. Documentation of environmental permits under Section 404 permit from the ACOE, a Section 401 water quality certification from the NCRWQCB, and a Section 1602 Streambed Alteration Agreement from CDFW must be provided prior to Permit Sonoma issuance of the Use Permit.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States"? If so, please describe and estimate any impacts the proposed project may have.

- The purpose of the project is to restore Rancheria Creek, which is subject to CWA jurisdiction. The USACE has been consulted for the overall project and has provided individual permits for the Phase I project and the Rancheria Road culvert replacement component. We anticipate that the USACE will also issue permits for the remaining components as the sole purpose of this project is to restore Rancheria Creek by increasing flow and improving aquatic habitat.

When was the water delivery system constructed?

- The one million gallon storage tank was constructed in 2022. Pipe work is being completed in 2023.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were

constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

- The project will not negatively impact the irrigation system which uses shallow groundwater pumps. Additional flow in Rancheria Creek will likely increase shallow groundwater elevations, which will benefit the vineyard irrigation system.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

- No buildings or structures are eligible for listing on the National Register of Historic Places. There is an abandoned home that will be removed as part of the channel realignment for the Highway 128 culvert replacement component, but the building is not listed. The building has been assessed by the Tribal Historic Preservation Officer and is covered under the USACE 404 permit for the Highway 128 culvert replacement component.

Are there any known archeological sites in the proposed project area?

- No known sites in the construction footprint
- Known sites are located on the Dry Creek Rancheria Trust property, but are outside of the construction footprint

Will the proposed project have a disproportionately high and adverse effect on low-income or minority populations?

- No

Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on tribal lands?

- No

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

- No

Required Permits or Approvals

The following permits are required for this project. The status of each permit is described.

- US Army Corps of Engineers Section 404 Nationwide Permit (Highway 128 Bridge - 95% complete, Rancheria Road Bridge - 95% complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- Regional Water Quality Control Board Section 401 Water Quality Certification For Trust land - Dry Creek Rancheria Environmental Department, for Fee land - EPA, (Highway 128 Bridge - 95% complete, Rancheria Road Bridge - 95% complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- California Department of Fish and Wildlife Section 1601 Streambed Alteration Agreement (Highway 128 Bridge - complete, Rancheria Road Bridge - complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- US Fish and Wildlife Service Biological Opinion and Incidental Take Permit - Covered under NOAA consultation

- NOAA Fisheries Biological Opinion and Incidental Take Permit - Covered under programmatic permit (Highway 128 Bridge - complete, Rancheria Road Bridge - complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- State Water Resources Control Board Storm Water Pollution Prevention Plan (SWPPP) For Trust land - Dry Creek Rancheria Environmental Department, for Fee land - State Board (Highway 128 Bridge - 95% complete, Rancheria Road Bridge - 95% complete, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- Sonoma County Grading and Use Permit (Highway 128 Bridge - submitted, Rancheria Road Bridge - submitted, Vineyard Reach - complete, Bank Enhancement - 50% complete)
- Sonoma County Water Agency Revocable License for impacts to the Russian River - Complete for work performed on the Russian River, not applicable for Rancheria Creek
- Caltrans Encroachment (Highway 128 Bridge - 90% complete, Rancheria Road Bridge - NA, outside of right-of-way, Vineyard Reach - NA, outside of right-of-way, Bank Enhancement - NA, outside of right-of-way)
- Northern Sonoma County Air Pollution Control District. Will be completed before implementation

Overlap or Duplication of Effort Statement

There is no overlap of the construction actions described in this project. However, this project proposal builds off of initial work done as part of a WCB Grant involving 14 actions at Dry Creek Rancheria.

Conflict of Interest Disclosure Statement

No Conflict of Interest exists

Uniform Audit Reporting Statement

Dry Creel Rancheria submitted a Single Audit report for 2022 and the Employer Identification Number (EIN) associated with that report is: 94-2422476

Disclosure of Lobbying Activities

Not applicable

Letters of Support

Letters of support attached in appendix D.

Letter of Partnership

Not applicable Category A applicant

Documents Authorizing the Study, Design, or Construction of a Dam Removal Project

Not Applicable