Memorandum

25 November 2014

To	Nina Hapner, Director of Environmental Planning, Kashia Band of Pomo Indians, Stewarts Point Rancheria		
Copy to	Rebecca Crow, PE GHD		
From	Penny Rogers, EIT	Tel	707 443 8326
Subject	Kashaya Utility District Water Supply Reliability Improvement Project	Job no.	84/10996/

Dear Nina,

This memo provides summary of the work completed and potential funding sources for the Water Supply Reliability Improvement Project at the Kashaya Utility District (KUD).

1 Project Description

Kashaya Utility District (KUD) is proposing to upgrade their water treatment system in order to increase water supply reliability.

The existing raw water storage only has capacity for 5,000 gallons. Raw water is treated through a microfiltration system and stored in the 66,000 gallon treated water tank. The ability to produce potable water is limited by the capacity to store raw water. As part of this project, it is proposed to increase the capacity of the raw water tank to 25,000 gallons.

During the treatment of raw water to potable water, there are two types of system backwash, one with raw water to remove sediment and one for cleaning the membranes. The KUD Operator estimates there is an additional 90 gallons of raw water that is flushed back over the probes in the micro-filtration unit every 40 minutes which runs approximately 4 hours per day (approximately 360 gallons per day of water). The raw water could be captured and stored in the new 25,000 gallon tank for reuse across the Rancheria including for watering heritage apple trees, other important vegetation and used as supplemental water for firefighting activities if needed, however it would need to be filtered to avoid the flused sediment from reentering the filtration system. Water from the "clean in place" cycle would not be captured because it is caustic.

The KUD would also like to install a backup power supply. In the past 24 months, the facility has experienced four power outages, usually two per year, lasting between one and two days. Prior to the drought, the community would experience large storms, which would result in power outages up to four days. The District is able to store 66,000 gallons of treated water, which is approximately 2 days of storage. However to maintain the treated water storage at capacity, water must be continuously pumped from the source to ensure that the 5,000 gallon raw water storage is at capacity. In the case of a power outage, there is no means for filling the raw water storage tank and treated water cannot be produced. This leads to a deficiency in the system. A back up power supply would provide security to the system in case of a power outage.

GHD Inc.
718 Third Street Eureka CA 95501 USA
T 1 707 443 8326 F 1 707 444 8330 E eureka@ghd.com W www.ghd.com

2 Permitting

As the project is located solely within the tribal boundary, the project does not require county building or planning permits. Any structural work must comply with the National Building Code. The State Coastal Commission should be contacted to determine what permits or determinations may be needed.

The project is required to undergo assessment under the National Environmental Policy Act (NEPA). If the project receives funding from the California State Government it will likely require assessment under the California Environmental Quality Act (CEQA).

3 Funding Options

3.1 Indian Health Service

The Indian Health Service (IHS) provides funding based on deficiencies. The very minimum amount of funding to meet the deficiencies is provided. For a project to be eligible for funding, the tribe should write a letter to IHS outlining the system deficiencies and requesting that the project be added to the Sanitary Deficiency System (SDS). The SDS is a federal funding system that operates nationwide and provides funds based on need.

Charles Thomson, of IHS, said that Stewarts Point Rancheria should write to apply to have the projects added onto the SDS however, he thought it was unlikely that the tribe would receive funding as the projects put forward are likely not to be considered a deficiency. There is already raw water storage and a power supply. Contingency projects are not considered deficiency projects. However, GHD has prepared a draft system deficiency letter that may be submitted by the Rancheria with supporting information that the proposed projects do represent a deficiency. The Draft letter is Attachment 1 to this memo and also includes information on the additional filtration that would be needed to reuse the filter backwash water and a cost estimate for all three proposed projects.

3.2 US Department of Agriculture

The USDA has a Loan and Grant program that funds water and wastewater projects for tribes. If the project is related to a sanitation issue the USDA can provide up to 70% of project costs as a grant and 20% of project costs as a loan.

Section 306C - Water and Waste Disposal Grants provides funds to a project that is required to alleviate health risks. Projects aim to provide water and waste disposal facilities and services to low income rural communities whose residents face significant health risks. Under Section 306C 100% of the proposed project could be funded through a USDA grant, however the KUD would need to receive a citation from the IHS or EPA. In the case where there is no sanitary issue, such as for the proposed KUD project, Kashia is eligible for a 45% grant and 55% loan. The loan is a low interest loan.

Funds may also be available through the Emergency Community Water Assistance Grants. Grants are available for between $150,000 and $500,000. The purpose of the grant is to assist rural communities that have experienced a significant decline in quantity or quality of drinking water due to an emergency. Alternatively, in the case where water supply decline is considered imminent the grant may be used to obtain or maintain adequate quantities of water that meets the standards set by the Safe Drinking Water Act. This emergency is considered an occurrence of an incident such as, but not limited to, a drought; earthquake; flood; tornado; hurricane; disease outbreak; or chemical spill, leakage, or seepage.

3.3 North Coast Resource Partnership

The North Coast Resource Partnership Provides funding opportunities through the Integrated Regional Water Management Program. Funding is currently available through Propositions 84 and future funding may be available through the recently passed Proposition 1. Proposition 84 relates to Safe Drinking Water, Water Quality and Supply, Flood Control and River and Coastal Protection.

Projects are required to be included in the NCIRWM Plan to be eligible for Proposition 84 Implementation. One regional application consisting of a suite of Priority Projects will be submitted on behalf of the North Coast Region for the Proposition 84 Round 3 Implementation Grant.

Proposition 84 Implementation Round 3 Grant Program Guidelines and PSP will be released in summer of 2015 and the applications for Round 3 will be due in autumn of 2015. Draft applications for the two-step application process are included in Attachments 2 and 3.

4 Next Steps

GHD has prepared a letter of application to IHS requesting that the raw water storage and power supply projects be added to the SDS. This letter outlines the proposed projects and provides a cost estimate. GHD has also begun to complete the NCIRWMP application for Round 3 if prop 84 funding. If the tribe is interested in pursuing funding options through a loan or grant from USDA, they should contact Quinn Donovan on 707 526 6797 (ext 105) for further information.

Included as part of this project information package are the following attachments;

- Attachment 1 – Indian Health Services SDS Letter
- Attachment 2 – NCRP Prop 84 Implementation Grant Application – Stage 1
- Attachment 3 – NCRP Prop 84 Implementation Grant Application – Stage 2

If you have any question regarding project funding pathways or this memo please do not hesitate to contact myself or Rebecca Crow on 707 443 8326

Regards

Penny Rogers
Project Engineer

25 November 2014

Lt. Charles Thompson, Sr. Field Engineer
Indian Health Services
Ukiah Field Office
1252 Airport Blvd, Suite B-5
Ukiah CA 95482-5979

Dear Lt. Thompson;

RE: Kashaya Utility District - Sanitary Deficiency System Request

The Kashia Band of Pomo Indians' Kashaya Utility District (KUD), located on the Stewarts Point Rancheria, requests the addition of three projects onto the Sanitary Deficiency System. A description of each project is presented below.

Project 1 – Storage System Upgrade

KUD is proposing a project to upgrade the raw water storage tank to 25,000 gallons. As you are aware, the existing raw water storage only has capacity for 5,000 gallons and is treated through a microfiltration system and stored in the 66,000 gallon treated water tank. The ability to produce potable water is limited by the capacity to store raw water. Increasing capacity to 25,000 gallons would increase water available to meet fire demands and provide additional water security during drought.

The current drought has added additional strain to the raw water source. The District pumps water from a well situated on the Wheatfield Fork of the Gualala River. The well is located along the side of the river 9 feet below the river bed. During the summer of 2014 the river was very low and by August 2014 was dry until mid-October. The community competes with the wine growing industry upstream for water from the river. The well has not gone dry, but over the past two years Paul Chappell, from the KUD, has observed a reduction in the static level and recharge times. The KUD is investigating backup sources of raw water but is concerned that the existing limited raw water storage volume could leave the community vulnerable if the drought continues. Additional raw water storage when it is available would provide the District time to secure trucked water if needed and would allow for larger water deliveries if needed.

The lack of raw water storage is creating a number of deficiencies in the system. In case of fire, the water required to manage the fire must come from the treated water tank. This is an inefficient use of treated water. The current drought has also created a deficiency in the availability of non-potable water for use across the Rancheria.

The 5,000 gallon tank currently sits on a 15 ft x 15 ft foundation slab that was constructed in the 1970's as the base for the 33,000 gallon tank that was the prior water tank for the KUD. The proposed 25,000 gallon tank would sit on this slab. The existing 5,000 gallon is considered in good condition and would remain on site to provide additional storage as necessary.

Project 2 – Raw Water Backwash Recapture

During the treatment of raw water to potable water, there is system backwash of treated water. The KUD Operator estimates there is an additional 90 gallons of raw water that is flushed back over the probes in the micro-filtration unit every 40 minutes for the 4 hour average system daily run time. The raw water could be captured and stored in the new 25,000 gallon tank for reuse across the Rancheria including for watering heritage apple trees, other important vegetation and used as supplemental water for firefighting activities if needed.

To be able to capture this water, an additional microfiltration unit would need to be installed to filter the solids from the backwash water prior to collection in the raw water tank. MISCOwater has provided a schematic of the proposed system upgrade which has been included with this letter as Attachment 1. MISCOwater has also provided cost estimate for equipment and installation of the additional micro filtration unit (Attachment 2). The cost estimate includes a single module SM microfiltration unit to recover the backwash water waste stream utilizing an equalization tank and all appropriate integrative plumbing, controls, and electrical connections. The total proposed cost is an installed price including all equipment, site installation, startup and training.

Project 3 – Back up electricity supply

The existing raw water source is situated at a lower elevation than the raw water storage tank. Electricity is required to pump water, uphill, from the source to the raw water storage before treatment. The KUD currently relies on two 10 horse power pumps. The pumps operate together and pump approximately 26 gallons per minute each. The pumps operate at 920 feet with 400 pounds of head pressure.

The KUD would like to install a backup power supply. In the past 24 months, the facility has experienced four power outages, usually two per year, lasting between one and two days. Prior to the drought, the community would experience large storms, which would result in power outages up to four days. The District is able to store 66,000 gallons of treated water, which is approximately 2 days of storage (C. Thompson, IHS, pers. comms.). However to maintain the treated water storage at capacity, water must be continuously pumped from the source to ensure that the 5,000 gallon raw water storage is at capacity. In the case of a power outage, there is no means for filling the raw water storage tank and treated water cannot be produced. This leads to a deficiency in the system. A back up power supply would provide security to the system in case of a power outage.

Cost Estimate

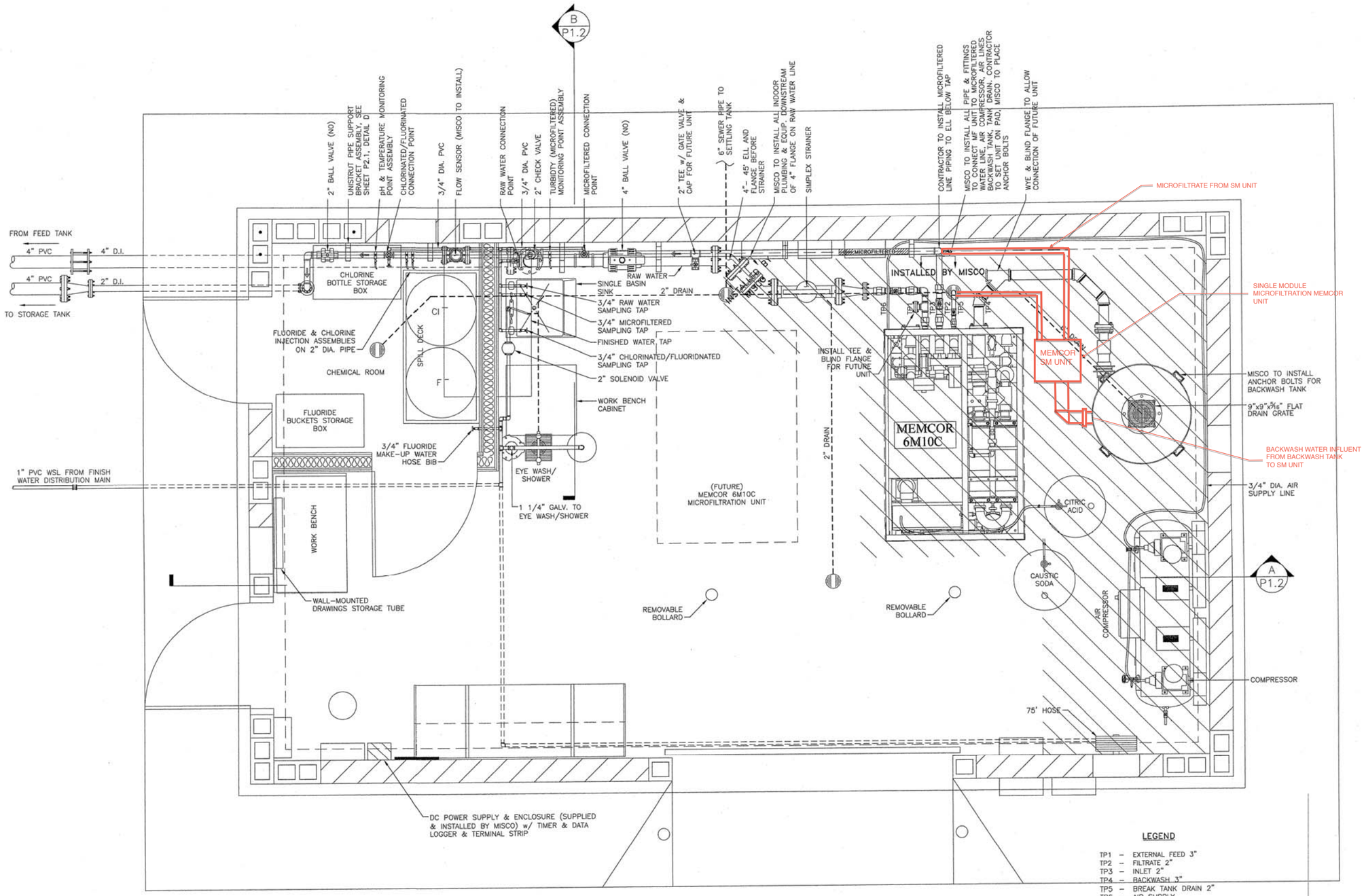
KUD is working with GHD Inc. to prepare an engineer's cost estimate for the three projects. There are cost efficiencies in completing all projects at the same time. Refer to Attachment 3 for a breakdown of combined project costs.

Respectfully,

Reno Franklin
Chairman

Enclosures
Attachment 1 – Schematic of Additional Microfiltration Unit
Attachment 2 – MISCOwater proposal and cost estimate.
Attachment 3 – Engineer's Cost Estimate

CC: File
Kashaya Utility District
Penny Rogers, GHD Inc., 718 Third St., Eureka CA 95521



LEGEND

TP1 – EXTERNAL FEED 3"
TP2 – FILTRATE 2"
TP3 – INLET 2"
TP4 – BACKWASH 3"
TP5 – BREAK TANK DRAIN 2"
TP6 – AIR SUPPLY

INSTALLATION AND/OR CONNECTION BY MISCO (ABOVE FINISHED FLOOR, INCLUDING PIPING, AIRLINES, EXCLUDING FLOOR DRAINS)

NOTE:
1. ALL PIPING AND FITTINGS BELOW TREATMENT BUILDING SLAB SHALL BE DUCTILE IRON AND THRUST RODDED w/ STAINLESS STEEL BOLTS AND NUTS, EXCEPT FOR CONDUIT AND 1" WSL FROM DISTRIBUTION.
2. INSTALL EXPANSION JOINT MATERIAL AT ALL CONCRETE/CONCRETE AND CONCRETE/METAL JOINTS.
3. THRUST RODDING CONNECTED TO BURIED FITTINGS NEEDS TO BE CONNECTED TO FLANGED PIPING IN TREATMENT BUILDING.

P1.1 PIPING & PLUMBING PLAN
SCALE: 3/4" = 1'-0"

Certified Engineering Geologist (Eng) Registered Civil Engineer
41032 JOHN C. KOSTER II MAZOMORA
Date Signed
EXPIRES: 7/30/09

DATE	BY	REVISIONS	APPR.

DRAWN: TEC
CHECKED: JCK
DISTRICT: SDO
SCALE: 3/4"=1'
SHT NO. 17 OF 26
DRAWING NO: 2SPL29P1.DWG

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING
CALIFORNIA AREA OFFICE
SACRAMENTO, CALIFORNIA

PIPING & PLUMBING PLAN

STEWARTS POINT
RANCHERIA

P1.1

USER: Thomas.Campbell FILE: C:\Land Projects\SP\CA-00-L29-CAD\dwg\2SPL29P1.dwg 5/20/2005 - 12:04pm

November 21, 2014

Pricing Presented to

GHD, Inc.
Stewart's Point Rancheria

Furnish and Installation of Memcor Water Recovery Microfiltration Unit

This proposal includes a single module SM microfiltration unit to recover probe wash water utilizing and feed equalization tank, integrative plumbing connections, controls, and electrical connections.

Single Module Microfiltration Unit SM-1 Auto…….....	Included
Installation ……	Included
Tax @ 8.25%.....	Included
Freight.....	Included
Startup and Training with One (1) Trips and Two (2) Total Days.....	Included
Subtotal.....	**$113,000**
Bonds @ 1.25%.....	$TBD

Project pricing reflects a general contract issued to MISCOwater for the Total Turn-Key Project Cost. Pricing is subject to change as a result of alternate project delivery methods.

* Pricing is subject to change due to any project requirements established by the Stewart's Point Rancheria with associated costs not listed above.

MISCOwater
5976 W. Las Positas Blvd #226
Pleasanton, CA 94588
925-225-1900

EVOQUA
WATER TECHNOLOGIES

Quotation

Evoqua Water Technologies LLC
55 Technology Drive, Suite 201
LOWELL MA 01851

Sold-to address:
MISCOWATER PACIFIC
5976 W LAS POSITAS BLVD
PLEASANTON CA 94588

Order Date:	11/14/2014
Sales Order No.:	10091950
Customer No.:	1012165
Customer PO No.:	To come-11142014
Incoterms (part 1):	FOB Free on board
Incoterms (part 2):	Free on board
Payment Terms:	within 30 days Due net
Sales Rep:	MISCOWATER PACIFIC
Contact Person:	Randolph Mimm
Phone Number:	978-934-9349

Ship to Attn: Mark Humberstone, 925-225-1900

Valid from date: 11/14/2014
Valid to date: 12/31/2014
Requested Shipping date: 11/14/2014

Line Item	Material / Description	Old Part Number	Origin	Qty./UOM	Unit Price	Total Price Currency USD
001000	W2T704081 602104,49/MEMCOR SM-1 Auto (w/Submodule S10N) ECCN: EAR99 HTS: 3926906090		AU	1 EA	$28,500	$28,500

For domestic shipments the following applies:
These commodities are sold for domestic consumption. Any export of these commodities must be made in accordance with applicable US laws.
For export shipments from the US the following applies:
These commodities, technology or software (items) were exported from the United States in accordance with the Export Administration Regulations Diversion contrary to US law is prohibited. These items are not to be used directly or indirectly in prohibited nuclear chemical/biological or missile weapons activities.

Applicable shipping, handling, and taxes
to be added at time of invoicing.

Net Total $28,500
Shipping & Handling to be Added

Ship-to address
MISCOWATER PACIFIC
SUITE 226
5976 W LAS POSITAS BLVD
PLEASANTON CA 94588

Bill-to address
MISCOWATER PACIFIC
SUITE 226
5976 W LAS POSITAS BLVD
PLEASANTON CA 94588

Kashaya Utility District - System Upgrade

Major Equipment and Construction Items

Unit Items	Quantity	Unit	Unit Cost	Total
25,000 gal Tank	1	Lump Sum	$ 37,500.00	$37,500
Shipping	1	Lump Sum	$ 10,000.00	$10,000
Microfiltration Unit	1	Lump Sum	$ 28,500.00	$28,500
Microfiltration Unit (installation and training)	1	Lump Sum	$ 84,500.00	$84,500
Generator (15 KW)	1	Each	$ 20,000.00	$20,000
			$ -	$0
Subtotal 1				**$180,500**

Other Construction Items	Cost Estimate		Total
Electrical	3%	of subtotal 1	$5,415
Instrumentation	5%	of subtotal 1	$9,025
Site Work	7%	of subtotal 1	$12,635
Mobilization/ Demolition	5%	of subtotal 1	$9,025
Erosion and Sediment Control	3%	of subtotal 1	$5,415
Subtotal 2	23%	of subtotal 1	**$36,100**

Non Construction Implementation Costs (Soft Costs)

Permitting/CEQA/NEPA	5%	of (subtotal 1 + 2)	$10,830
Engineering	15%	of (subtotal 1 + 2)	$32,490
Construction Management	10%	of (subtotal 1 + 2)	$21,660
Agency Costs	3%	of (subtotal 1 + 2)	$6,498
Land/ROW Acquisition	0%	of (subtotal 1 + 2)	$0
Other Soft Costs	0%	of (subtotal 1 + 2)	$0
Contingency	15%	of (subtotal 1 + 2)	$32,490
Subtotal 3	48%	of (subtotal 1 + 2)	**$103,968**

Cost Summary

Total Construction Estimate (w/o Contingency)	100%	of subtotal 1+2	**$216,600**
Total Estimated Project Costs	100%	of (subtotal 1 + 2 + 3)	**$320,568**
For Initial Funding Application	150%	of Total Estimated Project Costs	**$480,852**

North Coast Integrated Regional Water Management Plan

Implementation Project Application

The North Coast Integrated Regional Water Management Plan (NCIRWMP) Implementation Project Application Instructions and additional information can be found at the NCIRWMP Implementation Project Solicitation webpage. Please fill out grey text boxes and select all the check boxes that apply to your project. ***It is important to save the application file with a distinct file name that references the project name. When the application is complete, please email the application to kgledhill@westcoastwatershed.com***

Project Applications will be accepted until 5:00 pm, December 10th. *The project application will be closed at this date/time and edits to project applications and/or new project applications will no longer be accepted.*

Application responses should be clear, brief and succinct. Character limits are provided and include spaces. ***If you have questions, need additional information or technical assistance please contact Katherine Gledhill at kgledhill@westcoastwatershed.com or 707.795.1235.***

Preliminary Implementation Project Information

Organization Information

1. **Organization Name:** Kashaya Utility District

2. **Address (City, County, State, Zip Code):**
   120 Guerneville Road, Suite 1, Santa Rosa CA, 95403

3. **Contact Name/Title**
   a) Name: Nina Hapner
   b) Title: Director of Environmental Planning
   c) Email: nina@stewartspoint.org
   d) Phone Number (include area code) : 707 591 0580 ext 107

4. Organization Type

- ☐ Public Agency
- ☐ Nonprofit Organization
- ☒ Tribe
- ☐ Other: _____

General Project Information

1. Project Name: Kashaya Utility District Water Supply Reliability Improvement Project

2. **Project Description/Summary** [2000 characters max.]

Kashaya Utility District (KUD) is proposing to upgrade their water treatment system in order to increase water supply reliability.

The existing raw water storage only has capacity for 5,000 gallons. Raw water is treated through a microfiltration system and stored in the 66,000 gallon treated water tank. The ability to produce potable water is limited by the capacity to store raw water. As part of this project, it is proposed to increase the capacity of the raw water tank to 25,000 gallons.

During the treatment of raw water to potable water, there is system backwash of raw water. The KUD Operator estimates there is an additional 90 gallons of raw water that is flushed back over the probes in the micro-filtration unit every 40 minutes (approximately 360 gallons per day). The raw water could be captured and stored in the new 25,000 gallon tank for reuse across the Rancheria including for watering heritage apple trees, other important vegetation and used as supplemental water for firefighting activities if needed. Water from the "clean in place" cycle would not be captured because it is caustic.

The KUD would also like to install a backup power supply. In the past 24 months, the facility has experienced four power outages, usually two per year, lasting between one and two days. Prior to the drought, the community would experience large storms, which would result in power outages up to four days. The district is able to store 66,000 gallons of treated water, which is approximately 2 days of storage. However to maintain the treated water storage at capacity, water must be continuously pumped from the source to ensure that the 5,000 gallon raw water storage is at capacity. In the case of a power outage, there is no means for filling the raw water storage tank and treated water cannot be produced. This leads to a deficiency in the system. A back up power supply would provide security to the system in case of a power outage

3. **Specific Project Goals/Objectives**

[for each goal list specific objectives]

Goal 1: Improve water supply reliability

Goal 1 Objective: Inrease raw water storage capacity by installing a 25,000 gallon raw water storage tank

Goal 1 Objective: Recapture raw water backwash by installing an additional microfiltration unit to treat/filter raw water backwash prior to collection in the raw water tank

Goal 1 Objective: _____

Goal 1 Objective: _____

Goal 2: Increase resilancy to drought

Goal 2 Objective: Increase raw water storage capacity by installing a 25,000 gallon raw water storage tank

Goal 2 Objective: Recapture 95% of the 90 gallons of raw water that is flushed back over the probes in the micro-filtration unit every 40 minutes (approximately 360 gallons per day).
Goal 2 Objective: _____
Goal 2 Objective: _____

Goal 3: Increase resiliancy to climate change
Goal 3 Objective: Provide back up power source by installing a generator at the pump form the raw water source
Goal 3 Objective: Increase raw water storage to relieve pressue on potable system in case of wildfire.
Goal 3 Objective: _____
Goal 3 Objective: _____

Goal 4: _____
Goal 4 Objective: _____
Goal 4 Objective: _____
Goal 4 Objective: _____
Goal 4 Objective: _____

Additional Goals & Objectives (List)

_____

4. **Projected Project Start Date:** 2/1/2016

5. **Anticipated Project End Date:** 6/1/2016

6. **Funding Type**
   - ☐ Loan
   - ☒ Grant
   - ☐ Other

7. **List Potential Funding Program Name(s)**

_____

8. Project Type:
- ☒ Water supply
- ☐ Water quality
- ☐ Flood management
- ☒ Watershed and ecosystem enhancement
- ☐ Planning
- ☐ Community Education
- ☐ Monitoring/Assessment
- ☒ Other: Secure electricty supply

9. Current Project Phase:
- ☒ Feasibility Study
- ☒ Planning
- ☐ Environmental Documentation & CEQA

☐ Permitting
☐ Implementation / Construction
☐ Maintenance
☐ Monitoring
☐ Other: _____

10. Project Elements

[select all that apply]

☒ Water supply reliability, water conservation and water use efficiency
☐ Storm water capture, storage, clean-up, treatment, monitoring and management
☐ Water banking, exchange, reclamation and improvement of water quality
☐ Non-point source pollution reduction, management and monitoring
☐ Groundwater recharge and management projects
☐ Contaminant and salt removal through reclamation, desalting, and other treatment technologies and conveyance of reclaimed water for distribution to users
☐ Planning and implementation of multipurpose flood management programs
☐ Removal of invasive non-native species, the creation and enhancement of wetlands, and the acquisition, protection, and restoration of open space and watershed lands
☐ Watershed protection and management
☒ Drinking water treatment and distribution
☐ Ecosystem and fisheries restoration and protection
☒ Critical water quality or supply enhancement for Economically Disadvantaged Communities
☐ Stormwater management to reduce flood damage
☐ Monitoring / assessment of resources
☐ Other: _____

11. Statewide Priorities

[select all that apply] [for more information see IRWM Program Guidelines]

Drought Preparedness

☒ Promote water conservation, conjunctive use, reuse and recycling
☒ Improve landscape and agricultural irrigation efficiencies
☐ Achieve long term reduction of water use
☐ Efficient groundwater basin management
☐ System interties

Use and Reuse Water More Efficiently

☒ Increase urban and agricultural water use efficiency measures such as conservation and recycling
☐ Capture, store, treat, and use urban stormwater runoff (such as percolation to usable aquifers, underground storage beneath parks, small surface basins, domestic stormwater capture systems, or the creation of catch basins or sumps downhill of development
☐ Incorporate and implement low impact development (LID) design features, techniques, and practices to reduce or eliminate stormwater runoff

Climate Change Response Actions

☐ Adaptation to Climate Change: Advance and expand conjunctive management of multiple water supply sources
☒ Adaptation to Climate Change: Use and reuse water more efficiently

☒ Adaptation to Climate Change: Water management system modifications that address anticipated climate change impacts
☐ Adaptation to Climate Change: Establish and enhance migration corridors, re-establish river-floodplain hydrologic continuity, re-introduce anadromous fish populations to upper watersheds, and enhance upper watershed forests and meadow systems
☐ Reduction of Greenhouse Gas (GHG) Emissions: Reduce energy consumption of water systems and uses
☐ Reduction of Greenhouse Gas (GHG) Emissions: Use cleaner energy sources to move and treat water
☐ Reduce Energy Consumption: Water use efficiency
☒ Reduce Energy Consumption: Water recycling
☐ Reduce Energy Consumption: Water system energy efficiency
☐ Reduce Energy Consumption: Reuse runoff

Expand Environmental Stewardship

☐ Expand Environmental Stewardship to protect and enhance the environment by improving watershed, floodplain, and instream functions and to sustain water and flood management ecosystems.

Practice Integrated Flood Management

☐ Better emergency preparedness and response
☐ Improved flood protection
☐ More sustainable flood and water management systems
☐ Enhanced floodplain ecosystems
☐ LID techniques that store and infiltrate runoff while protecting groundwater

Protect Surface Water and Groundwater Quality

☐ Protecting and restoring surface water and groundwater quality to safeguard public and environmental health and secure water supplies for beneficial uses
☐ Salt/nutrient management planning as a components of an IRWM Plan

Improve Tribal Water and Natural Resources

☒ Improve Tribal Water and Natural Resources and include the development of Tribal consultation, collaboration, and access to funding for water programs

Ensure Equitable Distribution of Benefits

☒ Increase the participation of small and disadvantaged communities in the IRWM process.
☐ Develop multi-benefit projects with consideration of affected disadvantaged communities and vulnerable populations.
☐ Address safe drinking water and wastewater treatment needs of DACs.
☒ Address critical water supply or water quality needs of California Native American Tribes within the region.

Project Funding

1. **Total Funds for Planning / Design: <u>$38,988.00</u>**
   Select the source of these funds:
   - ☐ Local
   - ☒ State
   - ☐ Federal

   Select the status of these funds:
   - ☐ N/A

- ☐ Received and Date when funds were received: _____
- ☐ Pending and Date when funds were requested: _____
- ☒ Have not applied

2. **Total Funds for Environmental Compliance/ Mitigation / Permitting: $10,830.00**
   Select the source of these funds:
   - ☐ Local
   - ☒ State
   - ☐ Federal

   Select the status of these funds:
   - ☐ N/A
   - ☐ Received and Date when funds were received: _____
   - ☐ Pending and Date when funds were requested: _____
   - ☒ Have not applied

3. **Total Funds for Construction/ Implementation & Monitoring: $270,750.00**
   Select the source of these funds:
   - ☐ Local
   - ☒ State
   - ☐ Federal

   Select the status of these funds:
   - ☐ N/A
   - ☐ Received and Date when funds were received: _____
   - ☐ Pending and Date when funds were requested: _____
   - ☒ Have not applied

4. **Total Funds Requested: $320,568.00**

Collaborative Partnerships

1. **List all collaborating partners and agencies and nature of collaboration:**
   Indian Health Services
   Kashia Band of Pomo Indians

Project Location

1. **Project Location Description :**
   The Kashaya Utility District is located on the Stewarts Point Rahnceria which is managed by the Kashia band of Pomo Indians. Stewarts Point is located on Highway 1 approximately 20 miles west of Healdsburg.

2. **Site Address (if relevant) :**
   31458 Stewarts Point-Skaggs Springs Rd, Jenner, CA 95450, USA

3. **Mapped Location**
   a) County(s) : Sonoma
   b) City(s) : Stewarts Point

c) Stream(s) : South Fork Gualala River

4. **Is this project located in a Disadvantaged Community?** [View layer from North Coast maps]
   - ☐ Entirely
   - ☐ Partially
   - ☒ No

   List the Disadvantaged Community(s)

   _____

Project Strategies and Benefits

1. **Project Benefits**
   [select all that apply]

   Increase Water Supply
   ☒ Increased water supply or range in water supply (i.e. acre-feet per year)
   ☐ Improved water quality
   ☐ Increased recreational opportunities
   ☒ Decreased reliance on imported water
   ☐ Reduced groundwater overdraft
   ☐ Creation of wetlands and riparian habitat
   ☐ Decreased operational costs
   ☐ Other _____

   Water Quality Improvement
   ☒ Increased water supply
   ☐ Improved aquatic and wetland species habitat and populations
   ☐ Increased cropland production
   ☐ Creation of wetlands and riparian habitat
   ☐ Improved recreation opportunities
   ☐ Decreased treatment costs
   ☐ Other _____

   Groundwater Improvements
   ☐ Improved flood protection
   ☐ Decreased reliance on imported water
   ☐ Reduced surface water use, reduced pumping costs
   ☐ Decreased or prevention of groundwater overdraft
   ☐ Other _____

   Water Conservation and Reuse
   ☒ Increased water saving
   ☒ Efficient reuse of wastewater
   ☐ Costs savings from reduced purchases of imported water
   ☐ Saving construction of water storage facilities
   ☐ Increased nutrient levels for plant and crop use from use of reclaimed wastewater
   ☐ Other _____

Watershed Rehabilitation

☐ Long-term sediment reduction and temperature improvements
☐ Reduced surface water nutrient and bacteria concentrations (improved water supply quality)
☐ Improved fish and wildlife habitat and passage
☐ Enhanced public safety and recreational opportunities
☐ Instream rehabilitation to redress hydromodification
☐ Other _____

Habitat Improvement

☐ Reduced surface water nutrient and bacteria concentrations (improved water supply quality)
☐ Enhanced fish habitat
☐ Increased opportunities for recreational hunting and viewing
☐ Increased numbers of native species
☐ Reduced flood risks
☐ Education opportunities
☐ Other _____

Flood Management

☐ Increased aquifer recharge
☐ Runoff reduction
☐ Improved surface water quality
☒ Natural resources preservation and restoration
☐ Reduced risk to life and property
☐ Decreased flood insurance costs
☐ Other _____

2. **Describe how your project benefits the Economically Disadvantaged Communities it serves: [**1000 character max.]

_____

3. North Coast Integrated Regional Water Management Objectives

[for more information see the North Coast Integrated Regional Water Management Plan]
Check any of the following that apply to your project:

☐ Conserve and enhance native salmonid populations by protecting and restoring required habitats, water quality and watershed processes
☒ Protect and enhance drinking water quality to ensure public health
☐ Ensure adequate water supply while minimizing environmental impacts
☐ Support implementation of Total Maximum Daily Loads (TMDLs), the North Coast Regional Water Quality Control Board's (NCRWQCB) Watershed Management Initiative, and the Non-Point Source Program Plan
☐ Address environmental justice issues as they relate to disadvantaged communities, drinking water quality and public health
☐ Provide an ongoing, inclusive framework for efficient intra-regional cooperation, planning and project implementation

☐ Implement energy independence, greenhouse gas emissions or climate change adaptation project elements

4. **Describe how your project addresses the North Coast IRWM Objectives** selected [1000 characters max.] This project fits with Goal 4, Objectives 7 and 9. By increasing the raw water storage, there is more water available for uses such as fire management and localized irrigation. This will significantly reduce the current need to use treated water to meet non-potable needs. The project will increase the opportunity for water recycling within the treatment process. The ability to collect and store raw and treated backwash water will relieve some of the reliance on groundwater resources. This project also adress Goal 5, Objectives 10 and 11. The increase in the magnitude of storm events predict to occur as a reuslt of climate change will increase the potential for power outages at the treatment facility. The community is reducing their vulerablility to power outages by installing a backup power supply. This promotes local energy independance.

5. **List the impaired water bodies (303d listing) that your project benefits:**
[1000 character max.] [for more information, see maps and SWRCB & EPA]
The project occurs within the Gualara River - South Fork watershed. Improved water recycling during the treatment process will reduce reliance on water from tribuaries of the river.

6. **Select the other sensitive habitat areas your project benefits.**
[select all that apply] [see North Coast maps]

☐ Riparian corridors
☒ Perennial and intermittent streams
☐ Wetlands
☐ Lakes and ponds and adjacent shore habitat
☐ Marine habitats
☐ Coastal tide lands and marshes
☐ Coastal and offshore areas containing breeding or nesting sites
☐ Native grassland
☐ Serpentine chaparral/grassland
☐ Cypress woodland
☐ Oak woodland
☐ Redwood forest
☐ Areas used for ecological scientific study and research
☐ Existing wildlife refuges and reserves
☒ Habitats supporting rare, endangered, threatened and endemic species (CNPS, State, Federal)

7. **Select the Areas of Biological Significance (ASBS), Marine Protected Areas (MPA) and Critical Coastal Areas (CCA) that your project benefits:**
[select all that apply] [for more information, see maps and CCA, MPA & ASBS]

Critical Coastal Area:

- ☐ Klamath River
- ☐ Redwood Creek
- ☐ Redwood National Park

- ☐ Trinidad Head
- ☐ Mad River
- ☐ Eel River
- ☐ Mattole River
- ☐ King Range
- ☐ Pudding Creek
- ☐ Noyo River
- ☐ Jughandle Cove
- ☐ Big River
- ☐ Albion River
- ☐ Navarro River
- ☐ Garcia River
- ☐ Saunders Reef
- ☐ Del Mar Landing
- ☐ Gerstle Cove
- ☐ Estero Americano
- ☐ Estero de San Antonio

California Marine Protected Area:

- ☐ Punta Gorda
- ☐ MacKerricher
- ☐ Point Cabrillo
- ☐ Russian Gulch
- ☐ Van Damme
- ☐ Manchester and Arena Rock
- ☐ Del Mar Landing
- ☐ Salt Point
- ☐ Gerstle Cove
- ☐ Fort Ross
- ☐ Sonoma Coast
- ☐ Bodega

Areas of Special Biological Significance:

- ☐ Bodega Marine Life Refuge
- ☐ Del Mar Landing Ecological Reserve
- ☐ Gerstle Cove
- ☐ Kelp Beds at Saunders Reef
- ☐ Kelp Beds at Trinidad Head
- ☐ Kings Range National Conservation Area
- ☐ Pygmy Forest Ecological Staircase
- ☐ Redwood National and State Parks

Supplemental Implementation Project Information

Organization Information

1. **Project Name: Kashaya Utility District**

2. **Authorized Representative (if different from the contact name)**
   a) Name: _____
   b) Title: _____
   c) Email: _____
   d) Phone Number (include area code) : _____

3. **Has your organization implemented similar projects in the past?** ☒ yes ☐ no
   Please describe previous similar projects.
   _____

4. **List all projects your organization is submitting to the North Coast IRWMP in order of priority**.
   Kashaya Utility District Water Supply Reliability Improvement Project

5. **Organization Information Notes:**
   The Kashia Band of Pomo Indians' Kashaya Utility District (the district) is located on the Stewart's Point Rancheria. The district manages utility for the rancheria.

Project Information

1. **Describe the population served by this project.** [500 characters max.]
   As of 2010, 78 people live on Stewarts Point Rancheria. According to the 2010 United States Census, 72 of the 78 residents are Native American and the additional residents consider themselves to be both Native Americanand of another ethnicity.

2. **Describe the financial need for the project (i.e. describe why the project cannot be completed with the existing financial resources of the project proponent, landowner and/or beneficiary):** [500 characters max.]

3. **Describe local and/or political support for this project:** [500 characters max.]
   The Indian Health Service supports this project and it has been added to the Sanitary Deficiency System.

4. **Will this project mitigate an existing or potential Cease and Desist Order or other regulatory compliance enforcement action?** ☐ yes ☒ no
   If so, please describe? [500 characters max.]
   _____

5. **Will the project impact groundwater?** ☐ yes ☒ no
   If so, please describe? [500 characters max.]

   _____

6. Water Conservation Law Compliance

[Compliance with Water Conservation Laws link: http://www.water.ca.gov/wateruseefficiency/finance]

Groundwater Management Plan

a) Is your organization required to file a Groundwater Management Plan (GWMP)?
   ☐ yes ☒ no
b) If Yes, has your organization completed a Groundwater Management Plan?
   ☐ yes ☒ no
c) If Yes, when was the GWMP adopted? _____

Urban Water Management Plan

a) Is your organization required to file an Urban Water Management Plan (UWMP)?
   ☐ yes ☒ no
   [*Definition of entity that is required to file an UWMP with DWR: water supplier of more than 3,000 customers or supplying more than 3000 acre-feet annually*].
b) If Yes, list the date the UWMP was approved by DWR: _____
d) Is your UWMP in compliance with AB 1420 requirements?
   ☐ yes ☐ no
e) Does the urban water supplier meet the water meter requirements of CWC 525?
   ☐ yes ☐ no

7. **Does your project require CEQA?** ☐ yes ☒ no
   If yes, select the type of documentation:
   - ☐ Initial Study
   - ☐ Environmental Impact Report (EIR)
   - ☐ Environmental Impact Statement (NEPA/Federal involvement)
   - ☐ Mitigated Negative Declaration
   - ☐ Negative Declaration
   - ☐ Environmental Assessment
   - ☐ Exempt
   - ☐ N/A - not a CEQA Project

   Date or anticipated data for CEQA compliance: _____
   State Clearinghouse Number: _____

8. **Does you project require NEPA?** ☐ yes ☒ no
   Date for NEPA completion: _____

9. **Are other permits required for this project?** ☒ yes ☐ no
   If yes, please list:
   Building permit - Sonoma County

10. Is this project integrated into existing local, watershed, basin/regional plans or reports?
   ☐ yes ☒ no
   If so, please list plans or reports [list format: Document name, Author, Published date]:

11. **Describe the scientific and technical basis for your project** [1000 characters max.]
The current drought has added additional strain to the raw water source. The community competes with the wine growing industry upstream for water from the river. The ability to produce potable water is limited by the capacity to store raw water. KUD is proposing a project to upgrade the raw water storage tank to 25,000 gallons. During the treatment of raw water to potable water, there is system backwash of treated water. The raw water could be captured and stored in the new 25,000 gallon tank for reuse across the Rancheria including for watering heritage apple trees, other important vegetation and used as supplemental water for firefighting activities if needed. The KUD would also like to install a backup power supply. In the past 24 months, the facility has experienced four power outages, usually two per year, lasting between one and two days. Prior to the drought, the community would experience large storms, which would result in power outages up to four days.

12. Major Tasks and Deliverables for Proposition 84 Round 2 Funding

Major Tasks	Major Deliverables	Total Task Budget	IRWM Task Budget	Is IRWM Task scalable by 25%?	Is IRWM Task scalable by 50%?	Timeframe (months)
Planning / Design						
Engineering	Basis of Design Report	$32,490.00	$32,490.00	☐ yes ☐ no	☐ yes ☐ no	1
Agency Costs	Permitting	$6,498.00	$6,498.00	☐ yes ☐ no	☐ yes ☐ no	3
_____	_____	_____	_____	☐ yes ☐ no	☐ yes ☐ no	_____
_____	_____	_____	_____	☐ yes ☐ no	☐ yes ☐ no	_____
_____	_____	_____	_____	☐ yes ☐ no	☐ yes ☐ no	_____
Environmental Compliance/ Mitigation / Permitting						
Permitting/CEQA/NEPA	_____	$10,830.00	$10,830.00	☐ yes ☐ no	☐ yes ☐ no	3
_____	_____	_____	_____	☐ yes ☐ no	☐ yes ☐ no	_____
_____	_____	_____	_____	☐ yes ☐ no	☐ yes ☐ no	_____
_____	_____	_____	_____	☐ yes ☐ no	☐ yes ☐ no	_____
_____	_____	_____	_____	☐ yes ☐ no	☐ yes ☐ no	_____
Construction / Implementation						
Major Equipment	_____	$22,500.00	$22,500.00	☐ yes ☐ no	☐ yes ☐ no	_____
Construction Items	_____	$36,100.00	$36100.00	☐ yes ☐ no	☐ yes ☐ no	_____

Construction Management	_____	$21,660.00	$21,660.00	☐ yes ☐ no	☐ yes ☐ no	_____
Contingency	_____	$32,490.00	$32,490.00	☐ yes ☐ no	☐ yes ☐ no	_____
Construction / Implementation Monitoring						
_____	_____	_____	_____	☐ yes ☐ no	☐ yes ☐ no	_____
_____	_____	_____	_____	☐ yes ☐ no	☐ yes ☐ no	_____
Total Proposition 84 Round 2 Budget Request			$32,568.00			

13. Project Information Notes:

_____

Project Benefits

1. **Describe how your project benefits salmonids and other endangered/threatened species:**
   This project will enable the collection of raw water backwash during the treatment process. The backwash water can be stored in the larger raw water storage tank and will mean less water will need to be pumped from the well or river, leaving more natural flow for endangered and threatened aquatic species within the Gualala River. [500 character max.]

2. **Describe how your project addresses climate change adaptation and mitigation: energy efficiency, reduction of greenhouse gas emissions, reduction of carbon, or reduction in water demand:** [500 character max.]
   The increase in the magnitude of storm events predict to occur as a reuslt of climate change will increase the potential for power outages at the treatment facility. The community is reducing their vulerablility to power outages by installing a backup power supply. This promotes local energy independance.

3. **If your project includes water conservation as an element, describe how you will ensure that the water savings are used for the stated beneficial uses:** [500 character max.]
   The KUD Operator estimates there is an additional 90 gallons of raw water that is flushed back over the probes in the micro-filtration unit every 40 minutes. The raw water can be captured and stored in the new 25,000 gallon tank for reuse across the Rancheria including for watering heritage apple trees, other important vegetation and used as supplemental water for firefighting activities if needed.

4. **For each of the Potential Benefits that your project claims complete the Amount of Benefit and Estimated Benefit Value in the following table to describe an estimate of the benefits expected to be a result of the proposed project.** [*See the NCIRWMP Project Application instructions and background information to help complete the table. Work tables are provided in the instructions with additional guidance, source materials and examples from North Coast projects*.]

Potential Project Benefits Table

Potential Benefits	Physical Amt of Benefit	Suggested Physical Units	Estimated Economic Value	Suggested Economic Units
Water Supply Benefits				
Increased Instream Flow for Environmental Purposes	360 gallons per day of raw backwash recapture will mean less water is required from the river.	Gallons per year; Gallons per minute; Acre-feet per year		$80 per acre-foot per year
Increased Instream Flow for Agricultural Purposes	_____	Gallons per year; Gallons per minute; Acre-feet per year	_____	$57 per acre-foot per year
Increased Instream Flow for Municipal Purposes	_____	Gallons per year; Gallons per minute; Acre-feet per year	_____	$121 per acre-foot per year

Potential Benefits	Physical Amt of Benefit	Suggested Physical Units	Estimated Economic Value	Suggested Economic Units
Change in Timing and Volume of Instream Flow	_____	Cubic feet per second (cfs) over a particular period (document evidence of scarcity during this period)	_____	Project specific / Not monetized
Increased Water Supply Reliability	continuous and uninterupted water supply all year for 35 households	Number of household customers; Reduction in frequency of water shortages (e.g., once in five years, once in ten years); Reduction in magnitude of shortage (e.g., 10% reduction, 20% reduction)	_____	$19–$27 per household per month
Increased Groundwater Recharge	_____	Percent increase; Gallons per year; Acre-feet per year	_____	Project Specific/Not monetized
Avoided Water Supply Purchases	_____	Volume of water purchased per year (or at the frequency purchases would be avoided)	_____	Project specific: $ per unit of raw water purchased per year
Avoided Water Supply Projects	_____	Description of the avoided project, including physical benefits, and timing of actions	_____	Project specific: Cost of avoided project(s), including capital, replacement, and operations & maintenance costs, as applicable.
Avoided Water Shortage Costs	_____	Gallons per year; Acre-feet per year; Percent change in frequency /severity of water shortages	_____	Project specific: Avoided costs associated with water shortages
Avoided Electric Costs	_____	Energy units (kWh) per year; Acre-feet of water pumped per year	_____	Project specific: $ per kWh per year
Avoided Costs Associated with Emergency Repairs	_____	Project Specific	_____	Project specific: Avoided costs associated with labor and capital to make the emergency repair.
Revenue from Water Sales to New Customers	_____	Gallons per year; Acre-feet per year	_____	Project specific: $ amount of net increase in revenue
Water Quality				
Sediment Reduction	_____	Tons per year	_____	Project specific/Up to $11 per ton of sediment
Decreased Water Temperature	_____	Avoided project; Change in maximum daily temperature, by day	_____	Project specific
Increased Dissolved Oxygen (DO)	_____	Avoided project; Change in DO concentration	_____	Project specific
Bacteria/ Contaminant Reduction	_____	Avoided project; Change in bacteria/ contaminant concentration	_____	Project specific
Additional Water Quality Projects Avoided	_____	Avoided projects	_____	Project specific
Avoided Water Treatment Costs	_____	Gallons per year; Acre-feet per year	_____	Project specific: Difference in water treatment costs per unit of water per year
Avoided Culvert Failures	_____	Number of culvert failures avoided	_____	Project specific: Cost of avoided culvert failures

Potential Benefits	Physical Amt of Benefit	Suggested Physical Units	Estimated Economic Value	Suggested Economic Units
Flood Damage Reduction	_____	To determine flood damage reduction benefits, see specific instructions below.	_____	Project specific
Other Benefits				
Fishery Improvement	_____	Number of fish per year; Percent population increase; Density (fish/m^2)	_____	Project and species-specific values; Partially captured by other benefits
Increased Quantity or Quality of Recreation or Public Access	_____	Number of recreation days, by type of activity	_____	$128 per camping day, $54 per fishing day, $28 per hiking day, $33 per motorboating day, $61 per mountain biking day, $79 per picnicking day, $25 per sightseeing day, $33 per swimming day, $89 per wildlife viewing day.
Improved Fish Passage	_____	Number of fish per year; Percent population increase; Density (fish/m^2)	_____	Project and species-specific values; Partially captured by other benefits
Habitat Restoration	_____	Acres of habitat type	_____	$120 per acre per year (riparian habitat) $2,000–$4,000 per acre per year (wetland habitat); Project-specific
Invasive Plant Removal	_____	Acres of habitat improved	_____	$120 per acre per year (riparian habitat) 2,000–$4,000 per acre per year (wetland habitat)
Flood Control	_____	Area and type of land protected; Change in flood probabilities	_____	Project specific
Reduction in Shellfish Closures	_____	Number of days per year of reduced closures; Change in quantity of commercial shellfish production; Change in shellfish-related recreation days	_____	Project specific
Decreased Operation and Maintenance Costs	_____	Project specific	_____	Project specific: Avoided costs associated with labor and capital for operations and maintenance.
Avoided Costs of Road Maintenance	_____	Miles of road	_____	Project specific: Average road maintenance costs per mile including labor and capital.
Enhanced Fire-Fighting Capabilities	An additional 20,000 of raw water storage available to fight wild fires	Area protected per year; Avoided costs associated with other sources of water; Avoided costs of delays associated with responding to fires	_____	Project specific
Reduced Risk of Wildfire	_____	Amount of fuel load reduced; predicted reduction in annual fire risk	_____	Project specific; Non Monetized
Community and Social Benefits				

Potential Benefits	Physical Amt of Benefit	Suggested Physical Units	Estimated Economic Value	Suggested Economic Units
Education or Technology Benefits	_____	Number of people reached; Description of effects of technology (e.g., saved labor, better accuracy, etc.)	_____	Project specific; Not monetized
Avoided Public Water Resources Conflicts	raw water backwash collection will reduce need to compete with wine industry for river water	Describe and quantify the conflicts	_____	Project specific; Not monetized
Social Health and Safety	_____	Describe the effects in the project benefit notes	_____	Project specific; Not monetized
Climate Change Amelioration				
Carbon Emissions Reductions from Reduced Electricity Use	_____	Reduction in emissions of carbon dioxide equivalent (tons) per year; Reduction in energy use (kWh) per year	_____	**$32 per ton of carbon dioxide equivalent** (increases at a real rate of 2.5% per year) $22 per MWh (increases at a real rate of 2.5% per year)
Carbon Emissions Reductions from Other Reduced Energy Use	_____	Reduction in emissions of carbon dioxide equivalent (tons) per year; Reduced energy use per year (e.g., gallons of diesel fuel)	_____	**$32 per ton of carbon dioxide equivalent** (increases at a real rate of 2.5% per year)
Carbon Sequestration	_____	Number of trees planted; Volume of carbon sequestered (tons) per year	_____	**$32 per ton of carbon dioxide sequestered** (increases at a real rate of 2.5% per year) or **$2,100 per tree per year** (average annual value of carbon sequestered by a medium coniferous tree over 50 years discounted at a rate of 3%)

5. Project Benefits Notes:

_____

NORTH COAST
INTEGRATED REGIONAL WATER MANAGEMENT PLAN

IMPLEMENTATION GRANT
PROPOSITION 84, ROUND 2, STEP 2

DUE MARCH 1, 2013

APPLICATION TABLES

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Attachment 1 Work Plan and Schedule

GENERAL INFORMATION: Project Name	
Project Title	Kashaya Utility District Supply Reliability Project
Project Abstract (750 characters)	KUD is proposing three small projects to upgrade their water treatment system. 1. The existing raw water storage only has capacity for 5,000 gallons and is treated through a microfiltration system and stored in the 66,000 gallon treated water tank. The ability to produce potable water is limited by the capacity to store raw water. Increasing capacity to 25,000 gallons would enable raw water to be used to meet fire demand. 2. During the treatment of raw water to potable water, there is system backwash of treated water. The KUD Operator estimates there is an additional 90 gallons of raw water that is flushed back over the probes in the micro-filtration unit every 40 minutes. The raw water could be captured and stored in the new 25,000 gallon tank for reuse across the Rancheria including for watering heritage apple trees, other important vegetation and used as supplemental water for firefighting activities if needed. Water from the "clean in place" cycle would not be captured because it is caustic. 3. The KUD would like to install a backup power supply. In the past 24 months, the facility has experienced four power outages, usually two per year, lasting between one and two days. Prior to the drought, the community would experience large storms, which would result in power outages up to four days. The district is able to store 66,000 gallons of treated water, which is approximately 2 days of storage. However to maintain the treated water storage at capacity, water must be continuously pumped from the source to ensure that the 5,000 gallon raw water storage is at capacity. In the case of a power outage, there is no means for filling the raw water storage tank and treated water cannot be produced. This leads to a deficiency in the system. A back up power supply would provide security to the system in case of a power outage.
Organization	Kashia Band of Pomo Indians
Contact Name and Title	Nina Hapner
Disadvantaged Community	N/A
Grant Funds Requested	$320,568
Non-State Match	$0
Total Budget	$320,568
Watershed(s)	South Fork Gualala River
County(s)	Sonoma County
Status of project design and bid solicitation efforts	A preliminary feasibility analysis and engineer's cost estimate have been prepared.
Status of CEQA, NEPA, and other environmental laws	NA
Status of all necessary	NA

GENERAL INFORMATION: Project Name	
permits	
Status of acquisition of land or rights-of-way, if applicable	NA
Work that will be completed prior to October 1, 2013 (assumed contract date)	NA
Procedures for coordination with partner agencies and organizations including formal agreements	KUD is in regular contact with Indian Health Service and the North Coast Resource Partnership.
A description of synergies or linkages between other NCIRWMP projects	See Priority Project list for North Coast IRWM Proposition 50 and 84 projects at http://www.northcoastirwmp.net/prop84/rpf.php This project has developed from the North Coast Resource Partnership Project – Tehncial Assistance for Disadvantaged Water and Wastewater Providers. One of the main goals of this project was to create demonstration projects that serve as examples of how the tools can be practically applied to local service provides. In total, eight 'model projects' were completed applying the tools from the toolbox to meet community needs. Support was provided to Kashaya Utility District to help investigate the feasibility of upgrade projects for their water treatment system and explore potential funding avenues to complete the upgrade projects.
If the project is a component of a larger project, describe the other components of the larger project.	NA
If the project is a component of a larger project, describe how the project can operate as a stand-alone project or describe the components of the larger project that need to be completed to obtain the full benefits claimed.	NA
Describe the Standards to be used in implementation, (i.e., construction or safety standards, lab analysis, classification, protocols)	

Specific Goals and Objectives of the Project Table

	Goal	Measurable Objectives for each Goal
1.	Improve water supply reliability	• Recapture raw water backwash by installing an additional microfiltration unit to treat/filter raw water backwash prior to collection in the raw water tank.
2.	Increase resiliency to drought	• Increase Raw Water Storage Capacity by installing a 25,000 gallon raw water storage tank • Recapture 95% of the 90 gallons of raw water that is flushed back over the probes in the micro-filtration unit every 40 minutes (approximately 360 gallons per day).
3.	Increase resiliency to climate change	• Backup power available for pumping raw water during power outage resulting from large storm event • Install backup generator at pump from raw water source. • Increase raw water storage to relieve pressure on potable system in case of wildfire.

Description of the Need for the Project (750 characters) (describe the problem the project will address)

The existing raw water storage tank only has capacity for 5,000 gallons. The ability to produce potable water is limited by the capacity to store raw water. The lack of raw water storage is creating a number of deficiencies in the system. In case of fire, the water required to manage the fire must come from the treated water tank. This is an inefficient use of treated water. The current drought has also created a deficiency in the availability of non-potable water for use across the Rancheria. During the treatment of raw water to potable water, there is system backwash of treated water.

The current drought has added additional strain to the raw water source. The district pumps water from a well situated on the Wheatfield Fork of the Gualala River. The well is located along the side of the river 9 feet below the river bed. During the summer of 2014 the river was very low and by August 2014 was dry until mid-October. The community competes with the wine growing industry upstream for water from the river. The well has not gone dry but over the past two years the KUD Operator has observed a reduction in the static level and recharge times. The KUD is investigating backup sources of raw water but is concerned with storing raw water when it is available.

During 2013 and 2014, the facility has experienced four power outages, usually two per year, lasting between one and two days. Prior to the drought, the community would experience large storms, which would result in power outages up to four days. The district is able to store 66,000 gallons of treated water, which is approximately 2 days of storage. However to maintain the treated water storage at capacity, water must be continuously pumped from the source to ensure that the 5,000 gallon raw water storage is at capacity. In the case of a power outage, there is no means for filling the raw water storage tank and treated water cannot be produced. This leads to a deficiency in the system. A back up power supply would provide security to the system in case of a power outage.

Description of the Purpose of the Project and how it address the North Coast IRWM objectives (750 characters)

This project fits with Goal 4, Objectives 7 and 9. By increasing the raw water storage, there is more wate available for uses such as fire management and localised irrigation. This will significantly reduce the current need to use treated water to meet non-potable needs. The project will increase the opportunity for water recycling within the treatment process. The ability to collect and store raw and treated backwash water will releive some of the reliance on groundwater resources. This project also adress Goal 5, Objectives 10 and 11. The increase in the magnitude of storm events predict to occur as a reuslt of climate change will increase the potential for power outages at the treatment facility. The community is reducing their

vulerablility to power outages by installing a backup power supply. This promotes local energy independancy.

Project Description (2000 characters)

Storage System Upgrade

KUD is proposing a project to upgrade the raw water storage tank to 25,000 gallons. Increasing capacity to 25,000 gallons would enable raw water to be used to meet fire demand.

Raw Water Backwash Recapture

Water is treated through a microfiltration system and stored in the 66,000 gallon treated water tank. The KUD Operator estimates there is an additional 90 gallons of raw water that is flushed back over the probes in the micro-filtration unit every 40 minutes. The raw water could be captured and stored in the new 25,000 gallon tank for reuse across the Rancheria including for watering heritage apple trees, other important vegetation and used as supplemental water for firefighting activities if needed. Water from the "clean in place" cycle would not be captured because it is caustic.

To be able to capture this water, an additional microfiltration unit would need to be installed to filter the solids from the backwash water prior to collection in the raw water tank.

Back up Electricity Supply

The KUD would like to install a backup power supply. The existing raw water source is situated at a lower elevation than the raw water storage tank. The KUD currently relies on two 10 horse power pumps. The pumps operate together and pump approximately 26 gallons per minute each. The pumps operate at 920 feet with 400 pounds of head pressure. One 15KW generator would be sufficient to provide emergency power supply.

Project Work Task Table

Plans, studies, maps and specifications should be referenced, *including page or sheet numbers*, in the Project Work Task Table. *Please indicate which deliverables are considered Milestone deliverables (see Work Task Table example). Date format: 12/2013 (month/year).* Add rows as needed. Please note that the application tables are larger format tables to provide more room for responses.

#	Work Task Title	Work Task Description	Deliverables and Milestones	Task Pre-decessor	Start Date	End Date	% Com-plete *
A	**(a) Project Management**						
1	Contract Administration				02/2015	09/2015	
2	Labor Compliance Program				02/2015	09/2015	
3	Progress Reporting				02/2015	09/2015	
4	Final Report				02/2015	09/2015	
5	Project Performance & Monitoring Plan				NA		
6	Development of financing				09/2015	10/2015	
6	Other tasks (add tasks/rows as needed)				NA		
B	**(b) Land purchase/Easement**				NA		
1	Land purchase/Easement Tasks (add tasks/rows as needed)				NA		
C	**(c) Planning/Design/Engineering/ Environmental Documentation**						
1	Assessment and Feasibility Studies				02/2016	03/2016	
2	Preliminary Design				02/2016	03/2016	
3	60% Design Plans and Specifications				02/2016	03/2016	
4	Final Design/ Plans				02/2016	03/2016	
5	Environmental Documentation: CEQA /NEPA				02/2016	03/2016	
6	Permit Development: LIST				02/2016	03/2016	

#	Work Task Title	Work Task Description	Deliverables and Milestones	Task Pre-decessor	Start Date	End Date	% Com-plete *
7	Permit Development: LIST				02/2016	03/2016	
8	Other tasks (add tasks/rows as needed)				NA		
D	**(d) Construction/ Implementation**						
1	Construction contracting				03/2016	03/2016	
2	Mobilization and site preparation				03/2016	03/2016	
3	Project Construction				03/2016	06/2016	
4	Project Performance Monitoring and Data Management				02/2016	06/2016	
5	Demobilization				06/2016	06/2016	
6	Other tasks (add tasks/rows as needed)				NA		
E	**(e) Environmental Compliance/ Mitigation/ Enhancement**						
1	Environmental Compliance/ Mitigation tasks (add tasks/rows as needed)				02/2016	06/2016	
F	**(f) Construction Administration**						
1	Construction Administration tasks (add tasks/rows as needed)				02/2016	06/2016	

* Percent complete as expected by the assumed award date of October 1, 2013.

Attachment 2 Budget

Budget Summary

Project Title:						
Budget Category		**Requested Grant Funding**	**Cost Share: Non-State Funds**	**Cost Share: Other State Funds**	**Total**	**% Match**
(a)	Project Management Costs					
(b)	Land Purchase/Easement					
(c)	Planning/Design/Engineering & Environmental Documentation					
(d)	Construction/ Implementation					
(e)	Environmental Compliance/ Mitigation/ Enhancement					
(f)	Construction Administration					
(g)	Other Costs					
(h)	Construction/Implementation Contingency					
(i)	Grand Total (Sum rows (a) through (h) for each column)					

Sources for Non-State Funding Match and Other State Funds

Sources for Non-State Funding Match and Other State Funds	
Funding Source Name	**Date received or expected date of receipt of funds**

Budget Detail

Row (a) Project Management Costs

Row (a) Project Management Costs					
Project Management Type	**Personnel by Discipline**	**Number of Hours**	**Hourly Wage**	**% of Cost (if applicable) ***	**Total Admin Cost**
Labor					
Labor					
Equipment					
Supplies					
Travel					
Other					
Total					
* What is the percentage based on (including total amounts)?					
* How was the percentage of cost determined?					

Row (b) Land Purchase/Easement

Row (b) Land Purchase/Easement

Row (c) Planning/Design/Engineering & Environmental Documentation

Row (c) Planning/Design/Engineering & Environmental Documentation					
Personnel (Discipline)	**Work Task and Sub-Task**	**Number of Hours**	**Hourly Wage**	**Contingency Amounts**	**Total Cost**
Total					
Rationale used to determine the contingency percentage.					

Rows (d) Construction/Implementation

Row (d) Construction/Implementation				
Personnel (Discipline)	**Work Task and Sub-Task**	**Number of Hours**	**Hourly Wage**	**Total Cost**

Materials and Equipment	Work Task and Sub-Task	Number of Units	Unit Cost	Total Cost
Total				

Row (e) Environmental Compliance /Mitigation /Enhancement

Row (e) Environmental Compliance /Mitigation /Enhancement				
Personnel (Discipline)	Work Task and Sub-Task	Number of Hours	Hourly Wage	Total Cost
Materials and Equipment	Work Task and Sub-Task	Number of Units	Unit Cost	
Total				

Row (f) Construction Administration

Row (f) Construction Administration					
Administration Cost Type	Personnel (Discipline)	Number of Hours	Hourly Wage	% of Cost (if applicable)	Total Admin Cost
Labor					
Labor					
Equipment					
Supplies					
Travel					
Other					
Total					
What is the percentage based on?					
How was the percentage of cost determined?					

Row (g) Other Costs

Row (g) Other Costs				
Personnel (Discipline)	Work Task and Sub-Task	Number of Hours	Hourly Wage	Total Cost

Materials and Equipment	**Work Task and Sub-Task**	**Number of Units**	**Unit Cost**	
Total				

Row (h) Construction/Implementation Contingency

Row (h) Construction/Implementation Contingency

Annual Cost of Project

Annual Cost of Project (All costs should be in 2012 Dollars)							
	Initial Costs	Operations and Maintenance Costs					
YEAR	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Grand total Cost from Project Budget (row (i), Total column)	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) + (b)+…(f)
2013							
2014							
2015							
2016							
2017							
2018							
…							
…							
Project Life							
Comment Box							

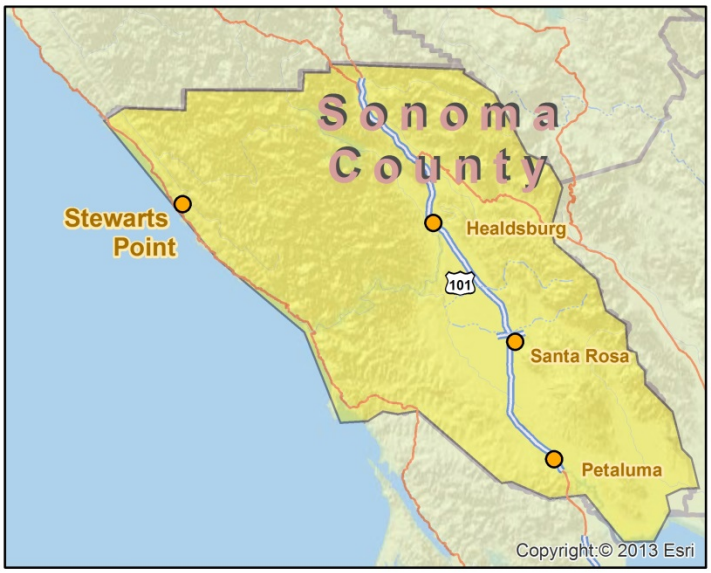
Attachment 3 Project Photo Page Template

Project Name: Kashaya Utility District Water Supply Reliability improvement Project
Organization Name:

Photo Pages

Photo description: Single unit microfiltration system from Memco.

Photo description: Single unit microfiltration system from Memco.



U.S. Highway
Major Road
Local Roads
Stream
River
Stewarts Point Rancheria (approximate)

Paper Size 8.5" x 11" (ANSI A)
0 190 380 760 Feet
Map Projection: Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Grid: WGS 1984 Web Mercator Auxiliary Sphere

N

GHD

Kashia Band of Pomo Indians
Technical Assistance for Disadvantaged Water and Wastewater Providers

Job Number 8410996
Revision A
Date 24 Nov 2014

Vicinity Map

Figure 1

718 Third Street Eureka CA 95501 USA T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

\\ghdnet\ghd\US\Eureka\Projects\Legacy\Projects\01081 HumboldtCounty DPW\8410996 NCRP Water-WW Assistance\08-GIS\Maps\Figures\GHD_Originals\F1_Vicinity_Kashia.mxd

Data source: ESRI Street Map; NAIP aerial 1m. Created by:porogers

Attachment 4 Technical Justification for the Project

Description of the expected physical benefits of the project

Kashaya Utility District (KUD) is proposing to upgrade their water treatment system in order to increase water supply reliability.

The existing raw water storage only has capacity for 5,000 gallons and is treated through a microfiltration system and stored in the 66,000 gallon treated water tank. The ability to produce potable water is limited by the capacity to store raw water. Increasing capacity to 25,000 gallons would enable raw water to be used to meet fire demand.

During the treatment of raw water to potable water, there is system backwash of treated water. The KUD Operator estimates there is an additional 90 gallons of raw water that is flushed back over the probes in the micro-filtration unit every 40 minutes. The raw water could be captured and stored in the new 25,000 gallon tank for reuse across the Rancheria including for watering heritage apple trees, other important vegetation and used as supplemental water for firefighting activities if needed. Water from the "clean in place" cycle would not be captured because it is caustic.

The KUD would like to install a backup power supply. In the past 24 months, the facility has experienced four power outages, usually two per year, lasting between one and two days. Prior to the drought, the community would experience large storms, which would result in power outages up to four days. The district is able to store 66,000 gallons of treated water, which is approximately 2 days of storage. However to maintain the treated water storage at capacity, water must be continuously pumped from the source to ensure that the 5,000 gallon raw water storage is at capacity. In the case of a power outage, there is no means for filling the raw water storage tank and treated water cannot be produced. This leads to a deficiency in the system. A back up power supply would provide security to the system in case of a power outage.

Technical Justification for the Project

The current drought has added additional strain to the raw water source. The community competes with the wine growing industry upstream for water from the river. The ability to produce potable water is limited by the capacity to store raw water. KUD is proposing a project to upgrade the raw water storage tank to 25,000 gallons. During the treatment of raw water to potable water, there is system backwash of treated water. The raw water could be captured and stored in the new 25,000 gallon tank for reuse across the Rancheria including for watering heritage apple trees, other important vegetation and used as supplemental water for firefighting activities if needed. The KUD would also like to install a backup power supply. In the past 24 months, the facility has experienced four power outages, usually two per year, lasting between one and two days. Prior to the drought, the community would experience large storms, which would result in power outages up to four days.

Scientific and Technical Documentation Table and CD Hard Copy

Technical and Scientific Documentation Table		
Technical and Scientific Document Name Format: Author/Agency. Title, Completion Date	**Document Description**	**Relevant page numbers**
NA		

Technical and Scientific CD

Copies of the reports, plans (half-scaled 11 x 17 tabloid), design specifications, maps, and other documents identified in the Work Plan and the Technical and Scientific Documentation Table must be copied to CD and sent to the address below. Receipt of the CD is due by March 1, 2013.

Katherine Gledhill
West Coast Watershed
11526 Sutton Street
Petaluma, CA 94952