



Paradise Irrigation District Options Identification Report

Submitted to:

University Enterprise, Inc.

6000 J Street Sacramento, CA 95819

Submitted by:

GEI Consultants, Inc.

2868 Prospect Park Drive, Suite 400 Rancho Cordova, CA 95679

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Communication Plan



1 Introduction

1.1 Study Area

Paradise Irrigation District (PID or District), located in central Butte County, California, was established in 1916 to supply water to an area of approximately 11,250 acres with a population of approximately 1,000 people. The population served by PID resides within the Town of Paradise (Town), which has changed dramatically from the time the District was established in 1916, reaching a population of 26,400 as of January 2018 with major growth occurring in the 1970s. The Town is located on a ridge in the western foothills of the Sierra Nevada with elevations ranging from 1,500 to 2,200 feet above sea level.

1.2 Purpose of the Study

On November 8, 2018, the Camp Fire that started near the community of Pulga in Butte County burned a total of 153,336 acres throughout the Town of Paradise, Pulga, Concow, Magalia, and the outskirts of east Chico. It was later determined by CAL FIRE that the Camp Fire was initiated by electrical transmission lines owned and operated by Pacific Gas and Electric (PG&E). The Fire resulted in significant loss of life and property in the Town of Paradise and the surrounding communities. As a result of this Camp Fire, PID lost approximately 90% of its connections making continued operations unsustainable until recovery and rebuilding is completed.

Subsequently, PID requested assistance from the California State Legislature which agreed to provide interim support for two years through the State Water Resources Control Board (SWRCB). As part of this assistance, the Legislature mandated the community to perform an Options Study (Study) to evaluate options for improvements to its water system infrastructure and finances to ensure the long-term sustainability of the community's water system(s) as well as supporting redevelopment of the community. This Study is also a mandated requirement to ensure that PID can obtain state funding for its drinking water system improvements.

1.3 Plan Goal and Objectives

Based on the mandate provided by the Legislature, and the work plan developed by the SWRCB, the goal of this Study is to formulate and evaluate options that provide short and long-term sustainability of water supply for the community of Paradise.

The formulation of objectives is a key step within the context of the Options Study. Objectives presented here are formulated in response to the goal of the Study, existing conditions and related water resources problems, needs, and opportunities of the study area. These objectives are used to guide the development and evaluation of options to address these water resources management needs. The objectives of this study are:

- Water supply reliability,
- Safe and affordable drinking water,
- Short and long-tern financial sustainability, and
- Support community redevelopment.

1.4 Communication and Engagement

To ensure that all relevant interests and affected communities are involved in the completion of the Study in a transparent manner, it was determined that the study will include a significant outreach and stakeholder component and consider the community as a whole, within the overarching potential for future sustainability. The Consensus and Collaboration Program (CCP) of the California State University, Sacramento was selected as the communication and engagement lead. For successful communication throughout the Study, the CCP prepared a communication plan (provided in Appendix A) that outlined the guiding principles of engagement, levels of engagement and participation, roles and responsibilities of the project convener, project team and the stakeholders group.

1.4.1 Levels of Engagement

The communication and engagement plan identified four major levels of engagement as follows:

- Project Convener
- Project Team
- Stakeholders Group
- Public

1.4.2 Project Convener

California State University Sacramento, Office of Water Programs (OWP) is the project convener who is responsible for the administration of the Study and any related decision making. With the support of the project team, the project convener provides technical information that others can use to make future decisions related to the water supply system.

1.4.3 Project Team

The Project Team is responsible for ongoing management of the study and is expected to develop all communications materials and conduct outreach and engagement activities. The Project Team is comprised of:

- Office of Water Programs will manage the Study as the Project Convener, to evaluate water system alternatives for the community of Paradise.
- Consensus and Collaboration Programs is responsible for the development and execution of the communication plan in consultation with the Project Team and the Stakeholders Group.
- State Water Resources Control Board (SWRCB) administers Proposition 1 funds made available to support drinking water-related efforts, including this study as administered by OWP. Divisions of SWRCB involved in the Study include the:
 - o Division of Drinking Water (DDW)
 - o Division of Financial Assistance (DFA)
 - o Other Divisions may be included as needed
- **Paradise Irrigation District** (PID) and Town of Paradise is the Technical Assistance recipient.
- GEI Consultants, Inc., is the consultant responsible for preparing the Study and for
 providing information to support the outreach and engagement throughout the Study
 development.

1.4.4 Stakeholder Group

The Stakeholders Group worked with the Project Team and provided input to define critical components of the Study. The Stakeholders Group served as a proxy for public input, representing a range of key perspectives. Members will be asked to share information and solicit input from their own networks to inform the Study. The Stakeholders Group met every month and received general information about the status of the Study and provided input on all key components of the Study.

The Stakeholders Group includes representation of the following interests:

- State Water Resource Control Board
- Technical Assistance recipients
 - Paradise Irrigation District
 - Town of Paradise
- Local Government representatives
 - County of Butte
 - Butte County Local Agency Formation Commission,

- o City of Chico, and
- o California State Assembly
- Local Non-Governmental Organizations representatives
- Local water representatives
- Local Union 228 Yuba City
- Technical Assistance provider: OWP
- Environmental justice groups

1.4.5 Engagement Opportunities

In addition to routinely scheduled monthly stakeholder meetings, further outreach and engagement opportunities were conducted, to coordinate and engage with the community regarding the planning and development of the Study. **Table 1-1** provides a list of all meetings conducted throughout the development of the Study.

Table 1-1: Stakeholder and Public Meetings (This table will be updated as we go)

Date	Meeting	Purpose

1.5 Organization of Options Study

- **Chapter 1 Introduction:** This chapter provides a description of the study area, discusses the purpose of the study, study objectives and communication and engagement.
- Chapter 2 Background: This chapter provides background information regarding PID operations, pre-Camp Fire conditions, Camp Fire event and Post-Camp Fire conditions.

- Chapter 3 Plan Formulation: This chapter describes the problem identified along with existing opportunities and constraints.
- **Chapter 4 Options Identification:** This Chapter provides a brief description of options identified based on the study objectives.
- **Chapter 5 Evaluation Criteria:** This Chapter provides a brief description of the evaluation criteria developed to screen and rank the options identified.
- **Chapter 6 References:** Reference documents that were used as part of the options study.



2 Background

2.1 PID Operations

2.1.1 Water Source

As mentioned previously, PID is a public utility and provides water to most areas of the Town of Paradise. PID relies predominately on surface water sourced from the Little Butte Creek watershed. Although a perennial creek, Little Butte Creek receives a relatively large amount of precipitation and resulting runoff. The average runoff for the watershed is approximately 16,340 acre-feet (ac-ft) per year. Little Butte Creek conveys surface water and storm runoff into the Paradise Lake and Magalia Reservoir; the latter is located approximately one-half mile north of the community of Magalia and approximately one mile north of the PID's service area.

The District has three water right permits allowing diversion of water from Little Butte Creek: two storage rights and a direct flow right. **Table 2-1** below provides additional information regarding the three water right permits including the source or point of diversion, permitted quantity and water availability timeframe.

Table 2-1: Surface Water Supply Summary

Permit	Source or Point of Diversion	Permitted Quantity	Availability Timeframe
Pre-1914 Appropriative Right	Butte Creek at Magalia Dam	8 cubic-feet-per- second	Year-round direct diversion
		Estimated at 2,500 ac- ft per year	Not available for storage
			Must be used first in priority for PID supply
1916 Priority Right	Paradise Lake and Magalia Reservoir	Paradise Reservoir – 6,700 ac-ft	Year-round diversion to storage to Paradise
		Magalia Reservoir – 2,800 ac-ft	Lake and Magalia Reservoir
		Total - 9,500 ac-ft	
1965 Priority Right	Paradise Lake	8,800 ac-ft	Oct 1 to May 31
			Diversion to storage in Paradise Lake
			Subject to Term 91

PID's three water supply rights total a maximum of 20,800 ac-ft. Of this, 2,500 ac-ft are associated with a direct diversion right at Magalia Dam (no storage) which must be used first in priority for PID supply. The remaining 18,300 ac-ft are associated with storage rights for Paradise Lake and Magalia Reservoir. Currently, the total storage capacity of both reservoirs is approximately 12,300 ac-ft. The upstream reservoir, Paradise Lake, is the main storage facility with a storage capacity of approximately 11,500 ac-ft. Downstream of Paradise Dam, storage behind the Magalia Dam is presently restricted to approximately 800 ac-ft, as a result of the current maximum water surface elevation dictated by the Department of Water Resources, Division of Safety of Dams (DSOD). PID is planning a seismic retrofit of Magalia Dam that would bring the capacity of Magalia Reservoir to approximately 2,570 ac-ft. This would bring the total storage capacity to 14,100 acre-feet.

The average annual runoff of Little Butte Creek, the primary source of water supply for PID is approximately 16,340 ac-ft per year. This exceeds the pre-fire average annual water demand of 7,000 to 8,000 ac-ft per year. However, PID is vulnerable to potential water shortages during extended dry periods. The District has approximately 6,000 ac-ft of additional water rights that are not being utilized because of a lack of storage.

2.1.2 Water Supply

PID has historically relied entirely on their surface water rights and District-owned Water Treatment Plant (WTP), which has provided reliable water in all year types to PID customers. Each year, PID takes advantage of its direct diversion water right allowance (Pre-1914 Appropriative Right) of 8 cubic feet per second (cfs) before any other supply is utilized. This is a requirement of PID's supply portfolio, but also necessary as this supply is only available during the time of year when runoff is actively entering the reservoir. Following this first use, PID uses its additional water right permits (1916 and 1965 Priority Right) as necessary to store supplies for use later in the year when direct diversion is not possible.

PID operates a raw water intake at Magalia Reservoir which is pumped to PID's WTP with a capacity of 22.8 million gallons per day (MGD). Thereafter treated water is conveyed to PID's distribution system through a distribution network of over 170 miles of pressure pipe ranging from 1 inch to 36 inches in diameter.

PID also has a single groundwater well with a maximum output estimated at 350 ac-ft per year. The primary purpose of the well is to augment PID's water supply during times of drought or emergency but under normal conditions well production is minimal and only operated for maintenance purposes. However, this well has been nonoperational since 2020 due to mechanical failure of the pump.

2.1.3 Water Transfers and Exchanges

PID maintains an agreement with their neighboring water purveyor, Del Oro Water Company, for the treatment and diversion of a limited quantity of water to serve the Paradise Pines District in nearby Magalia, north of the Town of Paradise. This water supply originates in Paradise Lake, captured alongside PID owned supplies, and treated at the PID WTP. Once passing through the discharge meter at the WTP, the supplies are diverted to the Paradise Pines District. Terms of this agreement also allow for a small amount of water to be transferred to PID in an emergency.

An intertie at the southeast border of the PID service area exists between PID and the Lime Saddle area of Del Oro Water Company's service area. While this intertie is functional and capable of water transfer in an emergency, it is no longer operated for regular transfer of supply. If its function is to be operated again, physical updates to the metering equipment would be required to quantify transfers of supply. There is no current plan to use this intertie for water sales or transfers.

2.2 Pre-Camp Fire Conditions

Since its founding, the Town of Paradise grew slowly before experiencing rapid population growth in the years leading up to incorporation in 1979. At this point, the Town became a place for retirees to settle, and in recent years, a younger demographic was also drawn to the area. Prior to the Camp Fire in November 2018, the Town of Paradise had more than 13,000 housing units of about 70 percent single-family detached homes, 15 percent multifamily homes, and 15 percent manufactured homes.

Prior to November 2018, for several decades the Town's population held steady at around 26,000 people with approximately 10,600 water connections. Community sentiment and sewer capacity deficiencies resulted in a challenging entitlement process for multifamily uses, leading to limited development of this housing type with approximately 200 people added between 2010 and 2018.

2.3 Camp Fire Event

On November 8, 2018, the Camp Fire started near the community of Pulga in Butte County. The Camp Fire burned a total of 153,336 acres throughout the Town of Paradise, Pulga, Concow, Magalia, and the outskirts of east Chico. The Town's geographical position on a ridge between two canyons and one route to the west made it particularly vulnerable. (Camp Fire Regional Economic Analysis, 2021).

The Fire resulted in significant loss of life and property in the Town of Paradise and the surrounding communities, with approximately 90% structure loss. Over 75% of the structures destroyed were in the Town of Paradise, including nearly 11,000 housing units, 450 commercial buildings, 5 schools, and thousands of utility structures. PID's distribution system sustained severe damage from the Camp Fire and fire-related cleanup activities.

Between 2018 and 2020, the Town of Paradise experienced an 82% loss in population. In the year following the Fire, approximately 11,400 residential units in the Town were lost, comprising over 85 percent of the Town's housing supply.

2.4 Post-Camp Fire Conditions

Adding to the existing sewer deficiencies, the Camp Fire resulted in contamination of the Town's drinking water and pipes by volatile organic compounds (VOCs), including benzene. PID has managed the remediation process, in the short-term including warning consumers not to ingest or

bathe in the contaminated water, distributing bottled water, and testing water for levels of contamination.

To address the root issue, PID:

- sampled/tested all mainlines and service laterals to standing homes,
- replaced service laterals at standing homes that were out of California drinking water standard compliance, and
- and are currently working on replacing service laterals at all burned lots over the next seven years.

As of May 2020, PID has confirmed that all of it mainlines are free of contamination. Service laterals to surviving structures and new rebuilds have been tested or replaced to bring them to compliance, but water advisories still exist for burned lots. To date, PID continues to recover their system and promote projects that support the rebuild of the Town of Paradise.

Due to displacement from the Camp Fire, there are hundreds of parcels occupied through use of a temporary housing permit issued by the Town. Additionally, there is a constantly evolving number of parcels that are in various stages of rebuilding. While all service connections may not correspond with a structure that has been issued a certificate of occupancy, PID was still responsible for providing water to the 3,600 active connections in 2020. Based on Department of Water Resources population tool, it was estimated that approximately 9,000 people were served through these 3,600 connections.

2.5 Related Plans and Studies

Surface Water Supply Feasibility Study for Cal Water's Chico District, Phase 1-6: Between 2012 and 2019, West Yost Associates performed a six-phase surface water supply feasibility study for Cal Water's Chico District to identify surface water supply alternatives to assist Cal Water in diversifying its water supply portfolio. Numerous surface water supply conveyance opportunities were identified, including a potential partnership with PID. First identified during Phase 1 and carried through to Phase 6, the partnership would include delivering water from PG&E's Miocene Canal to PID's water treatment plant via a new raw water pipeline. PID's water treatment plant would be expanded to treat water for delivery to Cal Water, which would be delivered to Cal Water via a new transmission main during normal and wet hydrologic years.

2020 Urban Water Management Plan: The 2020 Urban Water Management Plan (UWMP) was adopted by the PID Board of Directors in June 2021. The 2020 UWMP includes updates to previous UWMPs to incorporate how much water PID has on a reliable basis, anticipated demands for the foreseeable future, PID's plan to meet those future demands, and any challenges that PID will face in the future especially pertaining to recovery following the 2018 Camp Fire. Priority water supply and reliability projects particularly related to recovery efforts are also identified.

2020 Paradise Sewer Project Technical Memoranda: In November 2020, the Town of Paradise released information in the form of technical memoranda pertaining to the Paradise Sewer Project, which involves identifying and implementing a long-term solution for collection, treatment, and reuse/disposal of its wastewater. The goal of implementing this new wastewater management system is to improve the local economy while stopping degradation of groundwater quality caused by failed or failing septic systems.

Camp Fire Regional Economic Impact Analysis: In January 2021, the Camp Fire Regional Economic Impact Analysis was published to assess the effects of the 2018 Camp Fire on major population shifts, decline in regional housing supply, and economic hardships for local businesses. This report had the goal of providing information needed to make short-term decisions for business operations in the area by offering data on changed regional demographic and socioeconomic profiles after the Camp Fire; economic impacts of the Camp Fire in the Paradise Ridge, Chico, and broader Region; and potential residential and employment growth scenarios.



3 Plan Formulation

3.1 Challenges and Constraints

PID's mission is to deliver a safe, dependable supply of quality water in an efficient, cost effective manner with service that meets or exceeds the expectation of its customers. As a result of the Camp Fire, PID lost approximately 90 percent of its connections, which has resulted in revenue shortfalls of up to \$4 million annually. These annual losses are projected to decrease as the population within the PID service area increases and the water distribution network and related infrastructure are rebuilt.

PID coordinated with the Town of Paradise to understand post-fire population trends. Based on the total annual number of certificates of occupancy issued by the Town each year, it estimates that the population could increase by 1,000 persons per year with populations reaching 14,000 by 2025, 19,000 by 2030 and 26,000 (pre-Camp Fire population) by 2040. As regrowth of the Town continues, PID is actively working toward the reconstruction and recovery of critical infrastructure as well as ways to increase the reliability and quantity of future water supplies.

A large proportion of customer water meters were significantly damaged during the Camp Fire and post-fire recovery activities. As a result, PID is currently charging its customers a fixed fee of \$42.98 per month regardless of the amount of water usage, which is also contributing to the revenue loss. PID is currently working on installing water meters at all locations where there is active water usage.

Following the Camp Fire, it was determined that contamination resulting from the exposure of PID's distribution piping network to volatile organic compounds, or VOCs, had occurred. PID staff undertook a large-scale water quality sampling effort, collecting samples from over 6,000 locations and running over 400,000 individual tests to characterize the extent and nature of this VOC contamination. Overall, it was determined that 95 percent of the mains were clear and serving potable water. Approximately 50 percent of service laterals at burned properties were found to contain contaminants. As a result of these determinations, PID has undertaken a systematic program to replace service laterals for all destroyed structures where a rebuild will take place.

It is anticipated that in the absence of sufficient connections to generate revenue, continued operations and infrastructure improvements in support of redevelopment is not sustainable. PID has submitted Camp Fire related settlement claims to the Federal Emergency Management Agency (FEMA) and PG&E, which could be used to cover the operational losses sustained by PID and the needed improvements to the distribution system; however, the status of these claims is ongoing, and it is unclear how much or when, PID will receive settlement awards.

PID has received approximately \$15 million from the SWRCB to support its operations from 2019 to 2021. This is only expected to cover immediate shortfalls and will not cover any planned significant infrastructure improvements. In the near-term (seven to ten years), PID would need additional revenue sources to remain financially viable while recovery and rebuilding is completed.

The total volume of water that PID can store currently in Paradise Lake and Magalia Reservoirs together is approximately 12,300 ac-ft is anticipated to be sufficient to meet demands in all years through 2045 including extended drought conditions through water conservation measures. PID recognizes the vulnerabilities associated with climate change and extended drought conditions in a watershed dependent almost exclusively upon rainfall conditions from year to year and must identify viable long-term opportunities for interties, partnerships, transfers, or other means which would strengthen supply reliability.

Along with improving water supply reliability and enhancing and protecting water quality, PID must maintain a water supply that is affordable to its customer base. To do so, PID must explore funding mechanisms capable of supporting capital and Camp Fire related improvements, long-term operations and maintenance of facilities, and any opportunities that would strengthen PID's long-term resiliency. These funding mechanisms could include grant funding, State-sponsored financing, interim commercial financing, and water related fees.

3.1.1 Rate of Growth

PID estimates that they are serving nearly 9,000 people in the Town of Paradise based on the 3,600 connections as of December 2020. Even though there has been a significant increase in the population returning to the Town, it is expected to return to its pre-fire population of approximately 26,500 only by the year 2040. The significant loss of revenue due to the decrease in population and number of connections will continue to be a significant challenge for funding operations and system recovery.

3.1.2 PID Infrastructure Improvements

Camp Fire caused significant damages to PID water distribution infrastructure. Approximately 4,600 damaged service laterals and over 79,000 linear feet of water main pipe, along with other appurtenant devices, are estimated to be replaced and/or repaired over the next seven years as a direct result of the Camp Fire. These infrastructure improvements will further constrain PID's operations and water supply reliability.

3.1.3 Magalia Dam Improvements

PID's ability to make full use of its water rights is currently limited by allowable storage capacity in Magalia Reservoir. Magalia Dam originally had a storage capacity of 2,574 ac-ft, but concerns related to dam stability and the presence of the Magalia fault resulted in a restriction on the water surface elevation. To comply with Division of Safety of Dams (DSOD) requirements, Magalia Dam was drawn down in 1997 and now has a storage capacity of 796 ac-ft. The Magalia Dam Retrofit Project, which aims to retrofit the dam and would increase storage levels by 2,000 ac-ft, is in the design phase but is not estimated to be completed until 2030.

3.1.4 Finances

Prior to the Camp Fire, PID was serving approximately 26,000 people with approximately 10,600 water connections. As a result of the Camp Fire, PID lost approximately 90 percent of its connections

which resulted in a significant revenue loss. In 2018, PID's pre-Camp Fire revenue was approximately \$8.5 million whereas operational expenses were approximately \$5 million. In 2020, due to the significant reduction in number of customers and connections, revenue decreased to \$3.5 million whereas operational expenses increased to approximately \$5.5 million, resulting in a financial deficit of \$2 million annually. As a result of this financial deficit, PID's financially stability has been severely impacted to an extent that without financial assistance District's operations and sustainability could be severely impacted.

3.1.5 Time

As explained above, since PID is facing severe financial challenges due to loss of customers, time needed to implement would be a critical factor for any option identified to assist PID.

3.1.6 Affordability

The Town of Paradise is considered a disadvantaged community by the State of California and has a limited tax base, which has become even more constrained since the Camp Fire. Projects that would be funded through rate increases, assessments, or taxes, must consider the impacts to PID's ratepayers to support these funding mechanisms.

3.1.7 Drought Reliability

As explained in Section 2.1, PID's main source of water supply is runoff from Little Butte Creek watershed. The limited storage capacity, compared to runoff from Little Butte Creek watershed leaves PID vulnerable to potential water shortages during extended dry periods. Historically, PID overcame this challenge successfully with water conservation measures. However, for long term stability, PID must improve water supply reliability and resiliency.

3.1.8 Political Support

While there is currently a significant amount of attention being paid to PID and the Town of Paradise by State agencies eager to see progress towards redevelopment of the community, the success of redevelopment will require an equal commitment by local officials to move preferred Option(s) forward and to secure funding for those projects. Local political and community support will be required to champion the continuation of this critical planning effort and the eventual implementation of Options.

3.2 Opportunities

3.2.1 Available Water Supplies

As explained in Section 2.1.1, PID's three water supply rights total 20,800 ac-ft of which 2,500 ac-ft are associated with a direct diversion right at Magalia Dam and the remaining 18,300 ac-ft are associated with storage rights for Paradise Lake and Magalia Reservoir. However, the current total storage capacity of both reservoirs is approximately 12,300 ac-ft with a potential increase to 14,100

ac-ft after retrofitting Magalia Dam. PID has approximately 6,000 ac-ft of additional water rights that are not being utilized due to a lack of storage.

The average annual runoff of Little Butte Creek, the primary source of water supply for PID is approximately 16,340 ac-ft per year. This exceeds the pre-fire average annual water demand of 7,000 to 8,000 ac-ft per year. At this pre-fire level of demand, PID is vulnerable to potential water shortages during extended dry periods. As shown in **Figure 3-1**, water demand that was approximately 8,000 ac-ft in the year 2000, was reduced to nearly 4,300 ac-ft in 2015 due to drought conservation measures at the height of the drought that began in 2012. While demand rebounded in years following 2015 to approximately 5,800 ac-ft in 2018, the overall water use in 2020 is estimated to have decreased to 4,370 ac-ft as a result of the Camp Fire.

PID's 2020 Urban Water Management Plan (UWMP) estimates that this demand will increase to approximately 5,100 ac-ft in 2040 when the Town of Paradise reaches its pre-fire population of 26,500. Assuming normal hydrologic conditions, PID estimates that supply in 2040 would outweigh demand by nearly 16,100 ac-ft. It is anticipated that even if annual water use increases to pre-fire demand of 7,000 to 8,000 ac-ft per year, there would be supply available in addition to the increased demand. This surplus would be reduced during multiple dry year scenarios; however, even in a third dry year, PID estimates that supplies would outweigh demands by nearly 7,500 ac-ft in 2040, and in a fifth dry year, PID would still have nearly 1,500 ac-ft in excess supplies (**Figure 3-2**).

With the use of PID's water rights constrained by the amount of storage presently available and supplies in excess of demand, PID has the opportunity to generate revenue from sale of treated drinking water and temporary or long-term transfers of a portion of their established rights, including:

- Transfer to local districts within Butte County
- Transfer to Sacramento Valley entities (North of Delta) outside of Butte County
- Transfer to South of Delta entities

Any potential water transfer opportunities will need to consider water availability, PID customer demands, and treated water capacity.

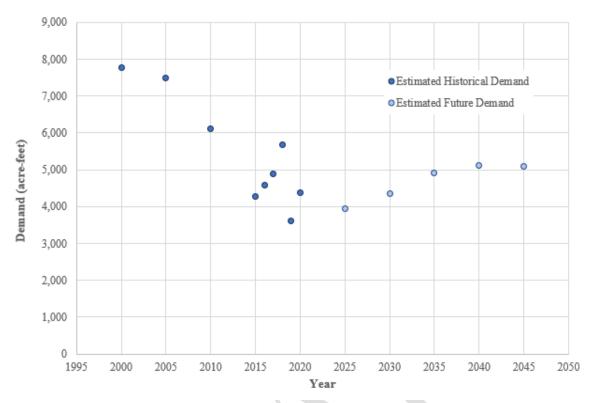


Figure 3-1: PID's Estimated Historical and Future Demand (Source: PID UWMP)



Figure 3-2: PID's Estimated Future Supplies Versus Demands (Source: PID UWMP)

3.2.2 Environmental Benefits

Water transfers occur for a variety of purposes, including supplementing agricultural, municipal, and industrial water supplies in other areas. Water transfers can also be used for environmental purposes such as in-stream flow augmentation for environmental benefits. Supplemental flows could be used to improve habitat connectivity, riparian health, water quality and water temperature advantageously during certain times of the year. These flows could be used to support the immigration, emigration and/or rearing of Central Valley Steelhead depending upon the timing, duration and magnitude.

3.2.3 Infrastructure Improvements

There are also potential revenue generating opportunities for PID related to the Miocene Canal (Canal). The Miocene Canal system is a hydroelectric conveyance facility owned by PG&E and Cal Water. The system originates at the West Branch of the Feather River and terminates at Lake Oroville. The Upper Miocene Canal was damaged during the Camp Fire which prevents water from being delivered to the Lime Saddle and Coal Canyon powerhouses. PG&E is currently repairing the Canal, and if PID were to assume ownership, there is the opportunity for revenue generation through potential water transfers and operation of the existing powerhouses.

3.2.4 Meters

A large portion of customer water meters were significantly damaged during the Camp Fire and postfire recovery activities, and as a result, PID is currently unable to meter customer water consumption. Currently, PID customers pay a fee for active water service (\$42.98 per month) but are not charged for volumetric water usage, which comprises a considerable portion of PID's revenue. PID's goal is to install up to 4,000 meters for potable services by the end of 2022 when a return to metered service is expected, with another 2,500 meters installed over a 6-year period. Once these meters are installed, revenue is anticipated to increase which could help the financial challenges faced by PID to a certain extent. For customers who do not need access to water at the moment, PID provides an option for ready-to-serve in the future for a fixed rate of \$21.49.

4 Options Identification

Based on the problem identified in Section 3.1 and evaluating the opportunities and constraints as explained in Section 3.2, Options were identified to achieve the objectives of this Study. These options are grouped into the following categories that are explained in detail in the following sections.

- Baseline
- No Project
- Financial Claims
- Agency Reorganization
- Water Transfers
- Infrastructure
- Funding Augmentation
- Others

4.1 Option 1 - Baseline

As explained previously, prior to the Camp Fire in November 2018, PID was serving safe, reliable and affordable drinking water to a population of approximately 26,000 through 10,600 connections which resulted in generating \$8.5 million revenue exceeding the operational expense of \$5 million. Baseline for this Study refers to the pre-Camp Fire conditions, where PID would continue to provide safe, reliable and affordable drinking water while generating revenues greater than the operational expenses.

4.2 Option 2 - No Project

As explained previously, in addition to the operational challenges, PID is facing severe financial deficit, currently estimated at \$2 million annually due to higher operational costs and lower revenue generation. No Project scenario is an option where no action is taken, or no option/project is implemented.

4.3 Financial Claims

PID is currently pursuing several financial claims with various agencies for the damages caused by the Camp Fire and to assist in the redevelopment. It is currently in the process of claiming damages from PG&E, requesting public assistance from applicable Federal Emergency Management Agency FEMA programs, and is leveraging insurance as applicable to meet funding deficits and to rebuild PID's infrastructure equal to the level prior to the 2018 Camp Fire. If these claims are successful, PID would

be able to rebuild its infrastructure and remain solvent until the population of the Town has recovered and PID's customer base has returned.

4.3.1 Option 3 - PG&E

PID is currently in litigation with PG&E and is seeking \$277 million in damages caused by the Camp Fire event to its infrastructure and operations. The timeline when these claims will be resolved is currently unknown. On a related note, Town of Paradise arrived at a settlement with PG&E for \$219 million.

4.3.2 Option 4 - FEMA

PID is currently pursuing many projects that may qualify for FEMA funding. PID is pursuing funding through the FEMA section 428 Fixed Cost Program for the following projects:

- Service Later Replacement Project,
- Backflow Preventers,
- Water Meters,
- Housing Boxes along with Automated Metering Infrastructure,
- Main Line Replacement, and
- B Reservoir Replacement.

The total estimated cost for these projects is approximately \$80.3 million. Per FEMA section 428 guidelines, federal cost share will be at least 75%, and PID has submitted an application and currently waiting for approval.

4.3.3 Option 5 - Insurance

A portion of PID's infrastructure damaged in the Camp Fire is covered by insurance carried by PID. PID is currently pursuing insurance reimbursement to replace 4,562 damaged meters totaling \$5.8 million in estimated insurance payments.

4.3.4 Option 6 - Additional Supplemental Appropriation for Disaster Relief

The EPA section of the Additional Supplemental Appropriation for Disaster Relief Act (ASADRA) includes \$349.4 million in supplemental funding for the State Revolving Fund (SRF) programs - \$53.3 million for Clean Water State Revolving Fund (CWSRF) and \$296.1 million for Drinking Water State Revolving Fund (DWSRF). These funds are available for wastewater treatment works and drinking water facilities impacted by natural disasters.

\$42 million was awarded to California in 2020, and appropriations are administered through SRFs by the State Water Resources Control Board (SWRCB). The SWRCB drinking water funding priorities in SFY 2021-2022 is focusing on helping small Disadvantaged Communities (DAC) solve their drinking water problems, such as PID after the 2018 wildfires. Under the DWSFR, a small community is defined as a community with a population of no more than 10,000 persons. PID with its current population is eligible as a small DAC after the Camp Fire and has applied for \$7 million through the DWSRF and is anticipating receiving funding from ASADRA.

4.4 Agency Reorganization

With the current challenges encountered by PID, there are some potential financial benefits if PID is reorganized with other agencies that have strong managerial, technical and financial capabilities. PID can potentially be reorganized by reorganizing PID into other agencies or other agencies into PID. Any agency reorganization would be performed in collaboration with the Butte Local Agency Formation Commission (Butte LAFCo) to ensure that all decisions are made locally.

4.4.1 Option 7 - PID into Other Agencies

Town of Paradise - Most of the population served by PID resides within the Town of Paradise, incorporated in 1979. Town of Paradise offers its residents several services such as police and fire protection. However, the Town of Paradise relies on PID for water treatment and distribution to serve its residents. Reorganizing PID into the Town of Paradise would allow the two entities to leverage existing managerial and technical capabilities and existing funding, and optimize operating expenses, which would assist PID overcome the financial deficit until their customer base returns.

South Feather Water and Power Agency - Formed in 1919, South Feather Water and Power Agency (SFWPA) is located approximately 20 miles southeast of the Town of Paradise, in the Sierra foothills of southeast Butte County. SFWPA provides treated water service to the communities of Oroville, Palermo, and Bangor in Butte County, and operates the South Feather Power Project, a FERC-licensed hydropower project and serves residents within Butte County's First Supervisorial District. SFWPA is substantially larger than PID, and thus reorganizing PID into SFWPA would permit continued operations and an absorption of deficit until PID's customer base returns.

4.4.1 Option 8 - Other Agencies into PID

Del Oro Water Company ("Del Oro"), established in 1963, currently serves the water needs of multiple districts throughout the state of California. Paradise Pines, Lime Saddle, Magalia, and Buzztail districts surrounding the Town of Paradise are currently served by Del Oro with approximately 6,000 connections. Reorganizing any of these Districts or combination of these Districts would allow the two entities to leverage existing managerial and technical capabilities and optimize operating expenses which would assist PID overcome the financial deficit until their customer base returns.

4.5 Water Transfers

PID can enter into water transfer agreements for a variety of purposes that benefit both the receiving parties (the buyer) and PID (the seller). Water transfers can provide a source of revenue for PID as well as maintaining associated water rights during a period when the supply may otherwise be surplus to PID's needs.

Water available for transfer by PID will include the supply associated with water rights that are presently surplus to PID's needs as demand increases to pre-fire levels. It is estimated that PID would have between 3,000 to 5,000 acre-feet per year available for transfer. Actual amount of water available will be estimated during the evaluation process. This evaluation considers three types of transfer, based on geography, available to PID:

- Butte County,
- North of Delta, and
- South of Delta.

4.5.1 Option 9 - Butte County

In-county transfers would entail transfer to in-county entities such as the City of Chico or other agricultural water supplies in the Sacramento Valley portion of Butte County. Water transfers to incounty entities can be conveyed through local facilities such as the Miocene Canal, a proposed intertie with the City of Chico, or through the Feather River and Lake Oroville. Transfers to offset groundwater use in the valley could contribute to the objectives of groundwater sustainability plans currently being developed.

In-county transfers can likely be facilitated annually and provide a consistent source of revenue. However, the revenue per acre-foot of transferred water is like to be lower than water transfer to other North of Delta entities and lower still to South of Delta entities

4.5.2 Option 10 - North of Delta

Transferring PID water to entities out of County, but north of the Delta, could occur on an annual basis, depending on demand, through Lake Oroville and conveyance downstream of the reservoir. Transfer partners could include entities in Sacramento, Yolo and Solano counties who could receive water conveyed down the Feather River and then the Sacramento River. It is expected that water districts in these counties will be experiencing an increased need for supplemental water as SGMA requirements reduce the availability of groundwater. Districts in these counties will have a growing, albeit intermittent demand, for supplemental water and are likely to purchase water in the range of \$100 to \$300 per acre-feet.

Other potential transfer partners include water districts along the Sacramento River, however, transfers to these entities would require exchanges with Feather River and Sacramento River flow

requirements and potentially Delta flow requirements. Therefore, these transfers require greater coordination with SWP and CVP operations and more difficult to implement.

4.5.3 Option 11 - South of Delta

Water transfers to entities south of the Delta have the potential to generate higher revenues during the years of transfer, however, due to constraints in the Delta these transfers have historically occurred less frequently.

In recent years sellers north of the Delta have received \$400 to \$700 per acre-foot of water made available for transfers to south of the Delta entities. These higher prices reflect the higher demand for supplemental water in the San Joaquin Valley and metropolitan areas in Southern California. In future years as groundwater supplies are reduced due to the implementation of SGMA, demand for supplemental water south of the Delta is expected to increase, with an expected increase in the willingness to buy by south of Delta entities.

Current federal Endangered Species Act (ESA) consultations for export of transfer water through Banks and Jones Pumping Plants covers the period of July through September, and transfers through the Delta are limited to this period. Limitations on Delta export operations in the early winter and spring months often result in the need to maximize SWP and CVP exports during July through September, which can further limit the available export capacity for water transfers. Historically, south of Delta transfer have occurred when the SWP allocation is between approximately 10 to 50-percent. During extremely dry conditions, export capacity is limited and reduces the export capacity for water transfers. During wetter periods, the transfer capacity is limited or eliminated as the SWP and CVP is able to maximize its export operations to the regulatory capacity.

4.6 Infrastructure

4.6.1 Option 12 - Miocene Canal

The Miocene Canal is a 25-mile-long man-made conveyance system comprised of ditches and wood-supported metal channels. The Canal is comprised of the Upper, Middle, and Lower Miocene Canals and is owned by PG&E (Upper and Middle Canals) and Cal Water (Lower Canal). Prior to the Camp Fire, water was diverted from the West Branch of the Feather River into the Upper Miocene Canal and then to Kunkle Reservoir, which is used by the California Department of Forestry and Fire Protection during wildfire incidents. From Kunkle Reservoir, water was conveyed to the Lime Saddle Powerhouse and the Middle Miocene Canal, which ultimately conveyed water to Cal Water's water treatment plant through the Coal Canyon Powerhouse and Cherokee Reservoir. Along with providing water for municipal use in Oroville through Cal Water and for the Canal's hydroelectric facilities, water from the Miocene Canal also provided water for nearby residential properties, groundwater recharge, and commercial agricultural uses.

A portion of the Upper Miocene Canal was destroyed during the Camp Fire. As a result, water that was diverted from the West Branch of the Feather River into the Canal cannot be conveyed to either of PG&E's powerhouses, which collectively have the potential to generate up to 3 megawatts of

power. PG&E is currently in the process of repairing the Upper Miocene Canal, and has been seeking opportunities to release ownership of its portion of the Canal. If PID were to assume ownership of the Miocene Canal and its facilities, revenue could be generated through the operation of the Lime Saddle and Coal Canyon powerhouses.

Assuming ownership of the Miocene Canal could also provide opportunities for revenue generation through the sale of treated drinking water and water transfer opportunities. As described above, the Miocene Canal is an unlined, leaky system that provides for groundwater recharge along its course when water is flowing. It is expected that water that was previously lost to the environment could be recovered and claimed by PID since the Upper Miocene Canal is expected to be a pipeline once repaired. Alternatively, PG&E's water rights could be included in the transfer of ownership of the Canal and its powerhouses. In either scenario, PID could benefit by selling this water to Cal Water which currently uses 3,300 acre-feet of PG&E water from the Miocene Canal to meet local water demands in Oroville. This additional water that is acquired by PID through acquisition of the Miocene Canal could also be used to transfer water to users south of the Delta through Lake Oroville.

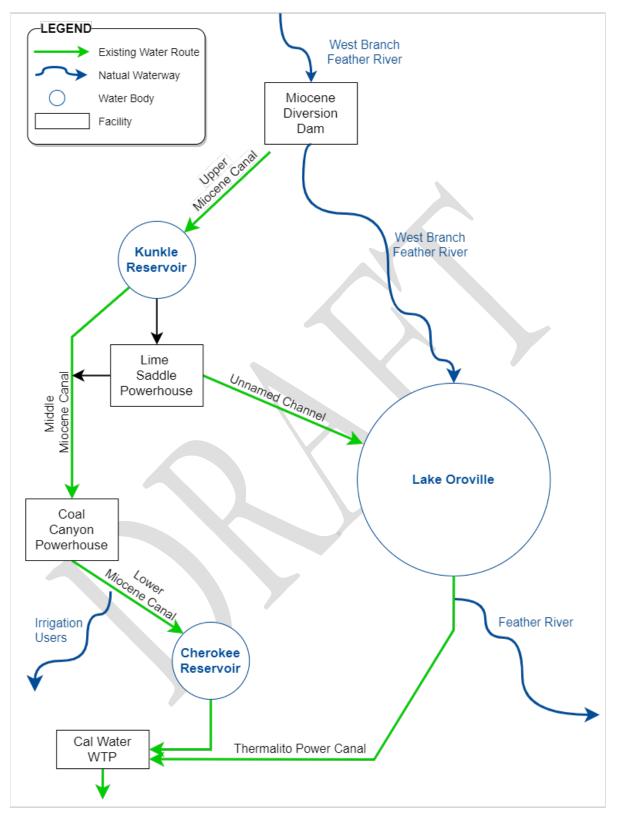


Figure 4-1: Miocene Canal Conveyance Schematic

4.6.2 Option 13 - Chico Intertie – PID WTP to Chico

A portion of PID's surface water supplies could be conveyed to the City of Chico through a potential intertie. This potential opportunity has been explored and considered by Cal Water and PID over the last five years, but hasn't been pursued further as a result of cost and feasibility considerations. Currently, groundwater is the sole source of water supply for the City, and as a result, an intertie with PID would help to improve water supply reliability and resiliency for City of Chico. Treated water from PID's water treatment plant located in Magalia would be delivered to the City of Chico via pipeline, which could be constructed concurrently with the Paradise Sewer Project that is currently in the preliminary planning phase. This option could require expansion or modification of PID's water treatment plant to deliver water to the City during normal and wet years.

4.6.3 Option 14 - Magalia Dam Raise

The Magalia Dam Retrofit Project, which is still in the design phase, aims to reestablish the previous water surface elevation allowing full storage capacity in the reservoir. Once PID can secure funding and move forward with construction, a petition will be made to the DSOD to restore the original water surface elevation of 2,225.8 ft. The construction is anticipated to be completed by 2030. This option would increase storage levels by 2,000 ac-ft and the total storage capacity of PID to 14,100 ac-ft. This additional storage capacity could provide PID additional water supplies that can be transferred to other agencies withing Butte County, North of Delta and South of Delta.

4.7 Others

4.7.1 Option 15 - Paradise Sewer Project

Prior to the Camp Fire, the Town of Paradise was the largest unsewered community in California. The need for a centralized wastewater treatment solution for the Town has been studied in several prior reports dating back to 1983. The need for a long-term solution for wastewater collection, transport, and treatment is needed primarily to improve the local economy in support of rebuilding efforts. The Paradise Sewer Project, currently in the preliminary planning phase could serve nearly 1,500 parcels and would collect and convey raw wastewater from the Town of Paradise to the water pollution control plant in the City of Chico via a single 18-mile-long pipeline. At the Chico Water Pollution Control Plant, wastewater from the Town of Paradise will blend with Chico wastewater, then the combined flow will be treated before discharging to the Sacramento River.

Estimated to be constructed and on-line by 2027, this Project would help attract businesses and stimulate growth in the Town of Paradise, which is the primary service area of PID. Recovery would be spurred by providing wastewater disposal certainty to help businesses and jobs return to the Town of Paradise and allowing for more densely populated and multifamily residential development to help increase affordable housing.

In addition to the growth of Town of Paradise that would subsequently result in increase of customer base and revenue to PID, PID could also take over the operations of sewer services as it can leverage

managerial, technical and operational capabilities and in return could also benefit from the revenue generated from sewer services.

4.7.2 Option 16 - Metering

Prior to the Camp Fire in September 2018, monthly usage for PID's 10,600 meters totaled 644 ac-ft, with monthly billings in service and consumption charges and service fees totaling over \$868,000. As mentioned previously in Section 3.2.7, a large portion of customer water meters were significantly damaged during the Camp Fire and post-fire recovery activities and PID customers currently pay a nominal fee for active water service (\$42.97 per month) and are not charged for volumetric water usage. PID's goal is to install up to 4,000 meters for potable services by the end of 2022 when a return to metered service is expected, with another 2,500 meters installed over a 6-year period. The project includes the cost of hazard mitigation measures to prevent against future fire related damages, including changing the meters from plastic to brass and changing the housing boxes from plastic to concrete. Once these meters are installed, revenue is anticipated to increase which could help the financial challenges faced by PID to a certain extent.

4.7.3 Option 17 - Water Bottling

This option would involve working with a manufacturer to bottle and sell water using PID's water supply. This option could potentially generate revenue from the profits of the water bottle sales, however, currently no manufacturer has been identified to work with PID on further developing this option.

4.7.4 Option 18 - Voluntary Agreements

The State Water Resources Control Board must protect beneficial uses and complete its update to the Bay-Delta Water Quality Control Plan to protect these beneficial uses in the Sacramento and San Joaquin Rivers and Bay-Delta. Many types of fish have experienced declines and many native fish species are now threatened with extinction. Voluntary agreements are being proposed as a result, as they are thought to help recover these fish species more efficiently than regulatory requirements. The framework provides for up 900,000 acre-feet of new flows in dry, below-normal, and above-normal water years and several hundred thousand acre-feet in critical and wet years, along with the creation of new and restored habitat and \$5 billion in new funding for environmental improvements. Terms for voluntary agreements have been shortened from 15 years to 8 years. Under this option, PID would contribute an agreed upon amount of water in above-normal, below-normal, and dry years, which could be partially compensated at an agreed upon cost per acre-foot. For example, as of May 2021, Yuba Water Agency has developed a voluntary agreement proposal which includes a base contribution of 9,000 acre-feet in above-normal, below-normal, and dry years, and an additional contribution of 41,000 acre-feet in those same years, compensated at \$290 per acre-foot.

4.8 Funding Augmentation

4.8.1 Option 19 - Rate Increases

A water rate increase would involve increasing the flat-rate currently charged to PID customers or increase the unit price of water delivered if done in tandem with the metering option to help offset the current funding shortfall. Any rate increase would need to be approved by the PID board and would require a public hearing.

4.8.2 Option 20 - Assessments

Options that provide direct benefits to residents of the Town of Paradise could be partially funded through an assessment on benefactor properties. The assessment would be levied on the residents' annual property tax bill depending on the property value which could be paid in full or over a longer time frame. Any assessment would require majority voter approval in accordance with Proposition 218.

4.8.3 Option 21 - Taxes

Taxes are another option for funding augmentation. While an assessment would be levied on property to pay for services that directly benefit that property, a tax applies more broadly and there does not need to be a direct relationship between how much tax a person pays and the benefit that is received. Two-thirds voter approval would be required to impose a new tax in accordance with Proposition 218.

4.8.4 Option 22 - Grants and Loans

PID could apply for several eligible grants that might provide funding to PID. Some of the potential grant opportunities are summarized below:

• California Clean Water State Revolving Fund (CWSRF): The California CWSRF is a low interest loan program administered by the State Water Resources Control Board (State Board) that provides financial assistance for water quality projects. The Fundable List is updated each State Fiscal Year (SFY) and identifies those projects that the State Water Board Division of Financial Assistance (DFA) intends to execute financing agreements with. Under the California CWSRF, projects for small disadvantage communities (DAC) and small severely disadvantaged communities (SDAC) are automatically added to the CWSRF Fundable List once a complete application is submitted. Small communities are defined as communities with populations less than or equal to 20,000 while DACs and SDACs are defined as communities with median household incomes less than 80 percent or 60 percent of the statewide median household income, respectively. Available funding for SFY 2021-2022 under the California CWSRF is anticipated to range between \$540 to \$750 million. An additional \$111 million is anticipated to be provided under the Small Community Wastewater

Program. DFA plans to execute financing agreements for SFY 2021-2022 by June 30, 2022.

- California Drinking Water State Revolving Fund (DWSRF): Similar to the California CWSRF, the California DWSRF is a low interest loan program administered by the State Board that provides financial assistance to help mitigate drinking water risks. The State Water Board's drinking water funding priorities in SFY 2021-2022 focus on helping small SDACs and small DACs solve their drinking water problems. Under the DWSFR, a small community is defined as a community with a population of no more than 10,000 persons. DACs and SDACs are defined as under the CWSRF. The Fundable List is updated each SFY and identifies those projects that the DFA intends to execute financing agreements with. Provided they submit a complete application and meet all eligibility requirements, projects for small DAC/SDAC and for expanded small DAC/SDAC are automatically added to the Fundable List. Projects on the Fundable List are then ranked in priority order, with priority given to those that 1) address the most serious risk to human health, and 3) are necessary for compliance with the requirements of the Safe Drinking Water Act. Available funding for SFY 2021-2022 under the California DWSRF is anticipated to be at least \$682 million, including \$46 million in supplemental funds from the "Additional Supplemental Appropriations for Disaster Relief Act of 2019." These funds are available to help DWRSF entities who suffered impacts from the calendar year 2018 wildfires. DFA plans to execute financing agreements for SFY 2021-2022 by June 30, 2022.
- Small Community Drinking Water (SCDW) Funding Program: The SCDW Funding Program, administered by the State Water Board, is available to assist small DACs in implementing drinking water infrastructure improvement projects. The SCDW Funding Program provides low-interest loans and other financing mechanisms, such as grants or principal forgiveness using federal and state funds, for the planning/design and construction of drinking water infrastructure projects that are needed to achieve or maintain compliance with federal and state drinking water statutes and regulations. Total available funding is estimated to be \$50 million for SFY 2021-22.
- **Financial Loan** As financial sustainability is a critical challenge currently encountered by PID, a financial loan from any agency that has the capacity to provide the required amount could help PID to a great extent. This financial loan could be provided to PID at a mutually agreed upon interest rate and repayment duration. At the moment, no agency has been identified to provide this assistance and this option will be further explored during the evaluation process.

4.8.5 Option 23 - SWRCB Funding Assistance

As explained in Section 3.1, PID has received approximately \$15 million from the SWRCB to support its operations from 2019 to 2021. This assistance is currently used to cover operational revenue shortfalls through December 2021. PID could apply for additional funding from SWRCB to provide

similar assistance for two to three additional years. If funded, this option could provide PID financial relief for few more years that might provide additional time for increase in population and demand.

4.9 Options Summary

Table 4-1 below provides a summary of Options 1 to 23 identified above. These options can be potentially combined during the evaluation process to create a new option if combining more than one option can better achieve study goals and objectives.



Table 4-1: Options Summary

Option Category	Option Number/Name
Baseline	Rebuild to pre-Camp Fire conditions
No project	2. Do Nothing
Financial Claims	3. PG&E
	4. FEMA Funding
	5. Insurance Reimbursement
	6. ASADRA
Agency Reorganization	7. PID Into:
	Town of Paradise
	• SFWPA
	8. Into PID:
	Del Oro
Water Transfers	9. Butte County
	10. North of Delta
	11. South of Delta
Infrastructure	12. Miocene Canal
	13. Chico Intertie
	14. Magalia Dam Raise
Others	15. Paradise Sewer Project
	16. Metering
	17. Water bottling
	18. Voluntary agreements
Funding Agreement	19. Rate increases
	20. Assessments
	21. Taxes
	22. Grants and Loans
	23. SWRCB Funding Assistance

5 Options Evaluation Methodology

5.1 Evaluation Criteria

All Options will be evaluated for their performance of the Study Objectives:

- Water supply reliability,
- Safe and affordable drinking water,
- Short and long-tern financial sustainability, and
- Support community redevelopment.

The evaluation criteria identified below directly addresses one or more of the Study Objectives.

5.1.1 Technical Feasibility

The technical feasibility of each Option will be assessed based on available information and for most of the Options identified above only conceptual information is available. Where no technical information is available or where only a conceptual discussion is available for an Option, GEI will provide its professional opinion as the technical feasibility of the Option.

Technical feasibility will consider the following elements:

- Can the Option be implemented with current state of engineering practice?
- Is the Option's technically feasibility consistent with PID operations and redevelopment objectives?
- Can the lifecycle of the Option provide short or long-term reliability for PID water supplies and/or redevelopment objectives and timelines?

5.1.2 Economic Feasibility

The economic feasibility assessment of each Option will include an economic analysis of the proposed Option relative to other considered Options. This assessment will identify the degree to which the Option is cost-effective, and the economic benefits that will be realized after implementation. The economic feasibility assessment will include the following information for, as appropriate:

• The economic analysis will describe the conditions that exist in the area and provide projections of the future with, and without, the project. Emphasis in the analysis must be given to the contributions that the plan could make toward alleviation of economic problems and the meeting of future demand.

- The economic feasibility assessment will include a cost comparison of Options that
 the Study Objectives. Options used for comparison must be technically feasible and
 developed with the same standards with respect cost, funding, project financing, and
 project lifecycle.
- Where Options provide water supply reliability to PID, the benefits will be measured
 relative to the cost of the other similar Options, if Options provide comparable
 levels of service.
- Where Options provide revenue without water supplies reliability benefits (water transfers, for example), the benefits will be measured relative to the cost of the other similar Options, assuming that compared Options provide comparable levels of service.
- Where Option benefits may be difficult to quantify; for example, a drought tolerant water supply outside of PID, environmental benefits from streamflow augmentation, or other social or economic benefits. These benefits will be documented and described qualitatively as completely as possible. These qualitative benefits will be considered as part of the justification for an Option in conjunction with the comparison of project costs described above.

5.1.3 Financial Feasibility

The evaluation of financial feasibility for each Option will include an assessment of funds available to cover the capital and lifecycle costs over the planning horizon. For those Options requiring capital and operational funding, the ability to achieve funding from the sources identified in Section 4.8, or others, will be assessed. Included in this assessment is the projected timeline required to secure funding sources and the effect of that timeline on PID redevelopment objectives. The financial feasibility will also assess the affordability to PID ratepayers, and all Options will be compared relative to any potential change to existing rate structures.

5.1.4 Regulatory Feasibility

The assessment of regulatory feasibility will consider all regulatory requirements for implementation of an Option, including an estimated timeline for regulatory approval. The assessment will include the following regulatory categories:

Environmental compliance and assessment of the environmental impacts to
endangered species, cultural, and other resources that would result from Option
implementation, consistent the environmental review process established in the
California Environmental Quality Act (CEQA) and the National Environmental
Policy Act (NEPA) to receive federal funding, as applicable to the Option and its
funding source.

- Regulatory requirements and constraints with implementation of Options, such as water transfers that require coordination with State and federal agencies.
- Regulatory requirements associated will local ordinance or planning objectives (such as SGMA) that govern or control the movement, storage or extraction of water within or between jurisdictions.

5.1.5 Environmental Impacts

Each Option considered will be evaluated for potential environmental impacts both detrimental and positive. Options will be evaluated utilizing standard CEQA and NEPA categories and criteria.

5.1.6 Legal Feasibility

The legal feasibility of each Option will identify any legal or institutional requirements, or barriers to implementing the proposed Options.

- Analysis of any water rights issues potentially resulting from implementation of an Option. All proposed options must comply with state water law.
- Discussion of legal and institutional requirements (e.g., contractual water supply obligations, water rights settlements, regional water quality control board requirements), state, and/or local requirements with the potential to affect implementation of an Option.
- Discussion of the need for multi-jurisdictional or interagency agreements, any coordination undertaken, and any planned coordination activities.
- Discussion of permitting procedures required for the implementation of an Option, and any measures that Study supporters can implement to speed the permitting process.
- Discussion of any unresolved issues associated with implementing an Option, how
 and when such issues will be resolved, and how the Option will be affected if such
 issues are not resolved.

5.1.7 Stakeholder/Public Acceptance

Each Option considered will be reviewed with Stakeholder Group to assess the level of support for the Option. Stakeholder input will primarily be solicited relative to the three Study objectives, but input will also be solicited for a broader level of support where Options may provide other local or regional benefits.

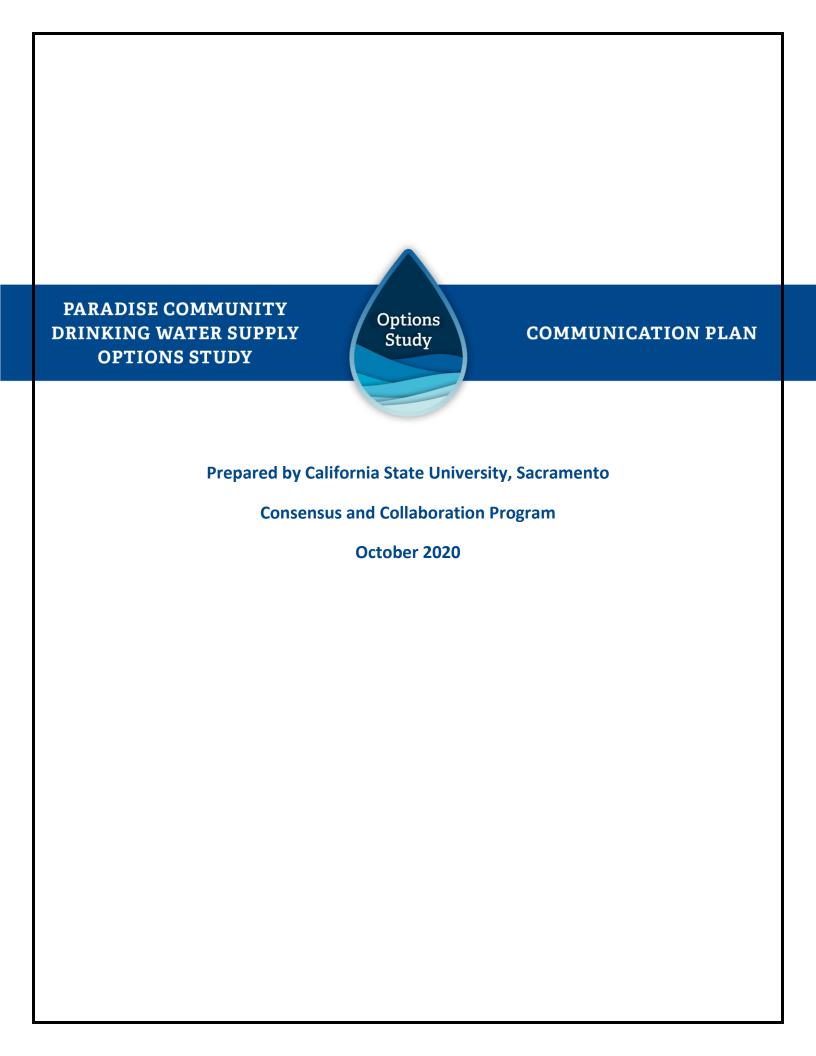
5.1.8 Implementation Timeline

Many of the feasibility criteria above incorporate assessment of timelines for Option implementation, funding, or regulatory approvals. Combined these timeline considerations will be consolidated to develop an overall Options implementation timeline. That timeline will be assessed against PID's objectives to redevelopment and need for revenue generations, as appropriate.



Appendix A Communication Plan





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. INTRODUCTION AND PROJECT BACKGROUND AND PURPOSE

As a result of the Camp Fire in November 2018, Paradise Irrigation District (PID) lost approximately 90% of its connections, making continued water supply operations unsustainable until recovery and rebuilding is completed. Therefore, the community needs to perform an Options Study (Study) to identify and evaluate long-term options for improvements to its water system infrastructure and finances to ensure the long-term sustainability and resiliency of the community's water system(s) as well as support redevelopment of the community. This Study is also a mandated requirement to ensure that PID can obtain funding for its drinking water system improvements from the California State Legislature.

The Study will include a significant outreach and stakeholder component and consider the community as a whole as well as the overarching potential for future sustainability. To ensure that all relevant interests and affected communities are involved in the selection of the Study consultant, and subsequent completion of the Study in a transparent manner, community outreach and engagement will be conducted using the tools described in this Communications Plan (Plan).

The Study will:

- Identify a range of options to ensure the long-term sustainability and resiliency of water supply for Paradise.
- Evaluate the feasibility of each option evaluation criteria include cost, community
 acceptance, environmental permitting, environmental impacts, administrative hurdles,
 etc. Costs include upfront capital costs as well as the present worth of long-term (40-50
 years) operation and maintenance costs.
- Rank options and provide recommendations for consideration by decision makers.

The Study will be prepared by a private consultant, selected through a public competitive process administered by the Sacramento State, Office of Water Programs (OWP) through a Technical Assistance Work Plan from the State Water Resources Control Board. The Study consultant will be selected through the use of a Request for Proposal (RFP) and associated selection steps administered by OWP as informed through public input.

I. COMMUNICATION PLAN PURPOSE AND GUIDING PRINCIPLES

This Plan serves as the roadmap for successful communications throughout the project. The activities outlined in the Plan are meant to support RFP development, Study consultant selection and Study implementation by ensuring an open flow of information and opportunities for input throughout the process. The Plan will be updated regularly to meet the needs of the Study.

GUIDING PRINCIPLES OF ENGAGEMENT

Successful engagement requires adherence to a set of guiding principles. The items listed below are intended as core components. All outreach and engagement activities and communications materials will be:

- Additive: Recognizing that there are several ongoing engagement efforts as part of the
 Town of Paradise rebuilding efforts, outreach and engagement should leverage these other
 efforts, build off of previous efforts, and efficiently utilize stakeholders' and community
 members' time and expertise.
- *Intentional*: All engagement opportunities need to be explicit in their purpose and differentiate between outreach and community engagement to ensure that expectations for the process are understood.
 - Outreach: Provide opportunities to inform the community about the process and educate on technical issues. Outreach activities promote trust, transparency, and accountability.
 - Engagement: Provide opportunities for stakeholders to learn from each other, envision together, own the process, give feedback and weigh in on decisions.
- Accessible: Ensure that those who wish to engage are part of this effort. Utilize a diverse suite of outreach tools to engage a broad audience. Consider all variables that can impact a community member's ability to participate in the effort, including but not limited to event location, time, language, information format, and economic and physical impediments.
- *Open and transparent*: Provide necessary information about process, timeline, and content. Be transparent and open about how decisions are made.
- COVID-19 Health and Safety Compliant: The process will be consistent with current COVID
 health and safety requirements prescribed by State and local governments. Any conflicts
 between such requirements will be reconciled by the SWRCB as the funding organization of
 this effort.

III. LEVELS OF ENGAGEMENT AND PARTICIPATION

Defining anticipated levels of engagement for all stakeholders involved in the Study is an essential first step in the outreach and engagement process. This section defines each anticipated major group involved in the Study development, as well as their expected level of input in the process. Figure 1 represents the desired nesting of the different levels of engagement, where information is shared throughout, and decisions are informed by all levels of engagement.

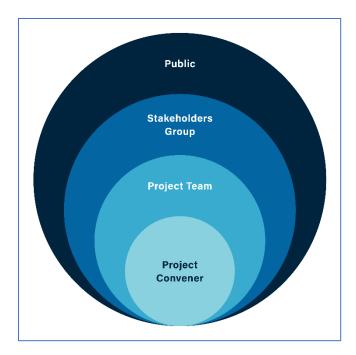


Figure 1. Levels of Engagement

PROJECT CONVENER

ROLES AND RESPONSIBILITIES

The project convener, with the support of the project team, is responsible for the administration of the Study and any related decision making.

MEMBERSHIP

CSUS-OWP is the project convener during the Study development phase and will provide technical information that others can use to make future decisions related to the water supply system. The Study will be a public document that will be available to all stakeholders and the public upon its completion. While it is anticipated that PID will assume the project convener role for future implementation of the Study's recommendations for the purposes of developing sustainable post-fire operations, it is the express purpose of the Study that other parties may also use the results to help further regional water resiliency and partnerships.

PROJECT TEAM

ROLES AND RESPONSIBILITIES

The Project Team is responsible for ongoing management of the study. The Project Team is expected to develop all communications materials and conduct outreach and engagement activities.

MEMBERSHIP

- Sacramento State, Office of Water Programs (OWP), is under contract with the State Water Resources Control Board, Division of Financial Assistance (DFA) to provide technical assistance to disadvantaged communities for planning and design services related to water system improvements. OWP will manage the Study project to evaluate water system alternatives for the community of Paradise.
- Sacramento State, Consensus and Collaboration Programs (CCP), is responsible for the development and execution of this Plan in consultation with the Project Team and the Stakeholders Group.
- State Water Resources Control Board (SWRCB) administers Proposition 1 funds made available to support drinking water-related efforts, including this study as administered by OWP. Divisions of SWRCB involved in the Study include the:
 - Division of Drinking Water (DDW)
 - Division of Financial Assistance (DFA)
 - Other Divisions may be included as needed
- Paradise Irrigation District (PID) and Town of Paradise is the Technical Assistance (TA) recipient.
- **Study consultant (TBD)** is responsible for preparing the Study and for providing information to support the outreach and engagement throughout the Study development.

STAKEHOLDERS GROUP

ROLES AND RESPONSIBILITIES

The Stakeholders Group works with the Project Team and provides input to define critical components of the Study. The Stakeholders Group serves as a proxy for public input, representing a range of key perspectives. Members will be asked to share information and solicit input from their own networks to inform the Study. The Stakeholders Group will meet monthly to receive general information about the status of the Study (goals, activities, timelines, etc.). In addition, special topic sessions will be scheduled to allow sufficient time for dialogue and solicitation of input. Meeting minutes will be prepared for all monthly meetings. When possible, the special topic sessions will be scheduled and coordinated with the monthly status report meetings. At a minimum, the Stakeholders Group will be asked to weigh in, review, and provide input on the following:

1. RFP development process:

- a. Review and provide input on the consultant evaluation criteria
- b. Review and provide input on the draft RFP
- Consultant selection: OWP, with the support of the Project Team, will review
 proposals, interview a short list of consultants, and select a project consultant.
 Stakeholders Group will be informed throughout the selection process.
- 3. Study development:

- a. Review and provide input on the List of options for consideration
- b. Review and provide input on evaluation parameters
- c. Review and provide input on draft Study and recommendations

MEMBERSHIP

The stakeholders group includes representation of the following interests:

- Technical Assistance (TA) recipient: PID and the Community of Paradise
- Local Government representatives: County of Butte, Butte County Local Agency Formation Commission (LAFCo), Town of Paradise, City of Chico, California State Assembly
- Local Non-Governmental Organizations (NGOs) representatives
- Local water representatives
- Local Union 228 Yuba City
- State Water Resource Control Board
- TA provider: OWP
- Environmental justice groups

COMMUNITY MEMBERS

In addition to the Stakeholders Group, the Project Team will solicit input from and inform the public in the Town of Paradise and throughout Butte County. Table 1 below provides a summary of the types of engagement efforts that will be offered throughout the project and their intended outcome. Specifically, each engagement effort will include suggested guidelines to inform and involve the public in RFP development and the Study.

Table 1. Outreach and Engagement Tools

Task/Event	Inform	Gather Input	Discuss/ Connect	Provide Choices	Deliberate	Decision Making
Press release and media	•					
Factsheets	•					
Stakeholder Assessment Interviews	•	•				
Survey	•	•				
Project website	•	•				
Social media	•	•	•			
Community informational event (remote participation as per COVID-19 requirements)	•	•	•			
Community workshop (remote participation as per COVID-19 requirements)	•	•	•	•		
Stakeholders Group Meetings	•	•	•	•	•	
Project Team	•	•	•	•	•	
Project Convener	•	•	•	•	•	•

IV. OVERVIEW OF COMMUNICATION TOOLS AND PUBLIC PARTICIPATION OPPORTUNITIES

Consistent with terms introduced in Table 1, this section describes specific engagement tools and methods to be used throughout the project.

Digital Engagement: Digital engagement is an approach that involves online exchange of information. Information provided through online media can be provided as hardcopies as well to ensure that information is accessible to all interested stakeholders. As shown in Table 1, digital engagement may include:

Press Releases and Media: All efforts associated with Paradise rebuilding efforts are
anticipated to attract significant attention from interested stakeholders. Consistent
messaging using press releases and local media to inform all interested stakeholders of
key Study outcomes and events will reach a large audience that may not be directly
involved in specific outreach efforts.

- **Factsheets:** Fact sheets help provide useful overviews of critical Study information and can be posted to a variety of digital platforms including local media, social media, and the project website. Factsheets are used to inform interested stakeholders.
- **Surveys:** Surveys are a useful tool for gathering initial feedback on Study components and concepts. Because they can be easily distributed to a large and diverse audience, surveys can solicit input from a wide range of sources. However, they do not readily offer the opportunity for two-way communication and follow up should the need arise.
- Project Website: Information about the Study will be available on the PID website. The
 project webpage will be regularly updated to ensure that stakeholders are informed
 about Study activities. The project webpage will serve as the primary clearinghouse for
 all publicly available Study information. Links can be easily shared with any interested
 parties.
- **Social Media:** Social media is a useful tool for informing, soliciting feedback from, and connecting diverse groups of stakeholders with other interested members of the community. It can be used simultaneously to update stakeholders of important Study milestones and events and provide a portal for information sharing and surveys.

In-Person Engagement: As noted, all initial outreach and engagement will be conducted virtually (using Zoom) due to COVID. As conditions improve and change, the tools listed below can be easily modified from virtual/online events to in person events.

- Stakeholder Assessment Interviews: Stakeholder assessments give the Project Team the opportunity to engage with a representative cross section of interested stakeholders. They provide an opportunity to tailor early Study concepts and components to the specific stakeholder needs and concerns based on a targeted set of questions and give Project Team staff the opportunity to ask follow-up questions.
- Community Informational Events: Informational events can take many forms from booths at other existing venues such as farmer's markets or fairs to standalone open houses. The purpose of informational events is primarily to inform interested stakeholders of Study concepts and components, but they also provide an opportunity to connect Project Team staff directly with community members.
- Community Workshops: Community workshops are structured events to showcase
 Study components to interested stakeholders. They are useful in connecting
 stakeholders to Project Team staff and creating dialogue between decision makers and
 the community.
- Stakeholders Group Meetings: Stakeholder group meetings provide targeted discourse between Project team staff and key stakeholders in the community. These events occur regularly and offer the highest level of engagement for a pre-determined set of stakeholders (as defined above) to carefully review Study components and provide targeted feedback on Study options through deliberative dialogue.

V. OUTREACH AND ENGAGEMENT WORKPLAN (ONGOING UPDATE)

The Outreach and Engagement Workplan is meant to be a working document that will be regularly updated per input from the Stakeholders Group to meet project needs and to ensure a transparent process and ongoing communication about the Study's progress.

PRESS RELEASES AND MEDIA

CCP, in coordination with the Project Team, will develop and distribute press releases and media advisories that correspond with Project milestones. An initial list of media outlets is provided below.

- The Paradise Post: https://www.paradisepost.com/
- Town News and Events: https://www.townofparadise.com/
- Chico Enterprise Record: https://www.chicoer.com/
- Town of Paradise Butte County: https://buttecountyrecovers.org/

FACTSHEETS

CCP, in coordination with the Project Team, will prepare topical factsheets to be shared with the Stakeholders Group and the public.

STAKEHOLDERS ASSESSMENT INTERVIEWS

The CSUS team has conducted interviews to gather information and input to inform the Plan development and subsequent outreach and engagement related to Study preparation. Interviewees were asked to respond to questions in three key areas: (1) the role and perspectives of the interviewee regarding the Study and subsequent related activities, (2) PID water system characteristics prior to the fire and the interviewee's vision for PID moving forward, and (3) public engagement and outreach opportunities and considerations. The interviewees are a subset of the Stakeholders Group and included representatives of:

- State Water Resource Control Board
- Community
- Miocene Canal Coalition
- PID
- Butte LAFCo
- Butte County Farm Bureau
- Cal Water
- Butte County Department of Water & Resource Conservation
- Butte County Board of Supervisors

SURVEY

CCP may develop and administer surveys to solicit input from the public. Survey links will be

provided through the project webpage on the PID website.

LISTSERV AND SOCIAL MEDIA

CCP will coordinate with PID to share information using PID's social media including:

- PID Facebook page (https://www.facebook.com/PIDWater/)
- PID twitter (https://twitter.com/pidwater?lang=en)
- PID Nextdoor (https://nextdoor.com/agency-detail/ca/butte-county/paradise-irrigation-district/)
- PID Listserv

Social media and listserv announcements will provide general information about the process (goals, activities, timelines, etc.) and the status of the Study, current opportunities for participation, and other timely and important information.

Members of the Stakeholders Group are encouraged to serve as communication partners and help distribute announcements using their social media and listservs to their members.

PROJECT WEBSITE

CCP will coordinate with PID to post project information on the PID website. The primary purpose of the project website page is to inform interested stakeholders and provide a centralized location for information about the Study, related material, progress updates, and opportunities to engage and provide input. The website page will make information easily accessible and allow interested parties to track the status and development of the Study. The website page is not intended to serve as a discussion forum.

Information to be provided on the website includes:

- 1. General project information
 - a. Project purpose and scope
 - b. Timeline and milestones
 - c. Project convener contact information
- 2. RFP process
 - b. RFP with information on how to respond to the RFP
 - c. Announcement on consultant selection
- 3. Public Engagement
 - a. Communication plan and timeline [to be updated as needed]
 - b. Stakeholders Group monthly meeting agendas and summaries
 - c. Scheduled public engagement opportunities
- 4. Options study information
 - a. Relevant information and related reports
 - b. List of options to be evaluated as part of the Study
 - c. List of evaluation criteria
 - d. Study report

COMMUNITY EVENTS: INFORMATIONAL AND WORKSHOPS

CCP, in coordination with the Stakeholders Group, will facilitate community events designed for informing and engaging non-technical audiences.

- The open house meetings/webinars will provide general information about the Study (background information, goals, activities, timelines, etc.) and its status.
- In general, the open houses will solicit public input on the same topics that will be discussed with the Stakeholders Group. However, materials will be tailored to be accessible to general audiences.

PROJECT WORKPLAN

As shown in Table 2 below, the Plan is designed to support and link with key milestones of the RFP development and the Study. Outreach and engagement activities identified in Table 2 will be updated regularly to ensure ongoing and transparent communication about Study activities.

Table 2. Outreach and Engagement Activities to Support Project Milestones

Anticipated Completion Date	Options Study Milestone	Stakeholders Group Input	Community Outreach
Ongoing	Pre-Engagement Activities		Identify local Media Outlets: Initial identification of local, regional, and state media outlets likely interested in Town of Paradise water supply issues. Connect with other engagement efforts in the Town of Paradise and surrounding areas as appropriate. Identify opportunities for outreach presentations with special interests groups (such as the County Water Commission; League of Women Voters) to provide short updates on the study and encourage participation.

Anticipated Completion Date	Options Study Milestone	Stakeholders Group Input	Community Outreach	
Sept 2020	RFP Development	Meeting (09/25/20) Meeting Purpose: Clarify and solicit input on engagement roles, draft Communication Plan, and draft RFP consultant evaluation criteria.	Website Development in collaboration with PID.	
TBD	Finalize and Advertise RFP		Factsheet: inform community members on the RFP scope, evaluation criteria, and schedule Social media/Press release/website: inform community members on RFP process and schedule	
TBD	RFP Response Period	Meeting: Update on responses to the RFP		
TBD	Consultant Selection	Meeting: update on consultant selection process		
TBD	Contract development and execution		Social media/Press release/website: inform community members of selected consultant, qualifications, and Options study process (options list development and Options evaluation)	
2 months post contract execution	Draft Options List	Meeting: Provide input on public engagement related to options list.	Public Forum: (1) Provide foundational information on the PID system (where water comes from, water rights, operations,	

Anticipated Completion Date	Options Study Milestone	Stakeholders Group Input	Community Outreach		
			capacity, etc.); (2) solicit input on options for consideration. Press Release		
3 months post contract execution	Finalize Options List and Description	Meeting: Provide input on list of options for consideration; options evaluation process	Ongoing communication through Social media/Press release/website Factsheet: Options list and descriptions Public meeting to provide an update on options to be considered		
10 months post contract execution	Options Evaluation	Multiple Meetings: Progress and input on options evaluation process; initial findings	Public meeting – Open house/Gallery of options Ongoing communication through Social media/Press release/website		
12 months post contract execution	Finalize study Results and Recommendations	Meeting: Update on study results and recommendations	Social media/Press release/website		