



NORTH COAST RESOURCE PARTNERSHIP

2018/19 IRWM Project Application

The North Coast Resource Partnership (NCRP) 2018/19 Project Application Instructions and additional information can be found at the NCRP 2018/19 Project Solicitation webpage (<https://northcoastresourcepartnership.org/proposition-1-irwm-round-1-implementation-funding-solicitation/>). Please fill out grey text boxes and select all the check boxes that apply to the project. Application responses should be clear, brief and succinct.

Project Applications will be accepted until 5:00 pm, ~~March 8, 2019~~ March 15, 2019. 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 to kgledhill@westcoastwatershed.com

If you have questions, need additional information or proposal development assistance please contact:

- Katherine Gledhill at kgledhill@westcoastwatershed.com or 707.795.1235
- Tribal Projects: Sherri Norris, NCRP Tribal Coordinator at sherri@cieaweb.org or 510.848.2043

Project Name: Treasure Creek Woods MWC Water Storage and Distribution System Improvement Project

A. ORGANIZATION INFORMATION

1. Organization Name: Treasure Creek Woods Mutual Water Company (TCW MWC)

2. Contact Name/Title

Name: Mary Havener

Title: Board President

Email: minikat@tds.net

Phone Number (include area code): (530)266-3286

3. Organization Address (City, County, State, Zip Code):

P.O. Box 3974

Trinity Center, CA 96091

4. Organization Type

- ☐ Public agency
☐ Non-profit organization
☐ Public utility
☐ Federally recognized Indian Tribe
☐ California State Indian Tribe listed on the Native American Heritage Commission's California Tribal Consultation List
☒ Mutual water company
☐ Other:

5. Authorized Representative (if different from the contact name)

Name: Same as Contact Name

Title:

Email:

Phone Number (include area code):

6. Has the organization implemented similar projects in the past? ☐ yes ☒ no

Briefly describe these previous projects.

N/A

7. List all projects the organization is submitting to the North Coast Resource Partnership for the 2018/19 Project Solicitation in order of priority.

TCW MWC Water Storage and Distribution System Improvement Project

8. Organization Information Notes:

None.

B. ELIGIBILITY

1. North Coast Resource Partnership and North Coast IRWM Objectives

GOAL 1: INTRAREGIONAL COOPERATION & ADAPTIVE MANAGEMENT

☒ Objective 1 - Respect local autonomy and local knowledge in Plan and project development and implementation

☒ Objective 2 - Provide an ongoing framework for inclusive, efficient intraregional cooperation and effective, accountable NCIRWMP project implementation

☐ Objective 3 - Integrate Traditional Ecological Knowledge in collaboration with Tribes to incorporate these practices into North Coast Projects and Plans

GOAL 2: ECONOMIC VITALITY

☒ Objective 4 - Ensure that economically disadvantaged communities are supported and that project implementation enhances the economic vitality of disadvantaged communities by improving built and natural infrastructure systems and promoting adequate housing

☐ Objective 5 - Conserve and improve the economic benefits of North Coast Region working landscapes and natural areas

GOAL 3: ECOSYSTEM CONSERVATION AND ENHANCEMENT

- ☐ Objective 6 – Conserve, enhance, and restore watersheds and aquatic ecosystems, including functions, habitats, and elements that support biological diversity
- ☐ Objective 7 - Enhance salmonid populations by conserving, enhancing, and restoring required habitats and watershed processes

GOAL 4: BENEFICIAL USES OF WATER

- ☒ Objective 8 - Ensure water supply reliability and quality for municipal, domestic, agricultural, Tribal, and recreational uses while minimizing impacts to sensitive resources
- ☒ Objective 9 - Improve drinking water quality and water related infrastructure to protect public health, with a focus on economically disadvantaged communities
- ☒ Objective 10 - Protect groundwater resources from over-drafting and contamination

GOAL 5: CLIMATE ADAPTATION & ENERGY INDEPENDENCE

- ☒ Objective 11 - Address climate change effects, impacts, vulnerabilities, and strategies for local and regional sectors to improve air and water quality and promote public health
- ☒ Objective 12 - Promote local energy independence, water/ energy use efficiency, GHG emission reduction, and jobs creation

GOAL 6: PUBLIC SAFETY

- ☐ Objective 13 - Improve flood protection and reduce flood risk in support of public safety

2. Does the project have a minimum 15-year useful life?

- ☒ yes ☐ no

If no, explain how it is consistent with Government Code 16727.

N/A

3. Other Eligibility Requirements and Documentation

CALIFORNIA GROUNDWATER MANAGEMENT SUSTAINABILITY COMPLIANCE

- a) Does the project that directly affect groundwater levels or quality?
☒ yes ☐ no
- b) If Yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?
☒ yes ☐ no

CASGEM COMPLIANCE

- a) Does the project overlie a medium or high groundwater basin as prioritized by DWR?
☐ yes ☒ no
- b) If Yes, list the groundwater basin and CASGEM priority: N/A
- c) If Yes, please specify the name of the organization that is the designated monitoring entity: N/A
- d) If there is no monitoring entity, please indicate whether the project is wholly located in an economically disadvantaged community.
☒ yes ☐ no

URBAN WATER MANAGEMENT PLAN

- a) Is the organization required to file an Urban Water Management Plan (UWMP)?
☐ yes ☒ no
- b) If Yes, list the date the UWMP was approved by DWR: N/A
- c) Is the UWMP in compliance with AB 1420 requirements? N/A
☐ yes ☐ no
- d) Does the urban water supplier meet the water meter requirements of CWC 525? N/A
☐ yes ☐ no
- c) If Yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project? N/A
☐ yes ☐ no

AGRICULTURAL WATER MANAGEMENT PLAN

- a) Is the organization – or any organization that will receive funding from the project – required to file an Agricultural Water Management Plan (AWMP)?
☐ yes ☒ no
- b) If Yes, list date the AWMP was approved by DWR: N/A
- c) Does the agricultural water supplier(s) meet the requirements in CWC Part 2.55 Division 6? N/A
☐ yes ☐ no

SURFACE WATER DIVERSION REPORTS

- a) Is the organization required to file surface water diversion reports per the requirements in CWC Part 5.1 Division 2?
☐ yes ☒ no
- d) If Yes, will the organization be able to provide SWRCB verification documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project? N/A
☐ yes ☐ no

STORM WATER MANAGEMENT PLAN

- a) Is the project a stormwater and/or dry weather runoff capture project?
☐ yes ☒ no
- b) If yes, does the project benefit a Disadvantaged Community with a population of 20,000 or less? N/A
☐ yes ☐ no
- e) If No, will the organization be able to provide documentation that the project is included in a Stormwater Resource Plan that has been incorporated into the North Coast IRWM Plan, should the project be selected as a Priority Project? N/A
☐ yes ☐ no

C. GENERAL PROJECT INFORMATION

1. Project Name: TCW MWC Water Storage and Distribution System Improvement Project

2. Eligible Project Type under 2018/19 IRWM Grant Solicitation

- ☐ Water reuse and recycling for non-potable reuse and direct and indirect potable reuse
- ☒ Water-use efficiency and water conservation
- ☐ Local and regional surface and underground water storage, including groundwater aquifer cleanup or recharge projects
- ☐ Regional water conveyance facilities that improve integration of separate water systems
- ☒ Watershed protection, restoration, and management projects, including projects that reduce the risk of wildfire or improve water supply reliability
- ☐ Stormwater resource management projects to reduce, manage, treat, or capture rainwater or stormwater
- ☐ Stormwater resource management projects that provide multiple benefits such as water quality, water supply, flood control, or open space
- ☐ Decision support tools that evaluate the benefits and costs of multi-benefit stormwater projects
- ☐ Stormwater resource management projects to implement a stormwater resource plan
- ☐ Conjunctive use of surface and groundwater storage facilities
- ☐ Decision support tools to model regional water management strategies to account for climate change and other changes in regional demand and supply projections
- ☒ Improvement of water quality, including drinking water treatment and distribution, groundwater and aquifer remediation, matching water quality to water use, wastewater treatment, water pollution prevention, and management of urban and agricultural runoff
- ☐ Regional projects or programs as defined by the IRWM Planning Act (Water Code §10537)
- ☐ Other:

3. Project Abstract

For the protection of human health, the environment, water quality, water conservation, and fire suppression, the proposed project includes installation of a 150,000-gallon welded steel storage tank, 2,500 ft of pipeline, and booster pump station (BPS) if needed, replacement of 4,200 ft of 6-inch water main, isolation valves, and appurtenances, replacement of 36 service connections, and installation of five new fire hydrants.

4. Project Description

The proposed project is located near Coffee Creek in the community of TCW MWC, Trinity County, CA, approximately 37 road miles northeast of Weaverville, CA. TCW MWC is proposing replacement of the existing water distribution system. The existing system is comprised of 6-inch asbestos cement (AC) pipe and 2½-inch Sch 40 PVC pipe with some lead-based fittings and has met its useful service life. The existing small PVC pipe often has numerous leaks, many of which are difficult to locate as it is located behind houses. Additionally, all existing copper service lines are failing with frequent leaks. When a leak occurs, all customers lose water and the entire system must be drained, resulting in large water losses due to the lack of isolation valves. Refer to pages from the 2017 Annual Inspection Report completed by the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) included in Attachment 1. Key needs in the system are highlighted therein.

For the protection of human health, water and storage supply reliability, water conservation, fire suppression, and groundwater protection, the proposed project includes:

- Phase 1: Installation of 4,200 ft of 6-in PVC water main, isolation valves, service connections, and fire hydrants.
- Phase 2: Installation of a 150,000-gallon storage tank, 2,500 ft of pipeline, and possibly a BPS, depending on tank location.

Construction of the proposed project could be phased such that distribution system replacement could occur first, while easement and environmental associated with tank installation occurs. Then the subsequent construction phase would include installation of the water storage tank and possibly a BPS if land/easement acquisition on a nearby hill is unsuccessful.

Upon completion of the project, TCW MWC will have increased reliability and safety of their water system by minimizing leaks and low pressure problems and improving fire suppression capabilities. This should reduce both electrical pumping and chemical treatment costs by minimizing unaccounted for water losses. With a new distribution system, TCW MWC should also see a reduction in the number of emergency repairs, therefore saving in both maintenance and labor costs. Furthermore, a completely sealed distribution system will allow for increased pressure and flows, as well as protecting the health and safety of the public.

The other major component of the proposed project is to construct a new welded steel potable water storage tank to meet Waterworks Standard 64554(c), which requires community systems to be capable of meeting maximum day demand (MDD) with the highest capacity source offline. The system does not currently meet this standard. Additionally, there are currently no fire suppression capabilities within the system, as existing infrastructure does not provide enough flow nor pressure to fill a fire truck in a very high fire hazard severity zone area as identified by CalFire. A map of this is included in Attachment 2.

5. Specific Project Goals/Objectives

Goal 1: Beneficial Uses of Water.

Goal 1 Objective: Improve drinking water infrastructure to protect public health.

Goal 1 Objective: Ensure water supply reliability and quality to the severely disadvantaged community (SDAC) of TCW MWC.

Goal 1 Objective: Reduce water service disruption.

Goal 1 Objective:

Goal 2: Water Conservation.

Goal 2 Objective: Reduction in loss of pumped and treated groundwater.

Goal 2 Objective:

Goal 2 Objective:

Goal 2 Objective:

Goal 3: Climate Adaptation & Energy Independence.

Goal 3 Objective: GHG emission reduction by conserving water requiring less pumping.

Goal 3 Objective: Improve water/energy use efficiency.

Goal 3 Objective: Community resiliency to drought conditions and forest fires.

Additional Goals & Objectives (List)

Goal 5: Economic Vitality.

Goal 5 Objective: Enhance the economic vitality of the SDAC of TCW by improving existing infrastructure with grant funding rather than requiring rate increases.

6. Describe how the project addresses the North Coast Resource Partnership and North Coast IRWM Plan Goals and Objectives selected.

The project will allow TCW MWC to safely and effectively supply water to its customers by improving failing infrastructure within the SDAC of TCW via grant funding and therefore improving the economic vitality of the community. The new water storage tank will result in the community meeting Waterworks Standards and provide fire suppression capability that doesn't currently exist in a community in a high

fire severity zone. The new water distribution system will reduce water loss within the system and replace lead fittings and AC piping. This will minimize the amount of groundwater pumped and prevent overdrafting of the groundwater source. The reduction in pumping should lead to GHG emission reduction and water/energy use efficiency. The new tank and distribution system will consist of materials to ensure long-term water supply reliability, quality, and fire suppression, with a service life greater than 15 years, and NSF certified components to protect public health.

7. Describe the need for the project.

The existing distribution system is comprised of AC pipe, failing copper services, and thin-walled PVC pipe that has numerous leaks which require complete shutdown and draining of the entire system due to no isolation valving. Leaks often go undetected for long periods until water pools on the surface indicating a significant amount of water loss. Leaks lower available water pressure for consumption and firefighting suppression in a very high fire hazard severity zone frequently threatened by wildfires. Recent large fires in the area reflect the need for adequate fire suppression in the community where none now exists. Existing infrastructure pressure is such that a fire truck can't be filled from the system. A tank sized to provide fire flow is proposed. A BPS may also be required if land/easement acquisition on a nearby hill is unsuccessful. The new tank would result in the system meeting current Waterworks Standards for adequate source/storage capacity, which it currently does not.

8. List the impaired water bodies (303d listing) that the project benefits:

The Trinity River and Coffee Creek are listed as impaired water bodies, both of which run directly through the service area boundary. Increased fire protection will minimize sediments and other contaminants that would otherwise run into these water bodies should a fire occur.

9. Will this project mitigate an existing or potential Cease and Desist Order or other regulatory compliance enforcement action? ☐ yes ☒ no

If so, please describe?

N/A

10. Describe the population served by this project.

TCW MWC provides water services to a population of approximately 134 according to the 2017 Annual Inspection Report. The entire service area boundary serves an SDAC as shown in the DAC Mapping Tool provided by DWR. This is included in Attachment 3. The project will provide a direct water-related benefit to all of the community.

11. Does the project provide direct water-related benefits to a project area comprised of Disadvantaged Communities or Economically Distressed Communities?

- ☒ Entirely
- ☐ Partially
- ☐ No

List the Disadvantaged Community(s) (DAC)

Treasure Creek Woods Mutual Water Company

12. Does the project provide direct water-related benefits to a project area comprised of Severely Disadvantaged Communities (SDAC)?

- ☒ Entirely
- ☐ Partially

- ☐ No

List the Severely Disadvantaged Community(s)

Treasure Creek Woods Mutual Water Company

13. Does the project provide direct water-related benefits to a Tribe or Tribes?

- ☐ Entirely
- ☐ Partially
- ☒ No

List the Tribal Community(s)

N/A

If yes, please provide evidence of support from each Tribe listed as receiving these benefits.

14. If the project provides benefits to a DAC, EDA or Tribe, explain the water-related need of the DAC, EDA or Tribe and how the project will address the described need.

The community is designated as an SDAC according to the DAC Mapping Tool provided by DWR included as Attachment 3. TCW MWC is continuously looking for ways to reduce costs. Replacing the distribution system and installing isolation valves will minimize leaks in the community and result in decreased pumping and chemical costs. The SDAC is also faced with threats of wildfires each summer, so minimizing leaks and increasing pressure and available water storage will create fire suppression capabilities that are not currently available.

15. Does the project address and/or adapt to the effects of climate change? Does the project address the climate change vulnerabilities in the North Coast region? ☒ yes ☐ no

If yes, please explain.

Replacing the failing water distribution system will result in the conservation of both water and energy by reducing unaccounted for water loss. This will minimize the amount of pumping required.

Constructing system storage for fire flow capabilities will protect the community from the increased threat of wildfires in a very high fire hazard severity zone as identified by CalFire. Minimizing fires will reduce resulting sediment runoff into waterways in the area including the Trinity River.

16. Describe how the project contributes to regional water self-reliance.

The failing water distribution system and lack of storage inhibits TCW MWC's ability to ensure safe and reliable drinking water and provide fire protection. This project will provide TCW MWC the ability to be self-reliant and ensures compliance with NCRP Goal 2 Objective 4 and NCRP Goal 4 Objectives 8, 9, and 10. The proposed project will ensure that an economically SDAC is supported and will enhance the economic vitality of the SDAC by improving infrastructure to ensure water supply reliability and quality to protect public health while minimizing impacts to sensitive resources and protecting groundwater sources from over-drafting.

17. Describe how the project benefits salmonids, other endangered/threatened species and sensitive habitats.

N/A

18. Describe local and/or political support for this project.

The SWRCB DDW has been consulted regarding the proposed project.

19. List all collaborating partners and agencies and nature of collaboration.

N/A

20. Is this project part or a phase of a larger project? ☐ yes ☒ no

Are there similar efforts being made by other groups? ☒ yes ☐ no

If so, please describe?

Water infrastructure improvement projects are being applied for by other agencies; however, no known agencies are in the immediate vicinity of this project.

21. Describe the kind of notification, outreach and collaboration that has been done with the County(ies) and/or Tribes within the proposed project impact area, including the source and receiving watersheds, if applicable.

None to date.

22. Describe how the project provides a benefit that meets at least one of the Statewide Priorities as defined in the 2018 IRWM Grant Program Guidelines and Tribal priorities as defined by the NCRP?

The proposed project meets Statewide Priority Action #1, in that the proposed project will result in water and energy conservation; Statewide Priority Action #2, in that the proposed project will ensure TCW MWC can be self-reliant and provide safe drinking water and improved fire suppression to an SDAC; Statewide Priority Action #4, in that unaccounted for water loss will be reduced in the proposed project, thus being more prepared for the next drought that occurs by maximizing all available water sources; and, Statewide Priority Action #7, in that the proposed project will allow TCW MWC to provide safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes to its customers.

23. Project Information Notes:

None.

D. PROJECT LOCATION

1. Describe the location of the project

Geographical Information

The proposed project is located in the community of Treasure Creek Woods Mutual Water Company, Trinity County, California with a latitude of 41°05'09" and a longitude of 122°42'18" (NAD 83 UTM coordinates 10 0524745E, 4548350N). TCW MWC is located approximately 37 road miles northeast of Weaverville, California.

2. Site Address (if relevant):

TCW MWC, located off Hwy 3 in Coffee Creek, California, includes Pine Lane, Cedar Road, and Mann Road.

3. Does the applicant have legal access rights, easements, or other access capabilities to the property to implement the project?

☐ Yes If yes, please describe

☒ No If No, please provide a clear and concise narrative with a schedule, to obtain necessary access.

☐ NA If NA, please describe why physical access to a property is not needed.

Per the deed in Attachment 4, TCW MWC has legal rights to the existing well site for distribution system improvements. Most new water pipelines will be within existing right-of-way. Easements may not exist

for the existing 2½-inch water line and other portions of pipelines highlighted in Attachment 4. It will be verified if easements exist for these pipelines, and if not, easement acquisition will be completed within 6 months of project award funding. Additional information is in Number 4 below.

4. Project Location Notes:

Easement and/or land acquisition will be required for construction of the water storage tank and BPS (if required). If an easement on a nearby hill can be obtained for the water tank, a BPS will not be required. The project will be phased such that easement acquisition of this portion of the project will be completed while design and construction of the distribution system is underway. Easement acquisition of the second phase will be complete in time for the second round of IRWM implementation funding, if complete funding is not available this round.

See Attachment 5 for the overall site plan of the proposed project.

E. PROJECT TASKS, BUDGET AND SCHEDULE

1. Projected Project Start Date: 3/1/20

Anticipated Project End Date: 12/31/22

2. Will CEQA be completed within 6 months of Final Award?

☐ Yes

State Clearinghouse Number:

☐ NA, Project is exempt from CEQA

☐ NA, Not a Project under CEQA

☒ NA, Project benefits entirely to DAC, EDA or Tribe, or is a Tribal local sponsor. [Projects providing a water-related benefit entirely to DACs, EDAs, or Tribes, or projects implemented by Tribes are exempt from this requirement].

☐ No

3. Please complete the CEQA Information Table below

Indicate which CEQA steps are currently complete and for those that are not complete, provide the estimated date for completion.

CEQA STEP	COMPLETE? (y/n)	ESTIMATED DATE TO COMPLETE
Initial Study	N	12/31/20
Notice & invitation to consult sent to Tribes per AB52	N	12/31/20
Notice of Preparation	N	2/15/21
Draft EIR/MND/ND	N	2/28/21
Public Review	N	2/28/21
Final EIR/MND/ND	N	4/30/21
Adoption of Final EIR/MND/ND	N	4/30/21
Notice of Determination	N	4/30/21
N/A - not a CEQA Project		

If additional explanation or justification of the timeline is needed or why the project does not require CEQA, please describe.

4. Will all permits necessary to begin construction be acquired within 6 months of Final Award?

- ☐ Yes
☒ NA, Project benefits entirely to DAC, EDA, Tribe, or is a Tribal local sponsor
☐ No

5. PERMIT ACQUISITION PLAN

Type of Permit	Permitting Agency	Date Acquired or Anticipated
Encroachment & Grading Permits	Trinity County	3/1/22

For permits not acquired: describe actions taken to date and issues that may delay acquisition of permit.

To date, no actions have been taken to acquire the necessary permits as all are required as part of the construction phase and will be acquired by the Contractor. It is not anticipated that there will be any delay in permit acquisition.

6. Describe the financial need for the project.

TCW MWC is designated as an SDAC according to the DAC Mapping Tool provided by DWR, included as Attachment 3. All phases of the proposed project are estimated to cost approximately \$3.08 million. If grant funding is not obtained, a 100% loan at 2.5% interest over 40 years would result in a yearly increase in rate per customer of about \$3,750.

7. Is the project budget scalable? ☒ yes ☐ no

Describe how a scaled budget would impact the overall project.

The overall project involves water distribution system replacement and water storage installation. The overall project can be phased such that the first phase would include distribution system improvements and the second phase installation of the tank and BPS. Refer to budget breakdowns of the total and phased projects in the Excel file, as well as details in Attachment 6 cost estimates. Additionally, the first phase of distribution system improvements is also scalable in itself if necessary.

8. Describe the basis for the costs used to derive the project budget according to each budget category.

Derived budget costs for the proposed project are based on planning, design, and construction costs from similar prevailing wage rate public works projects that have been recently bid and constructed in the north state incremented up by the Engineering News Record Construction Cost Index to reflect present industry costs. Costs included are for open-cut installation of a new water main, services, and appurtenances based on average market value and equal those required by prevailing wage.

9. Provide a narrative on cost considerations including alternative project costs.

Two alternatives were considered for the overall project that would result in the same benefits as described herein. Alternative A includes acquisition of land/easement on the nearby hill for installation of a new water storage tank. If this acquisition is successful, a BPS would not be required. Refer to #14 below for further explanation.

10. List the sources of non-state matching funds, amounts and indicate their status.

None

11. List the sources and amount of state matching funds.

None

12. Cost Share Waiver Requested (DAC or EDA)? ☒ yes ☐ no

Cost Share Waiver Justification: Describe what percentage of the proposed project area encompasses a DAC/EDA, how the community meets the definition of a DAC/EDA, and the water-related need of the DAC/EDA that the project addresses. In order to receive a cost share waiver, the applicant must demonstrate that the project will provide benefits that address a water-related need of a DAC/EDA. TCW MWC is an SDAC as defined by DWR shown in the mapping tool in Attachment 3. 100% of the proposed project will serve this area. Refer to Section C, Item 14 for a description of the water-related needs that the project directly addresses.

13. Major Tasks, Schedule and Budget for NCRP 2018 IRWM Project Solicitation

Please complete MS Excel table available at <https://northcoastresourcepartnership.org/proposition-1-irwm-round-1-implementation-funding-solicitation/>; see instructions for submitting the required excel document with the application materials.

14. Project Tasks, Budget and Schedule Notes:

Detailed costs for Alternative A of the overall project in which a BPS is not required are included in Table 1 of Attachment 6, as well as the included MS Excel table. If land acquisition is not successful on the hill, a BPS and tank would be installed in the service area boundary. Detailed costs of this Alternative B are included in Table 2 of Attachment 6. Tables 3-5 in Attachment 6 also provide costs considered if the overall project is phased with Phase 1 distribution system improvements and environmental, and Phase 2 water storage tank (and possibly BPS).

F. PROJECT BENEFITS & JUSTIFICATION

1. Does the proposed project provide physical benefits to multiple IRWM regions or funding area(s)?

☒ yes ☐ no

If Yes, provide a description of the impacts to the various regions.

Improving fire suppression will minimize the threat of fire and resulting added sediment load, thus improving the quality of water to other regions within the NCRP further downstream in the Trinity and Klamath Rivers.

2. **Provide a narrative for project justification. Include any other information that supports the justification for this project, including how the project can achieve the claimed level of benefits. List any studies, plans, designs or engineering reports completed for the project. Please see the instructions for more information about submitting these documents with the final application.**
The existing water distribution system within Treasure Creek Woods has met its useful service life. This is evident by the many leaks experienced as well as the need to drain the entire system when there is a leak. Some leaks cannot be located and contribute to unaccounted for water losses as well. A new distribution system would reduce the number of leaks in the system, which will reduce pumping and chemical costs of the water supplied. The new distribution system will allow TCW MWC to supply safe and reliable drinking water and provide a level of fire suppression to its customers that does not currently exist in a very high fire hazard severity zone. See the site plan of proposed improvements in Attachment 5.
3. **Does the project address a contaminant listed in AB 1249 (nitrate, arsenic, perchlorate, or hexavalent chromium)?** ☐ yes ☒ no
If yes, provide a description of how the project helps address the contamination.
N/A
4. **Does the project provide safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes consistent with AB 685?** ☒ yes ☐ no
If Yes, please describe.
The Project replaces old and leaking asbestos cement pipe and all service connections within the area with new piping that meets requirements of the California Water Code. The new distribution system will provide a more reliable method of delivering safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes to TCW MWC customers. Water loss and leaks will be minimized, which will reduce the possibility of contamination due to pressure losses.
5. **Does the project employ new or innovative technologies or practices, including decision support tools that support the integration of multiple jurisdictions, including, but not limited to, water supply, flood control, land use, and sanitation?** ☐ yes ☒ no
If Yes, please describe.
N/A
6. **For each of the Potential Benefits that the project claims complete the following table to describe an estimate of the benefits expected to result from the proposed project. [See the NCRP Project Application Instructions, Potential Project Benefits Worksheet and background information to help complete the table. The NCRP Project Application, Attachment B includes additional guidance, source materials and examples from North Coast projects.]**

PROJECT BENEFITS TABLE

Potential Benefits Description	Physical Amt of Benefit	Physical Units	Est. Economic Value per year	Economic Units
Water Supply				
Increased Water Supply Reliability	36	Connections	\$18,000	\$500/

Potential Benefits Description	Physical Amt of Benefit	Physical Units	Est. Economic Value per year	Economic Units
				connection
Avoided Electric Costs	1,750	kW-hr/year	\$265	\$0.15/kW-hr
Avoided Costs Associated with Emergency Repairs	3	Approx. # leaks/year	\$6,000	\$2,000/leak
Water Quality				
Avoided Water Treatment Costs	6	gal/year	\$30	\$5/gallon chemical
Bacteria/Contamination Reduction	3	approx. # leaks/year	See Item 7 below.	
Other Ecosystem Service Benefits				
Other Benefits				
Enhanced Fire Fighting Capabilities	50	Acres protected/year	See Item 7 below.	
Social Health and Safety	134	People	See Item 7 below.	
Carbon Emissions Reductions from Reduced Electricity Use	1,750	kWh/year	438 kgCO ₂ e	0.25 KgCO ₂ e/kWh

7. Project Justification & Technical Basis Notes:

Leaks in the distribution system reduce pressure and flow available for fire suppression as well as require more groundwater pumping and treatment costs. Replacing the distribution system should increase pressure and flows available for fire suppression, which will enhance firefighting capabilities as well as reduce the amount of groundwater requiring pumping and treatment. The project also includes installing water storage and fire flow capabilities to protect 50 acres of very high fire hazard land.

A leak in the distribution system not only indicates water is leaving the distribution system but also that bacterial contaminants can be entering the distribution system due to reduced pressures. Reducing bacterial contaminants/contamination and ensuring the social health and safety of the public is the number one priority and cannot be monetized.

Major Tasks, Schedule and Budget for North Coast Resource Partnership 2018/19 IRWM Project Solicitation

Project Name: TCW MWC Water Storage and Distribution System Improvement Project - Overall Project Budget

Organization Name: Treasure Creek Woods Mutual Water Company (TCW MWC)

This budget corresponds to the detailed cost estimate provided in Attachment 6, Table 1.

Task #	Major Tasks	Task Description	Major Deliverables	Current Stage of Completion	IRWM Task Budget	Non-State Match	Total Task Budget	Start Date	Completion Date
A	Category (a): Direct Project Administration								
1	Administration	In cooperation with the County of Humboldt sign a sub-grantee agreement for work to be completed on this project. Develop invoices with support documentation. Provide audited financial statements and other deliverables as required. Provide funding coordination throughout all aspects of the project.	Invoices, audited financial statements and other deliverables as required	0%	\$5,000.00	\$0.00	\$5,000.00	3/1/20	12/31/22
2	Monitoring Plan	Develop Monitoring Plan to include goals and measurable objectives	Final Monitoring Plan	0%	\$5,000.00	\$0.00	\$5,000.00	4/1/20	5/1/20
3	Labor Compliance Program	Execute service agreement with Labor Compliance Program company	Submission of Labor Compliance Program	0%	\$30,000.00	\$0.00	\$30,000.00	3/1/22	9/30/22
4	Reporting	Develop monthly reports describing work completed, challenges, and strategies for reaching remaining project objectives. Develop Final Report	Quarterly and Final Reports	0%	\$10,000.00	\$0.00	\$10,000.00	3/1/20	10/31/22
B	Category (b): Land Purchase/Easement								
1	Land Purchase/Easement	Research/acquire record maps, prepare legal descriptions, obtain preliminary title reports, get property appraisal, and acquire land and/or easements	Final easements and/or deeds of land acquired	0%	\$100,000.00	\$0.00	\$100,000.00	7/1/20	7/30/21
C	Category (c): Planning/Design/Engineering/Environmental Documentation								
1	Final Planning	Finalize preliminary plans and recommended improvements, including location of proposed water storage tank	Final Design /Plans & Specifications	0%	\$20,000.00	\$0.00	\$20,000.00	3/1/20	4/30/20
2	Geotechnical Review	Geotechnical engineer to complete site testing and recommend improvements in a final Geotechnical Report	Geotechnical Report	0%	\$20,000.00	\$0.00	\$20,000.00	9/1/20	12/31/20
3	Final Design /Plans & Specifications	Develop a set of final design plans and specifications ready to put out to bid. The plans and specifications will conform to all necessary requirements stipulated by the District and regulatory agencies to ensure a high quality product.	Final Design /Plans & Specifications	0%	\$186,000.00	\$0.00	\$186,000.00	12/1/20	7/30/21
4	Environmental Documentation: CEQA *	Notify tribes about the project and solicit input per AB-52; Conduct preliminary project review; Prepare Initial Study and all relevant CEQA documents as per CEQA Guidelines. File Notice of Determination	Filed Notice of Determination & Adopted Initial Study Negative Declaration	0%	\$80,000.00	\$0.00	\$80,000.00	5/1/20	4/30/21
5	Permit Development *: Trinity County Encroachment and Grading Permit - Costs are included in construction costs as the contractor will be responsible for them.	Encroachment and Grading Permit: a standard encroachment and grading permit for improvements within a street right-of-way and for earthwork shall be secured to accommodate all construction activities for the project. - Costs are included in construction costs as the contractor will be responsible for them.	Final Trinity County Encroachment and Grading Permit - Costs are included in construction costs as the contractor will be responsible for them.	0%	\$0.00	\$0.00	\$0.00	2/1/22	3/1/22
D	Category (d): Construction/Implementation								
1	Construction/Implementation Contracting	Develop advertisement for bids and contract documents; conduct pre-bid contractors meeting; perform evaluation of bids; award contract	Summary of Bids and Contract Award	0%	\$20,000.00	\$0.00	\$20,000.00	8/1/21	11/26/21
2	Mobilization and Site Preparation	Prepare Site and mobilize project:1. Initiate project site preparation; 2. Order project equipment and supplies; 3. Assure project permits are in place; 4. Conduct pre-project site photo-monitoring	Summary of site preparation activities in monthly reports; pre-project site photos	0%	\$225,000.00	\$0.00	\$225,000.00	3/1/22	4/29/22
3	Project Construction/Implementation	Installation of 4,200 feet of 6-inch PVC water main, isolation valves, service connections, and fire hydrants. Installation of water storage tank, 2,500 feet of pipeline and booster pump station as needed depending on tank location.	Summary of construction activities in monthly progress report; Photo documentation; Construction completed	0%	\$1,886,000.00	\$0.00	\$1,886,000.00	3/1/22	9/30/22
4	Project Construction/Implementation: 10% Contingency	10% Construction Contingency	Summary of construction activities in monthly progress report; Photo documentation; Construction completed	0%	\$211,000.00	\$0.00	\$211,000.00	3/1/22	9/30/22
5	Project Signage	Install construction project sign	Project sign	0%	\$1,000.00	\$0.00	\$1,000.00	3/1/22	9/30/22

Project Name: TCW MWC Water Storage and Distribution System Improvement Project - Overall Project Budget
Organization Name: Treasure Creek Woods Mutual Water Company (TCW MWC)
This budget corresponds to the detailed cost estimate provided in Attachment 6, Table 1.

Task #	Major Tasks	Task Description	Major Deliverables	Current Stage of Completion	IRWM Task Budget	Non-State Match	Total Task Budget	Start Date	Completion Date
6	Project Close Out, Inspection & Demobilization	Inspect project components and establish that work is complete. Verify that all project components have been installed and are functioning as specified will be conducted as part of construction inspection and project closeout. Conduct project completion photo monitoring. Prepare record drawings.	As-Built and Record Drawings; Project completion site photos	0%	\$20,000.00	\$0.00	\$20,000.00	9/1/22	12/31/22
7	Project Performance Monitoring	The performance of the project will be monitored in accordance to the Monitoring Plan using the following measurement tools and methods: Comparing pumping and chemical costs before project to after project.	Comparison of pumping and chemical costs pre-project to post-project	0%	\$5,000.00	\$0.00	\$5,000.00	4/1/20	12/31/25
8	Construction Administration	Complete tasks necessary to administer construction contract. Keep daily records of construction activities, inspection, and progress. Conduct project construction photo-monitoring.	Construction Management Logs; Completed construction administration tasks documented in monthly progress reports	0%	\$256,000.00	\$0.00	\$256,000.00	3/1/22	12/31/22
Total North Coast Resource Partnership 2018/19 IRWM Grant Request					\$3,080,000.00	\$0.00	\$3,080,000.00		
Is Requested Budget scalable by 25%? If yes, indicate scaled totals; if no delete budget amount provided.					\$2,310,000.00	\$0.00	\$2,310,000.00		
Is Requested Budget scalable by 50%? If yes, indicate scaled totals; if no delete budget amount provided.					\$1,540,000.00	\$0.00	\$1,540,000.00		

**Major Tasks, Schedule and Budget for North Coast Resource Partnership 2018/19 IRWM Project Solicitation
Phase 1**

Project Name: TCW MWC Water Storage and Distribution System Improvement Project - Phase 1 Distribution System Improvement Project Budget
Organization Name: Treasure Creek Woods Mutual Water Company (TCW MWC)
This budget corresponds to the detailed cost estimate provided in Attachment 6, Table 3.

Task #	Major Tasks	Task Description	Major Deliverables	Current Stage of Completion	IRWM Task Budget	Non-State Match	Total Task Budget	Start Date	Completion Date
A Category (a): Direct Project Administration									
1	Administration	In cooperation with the County of Humboldt sign a sub-grantee agreement for work to be completed on this project. Develop invoices with support documentation. Provide audited financial statements and other deliverables as required. Provide funding coordination throughout all aspects of the project.	Invoices, audited financial statements and other deliverables as required	0%	\$5,000.00	\$0.00	\$5,000.00	3/1/20	12/31/21
2	Monitoring Plan	Develop Monitoring Plan to include goals and measurable objectives	Final Monitoring Plan	0%	\$5,000.00	\$0.00	\$5,000.00	4/1/20	5/1/20
3	Labor Compliance Program	Execute service agreement with Labor Compliance Program company	Submission of Labor Compliance Program	0%	\$15,000.00	\$0.00	\$15,000.00	3/1/22	10/30/21
4	Reporting	Develop monthly reports describing work completed, challenges, and strategies for reaching remaining project objectives. Develop Final Report	Quarterly and Final Reports	0%	\$10,000.00	\$0.00	\$10,000.00	3/1/20	12/31/21
B Category (b): Land Purchase/Easement									
1	Land Purchase/Easement	Research/acquire record maps, prepare legal descriptions, obtain preliminary title reports, get property appraisal, and acquire land and/or easements	Final easements and/or deeds of land acquired	0%	\$15,000.00	\$0.00	\$15,000.00	6/1/20	12/31/20
C Category (c): Planning/Design/Engineering/Environmental Documentation									
1	Final Design /Plans & Specifications	Develop a set of final design plans and specifications ready to put out to bid. The plans and specifications will conform to all necessary requirements stipulated by the District and regulatory agencies to ensure a high quality product.	Final Design /Plans & Specifications	0%	\$66,000.00	\$0.00	\$66,000.00	8/1/20	12/31/20
2	Environmental Documentation: CEQA *	Notify tribes about the project and solicit input per AB-52; Conduct preliminary project review; Prepare Initial Study and all relevant CEQA documents as per CEQA Guidelines. File Notice of Determination	Filed Notice of Determination & Adopted Initial Study Negative Declaration	0%	\$80,000.00	\$0.00	\$80,000.00	4/1/20	12/31/20
3	Permit Development *: Trinity County Encroachment Permit - Costs are included in construction costs as the contractor will be responsible for them.	Encroachment Permit: a standard encroachment permit for improvements within a street right-of-way shall be secured to accommodate all construction activities for the project. - Costs are included in construction costs as the contractor will be responsible for them.	Final Trinity County Encroachment Permit - Costs are included in construction costs as the contractor will be responsible for them.	0%	\$0.00	\$0.00	\$0.00	3/1/21	4/1/21
D Category (d): Construction/Implementation									
1	Construction/Implementation Contracting	Develop advertisement for bids and contract documents; conduct pre-bid contractors meeting; perform evaluation of bids; award contract	Summary of Bids and Contract Award	0%	\$20,000.00	\$0.00	\$20,000.00	1/1/21	3/26/21
2	Mobilization and Site Preparation	Prepare Site and mobilize project:1. Initiate project site preparation; 2. Order project equipment and supplies; 3. Assure project permits are in place; 4. Conduct pre-project site photo-monitoring	Summary of site preparation activities in monthly reports; pre-project site photos	0%	\$100,000.00	\$0.00	\$100,000.00	3/1/21	4/30/21
3	Project Construction/Implementation	Installation of 4,200 feet of 6-inch PVC water main, isolation valves, service connections, and fire hydrants.	Summary of construction activities in monthly progress report; Photo documentation; Construction completed	0%	\$893,000.00	\$0.00	\$893,000.00	4/1/21	10/31/21
4	Project Construction/Implementation: 10% Contingency	10% Construction Contingency	Summary of construction activities in monthly progress report; Photo documentation; Construction completed	0%	\$99,000.00	\$0.00	\$99,000.00	4/1/21	10/31/21
5	Project Signage	Install construction project sign	Project sign	0%	\$1,000.00	\$0.00	\$1,000.00	4/1/21	10/31/21
6	Project Close Out, Inspection & Demobilization	Inspect project components and establish that work is complete. Verify that all project components have been installed and are functioning as specified will be conducted as part of construction inspection and project closeout. Conduct project completion photo monitoring. Prepare record drawings.	As-Built and Record Drawings; Project completion site photos	0%	\$5,000.00	\$0.00	\$5,000.00	9/1/21	12/31/21
7	Project Performance Monitoring	The performance of the project will be monitored in accordance to the Monitoring Plan using the following measurement tools and methods: Comparing pumping and chemical costs before project to after project.	Comparison of pumping and chemical costs pre-project to post-project	0%	\$5,000.00	\$0.00	\$5,000.00	4/1/20	12/31/25
8	Construction Administration	Complete tasks necessary to administer construction contract. Keep daily records of construction activities, inspection, and progress. Conduct project construction photo-monitoring.	Construction Management Logs; Completed construction administration tasks documented in monthly progress reports	0%	\$124,000.00	\$0.00	\$124,000.00	3/1/21	10/31/21
Total North Coast Resource Partnership 2018/19 IRWM Grant Request					\$1,443,000.00	\$0.00	\$1,443,000.00		
Is Requested Budget scalable by 25%? If yes, indicate scaled totals; if no delete budget amount provided.					\$1,082,250.00	\$0.00	\$1,082,250.00		
Is Requested Budget scalable by 50%? If yes, indicate scaled totals; if no delete budget amount provided.					\$721,500.00	\$0.00	\$721,500.00		

**Major Tasks, Schedule and Budget for North Coast Resource Partnership 2018/19 IRWM Project Solicitation
Phase 2a**

Project Name: TCW MWC Water Storage and Distribution System Improvement Project - Phase 2a Water Storage Improvements without BPS Project Budget

Organization Name: Treasure Creek Woods Mutual Water Company (TCW MWC)

This budget corresponds to the detailed cost estimate provided in Attachment 6, Table 4.

Task #	Major Tasks	Task Description	Major Deliverables	Current Stage of Completion	IRWM Task Budget	Non-State Match	Total Task Budget	Start Date	Completion Date
A	Category (a): Direct Project Administration								
1	Administration	In cooperation with the County of Humboldt sign a sub-grantee agreement for work to be completed on this project. Develop invoices with support documentation. Provide audited financial statements and other deliverables as required. Provide funding coordination throughout all aspects of the project.	Invoices, audited financial statements and other deliverables as required	0%	\$5,000.00	\$0.00	\$5,000.00	3/1/20	12/31/22
2	Monitoring Plan	Develop Monitoring Plan to include goals and measurable objectives	Final Monitoring Plan	0%	\$5,000.00	\$0.00	\$5,000.00	4/1/20	5/1/20
3	Labor Compliance Program	Execute service agreement with Labor Compliance Program company	Submission of Labor Compliance Program	0%	\$20,000.00	\$0.00	\$20,000.00	3/1/22	9/30/22
4	Reporting	Develop monthly reports describing work completed, challenges, and strategies for reaching remaining project objectives. Develop Final Report	Quarterly and Final Reports	0%	\$10,000.00	\$0.00	\$10,000.00	3/1/20	10/31/22
B	Category (b): Land Purchase/Easement								
1	Land Purchase/Easement	Research/acquire record maps, prepare legal descriptions, obtain preliminary title reports, get property appraisal, and acquire land and/or easements	Final easements and/or deeds of land acquired	0%	\$100,000.00	\$0.00	\$100,000.00	7/1/20	7/30/21
C	Category (c): Planning/Design/Engineering/Environmental Documentation								
1	Final Planning	Finalize preliminary plans and recommended improvements, including location of proposed water storage tank	Final Design /Plans & Specifications	0%	\$20,000.00	\$0.00	\$20,000.00	3/1/20	4/30/20
2	Geotechnical Review	Geotechnical engineer to complete site testing and recommend improvements in a final Geotechnical Report	Geotechnical Report	0%	\$20,000.00	\$0.00	\$20,000.00	9/1/20	12/31/20
3	Final Design /Plans & Specifications	Develop a set of final design plans and specifications ready to put out to bid. The plans and specifications will conform to all necessary requirements stipulated by the District and regulatory agencies to ensure a high quality product.	Final Design /Plans & Specifications	0%	\$103,000.00	\$0.00	\$103,000.00	12/1/20	7/30/21
4	Environmental Documentation: CEQA * - To be completed during Phase 1	To be completed during Phase 1	To be completed during Phase 1	0%	\$0.00	\$0.00	\$0.00	5/1/20	4/30/21
5	Permit Development *: Trinity County Encroachment and Grading Permit - Costs are included in construction costs as the contractor will be responsible for them.	Encroachment and Grading Permit: a standard encroachment and grading permit for improvements within a street right-of-way and for earthwork shall be secured to accommodate all construction activities for the project. - Costs are included in construction costs as the contractor will be responsible for them.	Final Trinity County Encroachment and Grading Permit - Costs are included in construction costs as the contractor will be responsible for them.	0%	\$0.00	\$0.00	\$0.00	2/1/22	3/1/22
D	Category (d): Construction/Implementation								
1	Construction/Implementation Contracting	Develop advertisement for bids and contract documents; conduct pre-bid contractors meeting; perform evaluation of bids; award contract	Summary of Bids and Contract Award	0%	\$20,000.00	\$0.00	\$20,000.00	8/1/21	11/26/21
2	Mobilization and Site Preparation	Prepare Site and mobilize project:1. Initiate project site preparation; 2. Order project equipment and supplies; 3. Assure project permits are in place; 4. Conduct pre-project site photo-monitoring	Summary of site preparation activities in monthly reports; pre-project site photos	0%	\$115,000.00	\$0.00	\$115,000.00	3/1/22	4/29/22
3	Project Construction/Implementation	Installation of water storage tank, 2,500 feet of pipeline and booster pump station as needed depending on tank location.	Summary of construction activities in monthly progress report; Photo documentation; Construction completed	0%	\$1,049,000.00	\$0.00	\$1,049,000.00	3/1/22	9/30/22
4	Project Construction/Implementation: 10% Contingency	10% Construction Contingency	Summary of construction activities in monthly progress report; Photo documentation; Construction completed	0%	\$117,000.00	\$0.00	\$117,000.00	3/1/22	9/30/22
5	Project Signage	Install construction project sign	Project sign	0%	\$1,000.00	\$0.00	\$1,000.00	3/1/22	9/30/22
6	Project Close Out, Inspection & Demobilization	Inspect project components and establish that work is complete. Verify that all project components have been installed and are functioning as specified will be conducted as part of construction inspection and project closeout. Conduct project completion photo monitoring. Prepare record drawings.	As-Built and Record Drawings; Project completion site photos	0%	\$5,000.00	\$0.00	\$5,000.00	9/1/22	12/31/22

Project Name: TCW MWC Water Storage and Distribution System Improvement Project - Phase 2a Water Storage Improvements without BPS Project Budget
Organization Name: Treasure Creek Woods Mutual Water Company (TCW MWC)
This budget corresponds to the detailed cost estimate provided in Attachment 6, Table 4.

Task #	Major Tasks	Task Description	Major Deliverables	Current Stage of Completion	IRWM Task Budget	Non-State Match	Total Task Budget	Start Date	Completion Date
7	Project Performance Monitoring	The performance of the project will be monitored in accordance to the Monitoring Plan using the following measurement tools and methods: Comparing pumping and chemical costs before project to after project.	Comparison of pumping and chemical costs pre-project to post-project	0%	\$5,000.00	\$0.00	\$5,000.00	4/1/20	12/31/25
8	Construction Administration	Complete tasks necessary to administer construction contract. Keep daily records of construction activities, inspection, and progress. Conduct project construction photo-monitoring.	Construction Management Logs; Completed construction administration tasks documented in monthly progress reports	0%	\$164,000.00	\$0.00	\$164,000.00	3/1/22	12/31/22
Total North Coast Resource Partnership 2018/19 IRWM Grant Request					\$1,759,000.00	\$0.00	\$1,759,000.00		
Is Requested Budget scalable by 25%? If yes, indicate scaled totals; if no delete budget amount provided.					\$1,319,250.00	\$0.00	\$1,319,250.00		
Is Requested Budget scalable by 50%? If yes, indicate scaled totals; if no delete budget amount provided.					\$879,500.00	\$0.00	\$879,500.00		

ATTACHMENT 1

State Water Resources Control Board – Division of Drinking Water Drinking Water Field Operations Branch – Klamath District – Redding Office Inspection Report

Name of Water System: Treasure Creek Woods MWC **PWS#:** 5301101 **Date:** 6/23/2017
Location: East side of Highway 3 in Coffee Creek, approximately eight miles north of Trinity Center.
Contact/Address: Mary Havener, President, P O Box 3974 Trinity Center, CA 96091 **Phone #:** (530) 266-3286
Owner/Address: Mutual Water Company, See Above **Phone #:** See Above
Permit Status: letter permit issued 1/14/94 **Permit #:** 01-01-94P(210)
Inspection done by: Ian McFadden, 5/25/2017 **Last Inspection:** 11/14/2013 by Franklin Saylor.

System Facilities and Operations (Customer numbers per 2016 Annual Report to DDW)

Area Served Treasure Creek Woods Mutual Water Company is a small community water system on the east side of Highway 3 in Coffee Creek, just north of Trinity Lake along the Trinity River. The Company serves a year round population of approximately 34 full time residents through 36 unmetered service connections including one commercial service connection serving a small café, (a Pizza Parlor) which is only open in the Spring and Summer and the Volunteer Fire Department building. The elevation throughout the service area is relatively consistent at 2600 feet above mean sea level. Summers are warm with high temperatures approaching 100°F. The majority of the precipitation occurs during the winter in the form of snow with lows reaching down into the 20's. There is a small amount of precipitation during the summer in the form of thunder showers.

Improvements since last inspection (2013): 1) Propane generator provides needed power during frequent outages due to heavy storms. 2) upgrading service stop boxes, approximately 2-3 per year, ½ are complete.

Proposed Improvements: 1) Investigating major system upgrades. 2) Plan to replace PVC line down the power line, breaks often. 3) Considering VFD pumps to replace pumps that cycle every 30 seconds.

Source of Supply:

Source	Status	Capacity	Comments
Well 1	Active	24-in CSP; One 6-HP Centrifugal pumps; 24 gpm @ 50 psig;	Approx. 20 feet deep with no sanitary seal; 200 feet west of Trinity River; lead-lag alternates between Wells 1 & 2
Well 2	Active	Two 5-HP centrifugal pumps 40 gpm combined @ 50 psig; higher gpm against lower backpressure	Approx. 20 feet deep with no sanitary seal; 300 feet west of Trinity River; 100 feet south of Well 1.
TOTAL		64 gpm	At lower backpressures, higher pump yields.
Surface water, auxiliary sources, connections with other systems: None			

Discussion: The wells operate on an alternating basis based on the pressure measured at the pressure tank in the Well 2 well house. A small stream that typically dries up before the end of the summer flows between the two wells approximately 50 feet from either well. Wells appear to be in the Trinity River 100-year floodplain with wellheads most likely above the high water marks. No known septic systems within 300 feet of either well. Need to take daily to weekly turbidity samples at wells to determine influence of surface water.

Safe Maximum Production Capacity of Supply (gpm): The wells operate on an alternating basis. There is reportedly no problem with excessive drawdown. The pumps constantly cycle to keep up with demand. Waterworks standards(64554(c)) for new permits require community systems using only groundwater to have a min. of two sources and be capable of meeting MDD with the highest capacity source offline. The MDD is approx.. 50 gpm, with well 2 offline, the system can only produce 24 gpm.

Year	Total Annual Water Production (Gal)	Maximum			Estimated Maximum Population Served	Number Service ConXs	Max Day Flow per ConX (gpd)	Max Day Flow per Person (gpd)	Comments
		Month (MGal)	ADD (Gal)	MDD (gpm)					
2016	6,438,919	2.216	71,484	50	134	36	1,986	533	July, August, Sept. has 10x the used of other months.
2015	No data								

Storage Facilities

Name	Type	Capacity	Comments
Well 2 Tanks	Bladder Pressure	2 @ 80 gallons	

Storage Adequacy: In order to meet the Waterworks Standards(64554(a)(2), a community water system shall provide storage capacity equal or greater than the MDD unless the system can demonstrate additional source capacity. In order to meet the Waterworks Standards, the Company needs to provide 10 gpm in excess source capacity which is provided by Well 1 at 24 gpm. While the sustained reliable source capacity of the Company's wells is unknown, based on the pumping capacity, it seems likely that the Company has sufficient source capacity to meet this requirement. No reported water outages or water shortages past several years.

Treatment Facilities 1) Raw well water is chlorinated prior to entering the distribution system.

2) 8.3% non-NSF-approved sodium hypochlorite solution (Clorox) is diluted 10:1 then injected at 0.8% by a 17 gallon per day Stenner brand peristaltic metering pump drawing from a 35-gallon capacity plastic storage crock. Have a complete spare peristaltic pump.

3) The strength of the hypochlorite solution is adjusted somewhat throughout the year based on chlorine residual readings within the distribution system.

4) The metering pump is not flow paced; therefore, the chlorine dosage varies depending on which well is used. Based upon the estimated maximum pumping rates of Wells 1 and 2, the chlorination system is able to provide a maximum dosage of 0.8 milligrams per liter (mg/L) when Well 1 is pumping and a maximum dosage of 0.5 mg/L when Well 2 is pumping, using a 0.6% sodium hypochlorite solution.

Operator Certification: Requires a state-certified Grade D1 or higher distribution system operator. Board is looking for someone else to replace Mary Havener as the Operator.

Name	D	Cert # & Expiry	T	Comments
Mary Havener	D1	31702, expires 12/1/18	No T	Mary Havener is MWC President

Distribution System: The distribution system contains a single loop with one dead-end main off the loop. The Company's maps of the distribution system indicate that the loop consists entirely of 6-inch diameter asbestos cement main; however, Ms. Havener reported that she believed there was some 3-inch diameter PVC water main as well. There are no known main valves. Thus, the entire water system is shutdown and the system dewatered whenever main repairs are necessary. The single dead-end main is not equipped with a flushing valve or hydrant.

Back-Flow Hazards The Company does not have a formal cross-connection program, and 1) **needs to adopt rules or ordinances regarding the prevention of cross-connections.** 2) **The Company needs to perform a cross-connection survey in order to identify any existing potential hazards.**

Emergency Provisions The Company is installed a new propane powered generator and generator building. **Generator installed as of 12/19/2013.**

Operation Records: The Company measures and records the chlorine residual within the distribution system daily. No other operations records are maintained. The results from the chlorine residual monitoring are reported to the Department each month.

Turbidity Monitoring: Since the wells are shallow and near the Trinity River (in the river gravels) turbidity monitoring was required by a Compliance Order, issued 6/2/94. Unfortunately, the only turbidity reading I have found in record are June through October 1994. No winter weather readings are on file. **Required ~daily turbidity readings for a 12-months period, beginning in September 2017.**

Bacteriological Monitoring: Company is required to collect at least one routine bacteriological sample each month. The samples are delivered to the Weaverville Sanitary District lab where they are analyzed. Results are sent to the Department by the tenth day of the following month.

Bacteriological Sample Siting Plan: The most recent BSSP was updated during the 2017 inspection.

Raw water coliform sampling:

Date	# Samples	Results	Comments
Aug 08	2	Both TC-	Follow-up to finished water TC+
Jan 16	1	TC	1.0 MPN

Chemical Monitoring Program: The Company relies on the Department to track chemical monitoring results and provide them with chemical monitoring schedules. The Company is past due on most Well 1 raw water chemical

FIRE HAZARD SEVERITY ZONES IN SRA

Adopted by CAL FIRE on November 7, 2007

HUMBOLDT COUNTY

SISKIYOU COUNTY

SHASTA COUNTY

TEHAMA COUNTY

MENDOCINO COUNTY

FIRE HAZARD SEVERITY ZONES in State Responsibility Area (SRA)

Moderate
High
Very High

FIRE PROTECTION RESPONSIBILITY

Federal Responsibility Area (FRA)
Local Responsibility Area (LRA) - Unincorporated
Local Responsibility Area (LRA) - Incorporated

Public Resources Code 4201-4204 direct the California Department of Forestry and Fire Protection (CAL FIRE) to map fire hazard within State Responsibility Areas (SRA), based on relevant factors such as fuels, terrain, and weather. These statutes were passed after significant wildland-urban interface fires; consequently these hazards are described according to their potential for causing ignitions to buildings. These zones referred to as Fire Hazard Severity Zones (FHSZ), provide the basis for application of various mitigation strategies to reduce risks to buildings associated with wildland fires. The zones also relate to the requirements for building codes designed to reduce the ignition potential to buildings in the wildland-urban interface zones.

These maps have been created by CAL FIRE's Fire and Resource Assessment Program (FRAP) using data and models describing development patterns, estimated fire behavior characteristics based on potential fuels over a 30-50 year time horizon, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure to new construction. Details on the project and specific modeling methodology can be found at <http://frap.cdf.ca.gov/projects/hazard/methods.htm>.

The version of the map shown here represents the official "Maps of Fire Hazard Severity Zones in the State Responsibility Area of California" as required by Public Resources Code 4201-4204 and entitled in the California Code of Regulation, Title 14, Section 1260 Fire Hazard Severity Zones, and is adopted by CAL FIRE on November 7, 2007.

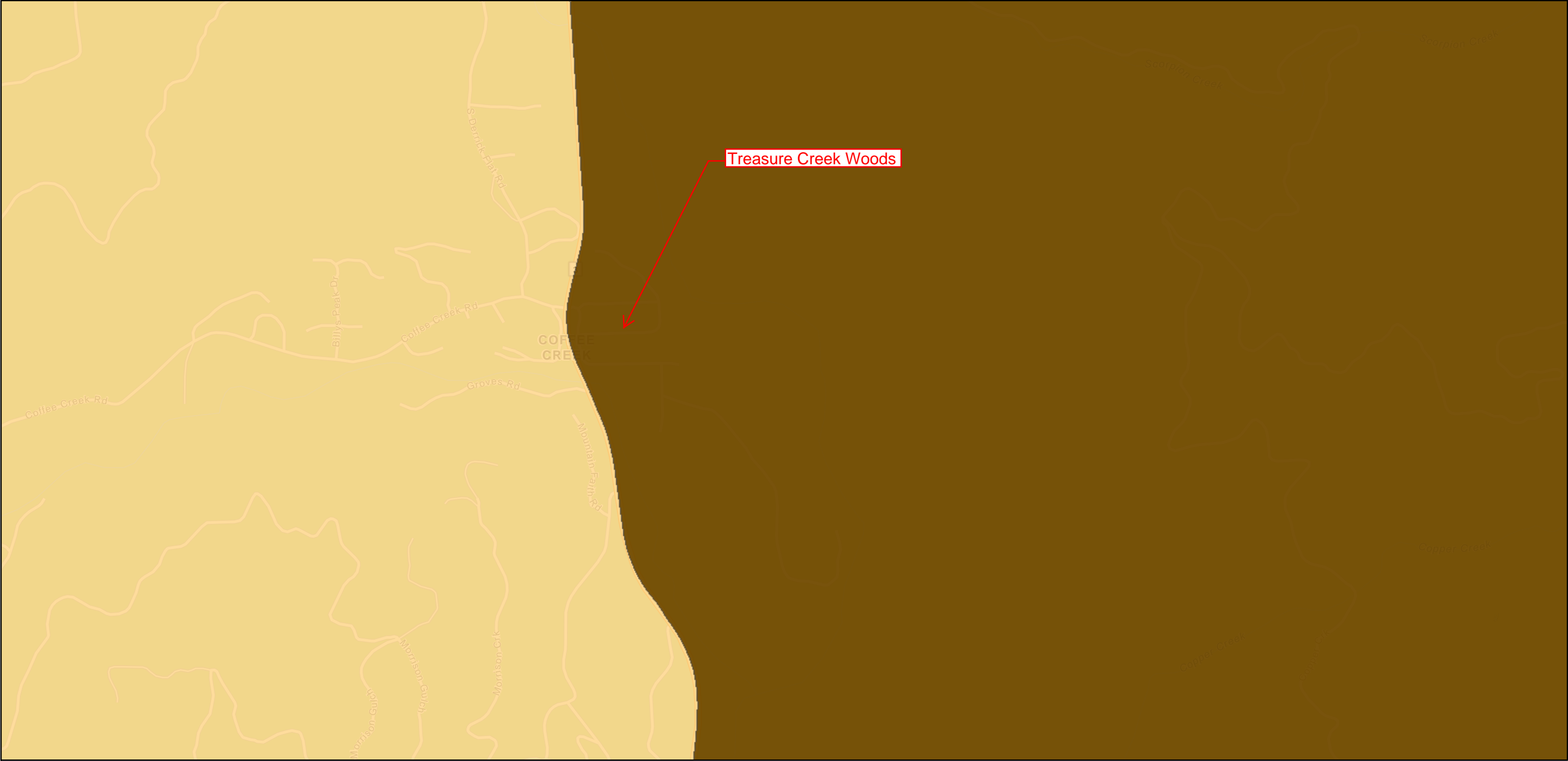
An interactive system for viewing map data is hosted by the UC Center for Fire at <http://firecenter.berkeley.edu/fhsz/>.

Questions can be directed to David Sapsis, at 916.445.5369, dave.sapsis@fire.ca.gov.

Projection Albers, NAD 1927
Scale 1: 150,000
at 32" x 46"
November 06, 2007



ATTACHMENT 3



3/13/2019, 2:03:47 PM

California Counties

Disadvantaged Communities - Places 2016

Data Not Available

Severely Disadvantaged Communities (MHI < \$38,270)

Disadvantaged Communities (\$38,270 >MHI< \$51,026)

Disadvantaged Communities - Tract 2016

Data Not Available

Severely Disadvantaged Communities (MHI < \$38,270)

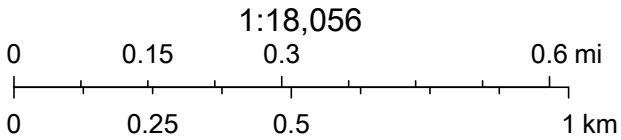
Disadvantaged Communities (\$38,270 >MHI< \$51,026)

Disadvantaged Communities - Block Group 2016

Data Not Available

Severely Disadvantaged Communities (MHI < \$38,270)

Disadvantaged Communities (\$38,270 >MHI< \$51,026)



US Census Bureau, U.S. Bureau of Reclamation, California Department of Conservation, California Department of Fish and Game, California Department of Forestry and Fire Protection, National Oceanic and Atmospheric Administration

ATTACHMENT 4

TRINITY COUNTY

RECORDING REQUESTED BY AND WHEN RECORDED MAIL TO NAME <u>Mr. B. Don Blackwood</u> ADDRESS <u>Trinity Center,</u> CITY & STATE <u>California</u> Title Order No. _____ Escrow No. _____		1898 RECORDED AT REQUEST OF <u>TRINITY COUNTY TITLE COMPANY</u> JUL 10 1973 2:22 P.M. TRINITY COUNTY RECORDS HELEN J. SMITH, RECORDER FEE \$ <u>3.00</u>
MAIL TAX STATEMENTS TO NAME _____ ADDRESS <u>SAME AS ABOVE</u> CITY & STATE _____		SPACE ABOVE THIS LINE FOR RECORDER'S USE <u>TRINITY COUNTY</u> DOCUMENTARY TRANSFER TAX \$ <u>NONE</u> _____ COMPUED ON FULL VALUE OF PROPERTY CONVEYED, _____ OR COMPUTED ON FULL VALUE LESS LIENS AND ENCUMBRANCES REMAINING AT TIME OF SALE. <u>Dennis L. McGlynn</u> TRINITY COUNTY TITLE COMPANY <small>Signature of Declarant or Agent determining tax. Firm Name</small>

Corporation Grant Deed

WESTERN TITLE FORM NO. 102

FOR VALUE RECEIVED, ELYWOOD CORPORATION, a corporation,

GRANTS to B. DON BLACKWOOD and GRACE M. BLACKWOOD, husband and wife as Joint Tenants as to an undivided 1/2 interest and GEORGE W. ELY and BERNICE M. ELY, husband and wife as Joint Tenants as to an undivided 1/2 interest all that real property situate in the

County of Trinity, State of California, described as follows:

A right of way for ingress and egress and public utility purposes over, under and across the existing road which road crosses at or near the westerly line of PARCEL NO. 2 as said PARCEL NO. 2 is described in the deed from B. Don Blackwood, et al., to ELYWOOD CORPORATION, a corporation, dated October 13, 1970 and recorded October 23, 1970 in Book 143 of Official Records at page 325, Trinity County Records.

IN WITNESS WHEREOF, said corporation has executed these presents by its officers thereunto duly authorized, this

5 day of July, 1973.

ELYWOOD CORPORATION
 By B. Don Blackwood President
 By George W. Ely Vice President

STATE OF CALIFORNIA

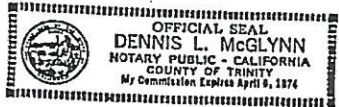
County of Trinity

On July 6, 1973, before me, the undersigned, a Notary Public, in and for said State, personally appeared B. Don Blackwood and George W. Ely, known to me to be the President and the Vice President of the corporation that executed the within instrument, and also known to me to be the persons who executed it on behalf of such corporation, and acknowledged to me that such corporation executed the same, and further acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its Board of Directors.

Dennis L. McGlynn
Notary Public

Dennis L. McGlynn
Name (Type or Printed)

FOR NOTARY SEAL OR STAMP



BOOK **159** PAGE **737**

MAIL TAX STATEMENTS AS DIRECTED ABOVE

1897

RECORDING REQUESTED BY

RECORDED AT REQUEST OF
TRINITY COUNTY TITLE COMPANY

AND WHEN RECORDED MAIL TO

NAME Elywood Water Supply Corp.
ADDRESS Trinity Center,
CITY & STATE California

JUL 10 1973

2:21 P.M.
TRINITY COUNTY RECORDS
HELEN J. SMITH, RECORDER
FEE \$4.50

Title Order No. _____ Escrow No. _____

MAIL TAX STATEMENTS TO

NAME _____
ADDRESS SAME AS ABOVE
CITY & STATE _____

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Documentary transfer tax \$.. NONE.....
☐ Computed on full value of property conveyed, or
☐ Computed on full value less liens and encumbrances
remaining thereon at time of sale.Dennis L. McGlynn TRINITY COUNTY TITLE COMPANY
Signature of declarant or agent determining tax—firm name

Individual Grant Deed

WESTERN TITLE FORM NO. 104

FOR VALUE RECEIVED, B. DON BLACKWOOD and GRACE M. BLACKWOOD, husband and wife;
and George W. Ely and Bernice M. Ely, husband and wife

GRANT to ELYWOOD WATER SUPPLY CORPORATION, a Corporation

all that real property situate in the

County of Trinity

, State of California, described as follows:

SEE EXHIBIT "A" ATTACHED

Dated July 3 1973

B. Don Blackwood
Grace M. BlackwoodGeorge W. Ely
Bernice M. Ely

STATE OF CALIFORNIA

County of Trinity } ss.
On July 5, 1973, before me, the undersigned,a Notary Public, in and for said State, personally appeared B. Don
Blackwood and Grace M. Blackwood and
George W. Ely and Bernice M. Ely
known to me to be the persons whose names are
subscribed to the within instrument, and acknowledged to me that
they executed the same.Dennis L. McGlynn
Notary Public

FOR NOTARY SEAL OR STAMP



BOOK 159 PAGE 735

MAIL TAX STATEMENTS AS DIRECTED ABOVE

EXHIBIT "A"
All that portion of the NW¼ of the NW¼ of Section 8, T37N, R7W, M.D.M., Trinity County, California, described as follows:

BEGINNING at a point on the North line of said Section 8, from which the NW corner thereof bears South 89°29'01" West, 366.00 feet distant;

thence, South 46°07' East, 162.16 feet;

thence, South 51°56' East, 103.32 feet;

thence, South 63°25' East, 65.10 feet;

thence, South 39°38' East, 31.70 feet;

thence, South 64°17' West, 30.78 feet;

thence, South 75°47' West, 91.67 feet;

thence, North 85°47' West, 91.14 feet;

thence, South 59°34'39" East, 585.11 feet to the most northerly corner of that parcel described as Parcel No. 1 in the deed to Elywood Corporation filed in Book 143 at page 325, Official Records of Trinity County;

thence, South 42°10'39" East, 97.24 feet to the Northeast corner of Lot 18 of Unit 1 of Treasure Creek Woods Subdivision as shown on the map of Unit 2 of Treasure Creek Subdivision which is recorded in Book 4 of Maps and Surveys, at page 198, Trinity County Records;

thence along the northerly line of Unit 2 of Treasure Creek Woods Subdivision North 47°49'21" East 50.00 feet;

thence, continuing along said northerly line North 53°17'43" East, 314.38 feet to the East line of the NW¼ of the NW¼ of said Section 8;

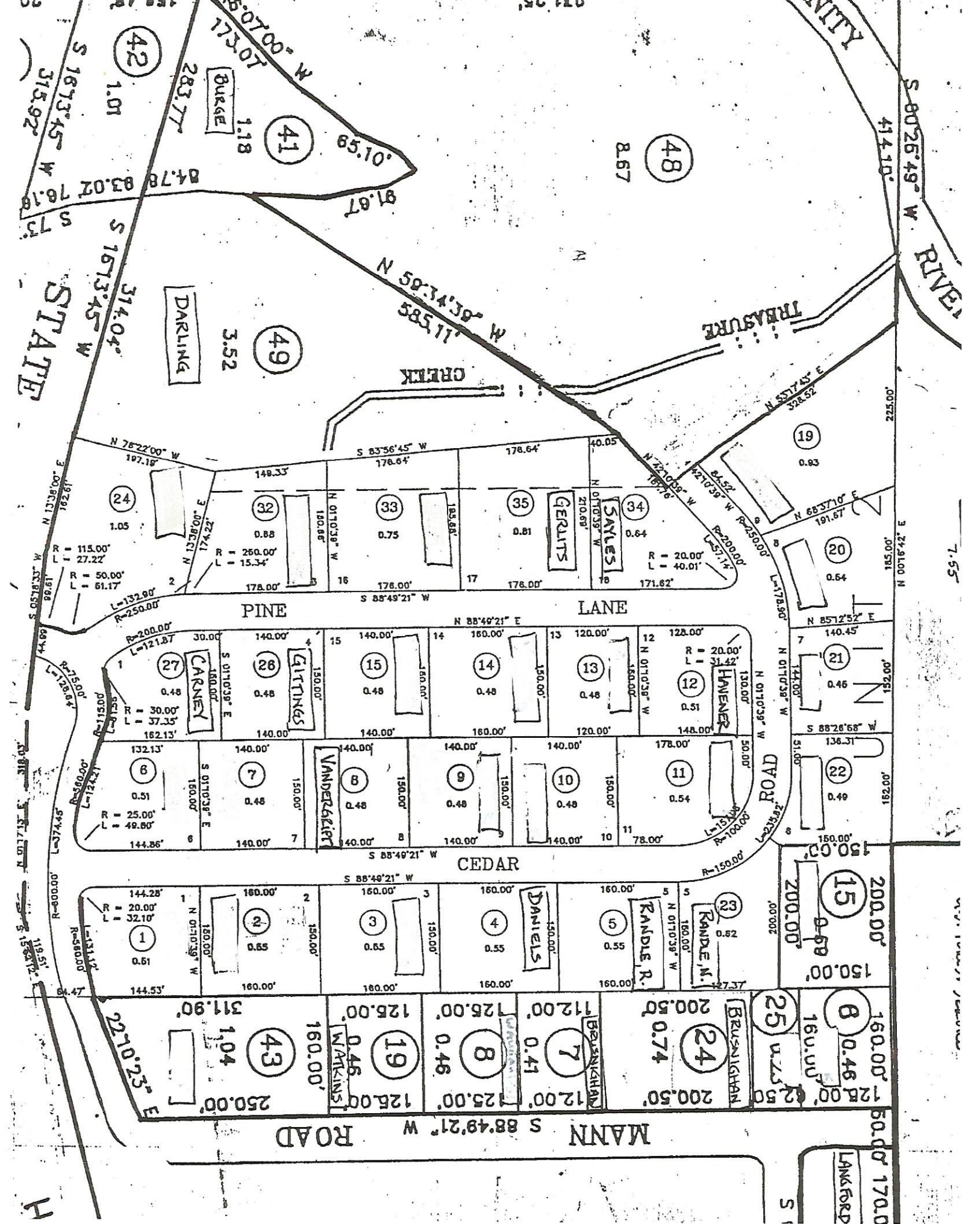
thence, North 0°25'49" East along said East line, 414.10 feet to the North line of said Section 8;

thence, South 89°29'01" East along said North line, 931.25 feet to the Point Of Beginning.

Containing 8.67 acres of land, more or less.

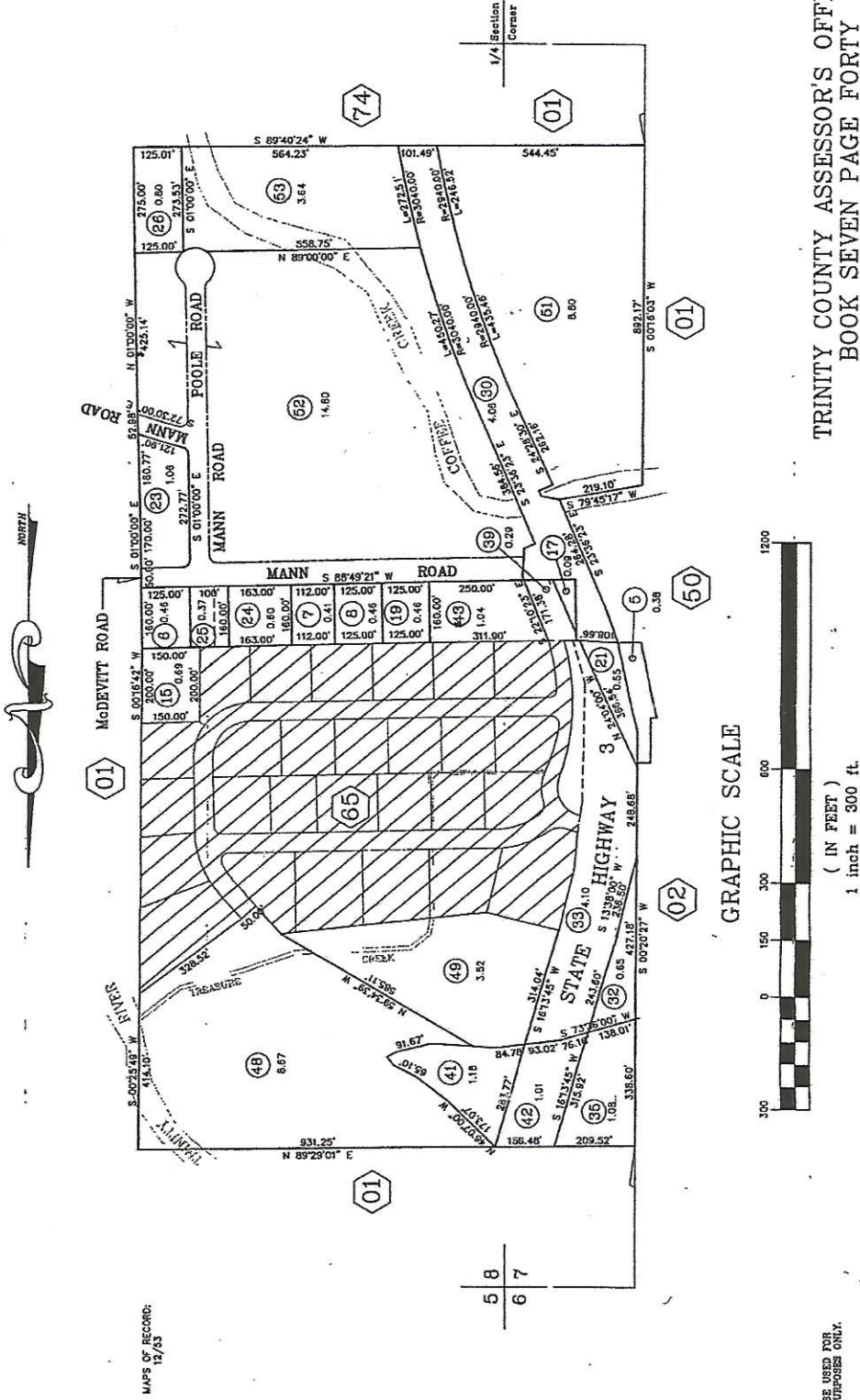
RESERVING unto the Grantors herein a right of way 15 feet in width for public utility purposes running from the existing well site situated on the above-described land in a westerly direction to the easterly line of that certain parcel of land as conveyed in the deed from The State Of California to B. Don Blackwood, et al., dated June 23, 1969 and recorded July 15, 1969 in Book 135 of Official Records at page 78, Trinity County Records.

ALSO RESERVING unto the Grantors herein a right of way 50 feet in width for ingress and egress and public utility along the southwesterly line of the above-described land.



THE W 1/2 OF THE NW 1/4 OF SECTION 8, T. 37 N., R. 7 W., M.D.B. & M.

7-400
T.A.C. 52-000



THIS MAP TO BE USED FOR
ASSESSMENT PURPOSES ONLY.

SM

TRINITY COUNTY ASSESSOR'S OFFICE
BOOK SEVEN PAGE FORTY
APRIL 6, 2006

TIKEASURE CREEK WOODS MUTUAL WATER COMPANY"

MAR. 15, 1995

LB

STATE FREEWAY 3 (PROPOSED)

TREASURE CREEK
ACTIVE HOSE-UPS

HOLDING TANKS
3 HOUSE
(5) TANKS @ 120 GAL. EA.

Blackwell
subdiv

INACTIVE HOSE-UPS
WELLS #1 & #2
#1 has (2) pumps
& (1) 120 gal. PRESS
TANK.
#2 has 1 pump.

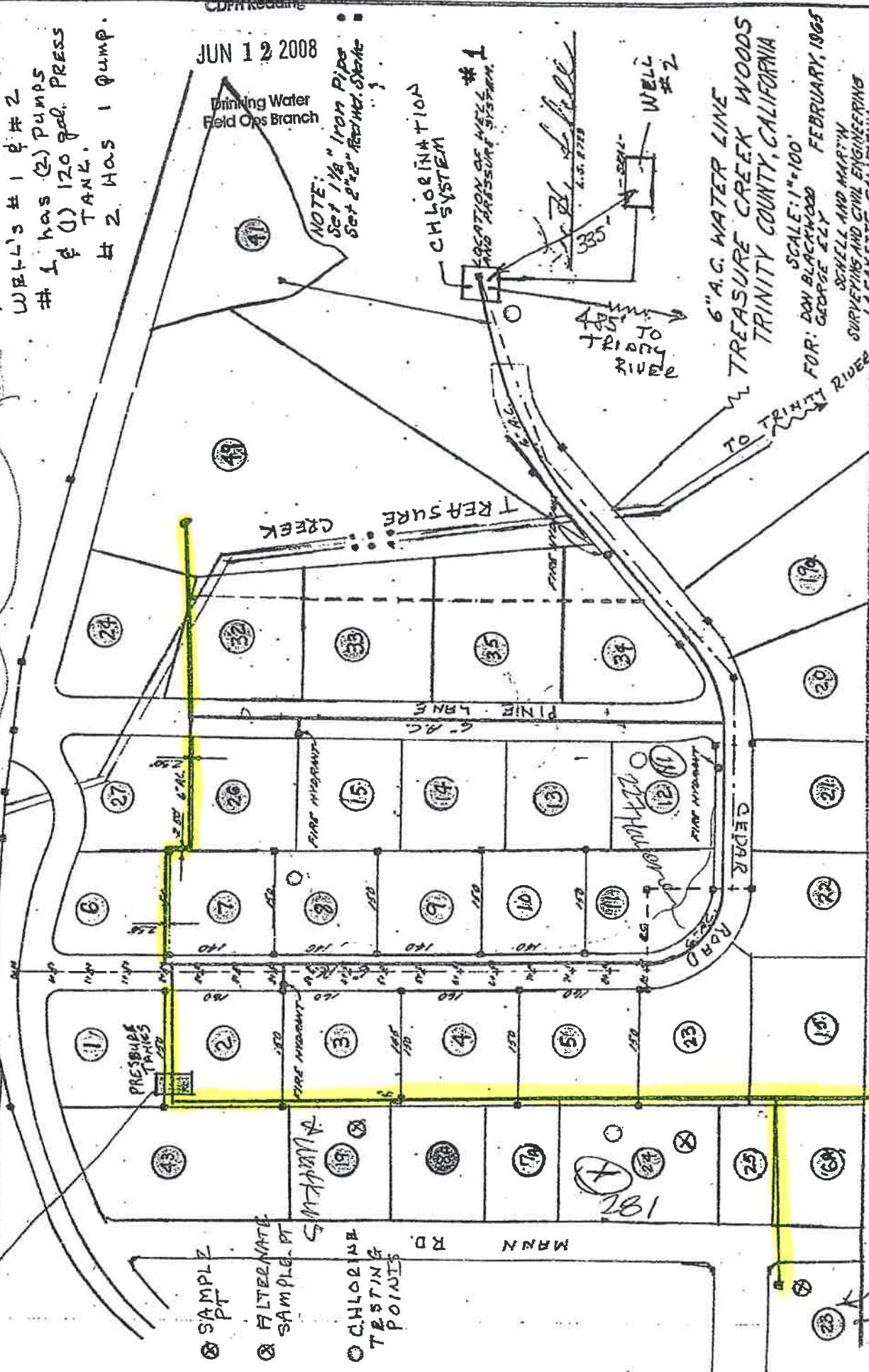
Received
CDPR Redding
JUN 12 2008

Drinking Water
Field Ops Branch

NOTE:
Set 1 1/2" Iron Pipe
Set 2 2" Reduct. Steel

RD. MANN

- ⊗ SAMPLZ PT
- ⊗ FILTERED SAMPLE PT
- ⊗ CHLORINE TESTING POINTS



6" A.C. WATER LINE
TREASURE CREEK WOODS
TRINITY COUNTY, CALIFORNIA

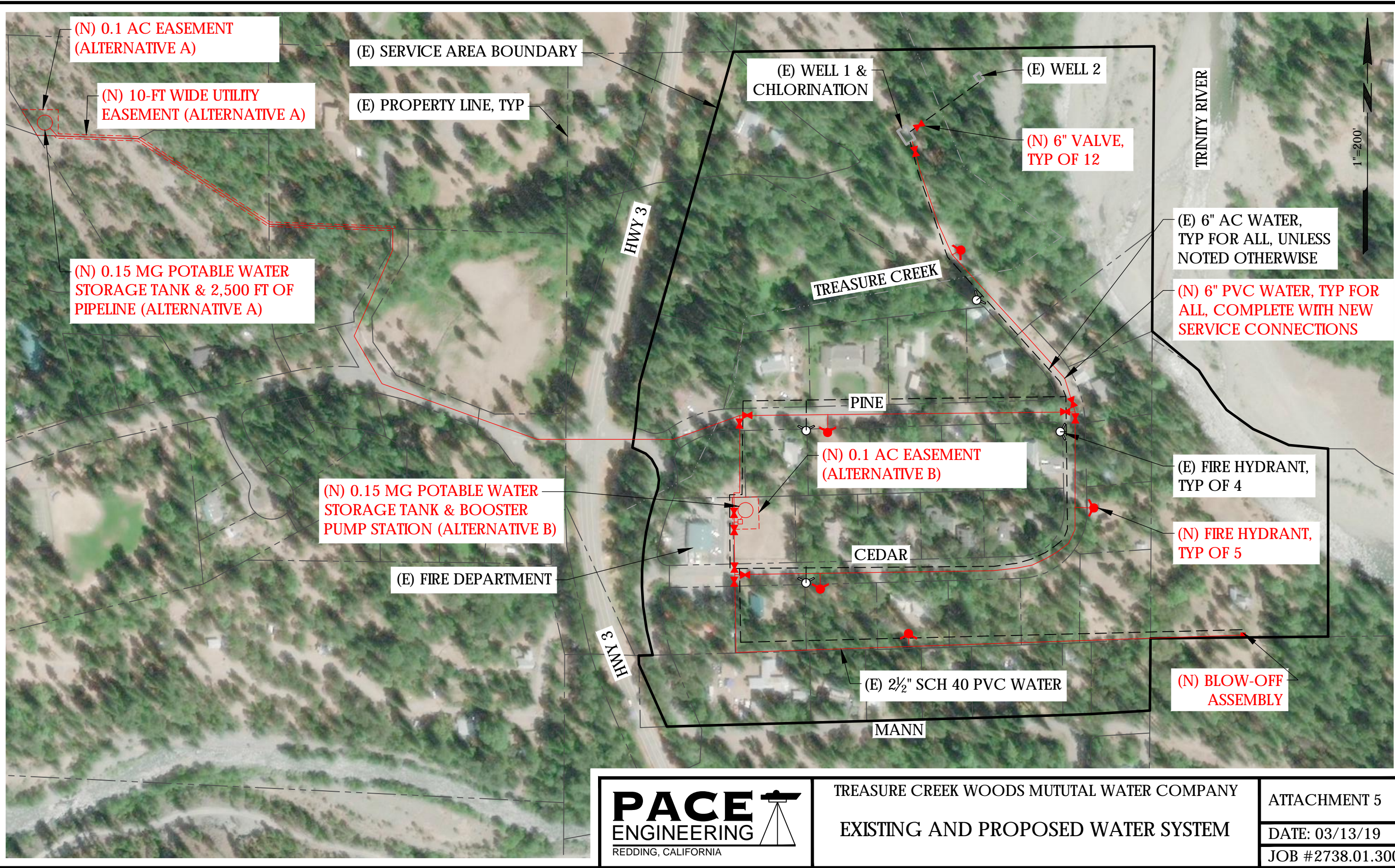
SCALE: 1"=100'
FOR: DON BLACKWOOD
GEORGE ELY
FEBRUARY, 1965
SCHELL AND MARTIN
SURVEYING AND CIVIL ENGINEERING
LAFAYETTE, CALIFORNIA

NOTE: ONLY CERTIFIED WATER TREATMENT OPERATORS OR
APPROPRIATELY TRAINED PERSONNEL WILL TAKE WATER SAMPLES
FOR BACTERIOLOGICAL ANALYSIS

COTTAGE

Longford

ATTACHMENT 5



ATTACHMENT 6

TABLE 1
TREASURE CREEK WOODS MWC
WATER STORAGE AND DISTRIBUTION IMPROVEMENT PROJECT
OVERALL PROJECT COST ESTIMATE - No BPS Alternative A

No.	Item	Quantity	Unit	Unit Cost	Total Cost
Construction Costs					
1	150,000-gallon storage tank, footing, and paint	1	LS	\$500,000	\$500,000
2	Tank site piping	1	LS	\$20,000	\$20,000
3	Upsize existing well pumps	3	EA	\$15,000	\$45,000
4	6-inch PVC water main	6700	LF	\$150	\$1,005,000
5	6-inch gate valves	12	EA	\$2,000	\$24,000
6	Fire hydrants	5	EA	\$7,500	\$37,500
7	Services	1500	LF	\$100	\$150,000
8	Electrical, telemetry, and alarms	1	LS	\$50,000	\$50,000
9	Mobilization/Demobilization	1	LS	\$150,000	\$150,000
10	Testing and disinfection	1	LS	\$40,000	\$40,000
11	Submittals	1	LS	\$40,000	\$40,000
12	Bonds	1	LS	\$20,000	\$20,000
13	Insurance	1	LS	\$15,000	\$15,000
14	Clean up	1	LS	\$15,000	\$15,000
15	Subtotal Construction Cost				\$2,111,500
16	Construction Contingency @ 10%				\$211,000
17	TOTAL CONSTRUCTION COSTS				\$2,322,500
18	Indirect Costs				
19	Engineering Services				
20	Finalize Planning				\$20,000
21	Bidding/Contract Award Services				\$20,000
22	Engineering design @ 8% of construction costs				\$186,000
23	Engineering construction administration @ 6% of construction costs				\$140,000
24	Construction Observation				\$116,000
25	Geotechnical Services				\$20,000
26	Startup Services and Record Drawings				\$20,000
27	Total Engineering Services				\$522,000
28	Other Indirect Services				
29	Prevailing Wage Monitoring				\$30,000
30	Easement Acquisition				\$100,000
31	Environmental				\$80,000
32	Funding Administration				\$20,000
33	Treasure Creek Administration and Legal				\$5,000
34	Total Other Indirect Services				\$235,000
35	TOTAL INDIRECT COSTS				\$757,000
TOTAL PROJECT COST					\$3,080,000

1. Costs in March 2019 dollars.

TABLE 2
TREASURE CREEK WOODS MWC
WATER STORAGE AND DISTRIBUTION IMPROVEMENT PROJECT
OVERALL PROJECT COST ESTIMATE - BPS Alternative B

No.	Item	Quantity	Unit	Unit Cost	Total Cost	
Construction Costs						
1	150,000-gallon storage tank, footing, and paint	1	LS	\$500,000	\$500,000	
2	Tank site piping	1	LS	\$20,000	\$20,000	
3	BPS 5 HP pump, motor, valves, and appurtenances	2	EA	\$20,000	\$40,000	
4	BPS 20 HP fire pump, motor, valves, and appurtenances	1	EA	\$40,000	\$40,000	
5	BPS wood building	144	SF	\$300	\$44,000	
6	6-inch PRV and appurtenances	1	LS	\$20,000	\$20,000	
7	6-inch PVC water main	4200	LF	\$150	\$630,000	
8	6-inch gate valves	12	EA	\$2,000	\$24,000	
9	Fire hydrants	5	EA	\$8,000	\$40,000	
10	Services	1500	LF	\$100	\$150,000	
11	Electrical, telemetry, and alarms	1	LS	\$50,000	\$50,000	
12	Mobilization/Demobilization	1	LS	\$150,000	\$150,000	
13	Testing and disinfection	1	LS	\$40,000	\$40,000	
14	Submittals	1	LS	\$40,000	\$40,000	
15	Bonds	1	LS	\$20,000	\$20,000	
16	Insurance	1	LS	\$15,000	\$15,000	
17	Clean up	1	LS	\$15,000	\$15,000	
18	Subtotal Construction Cost					\$1,838,000
19	Construction Contingency @ 10%					\$184,000
20	TOTAL CONSTRUCTION COSTS					\$2,022,000
21	Indirect Costs					
22	Engineering Services					
23	Finalize Planning				\$20,000	
24	Bidding/Contract Award Services				\$20,000	
25	Engineering design @ 8% of construction costs				\$162,000	
26	Engineering construction administration @ 6% of construction costs				\$122,000	
27	Construction Observation				\$116,000	
28	Geotechnical Services				\$20,000	
29	Startup Services and Record Drawings				\$20,000	
30	Total Engineering Services					\$480,000
31	Other Indirect Services					
32	Prevailing Wage Monitoring				\$30,000	
33	Easement Acquisition				\$100,000	
34	Environmental				\$80,000	
35	Funding Administration				\$20,000	
36	Treasure Creek Administration and Legal				\$5,000	
37	Total Other Indirect Services					\$235,000
38	TOTAL INDIRECT COSTS					\$715,000
TOTAL PROJECT COST					\$2,737,000	

1. Costs in March 2019 dollars.

TABLE 3 TREASURE CREEK WOODS MWC WATER STORAGE AND DISTRIBUTION IMPROVEMENT PROJECT Phase 1 - Distribution System Improvements Project Cost Estimate					
No.	Item	Quantity	Unit	Unit Cost	Total Cost
Construction Costs					
1	6-inch PVC water main	4200	LF	\$150	\$630,000
2	6-inch gate valves	12	EA	\$2,000	\$24,000
3	Fire hydrants	5	EA	\$8,000	\$40,000
4	Services	1500	LF	\$100	\$150,000
5	Mobilization/Demobilization	1	LS	\$80,000	\$80,000
6	Testing and disinfection	1	LS	\$20,000	\$20,000
7	Submittals	1	LS	\$20,000	\$20,000
8	Bonds	1	LS	\$10,000	\$10,000
9	Insurance	1	LS	\$10,000	\$10,000
10	Clean up	1	LS	\$10,000	\$10,000
11	Subtotal Construction Cost				\$994,000
12	Construction Contingency @ 10%				\$99,000
13	TOTAL CONSTRUCTION COSTS				\$1,093,000
14	Indirect Costs				
15	Engineering Services				
16	Bidding/Contract Award Services				\$20,000
17	Engineering design @ 6% of construction costs				\$66,000
18	Engineering construction administration @ 6% of construction costs				\$66,000
19	Construction Observation				\$58,000
20	Record Drawings				\$5,000
21	Total Engineering Services				\$215,000
22	Other Indirect Services				
23	Prevailing Wage Monitoring				\$15,000
24	Permits and Easement Acquisition				\$15,000
25	Environmental				\$80,000
26	Funding Administration				\$20,000
27	Treasure Creek Administration and Legal				\$5,000
28	Total Other Indirect Services				\$135,000
29	TOTAL INDIRECT COSTS				\$350,000
TOTAL PROJECT COST					\$1,443,000

1. Costs in March 2019 dollars.

TABLE 4
TREASURE CREEK WOODS MWC
WATER STORAGE AND DISTRIBUTION IMPROVEMENT PROJECT
Phase 2a Alternative - Water Storage Improvements without BPS Project Cost Estimate

No.	Item	Quantity	Unit	Unit Cost	Total Cost
Construction Costs					
1	150,000-gallon storage tank, footing, and paint	1	LS	\$500,000	\$500,000
2	Tank site piping	1	LS	\$20,000	\$20,000
3	Upsize existing well pumps	3	EA	\$15,000	\$45,000
4	6-inch PVC water main	2500	LF	\$150	\$375,000
5	Electrical, telemetry, and alarms	1	LS	\$80,000	\$80,000
6	Mobilization/Demobilization	1	LS	\$75,000	\$75,000
7	Testing and disinfection	1	LS	\$20,000	\$20,000
8	Submittals	1	LS	\$20,000	\$20,000
9	Bonds	1	LS	\$10,000	\$10,000
10	Insurance	1	LS	\$10,000	\$10,000
11	Clean up	1	LS	\$10,000	\$10,000
12	Subtotal Construction Cost				\$1,165,000
13	Construction Contingency @ 10%				\$117,000
14	TOTAL CONSTRUCTION COSTS				\$1,282,000
15	Indirect Costs				
16	Engineering Services				
17	Finalize Planning				\$20,000
18	Bidding/Contract Award Services				\$20,000
19	Engineering design @ 8% of construction costs				\$103,000
20	Engineering construction administration @ 6% of construction costs				\$77,000
21	Construction Observation				\$87,000
22	Geotechnical Services				\$20,000
23	Record Drawings				\$5,000
24	Total Engineering Services				\$332,000
25	Other Indirect Services				
26	Prevailing Wage Monitoring				\$20,000
27	Easement Acquisition				\$100,000
28	Funding Administration				\$20,000
29	Treasure Creek Administration and Legal				\$5,000
30	Total Other Indirect Services				\$145,000
31	TOTAL INDIRECT COSTS				\$477,000
TOTAL PROJECT COST					\$1,759,000

1. Costs in March 2019 dollars.

TABLE 5
TREASURE CREEK WOODS MWC
WATER STORAGE AND DISTRIBUTION IMPROVEMENT PROJECT
Phase 2b Alternative - Water Storage Improvements with BPS Project Cost Estimate

No.	Item	Quantity	Unit	Unit Cost	Total Cost
Construction Costs					
1	150,000-gallon storage tank, footing, and paint	1	LS	\$500,000	\$500,000
2	Tank site piping	1	LS	\$20,000	\$20,000
3	BPS 5 HP pump, motor, valves, and appurtenances	2	EA	\$20,000	\$40,000
4	BPS 20 HP fire pump, motor, valves, and appurtenances	1	EA	\$40,000	\$40,000
5	BPS wood building	144	SF	\$300	\$44,000
6	6-inch PRV and appurtenances	1	LS	\$20,000	\$20,000
7	Electrical, telemetry, and alarms	1	LS	\$80,000	\$80,000
8	Mobilization/Demobilization	1	LS	\$75,000	\$75,000
9	Testing and disinfection	1	LS	\$20,000	\$20,000
10	Submittals	1	LS	\$20,000	\$20,000
11	Bonds	1	LS	\$10,000	\$10,000
12	Insurance	1	LS	\$10,000	\$10,000
13	Clean up	1	LS	\$10,000	\$10,000
14	Subtotal Construction Cost				\$889,000
15	Construction Contingency @ 10%				\$89,000
16	TOTAL CONSTRUCTION COSTS				\$978,000
17	Indirect Costs				
18	Engineering Services				
19	Finalize Planning				\$20,000
20	Bidding/Contract Award Services				\$20,000
21	Engineering design @ 8% of construction costs				\$79,000
22	Engineering construction administration @ 6% of construction costs				\$59,000
23	Construction Observation				\$87,000
24	Geotechnical Services				\$20,000
25	Record Drawings				\$5,000
26	Total Engineering Services				\$290,000
27	Other Indirect Services				
28	Prevailing Wage Monitoring				\$20,000
29	Easement Acquisition				\$100,000
30	Funding Administration				\$20,000
31	Treasure Creek Administration and Legal				\$5,000
32	Total Other Indirect Services				\$145,000
33	TOTAL INDIRECT COSTS				\$435,000
TOTAL PROJECT COST					\$1,413,000

1. Costs in March 2019 dollars.