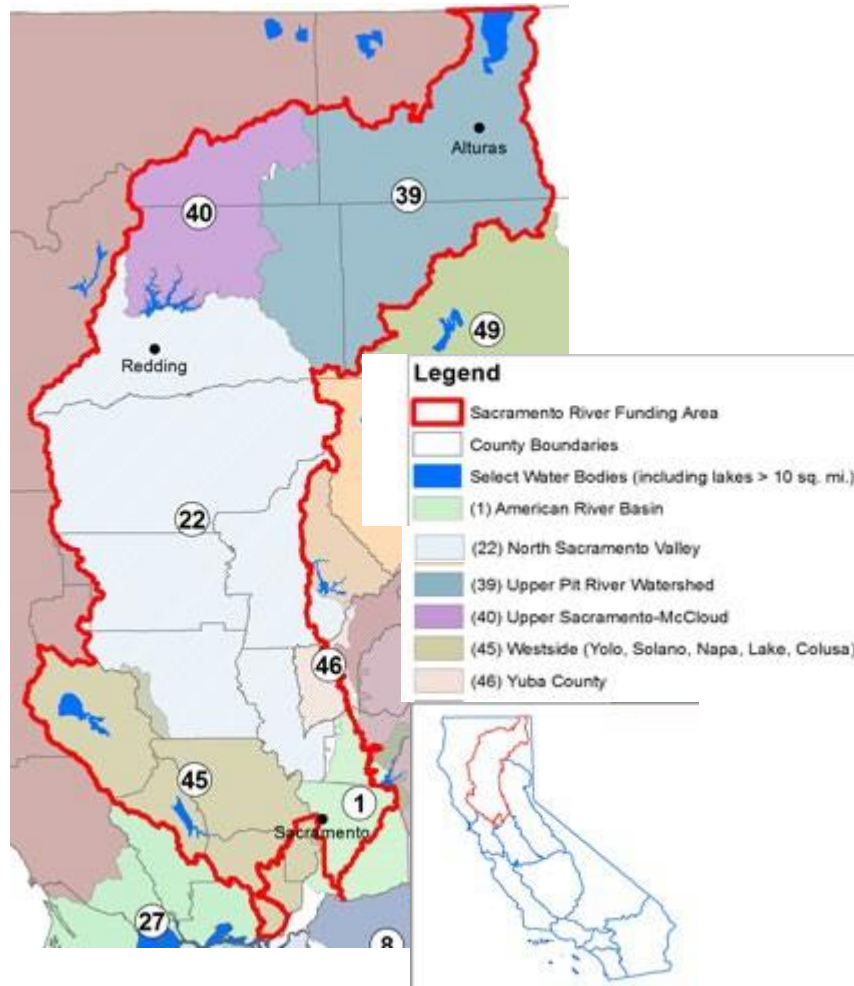


SACRAMENTO RIVER FUNDING AREA PROPOSITION 1 DAC INVOLVEMENT PROGRAM

PHASE 2 (YEAR 2) REPORT



Prepared by
Sacramento River Funding Area (SRFA)
Prop 1 Disadvantaged Community Involvement Program (DACIP)

Reviewed and Approved by the following Sacramento River Funding Area IRWM Regions:
Upper Sacramento-McCloud, Upper Pit River Watershed,
North Sacramento Valley, Yuba County, Westside, and American River Basin

With technical support from
Burdick & Company

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SRFA DACIP Report Acronyms List

Acronym	Meaning
ARB	American River Basin
CBNA	Community-based Needs Assessment
CC	Coordinating Committee
CDP	Census-Designated Place
CIEA	California Indian Environmental Alliance
CIP	Capital Improvement Plan
CNA	Community Needs Assessment
CPUC	California Public Utilities Commission
CRWA	California Rural Water Association
DAC	Disadvantaged Community
DACI	Disadvantaged Community Involvement
DACIP	Disadvantaged Community Involvement Program
DWR	Department of Water Resources
EDA	Economically Distressed Area
EJCW	Environmental Justice Coalition for Water
EPA	Environmental Protection Agency
ERP	Emergency Response Planning
GIS	Geographic Information System
IRWM	Integrated Regional Water Management
IRWMP	Integrated Regional Water Management Plan
LAFCO	Local Agency Formation Commission
LPA	Local Primacy Agency
MHI	Median Household Income
NA	Needs Assessments
NCRP	North Coast Resource Partnership
NSV	North Sacramento Valley
PSP	Project Solicitation Package
RCAC	Rural Community Assistance Corporation
Region	IRWM Region
RWMG	Regional Water Management Group
SCADA	Supervisory Control and Data Acquisition
SRFA	Sacramento River Funding Area
SWRCB	State Water Resources Control Board
SWS	Small Water System(s)
TAC	Tribal Advisory Committee
TMF	Technical, Managerial, and Financial
UFR	Upper Feather River
UPR	Upper Pit River
URC	Underrepresented Communities
USR	Upper Sacramento River

DISADVANTAGED COMMUNITIES INVOLVEMENT PHASE 2 SUMMARY

This report provides a summary of the outcomes and work conducted for Phase 2 of the Sacramento River Funding Area (SRFA) Proposition 1 Disadvantaged Community Involvement Program (DACIP). Phase 2 occurred from October 1, 2019 through September 15, 2019.

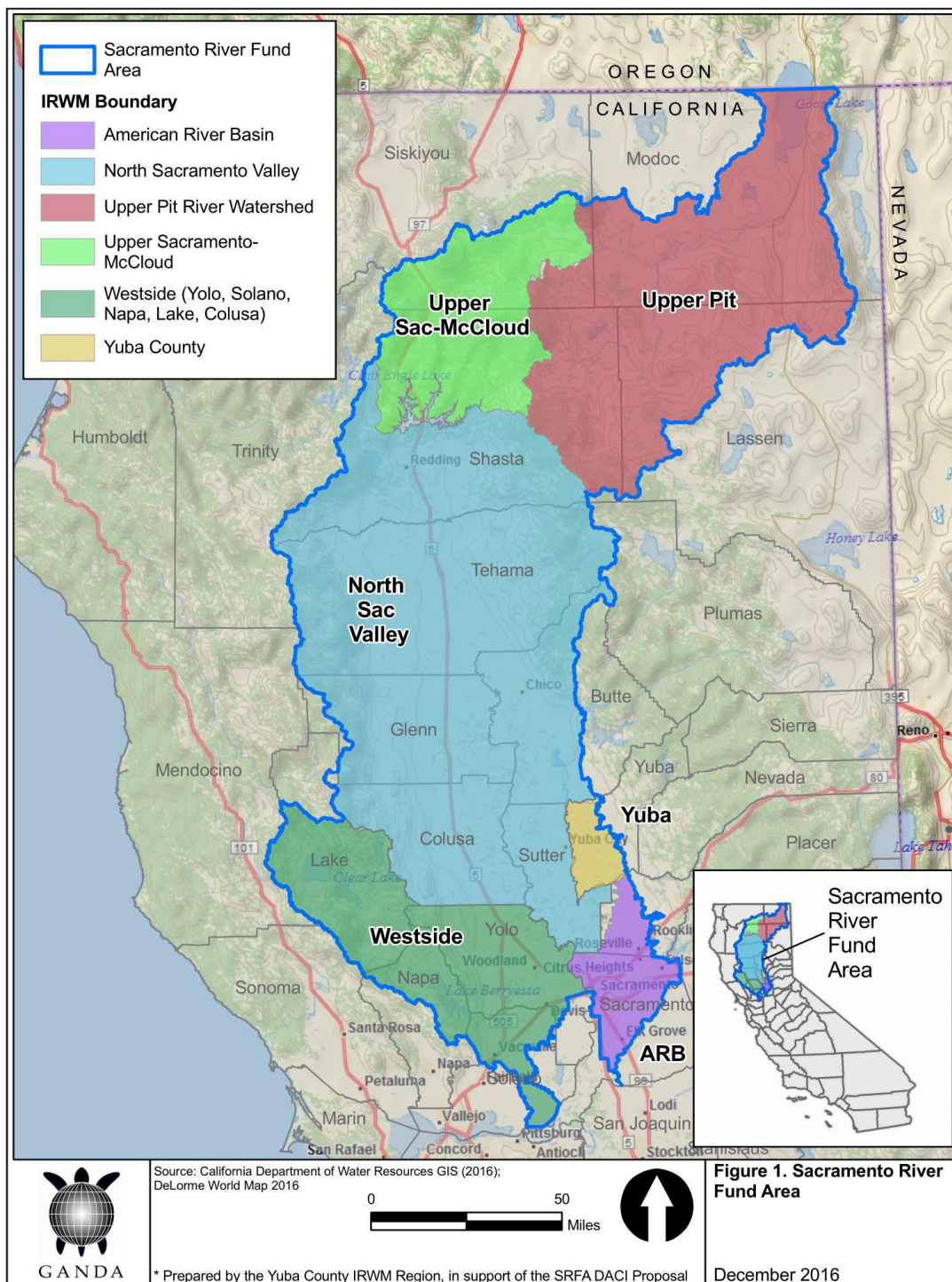
The SRFA comprises six Integrated Regional Water Management (IRWM) Regions (Figure 1): Upper Pit River Watershed (UPR); Upper Sacramento-McCloud (USR); North Sacramento Valley (NSV); Westside Yuba County [portion]; and a portion of the American River Basin (ARB).

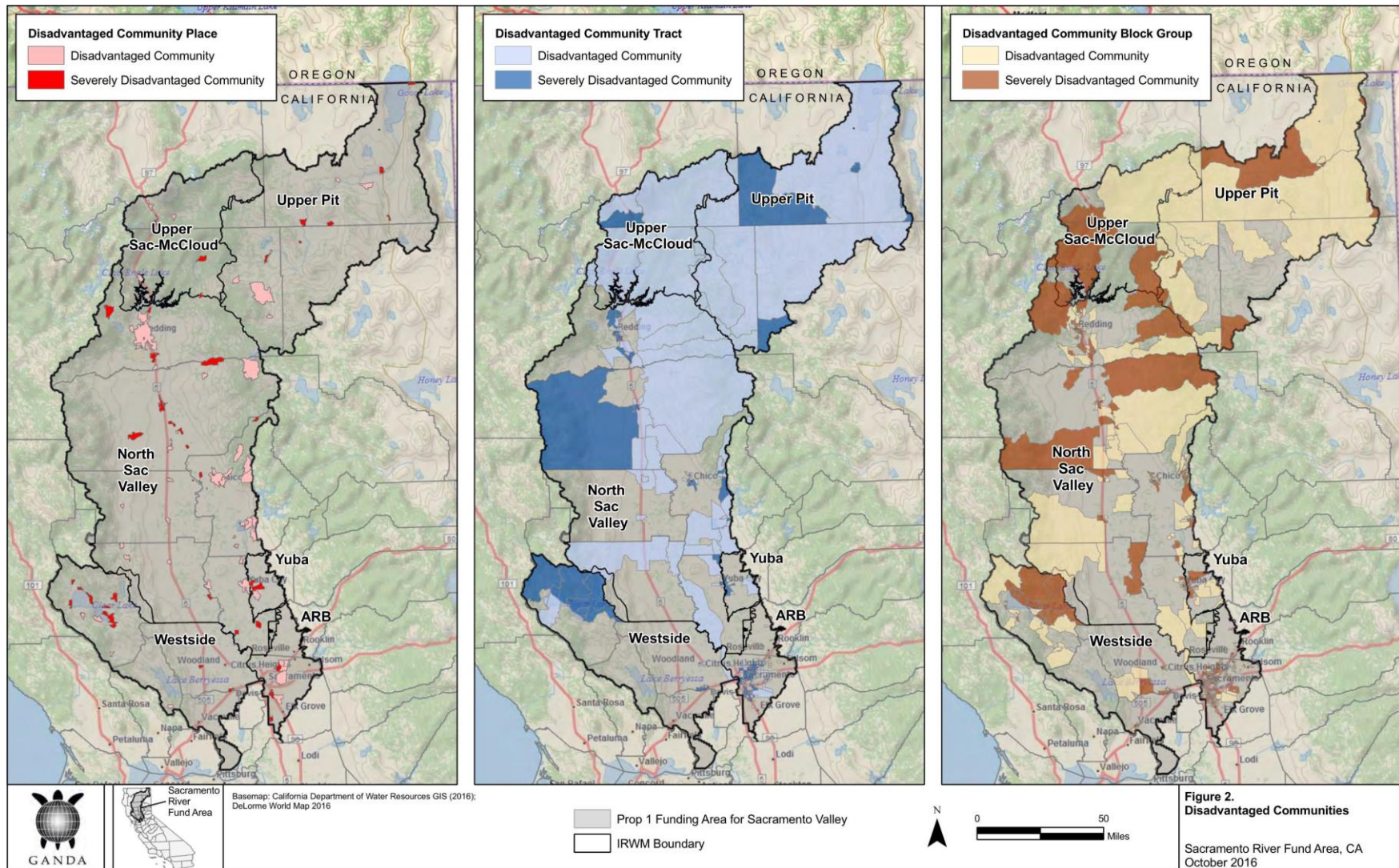
The primary outcomes of Phase 1, reported on previously, were thoroughly evaluated by the SRFA Technical and Management Teams; discussed and formally approved by each of the six RWMGs within the Funding Area; and by the full SRFA Subcommittee. The results of the Phase 1 work effort have directly informed the development of the recommended Phase 2 Activities described in this report. The results of both Phase 1 and Phase 2 will inform the final year's work plan and implementation effort for Year 3 (estimated to extend from October 1, 2019– June 30, 2021).

The Department of Water Resources (DWR) mapping tool was used to investigate the distribution and coverage of DAC mapping units used to analyze DAC focus areas in Phase 1, including: DAC Places, Community Tracts, and Community Block Groups. These DAC units were used to define and focus the geographic effort for SRFA DACIP Phase 1 and Phase 2 activities (see Figure 2 SRFA DAC Maps). Maps were also created to show the distribution and coverage of economically distressed areas (EDAs) in the SRFA (see Figure 3 SRFA EDAs).

The Phase 2 Work Plan in year 2 was oriented primarily toward providing DAC water systems and communities with technical assistance, training, project development and other direct follow-up on the most critical water and wastewater needs that were identified in Phase 1. The Project Team proposed a Phase 2 work effort that included the following Activities: 1. Project Management and SRFA-wide IRWM Coordination and DACIP Grant Communications, 2. Technical Assistance, Phase 1 Follow-up and On-going Outreach, 3. Phase 3 Strategy Development, and 4. Grant Administration.

Below is a description of the work conducted and outcomes achieved for the Phase 2 effort, organized according to Activity.





Activity 1: Project Management and SRFA-wide IRWM Coordination and DACIP Grant Communications

Project Management and Regional coordination within the funding area continued throughout Phases 1 and 2. This activity facilitated two-way communication between the Project Team and local DAC representatives, IRWM representatives, DACI-Coordinators and Project Partners, as well as ongoing task troubleshooting and refinement. The large geographic area included in the SRFA, in combination with the high level of engagement of the SRFA Integrated Regional Water Management (IRWM) groups and ambitious nature of the Work Plan, required a significant amount of coordination and communication. Additionally, because the SRFA DACI Program was the only existing program that overlapped with the geographic scope of the DWR Round 1 IRWM Implementation funding program, the SRFA DACI project managers also supported the coordination efforts required ahead of the Proposition 1 Implementation Grant Application Submittals. Additionally, the SRFA DACI program supported the development of project documents for DAC projects included in Round 1 applications in each region as relevant.

Primary coordination and communications conducted under this activity included:

- On-going (often weekly) management and coordination of the Project Management Team for the efficient tracking of all tasks
- Management of DACI-Coordinator tasks
- Regular calls and emails with contractor leads on task status and updates, troubleshooting, and feed-back on needed updates to the workplan or schedule
- Convening of team meetings to calendar Phase 2 activities, coordinate tasks and public communications, review materials and provide feedback

This task also included on-going coordination of the SRFA Subcommittee with representatives from each of the 6 IRWMS as well as regular updates to each RWMG for SRFA-wide issues or workshop announcements, SRFA DACIP grant updates as relevant and SRFA support for the IRWM Implementation project and application development process. The primary work conducted under this task includes:

- Coordination of Subcommittee conference calls and two face to face meetings for important updates and SRFA Implementation Coordination and Project vetting (including call/meeting scheduling; creation of agendas, other support materials and documents; taking notes; and follow-up emails)
- Coordinating with DWR for the SRFA IRWM Implementation workshops
- Follow-up with DWR on SRFA questions for the IRWM Round 1 Implementation Application process
- Coordination and review of the draft PIFs for DAC Projects within the SRFA
- Announcements of the SRFA Training Workshops being hosted under the SRFA DACIP grant (Activity 2) as well as follow-up on Technical Assistance provided under this grant

In addition to the coordination of the SRFA Teams, Subcommittee, and IRWM/RWMGs, this Activity included the development of the SRFA DACI Website material collation, web programming, icon development and testing.

Activity 1 Deliverables: The following deliverables have been submitted to DWR as part of Phase 2 invoicing and per the Grant Agreement:

1. SRFA Subcommittee Meeting Agendas and Notes
2. SRFA DACIP Website (going live in 1st Quarter 2020)

Case-Study Fire Preparedness Workshop

The catastrophic fires that plagued several areas of the SRFA in recent years created additional, emergency needs for several DAC communities in our funding area. Therefore, part of this activity was spent gathering lessons learned from these fires to try to develop support materials to help DAC communities better prepare for the next disaster. Initially, we planned to develop an inter-IRWM workshop to focus on the nexus between fuel load reduction, risk to DACs and Project Development in the rural far north of the SRFA. However, in conducting the post-fire interviews, the team quickly learned that these communities were either suffering from meeting fatigue due to the huge state and local-level response to the recent fires and/or had adequate support by fire experts in the short run and there was not a need for the workshop as initially envisioned, nor interest in participating. For this reason, we altered the approach and developed a summary document of the Fire Lessons obtained during these interviews and conversations across the SRFA (Appendix A). The Lessons Learned summary provides many useful recommendations that DAC communities and water systems could follow-up on, with little additional support, if there was adequate local leadership to drive the effort. However, as is often the case in DAC communities, the capacity of local leadership is often already overwhelmed by daily tasks and compliance standards, so that additional preventive or protective measures to prepare for an emergency are not done. As a first step toward providing support and guidance to DAC communities around the topic of emergency planning, we developed a targeted training opportunity on Emergency Operations Centers (EOC).

California Water (Cal-Water) routinely hosts Emergency Operations Center Trainings (EOC) in places that they serve and so have developed a team of experts and support materials to run such trainings as needed. EOC trainings are an opportunity for anyone involved in water distribution operations, communications, financing, public safety and emergency response to get together in a room to talk through the appropriate preparation steps that their Agency should take ahead of an emergency and then to talk through an actual mock-emergency in real-time to practice the steps that each person's "role" should take in an emergency. Under the Phase 2 work plan, Cal-Water agreed to host two EOC trainings within DAC communities in the SRFA (Lucerne for the Westside IRWM and Marysville for the Yuba IRWM). These events were very successful and had attendees from a good cross section of entities. We hope to conduct additional EOC training events in Year 3 and will make the EOC support materials available on the SRFA DACI website.

Project Development

The Phase 1 Needs Assessments as well as the Phase 2 workshops (described below) and other regional efforts increased the awareness across the SRFA of the Technical Assistance for Project Development being offered through the SRFA DACI Program as well as the broader range of services that RCAC provides as support to rural communities. This outreach and interaction across the SRFA lead to several system-specific calls regarding questions and requests for one-on-one Technical Assistance. The Phase 1 need's assessment results also provided foundational information that RCAC's team was able to use to follow up on and offer additional technical assistance. In total, in Phase 2 RCAC's team conducted 22 Technical Assistance (TA) projects that were supported by the SRFA DACI Program and over a dozen other projects were leveraged into other State of California contracts by way of contact through the SRFA DACI Program. Additionally,

a total of five communities, so far, received application assistance for grant funding resulting from TA provided under the SRFA DACI Program. **(see Appendix B for more detail).**

Paul Rose of Rose Water System Management provided additional in-field TA to another 18 DAC water systems in the Upper-Sacramento McCloud, Lower Pit and Upper Pit River IRWM regions and provided referral for follow-up by RCAC during his work on the Operation and Maintenance SWAT Case study (see SWAT Case Study summary below and Appendix C for more detail). Paul also helped develop projects in these regions that ultimately resulted in PIFs for IRWM Round 1 Funding Applications.

Additionally, the SRFA Technical Team provided detailed technical review and comments, by request, for all DAC Project Information Forms (PIFs) developed for the 2019 IRWM Round 1 funding.

Technical Training Workshops

The primary goal of the Phase 2 Technical Workshops was to provide technical assistance addressing SRFA DAC Water Systems' most urgent needs, as identified in the Phase I Needs Assessments, in each IRWM Region (within DAC Places as well as Small Water Systems). RCAC's team of water system experts reviewed the outcomes of the SRFA DACI Phase 1 TMF Needs Assessments to develop the content to be covered in these Workshops for each IRWM, to address the most consistent, critical needs by Region.

The efforts from Phase 1 provided detailed needs assessments from sixty-seven (67) water and wastewater utilities in DAC places from the five IRWM Regions. These needs assessments utilized the TMF (technical, managerial, and financial) framework to categorize the needs of the utilities. The small water system data, collated in Phase 1 which included maps of system locations, were used to determine the locations for the Phase 2 workshops to ensure that the training was being brought to the DAC water systems, rather than expecting DAC system staff to travel to the training. For many regions, this was the first time that trainings of this caliber and offering such key training opportunities were offered in their vicinity. The SRFA Technical Team developed workshop Agendas and materials for each IRWM Region and worked in collaboration with the relevant RWMG or DACI-Coordinator to announce and advertise each workshop to foster maximum DAC participation. Due to the highly rural nature of the northern half of the SRFA, we provided technical assistance follow-up and workshop trainings, even for workshops with only a few attendees, knowing that these people are likely the only technical staff for the DAC water systems in these regions and therefore likely need significant support.

Data obtained during Phase 1 was used to outline the workshop topics by Region as well as to help guide the workshop locations and provide a targeted list of potential participants from utilities where needs assessments were conducted. A total of sixteen workshops were conducted which provided over one thousand contact hours across all participants and IRWMs in the SRFA. **See Appendix B** for summary tables broken down by IRWM Region of each workshop completed along with other supporting information.

SWAT CASE Study

The Phase 1 TMF-Needs Assessments highlighted the nearly universal situation wherein water systems serving small disadvantaged communities struggle with the on-going and routine day-to-day workings (operations and maintenance tasks) of their water and wastewater systems. A lack of Water System Board training and access to administrative services combined with few to no qualified technical staff compound this issue in rural, DAC water systems. The lack of the on-going funding needed, lack of qualified operators, and these other factors can generate an ever-growing operational deficit. These shortfalls create a constant strain on operations and can lead to a collapse of the system's ability to provide the necessary services to their customers, even creating a health or environmental hazard in the process.

This case study was developed to investigate the potential of 'regionalizing' O&M technical services across two largely rural and DAC IRWM regions, to see if these systems could agree to work together to solve a mutual problem. It is clear from the TMF Needs Assessments and the Phase 2 follow-up Circuit Ride that in order for a group of small water and wastewater systems to be able to regionalize their O&M and create a program that is durable, they will need the initial design of the program to be sponsored and supported by technical experts (similar to consolidation efforts which are highly supported with State funds). This would have a huge impact on the ability of a group of systems to create the organizational and financial agreements as well as the key implementation tasks associated with development of maintenance schedules, prioritized repairs, and proper daily operations. The Assistance would include a mobile team of skilled, trained, and experienced licensed water and wastewater operators with tools and equipment available to use in region. This mobile team could move into a system with the necessary materials, and work in conjunction with local system operators on a variety of small tasks and projects. Bringing this level of skill, experience and equipment for targeted small system repairs would quickly alleviate pressure on these staff and would allow for additional, highly technical training in the process (**See Appendix C SWAT Case Study Summary for more detail**). The implementation of the SWAT Case study will be trialed in Year 3 of the SRFA DACI Program in the Upper Pit and Upper Sac-McCloud IRWMs.

OPUD Case Study

Latino Outreach

The Community-based Needs Assessments (CBNA) conducted during Phase 1 highlighted key drinking water issues that both the Water Purveyors and Community members identified as key needs. Non-English communities are traditionally less aware of and engaged in local and regional water issues. This is an observation that was confirmed as the DACI outreach team engaged with non-English speaking residents in DAC communities throughout the SRFA region and specifically in the communities of Olivehurst and Linda within the Yuba IRWM. Some universal observations made across all communities included:

- Very few Non-English-speaking individuals know, by name, the entity that purveys their water. In many cases this is because many of the people with whom we spoke are renters whose water bill is included in their rent, so they have no occasion to directly interface with their water agency.
- The vast majority of the people with whom we spoke do not trust the quality of their water. In some communities, this mistrust is merited, but in most cases it is unfounded. There are various reasons for the mistrust. Some misidentify the source of their water, for example in Yuba County, many people we spoke to believed that their drinking water comes directly from a nearby dirty river with visible trash. Others note

unpleasant colors or odors in their water. Additionally, across the board, there is an underlying cultural self-defense mechanism that is present with respect to consuming tap water, though perhaps not always consciously, in a lot of the respondents. Many Latino residents emigrated from places where drinking tap water is, in fact, very dangerous. So there is an innate risk aversion towards the practice.

- Due to the concern over the quality of the water, every single person with whom we interacted reported purchasing bottled water for home consumption, many even for cooking. Many of the families we spoke to were in a lower socioeconomic stratum, where spending upwards of \$200 a month on bottled water, as was reported, can have a devastating and disproportionate effect on their economic wellbeing.

Given these findings, we approached the second phase of the SRFA DACI project as an opportunity to follow-up on these CBNA and attempt to address these issues. We selected one of the communities in which we had conducted our CBNA efforts as a pilot community in which to try various outreach and water education approaches. The thought was that if successful, we could more easily expand these strategies and efforts to other communities within the funding area. We found a willing and supportive partner in the Olivehurst Public Utilities District (OPUD) for this Phase 2 Case Study. **(see Appendix D OPUD Latino Outreach for more detail).**

Water Education in School

The Phase 1 CBNA demonstrated a need for improved water education within the Community of Olivehurst. Based on well-documented research on the positive impacts of education on water conservation and water-literacy, the Olivehurst Public Utility District/OPUD and the DACI Team initiated the development of a comprehensive school-based program aimed at empowering youth and families in the Olivehurst community. This program was developed to compliment the largely adult-based Latino Outreach program described in Appendix D.

This part of the Phase 2 Work Plan targeted development of a youth education program case study within area schools. The team first focused on relationship-based outreach and cultivation of partners – Principals and Vice-Principals, followed by relationship building with teachers. This education program focused on augmenting and complementing the existing core curriculum to assist children in learning more about their water via hands-on activities, experiments, and meaningful educational experiences around water education (i.e. answering the questions: Where does my water come from? Why should I conserve it? Is it safe to drink?).

This outreach effort was intended to educate these young consumers, while providing them with meaningful educational and enriching experiences relating to water. This effort supports local children becoming informed, current and future, water-users in the communities where they will live and thrive. The specific goals of this Case Study were:

- To improve science-based student learning, particularly in the area of water access, availability, conservation and eco-systems that support life.
- To inspire the next generation of youth, to be aware and knowledgeable when it comes to the water they drink and how it gets to them.
- To provide deep learning experiences, with the use of a Water-Related Field Trip, Experiment Boxes, a Water Skit, a Water Day, and a Water Ambassador Day at an OPUD Board meeting to engage students and families alike, activating the local community with the Olivehurst Public Utility Department.

This program is now being incorporated into County-wide water education initiatives being led by Yuba Water Agency to leverage the advances made in this Case Study and extend them out to all grades and schools in Yuba County. (See **Appendix E** for more detail on this program's components and outcomes)

URC Case Study in ARB

The Project Management Team has been working with the ARB IRWM/RWVG to develop a case study work plan and budget to specifically address the issue of Homeless Access to Water and Wastewater Services in the ARB region in year 2. The homeless population in the ARB IRWM Region is a key URC that was identified as a key focus group with significant water and wastewater needs during Phase 1. This case study will be implemented in year 3 and will include coordination of known entities already working with the homeless issue in ARB. This Case Study will seek to identify a pilot project to improve the ecosystem of the lower American River by addressing access to water, sanitation, and hygiene (WASH) for people experiencing homelessness (see Activity 3 for the Phase 2 Year 3 planned approach for this Case study).

Tribal Engagement and Needs Assessment

California Indian Environmental Alliance (CIEA) was contracted in Phase 2 to conduct Tribally focused needs assessments for Tribes that cover the SRFA boundaries. Their Tribal Needs Assessment Report (**Appendix F**) is an initial assessment of the results of the targeted Tribal Needs Assessment surveys, follow-up interviews and meetings completed from April 2, 2019 through September 27, 2019 by CIEA. Twelve Tribes, or one quarter of SRFA Tribes combined contributed to this Needs Assessment.

CIEA staff provided the survey using an online digital service, fillable pdf and paper surveys to Tribal Environmental Directors, Tribal Administration, leadership staff, and/or Tribal Water Operators, as appropriate by Tribe. Each Tribe who completed this survey has traditional territory within the SRFA, or their territory overlaps the SRFA and an adjacent funding area. Eight of the 14 Tribal respondents are in multiple SRFA IRWM regions or adjacent IRWMs in separate funding areas. Following the receipt of these surveys CIEA interviewed six Tribes and combined those meeting notes into a summary report. (see Appendix F for more detail).

The results of these Needs Assessments revealed significant and varying water and wastewater needs for Tribal Communities and Tribal people across the SRFA. The technical team will focus on developing Tribal-only technical workshops to help address some of these needs within each IRWM and on dates selected via consultation with Tribal representatives on the IRWM/RWVG and/or other Tribal representatives in the region. The team will work in region to ensure the training meets a need considered most critical to the Needs Assessment respondents, communities and Tribal representatives. Initial recommendations for training include Private Well and Septic O&M, Emergency Response Planning and Resources, and Capital Improvement Planning. Additionally, these Tribal-only workshops will be used to develop relationships between Tribal representatives and the Technical Team to identify TA services that can be provided on a one-on-one basis, now and into the future.

In 2018 the NSV started its Plan Update to be Prop 1 compliant. One of the areas where we were weak was in Tribal representation. In 2019 we proposed to change our bylaws. The bylaws currently set the NSV Board at three members from each county in the region; the Technical

Advisory Committee (TAC) had two members from each county, two at large members, and a designated seat for Tribes. On March 2, 2020, the Board will consider changing the bylaws to make the Board two members from each County and two Tribal members; the TAC will be two members from each county, two at large members, and two tribal members. All seats will be voting.

With CIEA's help, Oscar Serrano, TAC Tribal member, and I contacted all the Tribes in our area. Mail with follow up by phone and email. It looks like we will be able to have a Tribal representative on the Board and one on the TAC (Oscar is leaving, but another tribe expressed interest). This is better than expected as several Counties have empty seats. Indications are that modified bylaws will pass if we can muster a quorum on March 2.

Activity 2 Deliverables: The Appendices to this report represent the key deliverables for the SRFA DACI Phase 2, Year 2 Work Plan.

Activity 3: Phase 2, Year 3 Strategy Development

This task constitutes the Technical Team's review of the information from Phase 1 Needs Assessments (year 1) and Phase 2 Technical Assistance and Needs Follow-up (year 2) and the development of a plan for additional TA, training and outreach (now called Phase 2, year 3). There were several key lessons learned in Years 1 and 2 that have directly informed the strategy for Year 3. These are:

- Water purveyors across the funding area have needs that the Technical Team (e.g., RCAC and Rose Water Systems) already routinely address via direct Technical Assistance, and Technical Support workshops and trainings within California; however, small DAC water purveyors often do not have staff able to travel to take advantage of this help. Therefore, in Year 3, we will continue to offer direct TA, by request, so that DAC project development support can continue across the SRFA.
- Remote and rural water purveyors often share the key need for capacity-building of their board members and staff and have difficulty in retaining these staff once they are adequately trained. In addition, the operating budgets of numerous small water systems do not allow for adequate funding to pay staff for key monitoring, maintenance, and other ongoing operational tasks that would allow them to remain in State compliance. And, finally, these same remote and/or small water systems have logistical barriers (i.e., mountainous terrain) that preclude their physical consolidation with other systems. The SWAT O&M implementation case study will attempt to develop a model for how these systems can work together to achieve affordable technical support, bulk purchase benefits, coordination agreements to reduce the O&M burden on each system.
- Latino communities across the SRFA would benefit from increased engagement and outreach as demonstrated in OPUD. The Tu Agua social media program and community engagement activities will be extended into other counties and areas with the SRFA in year 3.
- The URC Case Study Implementation includes the following planned approach and anticipated outcomes for year 3:
Approach: Through a series of 3-4 planning meetings aim to:
 1. Understand the specific interests and discuss possible solutions.

2. Develop a draft pilot project that is most promising to address these issues.
3. Convene Resource and Advocacy Stakeholders to refine the pilot project.
4. Implement and track the pilot project.

Anticipated Outcomes

1. Document stakeholder interests and input through the process.
 2. WASH services and information on other assistance to those experiencing homelessness along the lower American River during the pilot project.
 3. Quantified ecosystem improvements resulting from the pilot project.
- Tribes across the SRFA have similar needs to other DAC communities, but unique concerns and barriers to support services that must be addressed to allow for meaningful and enduring Tribal engagement in IRWM and other similar State Programs. A Tribal Committee will be formed to develop a report to DWR on these barriers and to make recommendations for solutions. Additionally, Tribal-only training workshops will be developed and provided in each IRWM under consultation with Tribal representatives and the IRWM/RWMGs.

These updates to the Phase 2 Work Plan for Year 3 are being reviewed by DWR for a Grant Amendment. An updated version with their comments will be sent to the SRFA Subcommittee for review and comment ahead of final submittal to DWR.

Activity 4: Grant Administration

Activity 4 tasks during Phase 2 of this project included the following:

- Oversight ensuring compliance with the Grant Agreement throughout the work effort.
- DWR reporting and invoicing (e.g., submitting quarterly reports and invoices, ensuring prompt payment of subcontractor invoices, ensuring that all financial and reporting records are kept in a manner that would support an audit), and preparation of the summary reports.

Activity 4 Deliverables: The following deliverables have been submitted to DWR during invoicing and as per the Grant Agreement:

1. Quarterly/monthly reports and invoices (supported by technical and budget data provided by the Project Manager), as specified in the Grant Agreement

APPENDICES

Appendix A. SRFA Fire Lessons Learned Summary

Fire Preparedness, Response, and Recovery: Results of Interviews on “Lessons Learned” from Recent Catastrophic Fires in the Sacramento River Funding Area

1. Introduction

Catastrophic wildfires pose an urgent threat to lives, property, and resources in California. Ten of the most destructive fires in California history have occurred since 2015 and, of those, eight have occurred in Northern California.¹ The 2017 and 2018 wildfire seasons were the most destructive in California’s history.² Not only is the rate of catastrophic fire increasing, but the size and cost in life and structures lost has also increased – with 141 deaths, loss of over 31,000 structures and over 1 million acres burned. The most recent catastrophic fire in November of 2018, the Camp Fire, killed 86 people and destroyed over 18,000 structures with 156,000 acres consumed. These events have come with significant cost – in life, property, forest acreage, firefighting costs, and emotional trauma.

Using funding allocated through the Proposition 1 Integrated Regional Water Management (IRWM) Disadvantaged Community Involvement Program, a pilot project aimed at leveraging the lessons learned from recent fires in the Sacramento River Funding Area (SRFA) has been initiated. The initial work effort involved in-depth interviews with agencies and organizations in three counties within the SRFA that were most heavily impacted in recent years: Butte County (Camp Fire), Shasta County (Carr Fire), and Lake County (Valley Fire). The key questions posed during these interviews were:

1. If you knew fire was coming a year in advance what would you do differently?
2. What are the key lessons learned from the most recent event?
3. How is your recovery progressing?
4. What are your recommendations for moving fire preparation/prevention/response/recovery forward across the SRFA region?

2. Overview of Results

Many valuable “lessons learned” emerged from the interviews conducted in the three counties. Many of the same observations were expressed over and over. These observations, along with other key points and lessons learned, are summarized below. Section 3 provides a more detailed summary of key points and lessons learned by county. Some key lessons learned that pertain to the general community:

- **Communications:** Communication during and following a major fire event was especially challenging, with loss of power, loss of cell phone and landline use, and widespread displacement of residents. Recommendations for improved communication ranged from installing sirens to warn residents, to purchasing (and training staff to use) radios for communication during and after a fire, to setting up a communication plan with local media prior to an emergency event, to using the State Water Resource

¹ CAL FIRE, Top 20 Most Destructive California Wildfires, (Mar. 14, 2019), http://www.fire.ca.gov/communications/downloads/fact_sheets/Top20_Destruction.pdf; CAL FIRE, Top 20 Deadliest California Wildfires, (Feb. 19, 2019), http://calfire.ca.gov/communications/downloads/fact_sheets/Top20_Deadliest.pdf; CAL FIRE, Top 20 Largest California Wildfires, (Mar. 14, 2019), http://www.fire.ca.gov/communications/downloads/fact_sheets/Top20_Acres.pdf.

² CAL FIRE, Incident Information as of Jan. 24, 2018, http://cdfdata.fire.ca.gov/incidents/incidents_stats?year=2017 (last visited Apr. 10, 2019).

Control Board's existing website for noticing Do Not Drink or Boil Water orders for residents whose water systems have been impacted by fire.

- **Housing Needs Post-Fire:** Finding sufficient long-term housing for displaced residents can be a major challenge following a catastrophic fire. There were no definitive "lessons learned" in response to this need, except to recommend that individuals have a plan in place for where to go and who to stay with in the event of a catastrophic fire.
- **Rebuilding the Community:** How do you rebuild when you have no current tax base left? Many communities are currently facing that question following these devastating fire events. In some instances, the legislature has appropriated money either through the Office of Emergency Services (OES) or the State to support the town/county for unincorporated areas for three years to try to promote recovery and rebuilding. Special districts, such as water districts, however, are not funded to support their recovery during loss of rates, which is extremely problematic for the rebuilding of many water systems.
- **Insurance:** Many expressed frustration about insurance reimbursement, with regard to both homes and water system facilities. There was concern expressed regarding the reimbursement timeline, as well as continued coverage post-fire. The importance of understanding one's insurance coverage was emphasized, as well as ensuring that water systems are not under-insured. There may be legislative avenues to addressing "holes" in the insurance policies.
- **Fuel Reduction:** Many emphasized the importance of fuel reduction, with several pointing to the responsibility of the federal government for improved fuel reduction practices on federal lands that are adjacent to rural communities. One person suggested public/private partnerships to make co-gen plants a more attractive to business investment.

Some key lessons learned pertaining specifically to water systems:

- **Emergency Planning and Training:** There is a need across the board for increased planning for catastrophic fire in Emergency Response Plans, as well as for *training* of staff. In particular, protection and response related to water systems should be initiated to protect water quality and watershed areas.
- **Defensible Space and Hardening:** Most of the individuals interviewed emphasized the importance of defensible space and hardening of water system infrastructure (no wood!).
- **Proof of Identification:** Many interviewees told tales of water system managers/owners being unable to access their systems past check points during or following a fire event due to lack of photo ID badge. All staff should have photo ID badges, with them at all times, along with a "go pack" of other emergency items.
- **Generators:** Without electricity, having sufficient generators is critical for protecting water systems and keeping water in the lines. Many water systems have emergency generators that are undersized. Water system managers also encountered problems finding generators, moving generators against the flow of traffic, and getting fuel. Make a plan for this!
- **Regionalization:** Following these catastrophic fire events, many small water systems that were formerly opposed to the idea of regionalization are now considering interties and other means of sharing resources. Interties between systems has been critical for recovery. Strength in numbers is the key reason for regionalization!
- **GIS Mapping:** The City of Redding was able to use GIS mapping of the Carr Fire as it was occurring. This allowed system operators to plan as the fire was moving. Key point!
- **CalWARN:** It is strongly recommended that all water systems join CalWARN (California Water/Wastewater Agency Response Network). The program provides an established mutual-aid agreement to reach out for assistance from utilities not affected to supply materials, equipment, and personnel. Sign up is free. Work is 100% reimbursable by FEMA for 30 days following disaster.

3. Key Points and Lessons Learned, by County

This section summarizes key points and lessons learned from the interviews conducted in each of the three counties.

Carr Fire: Shasta and Trinity Counties

Background

The Carr Fire was reported on the afternoon of July 23, 2018, and burned 229,651 acres (359 sq mi) before it was 100% contained on August 30, 2018. The Carr Fire destroyed at least 1,604 structures (at least 1,077 were homes) while damaging 277 others, becoming the sixth-most destructive fire in California history (now the seventh-most destructive fire), as well as the seventh-largest wildfire recorded in modern California history. On July 26, the fire jumped the Sacramento River, making its way into the city of Redding, causing the evacuation of 38,000 people. Evacuations also took place in Summit City, Keswick, Lewiston, Shasta Lake City, Igo, Ono, and French Gulch. Eight people died in the fire, including three firefighters. The fire directly impacted the water sources Keswick Dam and Shasta Dam. The Carr Fire cost over \$1.66 billion (2018) in damages, including \$1.5 billion in insured losses and more than \$158.7 million in suppression costs.³

Key Points from Interviews

During February 2019, interviews were conducted with eight people who acted in a management/decision-making capacity during and/or in response to the Carr Fire. They included the following individuals:

- Jessica Chandler, P.E., PACE Engineering, Staff Engineer: Shasta County Public Works conducted a Carr Fire recovery assessment that they've billed as a special outgrowth of the local Watershed Sanitary Survey local surface water suppliers are required to make every five years. Jessica led the assessment, which focused on public water systems regulated by the State Water Resources Control Board Division of Drinking Water.
- Brian Crane, City of Redding Public Works Director Annuitant: Point Person for the Carr Fire.
- John Duckett, City of Shasta Lake, City Manager
- Christy Gilbreath, Shasta County Environmental Health, Registered Environmental Health Specialist
- Leonard Moty, Shasta County Supervisor
- Pat Vellines, Department of Water Resources, Regional Coordinator: Pat lived in Old Shasta, where 500 of 700 homes were lost to the fire. Pat provided some observations from the homeowner perspective.
- Steve Watson, State Water Board, Division of Drinking Water, Lassen District Engineer
- Eric Wedemeyer, Shasta County Public Works, Supervising Engineer

Brian Crane helped head up the recovery effort. Brian reported that the recovery effort went smoothly, noting that they had learned a lot from the recovery efforts in Santa Rosa and Ventura. Brian said that 267 residential homes burned within city limits; 1,100 homes burned both within the city and county. Between the fire's start (July 23, 2018) through early December, debris was removed from all of those homes, mostly through the efforts of CalOES – half a million tons of debris removed. The City of Redding had updated their Emergency Response Plan a couple of years prior. Brian noted that while the recovery effort couldn't have gone much more smoothly, communications could have been improved. This is a theme we heard throughout all of the interviews.

³ Source: https://en.wikipedia.org/wiki/Carr_Fire

The following key points and “lessons learned” emerged from the interviews in Shasta County.

Preparation – Residential/Community:

- **Residential Fire Preparedness:** There’s a lot of educational material out there already. What seems to be more important than education is finding a way to *motivate* people to prepare for fire, how to get people to act (getting past, “It won’t happen to me”).
- **Defensible Space:** Brush needs to be cleared further away from buildings, not just to keep the fire from catching the building but to clear an access route for the fire fighters – they need to be able to get into the fire *and back out*.
- **Sirens:** Warning for residents was slow. A loud community siren would have been a simple and effective solution.
- **Proof of Identification for Homeowners:** Homeowners should keep copies of proof of their street address – not a PO Box – because they will need that to get to their house after the fire.
- **Water Storage:** Many residents that were evacuated left their sprinklers on, which ran the water storage down. Lessons learned: Homeowners should be instructed not to leave their sprinklers on.
- **Emergency Response Bags:** Everyone should have an emergency response bag. Emergency response bags should be equipped with adequate supplies (blankets, batteries, respiratory protection, gloves, flashlights, non perishable snacks, etc). (Important for water system operators, too.)

Preparation – Water Systems:

- **Defensible Space:** The importance of defensible space around *all* of the water system facilities, as well as “hardened” (cinderblock, metal roof, etc. – *no* wood), was emphasized by several of the interviewees.
- **Communication Plan:** There is widespread power outage during and after a major fire and inability to communicate. Officials had to rely on local news media to get information out to the communities, and that didn’t always work well. Suggest working with the local news media *now* and establishing a plan for communication during an event. Likewise, get to know who the Public Information Officers (PIOs) are before an event. Also, as part of advance emergency planning, there should be a plan for *multiple ways* of getting communications out to the public. All counties should institute the 2-1-1 phone system – referral number for all health and human services (e.g., where’s the food bank? Where can I get assistance for x,y,z? Is my water contaminated?).
- **Generators:** Many water systems have emergency generators that are undersized: meant to handle a localized power outage, or a house fire. Water system managers also encountered problems finding generators, moving generators against the flow of traffic, and getting fuel. Make a plan for this! Have contracts for fuel in place. Some of the facilities were not updated for generator ties; in an emergency on short notice, may not be able to get pig-tail (adapter). Get it straight beforehand! Make sure there are sufficient generators for *key* infrastructure.
- **Proof of Identification for Water System Owners/Operators:** It is especially important that water system owners/managers carry photo identification badges. There were several instances reported of water system managers being unable to pass check points due to lack of carrying an photo identification badge.
- **Know Who Your EOC Rep is:** Water system owners/managers should *get to know* the local Emergency Operations Center (EOC) prior to any emergency event. Water system owners/managers need to know who the water utility rep is at the EOC, who will sit at the table during an event.
- **Emergency Response Plans and Training:** The water districts generally didn’t have emergency response plans that were robust enough to address *wildfire*. Emergency Response Plans should be updated and

reviewed annually with all employees. Update Emergency Response Plans for wildfire, heavy snow, and prolonged periods of power outages. Also, staff need additional training on how to handle a wildfire situation. Incorporate emergency response training and exercises (see FEMA trainings <https://training.fema.gov/>).

- **CalWARN (California Water/Wastewater Agency Response Network):** All water system operators should join CalWARN. The program provides an established mutual-aid agreement to reach out for assistance from utilities not affected to supply materials, equipment, and personnel. It is free to sign up. Work is 100% reimbursable by FEMA for 30 days following disaster.
- **GIS Mapping:** Updating maps to GIS is something that all the water districts need to do – and store on the Cloud.
- **Document Water System Assets:** Keep current records to document water system assets (pump stations, water treatment plant, tanks, buildings, etc.). Document data in a format that is easily transferred to FEMA forms.

Response – Water Systems:

- **Maintaining Pressure in Water Systems:** Power loss during a fire can lead to loss of pressure. If pressure is reduced to less than 5 psi, there is the potential for bacteria to grow and for other contamination by toxic chemicals. Doing whatever possible to maintain water in the pipes is critical!
- **GIS Mapping:** The City of Redding did a great job with GIS mapping of the Carr Fire as it was occurring. This allowed system operators to plan as the fire was moving. GIS mapping of the fire boundary and hot spots was key in responding to the fire!

Post-Fire Recovery:

- **Post-Fire Communication:** Some people get their news from FaceBook, others on Twitter, others listen to the radio, others get the newspaper – there's no one central source where people get their news. Some local officials tried making announcements through the local news media but 1) sometimes they changed the message, and 2) sometimes they wouldn't post the message at all. Need a plan for post-fire communication, particularly to be able to warn returning homeowners of public health hazards.
- **Post-Fire Communication:** Local media was not very effective at issuing boil water notices. The SWRCB Division of Drinking Water has a website that allows user to type in their address and find out which water system they are served by. One suggestion (from Jessica Chandler, PACE Engineering) is to use the State Water Board's website to announce "Do Not Drink" or "Boil Water" notices. Local media (and other means of communication) can simply direct people to the website.
- **Rebuilding the Community:** Whatever you can do to get people to rebuild their homes is critical, for example, streamlining the permit process. Permitting has been problematic for many residents who lived in homes built prior to the new, stricter building codes. Following the Carr Fire, Brian Crane reported that the re-permitting process was set in place by mid-September: If a homeowner was rebuilding essentially the same house, the permit was approved within one week. If the homeowner was making changes, the permit would be approved within 2-3 weeks. Though of course all must be consistent with new codes...
- **FEMA:** Get your County to declare an emergency. Most importantly, *document* every stop of the emergency work.
- **Interties for Water Systems:** Many small water systems were severely impacted by the Carr Fire. Shasta CSD lost a third of its customers and CSA No. 25 went from 209 to 8 overnight. Interties between systems has been critical for recovery.

- **Post-fire O&M:** Big problem of lack of revenue when all (or a majority of) the homes burn... USDA has made some money available and FEMA and/or OES may pay for some restoration; however, it has been difficult to locate funding sources that will fund *operations* of a water system until a sustaining population returns to water use. So – try to find insurance (or some other funding source) to cover, for example, two years of revenue base; FEMA won't cover that.
- **Water System Post-fire Training:** Surface water plant operators can do small scale testing and extrapolate up coagulant and chemical dosing, using jar and bucket tests. Turbidity was high in early rains and small scale testing may have saved fouling filter media.
- **Debris Flows:** The recovery team for the Carr Fire was proactive in preventing debris flows, and as a result debris flows were not much of a problem. They placed debris catchment devices at crossings of roads, installed erosion control, distributed free materials to homeowners. They are looking into grant funds to construct sludge ponds at one of the treatment plants (Buckeye), so that they *can* treat sludge if they need to, "next time."
- **Debris Flows:** The recovery team capped 267 sewer laterals so that debris wouldn't flow back into those. That worked.

Butte County: Camp Fire

Background

The Camp Fire was the deadliest and most destructive wildfire in California history to date. It is also the deadliest wildfire in the United States since the Cloquet fire in 1918. Named after Camp Creek Road, its place of origin, the fire started on November 8, 2018 in Butte County. After exhibiting extreme fire behavior through the community of Concow, an urban firestorm formed in the densely populated foothill town of Paradise. The fire caused at least 85 civilian fatalities, with three persons still missing. It covered an area of 153,336 acres (almost 240 sq. miles), and destroyed 18,804 structures, with most of the damage occurring within the first four hours. Total damage was \$16.5 billion; one-quarter of the damage, \$4 billion, was not insured. The fire reached 100 percent containment after 17 days on November 25, 2018.⁴

Key Points from Interviews

During January - February 2019, interviews were conducted with 16 people who acted in a management/decision-making capacity during and/or in response to the Camp Fire. They included the following individuals:

- Amanda Aguiar, Butte County Environmental Health, Senior Environmental Specialist: Oversees Community Water Systems
- George Barber, Former Paradise Irrigation District (PID) Manager and current District Manager for Cal Water, Chico and Oroville
- Derek Bell, Butte County Sheriff's Department
- Shelby Boston, Director of Butte County Employment and Social Services: Worked the EOC, managed the shelters
- Bud and Evelyn Caldwell, Owners of Pacific Pride fueling stations in Paradise and Chico area
- Cindi Dunsmoor, Butte County Emergency Services
- Lauren Gill, Paradise Town Manager, Town EOC Director

⁴ Source: [https://en.wikipedia.org/wiki/Camp_Fire_\(2018\)](https://en.wikipedia.org/wiki/Camp_Fire_(2018))

- Paul Gosselin, Director Butte County Water and Resource Conservation: Fire EOC Liaison – Disaster Recovery Center
- Erik Gustafson, City of Chico, Public Works Director
- David Hawkes, Cal Fire, Butte County and Unit Fire Chief
- Shari McCracken, Butte County Chief Administrative Officer: Director of EOC during disaster
- Elaine McSpadden, Butte County Environmental Health: Debris Removal Team
- Danielle Nuzum, Environmental Health, Assistant Director: Disaster Recovery Operations Center and Debris Removal
- Radley Ott, Butte County Public Works, Assistant Director: Disaster Recovery Operations Center
- Kevin Phillips, Paradise Irrigation District, General Manager
- Doug Teeter, Butte County Board of Supervisors, Paradise area

The Camp Fire was unprecedented in its speed and magnitude; it came through quickly and shot embers over long stretches of property and even over canyons contributing to the inability to fight the fire. FEMA and CalOES both recognized the uniqueness of this fire from a logistical perspective because of the wind factor that moved the fire so quickly. While planning is essential, all (including FEMA and CalOES) agreed that “there was no way to prepare for this fire.” Response moved rapidly from fire defense to safety and evacuation of people. Butte County, through their cooperative program with Cal Fire, adheres to the Get Ready! Get Set! Go! Program. They had worked with the local Fire Safe Councils and other citizens to create escape routes and alternative escape routes. There had been a test of this process in 2018, which proved to work. This fire was too big and moved too fast to address evacuation in any type of systematic manner.

Several interviewees commented on the amazing response from neighboring counties and agencies. The mutual aid came from Sonoma, Yolo, Yuba, San Luis Obispo and other counties. There were over 40 mutual aid agencies, municipalities, and counties involved. At the time of the interviews, the Camp Fire had been moved out of “emergency” status but was still in the early stages of recovery. There were uncounted tales of heroism.

The following key points and “lessons learned” emerged from the interviews in Butte County.

Preparation:

- **Sirens/Radio:** Again, there was a suggestion for early detection sirens for early warnings, and investment in radios by all entities involved in fire response. Cal Fire and Butte County Sheriff’s Department currently use radio communication, but were unable to interact with other entities.
- **Homeowner Preparation:** Suggests metal roofs with a pitch and no gutters, and clearance of a defensible space ahead of time.
- **Importance of Backup:** It is critical for homeowners, business owners, water system owners, etc. to have backup records in another location (or stored in the Cloud or other off-site server).
- **Evacuation:** Need for alternative exit routes and cleared spaces/pullouts along the evacuation routes. Also suggested were evacuation fields alongside of roads, where people could “shelter in place” if needed.
- **Improved Road Access:** Long-term need includes improved road access for debris removal and transport. There has been a significant increase in trips per day on all roads associated with ingress and egress for recovery, which becomes a hidden cost of the fire recovery.

- **Forest Management:** While most people did manage a clear space around their homes, the area is surrounded by forests. Better forest management is essential in these more rural areas. One person suggested legislation mandating clearing and fuel reduction programs in the national forests accompanied by co-gen plants to accommodate the removal. She sees a public/private partnership necessary to make co-gen plants more attractive to business investment.
- **Fire Fighting Equipment:** Firefighters are still using Vietnam-era helicopters. They need newer and larger helicopters equipped with night flight technology to move more people and water for fire suppression.

Response:

- **Communication:** Again, communication issues were a major issue. There were no landlines/no email/no cell phone coverage/no internet. With these tools down, there was limited means to receive information from the fire lines. Cal Fire and the Sheriff had radios and they were useful, but there is a need for more training in this technology. Media crews provided information via their broadcasts that helped to relay information from the fire line to the EOCs.
- **Individual Responsibility:** Individuals need to be prepared and responsible for getting themselves out of danger. Although evacuation routes had been set up and even practiced, people were reluctant to leave until told to do so by officials.

Post-Fire Recovery:

- **Need for Long-term Housing:** The housing inventory in the area was low to begin with, but escalated as a result of the fire, predominately in the Chico area. 50,000 people were evacuated and this increased the population to the City of Chico by around 20,000 in the space of 48 hours. There was also an influx of “on the fringe” population – resulting in Chico’s “mini” disaster after the disaster. FEMA is constructing temporary housing, but it will take years. Long-term housing is a major need to ensure rebuilding in the fire footprint. If people cannot find temporary housing within the area, they will leave to seek employment elsewhere, which impacts what is left of the economy in the area. The rapid influx of occupants has also resulted in infrastructure problems from the massive increase in water use and wastewater. More people in each household increases water use, without there being additional hook-ups to help recover the associated costs.
- **Protection for Renters:** There needs to be a program to address protection for renters. Renters were being turned out on the street so that property owners could take advantage of the increased demand and prices for the sale of properties.
- **Debris Removal – Process:** The debris removal effort is going very slowly. Debris removal is initiated through the Environmental Health Department in cooperation with Cal Recycle, which is overseen by the Waste Management Board. FEMA has declared the burned-out area a hazardous area and is limiting the ability for people to set up camp or live in an RV on their property. The Board and the Town Council both had to renege on permits allowing people to return to their property in RVs during recovery. This transition is an issue because people are having to pay for housing, while trying to rebuild.
- **Debris Removal – Funding:** Debris removal is not mandated and so FEMA will not fund it in specific instances. This needs clarification and perhaps a legislative fix. The biggest threat is contaminated runoff into surrounding waterways, impacting water quality. An inter-agency partnership should perhaps be encouraged or required.
- **Rebuilding the Community:** Disaster experts claim the estimates for return in this type of disaster range between 10-20%. The legislature approved a bill backfilling lost revenue through property taxes to public agencies. But this is currently only property taxes revenue, not sales taxes or rate revenue. This benefits the Town and the County, but doesn’t cover rate-based entities such as PID or other small

water systems. Schools are a question as well. While impacted schools have been relocated throughout the county, the question is will they have the numbers to rebuild?

- **Donations Management:** There has been an outpouring of donations. The Governors office is coordinating corporate donations: Walmart = \$1 million in Butte, Sierra Nevada chipped in \$1 million to set up shelters and then set up the Resilience Beer, which has resulted in 1500 breweries nationwide chipping in from the proceeds (\$30 million so far). Triage of donations became an issue, and it was especially difficult to accommodate clothing contributions. Lesson learned: Gift cards are the most helpful and practical donation.
- **Water System Contamination:** One major issue for Paradise Irrigation District (PID) was the introduction of benzamine into the delivery system. Dewatering the system caused a drop in pressure and that resulted in benzamine being sucked into the system, adhering and absorbing into water system components. These all need to be flushed until the contaminants reach non-detection levels. One Environmental Health official noted if there were a next time, they would just order Do Not Drink Orders and wouldn't allow boil-water orders. Due to the many unknown constituents and contaminants, many of them associated with fire suppression activities, a higher level of protection is necessary.
- **Insurance:** A lot of people were underinsured. One person suggested the County should hold insurance workshops; local agents and adjusters don't really understand their policies. Homeowners who did not lose their homes faced different types of insurance problems; for example, some homeowners' insurance only paid for three weeks of housing to people whose homes were not totally destroyed, but there were still restrictions on their re-entry to their property. Also, specific insurance companies are dropping coverage for homeowners within the fire footprint.
- **Watershed Protection/Debris Flows:** Radley Ott, Assistant Public Works Director for Butte County, was put in charge of watershed management and recovery. He convened an immediate conference call with 40-50 agency staff, and they created a Watershed Oversight Response Team (WORT). Cal Fire initiated mapping to understand the risk to human life and debris flow risks, and then they developed an Emergency Mitigation Response. He found that there was funding and a plan for physical processes but none for water quality monitoring and sampling. He got the BMPs from CalOES on erosion control/sediment controls and installed 120,000 linear feet of waddles to slow the surface water erosion/drainage and delivery to open waterways. It is still unclear whether these costs will be reimbursed.
- **Timber and Biomass Removal:** Radley Ott said he was overwhelmed by the scale and magnitude of burned and dying trees on private lands. There are hundreds of thousands of trees that will fall/die in the next five years and become fuel for future fires. Although there may be public assistance for removal of these trees, they are still struggling to locate places to take them. He is concerned about the debris removal's impact on the watershed and the waterways.
- **Consistency of State/Federal Management:** There is a need for a State and Federal liaison/program manager for each incident to ensure that there is a clear and consistent message through all channels of authority. The goal is consistency on financial/reimbursement and operations and management questions and approaches. Staffing at the State and FEMA is like a revolving door; there needs to be a better "passing of the baton" when there is staff turnover.
- **Human Element:** The impact of this fire on residents, County staff, and other officials was devastating. There needs to be more emphasis on the human element. Kaiser set up a temporary counseling program for victims (Kaiser doesn't even serve Butte County) and there was a significant increase in use of the Employee Assistance Programs made available through various employers.

Legislation: Note that several legislative bills were introduced to address some of the needs outlined above, following the Camp Fire. Three major pieces of legislation introduced by Assemblyman James Gallagher included:

1. Legislation to amend CEQA to streamline it during the rebuild stage. The thought process is that both the County for the unincorporated areas and the Town of Paradise have current General Plans that went through a laborious CEQA process. To help save costs on CEQA documents, this legislation proposed to rely on the General Plans more than to create new CEQA documents. This bill was met with a lot of resistance, and failed.
2. Legislation to provide property tax monies to both Butte County and the Town of Paradise for a period of three years to help keep a steady revenue stream for these entities during the rebuilding stage. The majority of the revenue stream for these entities comes from property taxes. This revenue has been approved by the legislature and is in the budget.
3. Legislation to provide reimbursement for ratepayer revenue for three years to Paradise Irrigation District (PID). About 90% of their revenue comes from the ratepayers, so although they did receive the property tax reimbursement, it doesn't help them as much. This request will cost about \$21 million for the three years and it looks like it will be included in the Governor's May revise.

Valley Fire: Lake County

Background

The Valley Fire started on September 12, 2015 near Cobb in Lake County. The fire spread quickly. Within six hours it had burned more than 10,000 acres, and by the following day had burned 50,000 acres, destroying much of Cobb, Middletown, Whispering Pines, and parts in the south end of Hidden Valley Lake. The fire ultimately spread to 76,067 acres, killing four people and destroying nearly 2,000 buildings before it was fully contained on October 15, 2015. The Valley Fire caused at least \$921 million (2015 USD) in insured property damage. At the time, the fire was the third-most destructive fire in California history, based on the number of structures burned.⁵

Key Points from Interview

During February 2019, an interview was conducted with Jan Coppinger, Lake County Special Districts, about "lessons learned" following the Valley Fire. The following key points emerged from this interview.

Preparation:

- **Communication:** Cell phones didn't work during the fire. Many Lake County officials and water system operators are looking into purchasing radios, and providing special training for using the radios.
- **Proof of Identification for Water System Owners/Operators:** Many water systems burned and were destroyed. Several water system owners and operators were unable to get through road blocks to access their systems due to lack of identification. This once again underscores the importance of having photo identification.
- **Water System Staff Readiness:** Each staff member should have a "go pack" in their car so they have all the needed information on them (hard copy of phone numbers, and needed codes, keys, phone, radio, ID etc.)
- **Data Back-up to the Cloud:** The importance of backing up data to the Cloud was emphasized.

⁵ Source: https://en.wikipedia.org/wiki/Valley_Fire

- **Water Storage:** People can drain fire water in systems that have small amounts of storage if they are using water to protect their homes. Lessons learned: Homeowners should be instructed not to leave their sprinklers on.

Post-Fire Recovery:

- **Mutual Aid amongst Water Systems:** A local Office of Emergency Services (OES) was formed following the Valley Fire. They meet on a regular basis, every quarter to six months, to discuss mutual support and equipment. The water systems share emergency response equipment. A regional equipment inventory has been created, outlining who has what, and what equipment works where. They have divided the area into regions to determine who will staff a fire depending on where it starts.
- **Importance of Interties:** Many of the water systems in this region are very small and very unprepared for emergencies. The importance of regionalization became evident following the Valley Fire. Several of the water system owners/operators are exploring opportunities to install interties between nearby systems so that during emergencies they can provide (and receive) support. Strength in numbers is the key reason for regionalization!
- **Revenue for Fire Fuel Reduction:** Lake County is taxing some of the Kelseyville/Riviera Heights/Soda Bay area to pay for fire fuel reduction actions. This is a potentially good option for areas with vacant land and, for example, elderly who are in areas of high fire risk but are unable to manage the vegetation.

4. Potential Next Steps

Based on the outcomes of these interviews, some potential next steps being considered under the Proposition 1 Disadvantaged Community Involvement Program for the Sacramento River Funding Area include:

1. Work with Jessica Chandler from PACE Engineering (Redding, CA) to potentially repeat the “Table Top Exercise” (that was conducted for small water systems in Shasta County) for water system operators in Lake County.
2. Bolster Emergency Response Plan (ERP) trainings to include these recent lessons learned.
3. Trial an ERP Implementation training in the SRFA to help get water systems in high risk areas better prepared for an emergency, as well as support the regionalization of risk planning and response in a location where the logistics of the water systems and topography support that effort. Cal Water provides this type of training for places they serve; potentially work with them, or with Jessica Chandler.
4. Partner with the California Association of Environmental Health Directors to present a program for discussion at their next conference held in Northern California. (Typically, these events are held on an annual basis with the location moving around the state.)

Appendix B. SRFA Technical Training Workshop and Technical Assistance Summary

Sacramento River IRWM Regional Summary Phase Two

Rural Community Assistance Corporation

SRFA Phase 2 Technical Training Workshops

The primary goal of the Phase 2 Technical Workshops was to provide technical assistance addressing SRFA DAC Water Systems' most urgent needs, as identified in the Phase I Needs Assessments, in each IRWM Region (SRFA within DAC Places as well as Small Water Systems). RCAC's team of water system experts reviewed the outcomes of the SRFA DACI Phase 1 TMF Needs Assessments to develop the content to be covered in these workshops for each IRWM to address the most consistent critical needs by region. The SRFA Technical Team developed workshop agendas and materials for each IRWM region and worked in collaboration with the relevant RWMG or DACI-Coordinator to announce and advertise each workshop to foster maximum DAC participation.

The efforts of Phase 1 provided detailed needs assessments from 67 water and wastewater utilities in DAC places from the five IRWM regions. These needs assessments utilized the TMF (technical, managerial, and financial) framework to categorize the needs of the utilities. Data obtained was used to outline the workshop topics by region to help guide the workshop locations in respective IRWM regions and provide a targeted list of participants from utilities where needs assessments were conducted. A total of 16 workshops were conducted, which provided 1,107 contact hours across all participants and IRWMs. The tables below are broken down by IRWM region of each workshop completed, including supporting information.

Date	Place	IRWM Region	Title	Short Description	Benefits	Participants
02/27/19	Yuba City	North Sac Valley	Capital Improvement Plans	A Capital Improvement Plan prioritizes the replacement or installation of infrastructure assets. It includes the forecasting and budgeting of capital outlay and is an integral part of the budgeting and rate-setting process for even very small water systems.	Increase utility managerial and financial capacity.	6
03/06/19	Chico	North Sac Valley	VE/ERP / Developing technical networks	Developing vulnerability assessments and Emergency Response Plans will provide resilience to the operation of any drinking water system and wastewater treatment facility,	Provide utility with increased managerial and technical capacity during emergency events.	13

				even a very small system.		
04/17/19	Redding	North Sac Valley	VA/ERP / Developing technical networks	Developing vulnerability assessments and Emergency Response Plans will provide resilience to the operation of any drinking water system and wastewater treatment facility, even a very small system.	Provide utility with increased managerial and technical capacity during emergency events.	26
06/11/19	Chico	North Sac Valley	Drought Contingency and Water Loss	Overview of drought history, customer policies and education. Assessing supply and demand, developing and implementing a conservation plan. Overview of water meters including AMR's and conducting simple water audits.	Training increases utilities managerial capacity as it relates to drought plan implementation and conservation plan.	14
08/27/19	Redding	North Sac Valley	CIP / Asset Management	A Capital Improvement Plan prioritizes the replacement or installation of infrastructure assets. It includes the forecasting and budgeting of capital outlay and is an integral part of the budgeting and rate-setting process for even very small water systems.	Increase utility managerial and financial capacity.	11
09/03/19	Chico	North Sac Valley	Onsite septic O & M / Private well	The workshop will educate well owners on proper operation and maintenance of drinking water wells and septic systems, common	Increase home owners with private wells and septic to properly manager both systems. Increases public health.	13

				troubleshooting of domestic well and septic system, preventive maintenance and solutions.		
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Date	Place	IRWM Region	Title	Short Description	Benefits	Participants
02/20/19	Clearlake	Westside Yolo	O & M plans, site sampling plans	Well-developed operation and maintenance plans allow water and wastewater systems to create easy to follow steps and guidelines to ensure effective operation and treatment. This workshop will provide water and wastewater guidance documents, operations and maintenance checklists and other procedures to provide utilities with vital tools.	Increased technical and managerial capacity by providing framework for procedures and sample site plans to ensure safe drinking water.	28
03/13/19	Clearlake	Westside Yolo	Regionalization	Small water systems must meet the same regulations as large water systems without the economies of scale enjoyed by larger systems. The challenges of maintaining safe water quality, whether you are regulated or not, are not only expensive, but can be life threatening. Learn how to regionalization or consolidation may be a viable solution.	Educate on the benefits of regionalization/consolidation, barriers and successful case studies. Workshop will increase managerial capacity bringing regionalization into the utilities tool belt to ensure public health is protected.	14

03/27/19	Woodland	Westside Yolo	Wellhead source water protection	Source water assessments provide water utilities, community governments, and others with information needed to protect drinking water sources. Learning how to conduct a source water assessment and implement management measures can prevent, reduce or eliminate risks to your drinking water supply.	Increase technical and managerial capacity of utilities by educating on public health threats and management measures for prevention, reduction or elimination of risks to protect public health.	13
04/23/19	Nice	Westside Yolo	Financial Capacity-Developing Plans and Policies	Put together financial plans, budgets and policies for your drinking water and/or wastewater system. Proper financial planning will increase the stability of your water system. We will review the components of sound financial practices and then lead you step by step in developing plans and policies for your specific system.	Increase participants managerial and financial capacity by educating on BMPs, CIP's and rate setting. This knowledge will assist utilities resilient and plan for the future.	7
06/26/19	Nice	Westside Yolo	Wellhead source water protection	Source water assessments provide water utilities, community governments, and others with information needed to protect drinking water sources. Learning how to conduct a source water assessment and implement	Increase technical and managerial capacity of utilities by educating on public health threats and management measures for prevention, reduction or elimination of	9

				management measures can prevent, reduce or eliminate risks to your drinking water supply.	risks to protect public health.	
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Date	Place	IRWM Region	Title	Short Description	Benefits	Participants
05/14/19	Alturas	Upper Pit	Improving Managerial Capacity- Developing Plans & Policies	Overview of the policies and procedures of a highly effective system management structure as a group, then focus in on the specific policies and procedures that your system would like to develop.	Increase managerial and financial capacity to utilities by introducing planning practices, asset management and compliance issues.	6
7/8-7/12	Fall River	Upper Pit	Operator Prep Grade 1&2/ Operator Math dosing	Workshop will cover basic distribution and treatment math found on state exam. Basic arithmetic, volume, chemical dosing.	Increase utility operators' technical capacity by empowering them with operator math knowledge.	2
07/25/19	Alturas	Upper Pit	Lagoons and Wastewater treatment	Review wastewater lagoon treatment types including a review on wastewater lagoon microbiology, and review daily operation requirements along with typical lab procedures. We will look at case studies on typical lagoon failure and how to remedy the treatment process.	Increase technical and managerial of wastewater utilities by providing overview of treatment, process control and case studies to prevent discharges with negative public health implications.	10

Date	Place	IRWM Region	Title	Short Description	Benefits	Participants
02/06/19	Elk Grove	ARB	Onsite septic & Private Well	The workshop will educate well owners on proper operation and maintenance of drinking water wells and septic systems, common troubleshooting of domestic well and septic system, preventive maintenance and solutions.	Increase home owners with private wells and septic to properly manager both systems. Increases public health.	12
7/8-7/12	Mt. Shasta	Upper Sac McCloud	Operator Prep Grade 1&2/ Operator Math dosing	Workshop will cover basic distribution and treatment math found on state exam. Basic arithmetic, volume, chemical dosing.	Increase utility operators' technical capacity by empowering them with operator math knowledge.	7

Technical Assistance

The Phase 1 Needs Assessments as well as the Phase 2 workshops and other regional efforts increased the awareness across the SRFA of the technical assistance being offered through the SRFA DACI Program as well as the broader range of services that RCAC provides as support to rural communities. This outreach and interaction across the SRFA lead to system-specific calls regarding questions and requests for one-on-one technical assistance. The Phase 1 Needs Assessment results also provided foundational information that RCAC's team was able to use to follow up on and offer additional technical assistance. In total 22 technical assistance (TA) projects were supported by the SRFA DACI Phase 2 funding and over a dozen other projects were leveraged into other state of California contracts by way of contact through the SRFA DACI Program. Additionally, so far a total of five communities received application assistance for grant funds resulting from TA provided under the SRFA DACI Program. The table below summarizes these TA projects from Phase 2.

Technical & Financial Assistance funded by SRFA DACI Program			
DAC Water System	Deliverables	Status	RCAC Staff
Paskenta CSD	Board Training		
	Understanding a Treatment Plant	Completed	John Van den Bergh & Mila Spitsyn
	Budget Development	Completed	Bridget Harris & John Van den Bergh
	Board Responsibilities and the Brown Act	Completed	Bridget Harris & John Van den Bergh
Lakeside Woods	Cross Connection Control Program	In progress	David Hossli
	Board Training	Completed	Bridget Harris & Neil Worthen
Burney Water District	Cross Connection Control Program	Almost done	David Hossli
	Identification of cross connection location	In progress	Jerry Tinoco
White Oaks Mutual	New well assistance	Completed	David Hossli
Mountain Gate CSD	Board Training		
	Budgets	Completed	Bridget Harris
	Rate setting principles	Completed	Thi Pham
Hat Creek Mutual Water Co	Asset inventory	Completed	Omar Al-shafie
	Rate Study	Data verification	Omar Al-shafie
Paradise	Working with CHIP, benzene infiltration	In Progress	Omar Al-shafie

Mc Cloud CSD	Rate Studies and case study of rate integration		Sara Bixler
	Solid waste rates	Data verification	John Van den Bergh
	Snow removal rates	Data verification	
	Street lighting rates	Data verification	
Lassen County Water Works ("Bieber")	Assistance with funding application through IRWMP	Completed	Rodney Page
	for water meters and fire hydrants	Project submitted to IRWMP	
		In Review	
Juniper Acres	Needs assistance with an IRWMP funding application	Completed	Rodney Page
		Project submitted to IRWMP	
		In Review	

TA & FA funded by others, as a result of SRFA DADI Program Needs Assessment

DAC	Description	Status	RCAC TAP
California Pines, CSD	Rate Studies		Bridget Harris
	Wastewater Rate Study	Applied for TA	John Van den Bergh
	Drinking Water Rate Study	Data verification	
	Solid waste Rate Study	Data verification	
Mc Cloud CSD	Rate Studies		Sara Bixler
	Wastewater Rate Study	Data verification	John Van den Bergh
	Drinking Water Rate Study	Data verification	
Mountain Gate CSD	Rate Study		Thi Pham
	Drinking Water	Data verification	John Van den Bergh
Lakehead	Consolidation study	TA Budget needed	Olga Morales
		Slow progress	John Van den Bergh
		Defining Scope	
Bieber	MHI	In Progress	Jean Thompson
Arbuckle PUD	Rate Studies		
	Drinking Water	Rejected	
	Wastewater	Rejected	
	MHI	Approved	
		In progress	Jean Thompson
Adin CSD	Wastewater Study, CIP and Prop 218 assistance	Approved	Rodney Page
		Starting	John Van den Bergh

Clear Creek CSD	Drinking water Rate Study, CIP and Prop 218 assistance	Approved	Rodney Page
		Data collection	John Van den Bergh

FA of Funding Applications moved from IRWMP to other State Funders

DAC	Description	Status	RCAC TAP
Olivehurst	Planning Application	TA Approved	Jerry Tinoco
		Close to completion	
Dunsmuir	Planning Application	TA Approved 6/20/19	Jerry Tinoco
		Prop 1 assistance refused	Linda Stonestreet
City of Alturas	Construction Application for Hydrants & meters	Submitted 3/25	Jerry Tinoco
		Resubmitted 4/30	Linda Stonestreet
		Resubmitted 6/24	
		TA Approved 7/1/19	
Burney Water District	Construction Application for water meters	TA Approved 5/17/19	Jerry Tinoco
		Prop 1 assistance refused	Linda Stonestreet
Adin CSD	Wastewater planning application	TA Approved	Jerry Tinoco
		Need budget	
		Not started	

Next steps

There are numerous projects near completion that will roll over into year 3 for completion and other DACI needs that will be addressed by commencing new projects in year 3 as requested by communities. Technical and financial assistance requests beyond the scope of this contract will be leveraged in other state and federal contacts as needed.

Appendix C. SRFA O&M SWAT Case Study

Case Study Summary: Regionalization of Small Utility System Operation & Maintenance



Written By: Paul Rose, Rose Water System Management, LLC

Summary

Many water systems serving small disadvantaged communities struggle with the day-to-day workings of their water and wastewater systems. Lack of the on-going funding needed, lack of qualified operators, and other factors, can generate an ever-growing operational deficit.

These shortfalls create a constant strain on operations and could lead to a collapse of the system's ability to provide the necessary services to their customers, possibly creating a health or environmental hazard in the process. This case study was developed to investigate the potential of regionalizing O&M across two largely rural and largely DAC IRWM regions, to see if these systems could agree to work together to solve a mutual problem.

Overview

A utility system's health and ability to operate effectively depends on three components: technical, managerial, and financial. These components must all function in unity for a utility to operate properly. Loss or inadequate support of any one of these components causes long term harm to the system's ability to provide the necessary services to its customers 24 hours a day, 7 days a week and hinders a system's ability to react to emergency repair needs or changing conditions.

All too often small, disadvantaged communities lack the capacity in one or more of these components (usually all three). This case study was geared toward investigating a possible solution for multiple systems at once by developing a regionalized, expert support network. Paul Rose, of Rose Water Systems, conducted a technical circuit ride of the water systems serving small disadvantaged communities in the Upper Pit River and Upper Sacramento River IRWM Regions of California, to explore solutions specific to the needs of these regions.

Background Information

Properly operated and maintained utility systems require a substantial amount of ongoing financial expense to keep them operating properly, to maintain existing infrastructure, and to extend the integrity of the infrastructure to its projected life expectancy. Many utilities in areas where the Median Household Income (MHI) is below average, avoid or delay needed rate increases because of concerns that their customers will not be able to afford the increase. Lack of payment creates a new set of problems for the utilities who often lack sufficient office and administrative staff for even routine bookkeeping. Although understandable, this style of management leads to consequences that grow over time and result in minimal levels of needed operational maintenance and repairs, which ultimately results in premature aging of infrastructure or acute failure of key components. Operational funding of water and wastewater systems comes exclusively from rates, while capital improvements within these utilities are typically supported through grants from state and federal agencies. While this in itself is a logical approach to supporting these communities, lack of maintenance can cause the utility to spend needed operational budgets on repetitive repairs and the utility can find itself falling into a cycle of repetition by replacing the funded infrastructures prior to its expected life span.

The results of the Technical Managerial and Financial (TMF) Needs Assessments that were conducted in Phase 1 of the SRFA DACI Program highlighted these issues as common to most of the DAC water systems within this Funding Area. A solution that the State Water board often supports for DAC water systems that are struggling to maintain the ongoing O&M of their system is consolidation of these systems into one larger system, or with a larger utility, with fewer financial, technical and managerial gaps that can maintain the system. This solution is not always feasible, particularly for highly rural and remote communities where the distance and topography make consolidation impractical or too costly. However, the SRFA DACIP Technical Team noted that if these systems could not physically unite, they could operationally unite by sharing staff that can move between systems providing the needed expertise and reducing the salary costs for any one system and providing opportunities for bulk purchasing of materials needed by all systems to reduce the per unit cost (e.g., water treatment chemicals and other common consumables). This case study is intended to explore the feasibility of using a specialized team, who works directly with and for groups of small utilities, to provide technical experts able to enhance the operation of the system and addresses timely maintenance, delaying the need to replace their infrastructures.

O&M Needs Assessments

Paul Rose, of Rose Water System Management is an O&M expert, having served 12, of over 30 years' experience, at the Truckee-Donner PUD as Distribution Foreman. Paul holds a California Distribution 5 Treatment 3, and an AWWA Cross-Connection certification. As part of Phase 2 of the SRFA DACI Program, Paul visited 17 small systems across the Upper Sacramento and Upper Pit IRWM Regions, interviewing managers, supervisors, and operators around their key gaps in on-going operations and maintenance. These systems consisted of a mix of providers of drinking water, drinking water and wastewater, and one providing just wastewater. The table below provides a summary of these systems and their staffing levels compared to number of connections served.

IRWM Region	# of Full-Time Employees	# of Part-Time Employees	# of Connections	Service Provided		
				Water	Wastewater	Streets
Upper Sacramento IRWM Region						
Lakehead Subdivision Mutual	0	0	17	XX		
Lakeshore Villa Mutual	0	Contract Operator	45	XX		
Lakeside Woods Mutual	0	Contract Operator	115	XX		
McCloud CSD	5	0	669	XX	XX	
City of Dunsmuir	6	0	1187	XX	XX	
City of Mt. Shasta	12	0	1841	XX	XX	XX
Upper Pit IRWM Region						
Hat Creek Highlands Mutual	0	Contract Operator	44	XX		
Little Valley CSD	0	Contract Operator	47	XX		
Canby	0	2	53	XX	XX	
Cassel Park Mutual	0	Contract Operator	59	XX		
Hat Creek CDP	0	1	63	XX		
Adin CSD	0	1	130		XX	
California Pines CSD	4	0	150	XX	XX	XX
Lassen County Waterworks - Bieber	1	0	150	XX	XX	
Fall River Valley CSD	4	0	490	XX	XX	
Burney Water District	4	0	1364	XX	XX	
City of Alturas	4	0	1470	XX	XX	XX

From my discussions it quickly became obvious that the number one factor all systems struggled with for on-going O&M was a lack of funds. This lack of funding resulted in two other key limiting factors: inadequate staffing levels and lack of necessary equipment.

Systems below 150 connections typically had no full-time operators and two-thirds had no part-time operators, instead relying on contract operators providing minimal operation of the system, usually just to stay in compliance. Maintenance is only performed to repair components that are critical to direct operations i.e. chlorination and chemicals, pump repair, leaks. Pump maintenance, storage tank repairs, and wastewater levee management are deferred, with no reserves budgeted for such work.

Larger systems with full time employees performed somewhat better but still rely on grants for most capital and replacement projects, and still tend to defer routine maintenance.

Contributing Factors, Observations, and Suggestions

Retention of trained personnel was indicated as a key problem with maintaining efficient system operations and when attempting to adhere to a routine maintenance schedule. As personnel become trained and more efficient in their positions, these small, DAC systems often lose them to other larger systems or companies whose pay scale is substantially higher than what a small utility can afford. Also, a lack of a local workforce severely limits the system's ability to create a stable, long term team of staff or to replace staff when someone leaves. Adding to the plight of small, rural, DAC water systems are the recent changes to California labor laws that force water utilities to pay prevailing wages when contracting for repairs. The effect of this decision is immeasurable on small DAC systems, and has driven repair costs quickly beyond what the system can afford to pay. Most systems even lacked the resources to maintain a comprehensive and up-to-date cross connection program. This is a severe technical deficit for a drinking water provider and can lead to water quality issues, raises the potential for contamination, and poses a public health risk.

When asked if systems would be willing to actively participate in short term maintenance support with neighboring utilities, most were receptive to the concept but the utilities feared losing an employee would be a setback to their schedules. Some very small systems simply could not allow their operators to rotate out for even a day. Staffing redundancy is so lacking that some operators cannot take vacation time due to the lack of trained or available personnel to step in. Therefore, for regionalization of O&M to function properly, these systems would need to see how the concept would directly affect their work efforts, and how their local, daily needs would still be supported.

So, what action could stimulate regional cooperation among DACI systems? As a first step the region could explore building cooperation and communication between systems by implementing a monthly or bi-monthly roundtable discussion facilitated by a coordinator and hosted by a larger system. Current projects and issues with each system would be presented to the group and solutions put forth. The simple act of meeting regularly will naturally build relationships for problem solving, training, emergency response coordination, and possibly lead to a future regionalized labor or purchasing agreement. This concept was well received and should be explored as a first step toward implementation of a regionalization agreement.

Discussions with DACI systems resulted in some common hurdles. Finding solutions to these common problems may serve as the catalyst for further cooperation.

- On-going employee training is costly and impacts small system schedules. Systems could work together to request CRWA and/or RCAC to host regional training workshops in their vicinity. Additionally, develop a sponsorship program to pay for costs associated with attending state level conferences and trainings.
- Chemical and delivery cost are a common problem. There is one chemical supplier for the entire north part of the state. Districts should coordinate their regular deliveries and explore a central drop point for deliveries to save all systems in these charges. Also, systems could consider negotiating with suppliers as a group for material purchases made in bulk.



Severely Disadvantaged town of Little Valley

- Possible ways to cultivate, retain, and incentivize local employees. Systems could explore starting an apprenticeship program through California Rural Water Association's (CRWA) apprenticeship program. Rural Community Assistance Program (RCAC) may also have a program to support education.
- Due to the distance from certified labs many systems rely on a courier to pick up the samples. The coordination of this can be difficult and, if the pickup time is missed the operator must transport the samples to the lab. Discussion of lab support should be initiated.

SWAT Team

It is clear from the TMF Needs Assessments and the Phase 2 follow-up Circuit Ride that in order for a group of small water and wastewater systems to be able to regionalize their O&M and create a program that is durable, they will need the initial design of the program to be sponsored and support by technical experts (similar to consolidation efforts which are highly supported with State funds). This would have a huge impact on the ability of a group of systems to create the organizational and financial agreements as well as the key implementation tasks associated with development of maintenance schedules, prioritized repairs, and proper daily operations. The Sponsored Assistance would include a mobile team of skilled, trained, and experienced licensed water and wastewater operators with tools and equipment available to use in region. This mobile team could move into a system with the necessary materials, and work in conjunction with local system operators on a variety of small tasks and projects. Bringing this level of skill, experience and equipment for targeted small system repairs would quickly alleviate pressure on these staff and would allow for additional, highly technical training in the process.

With adequate financial support, this team could manage a master maintenance schedule for the systems they support. The team would gear up for required maintenance tasks, or schedule outside contractors to perform certain repetitive maintenance tasks for several systems at one time, at a better contract cost than if each system contracted the service by itself. This team could also have the ability to “lend” a crew person to a system for short periods of time to augment the local workforce, be it for a repair or to allow local crews to take time off without fear of losing control of their system.

Being in daily or weekly communication with the local system operators would offer the ability to schedule maintenance, repairs, or support operation. Materials could be ordered and crews scheduled, with coordination of outages, or other necessary prerequisites, synchronized with the system.

To take the concept further; for very small systems with no full-time operators, or perhaps engaging a contract operator, daily operation could be enhanced with modern tools such as SCADA systems. Support for daily operations could be in the form of a regional “General Operator.” Duties would include documentation of activities and metrics from online spreadsheets. These documents would be sharable with contract operators or even trained unlicensed locals. The General Operator would have the ability to also monitor the utility systems through cloud-based SCADA. The General Operator would oversee or even actively participate in routine administrative activities with the contract operators to ensure that these systems perform tasks and deliver reports necessary for compliance. State and County regulators would welcome this oversight, as it would most likely reduce the amount of time spent with follow up from a lack of compliance, and provide another layer of review to ensure the systems are operating within state regulations.

Sampling and compliance with monitoring schedules is also an area that DACI systems fall short. Having the SWAT team responsible for all sampling of all systems within a regionalized network would:

- Save operator time each week.
- Ensure that samples are collected and transported in accordance with laboratory requirements, thus strengthening water quality for customers.
- Reduce the number of ‘out of compliance’ systems for monitoring violations. Some small system operators simply do not understand the complexity of monitoring schedules.
- Lab costs could be negotiated as a group, as required testing is a significant portion of the operating budget.



McCloud Wastewater Pond

How to Fund

The objective of this case study focuses on the actual key needs of small water systems in the northern part of the SRFA, to develop a strategy for an O&M SWAT team concept. The next key question is how to pay for this support as a pilot project (initially) and then as a sustainable programmatic solution to rural, DAC water and wastewater O&M.

Nathan Gardner-Andrew, Chief Advocacy Officer with the National Association of Clean Water Agencies, says that “If you take a look at the government now, there’s the Low Income Home Energy Assistance Program, which helps cover heating and cooling costs for a segment of the population below a certain income level. Why not something similar on the water side?” This is especially relevant with the increasing drinking water regulations. “It’s not right for the federal government to add regulatory requirements on one hand and then give less and less money to utilities to help meet them”.

Efforts are under way in the California legislature to create funding mechanisms for this very purpose. SB-414, the Small Systems Water Authority Act of 2019, would authorize the state to order consolidation of a larger system with a DACI system or, if consolidation is not appropriate or feasible the State Board would contract with an administrator to provide administration and managerial services, and would fund such a contract. SB-200 would provide ongoing funding to contract with, or provide a grant to, an administrator to provide administration, technical, operational, managerial, or any combination of such services to assist DACI communities deliver an adequate supply of affordable, safe drinking water. The creation of a dedicated state funded “SWAT” unit to support operation and maintenance may be one solution to slow the cycle of decay and generate the vitally needed capacity in these areas.

Supporting these DAC systems to maintain a basic and compliant level of service makes sense in the both the short and long term, ultimately enhancing the lives of the communities they serve. Nurturing these small utilities’ services and infrastructure not only adds to the quality of life current customers, but these types of regionalized agreements could provide community improvements that attract people into areas that are currently seeing a decline due to attrition.

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Appendix D. SRFA Community-based Needs Assessment Case Study Follow-up (OPUD)

SRFA DACI – Phase 2
Olivehurst Public Utility District (OPUD) Case Study: Improved
Public Outreach Summary

The Community-based Needs Assessments (CBNA) conducted during Phase 1 highlighted key drinking water issues that both the Water Purveyors and Community members identified as key needs. Non-English communities are traditionally less aware of and engaged in local and regional water issues. This is an observation that was confirmed as the DACI outreach team engaged with non-English speaking residents in DAC communities throughout the SRFA region and specifically in the communities of Olivehurst and Linda within the Yuba IRWM. Some universal observations made across all communities included:

- Very few Non-English-speaking individuals know, by name, the entity that purveys their water. In many cases this is because many of the people with whom we spoke are renters, and as such their water bill is included in their rent and they have no occasion to directly interface with their water agency.
- The vast majority of the people with whom we spoke do not trust the quality of their water. In some communities, this mistrust is merited, but in most cases it is unfounded. There are various reasons for the mistrust. Some misidentify the source of their water, for example in Yuba County, believing that their drinking water is directly from a nearby dirty river with visible trash. Others note unpleasant colors or odors in their water. Additionally, across the board, there is an underlying cultural self-defense mechanism that is present with respect to consuming tap water, though perhaps not always consciously, in a lot of the respondents. Many emigrated from places where drinking tap water is, in fact, very dangerous. So there is an innate risk aversion towards the practice.
- Due to the concern over the quality of the water, every single person with whom we interacted reported purchasing bottled water for home consumption, many even for cooking. Many of the families we spoke to were in a lower socioeconomic strata, where spending upwards of \$200 a month on bottled water, as was reported, can have a devastating and disproportionate effect on their economic wellbeing.

Given these findings, we approached the second phase of the SRFA DACI project as an opportunity to follow-up on these CBNA and attempt to address these issues. We selected one of the communities in which we had conducted our CBNA efforts as a pilot community in which to try various outreach and water education approaches. The thought was that if successful, we could more easily expand these strategies and efforts to other communities within the funding area. We found a willing and supporting partner in the Olivehurst Public Utilities District (OPUD) for this Phase 2 Case Study.

OPUD allowed us to interact with the community they serve as a representative of OPUD. This was important, as one of the target outcomes was to increase awareness of OPUD as a water purveyor and enhance the relationship between the community and its water agency. As OPUD representatives, we reached out to the community through event participation, presentations to key target audiences, media interviews, social media engagement and more. All efforts were done in the target audience's preferred language (Spanish) and in a culturally appropriate manner.

The reception we have received thus far has been phenomenal, with many identifying the information we are providing as new to them and very helpful. We are now commonly seeing people at events who come up to us and say they've seen our Facebook videos and information, showing how the multifaceted approach is working to reinforce key messages which are:

- Your tap water is safe to drink
- Know where your water comes from
- Use water wisely
- OPUD cares

We are also receiving extraordinary feedback from individuals at presentations, who, upon participating in a tap water tasting, express their bewilderment over having unnecessarily spent so much money on bottled water when their tap water is safe and good to drink.

After a relatively short amount of time on this effort during Phase 2, we are beginning to anecdotally see the increased awareness of and engagement in water issues in our target audiences. As we continue to work in the Olivehurst community and through our various media efforts, we expect this awareness to compound and spread.

Everything we have done thus far through this effort is replicable, adaptable and scalable to work in other communities throughout the funding area and beyond. We look forward to continuing with this pilot and applying its best practices in other communities and Regions.

Following is a brief outline of the OPUD Public Outreach campaign strategies, activities and results during Phase 2:

OPUD Public Outreach Campaign Development

- Developed campaign key messages and supporting messages focused on four areas:
 - Your tap water is safe to drink
 - Know where your water comes from

- Use water wisely
 - OPUD cares
- Developed complementary campaign brands in English and Spanish that support the key messages, including logos, iconography and brand messaging (Know It, Use It, Drink It).
- Developed series of collateral materials and social media assets that incorporated our key messages and creative assets.

Public Engagement and Education

- Provided presentations at English Learner Advisory Committee (ELAC) meetings at local elementary schools, including Ella Elementary, Johnson Elementary and Linda Elementary.
 - Developed a relationship with ELAC coordinators at various local schools
 - Presented to more than 40 parents of English-learner students
 - Provided information on OPUD and Linda Water Agency
 - Provided information on the source of their water
 - Provided information on water quality and the drinkability of tap water
 - Provided tap water samples to participants.
 - Prior to the samples, every participant informed us that they used bottled water.
 - After the samples, everyone who approached us stated that they liked the tap water and questioned the need to purchase bottled water in the future.
- Attended the *Cinco de Mayo* event, organized by *Organizaciones Unidas*.
 - Provided water education materials and participation in a hands-on watershed/water-quality interactive model to 82 individuals, mostly non-English speakers
- Attended the 4-day Yuba-Sutter Fair
 - Provided flyers and information on water quality (tap water vs. bottled water), water conservation, groundwater and an energy-efficient appliance rebate program.
 - Engaged participants in a hands-on, interactive watershed/water-quality model.
 - Directly interacted and educated 1,595 fair participants.
- Attended the Ampla Health Health Fair
 - Developed a relationship with Ampla Health in Olivehurst, a clinic providing health care services to lower income Olivehurst residents
 - Attended Ampla Health's health fair in Olivehurst, where we:
 - Provided flyers and information on water quality (tap water vs. bottled water), water conservation, groundwater and an energy-efficient appliance rebate program.

- Engaged participants in a hands-on, interactive watershed/water-quality model.
- Directly interacted and educated 159 health fair participants.

Media/Social Media

- Conducted a live radio interview on *La Buena* 92.1 FM, *La Ranchera* 104.7 FM, *La Ranchera* 890 AM and live streams on their corresponding Facebook pages.
 - The Spanish-language stations cover a large swath of Northern California and the Central Valley
 - Spoke about water quality, bottled water vs. tap water, the importance of establishing a relationship with your water purveyor and the need to have more representation of Latino communities at the decision-making level when it comes to water issues
 - Fielded questions from callers and Facebook audiences
- Launched *Tu Agua Olivehurst*, a Spanish-Language Facebook page dedicated to our public outreach efforts and messaging. (www.facebook.com/tuaguaolivehurst)
 - Developed and posted Facebook content that supported our identified key messages, including:
 - Water conservation tips (https://www.facebook.com/tuaguaolivehurst/photos/?tab=album&album_id=2331539146930950)
 - Infographics on groundwater
 - Videos with tap water recipes to encourage tap water consumption (www.facebook.com/tuaguaolivehurst/video_grid/)
 - Videos demonstrating watershed and water stewardship
 - Photos and posts promoting our engagement efforts in the community
 - To date, we have:
 - Had 4,362 individuals see our videos
 - Reached 10,281 unduplicated individuals through our posts
 - Generated 33,867 impressions (individuals can have multiple impressions—see multiple items from our page)
 - This was all accomplished within the first three weeks

Backup Documentation

OPUD Key Messaging

- Your tap water is safe to drink.
 - Tap water is regularly treated and tested and proven safe to drink
 - Your drinking water does not come from the river
 - Your water does not contain chemicals that make it unsafe to drink
 - Your water treatment facility is located_____, you can schedule an appointment to go see how your water is tested
 - Use tap water instead of bottled water
 - It's less expensive to drink tap water than to purchase bottled water
 - Bottled water often has leaching of plastic, which isn't good for your health
- Know where your water comes from.
 - OPUD is your water provider
 - All water consumed in Olivehurst is groundwater
 - Groundwater is well water that is stored naturally underground
 - Your water does not come from the river
- Use water wisely.
 - During the worst of the drought, Olivehurst residents answered the call and made significant water conservation strides.
 - While things have gotten better, we are still in a drought
 - It's important for everyone to continue using water wisely so we have the water we need during drier years
 - There are lots of ways to use water more wisely
 - Shorter showers and less time outdoor watering is the best way to conserve water
 - Teach your children to use water more wisely in these three easy steps
 - Turn off the tap while brushing your teeth
 - Turn off the tap while washing your hands
 - Take a shorter showers
 - Appliance use, energy efficient appliances: shower heads, dishwashers, faucets, hoses, etc...
 - There are a lot of available rebates for Energy Efficient appliances
 - Check with OPUD or your appliance store for details
 - Get an energy star dishwasher. Your kids will love you. (So they don't have to do the dishes, because it takes more water to do the dishes then to clean them with an EE dishwasher.)
- OPUD cares.
 - OPUD is striving to better serve the diverse community of Olivehurst

- OPUD would like to have meaningful and helpful interactions and engagement with the community of Olivehurst
- OPUD has a community Facebook page and would love for you to be a part of it
- OPUD would appreciate more customers/consumers at its board meetings
- OPUD acknowledges that it needs better customer service
 - OPUD wants to hear from you
 - OPUD would like more customer feedback
 - OPUD would like to communicate better with its customers
 - OPUD would like to accept more forms of payment
 - OPUD listens to your concerns and looks for the best possible ways to help you
 - OPUD would like to have a Google rating of 4 stars by 2021
- OPUD would like to offer services to the local schools that would teach and enrich the lives of students around meaningful experiences with water
 - OPUD would like to install water bottle refilling stations in your local elementary schools

- 1.** Know where your water comes from
- 2.** Use water wisely
- 3.** Your tap water is safe to drink



KNOW



USE



DRINK

go blue

KNOW IT • USE IT • DRINK IT



tu agua

CONÓCELA • ÚSALA BÉBELA



¿De Donde Viene Tu Agua?

1 La lluvia, llamada precipitación, derrama agua sobre la superficie terrestre.

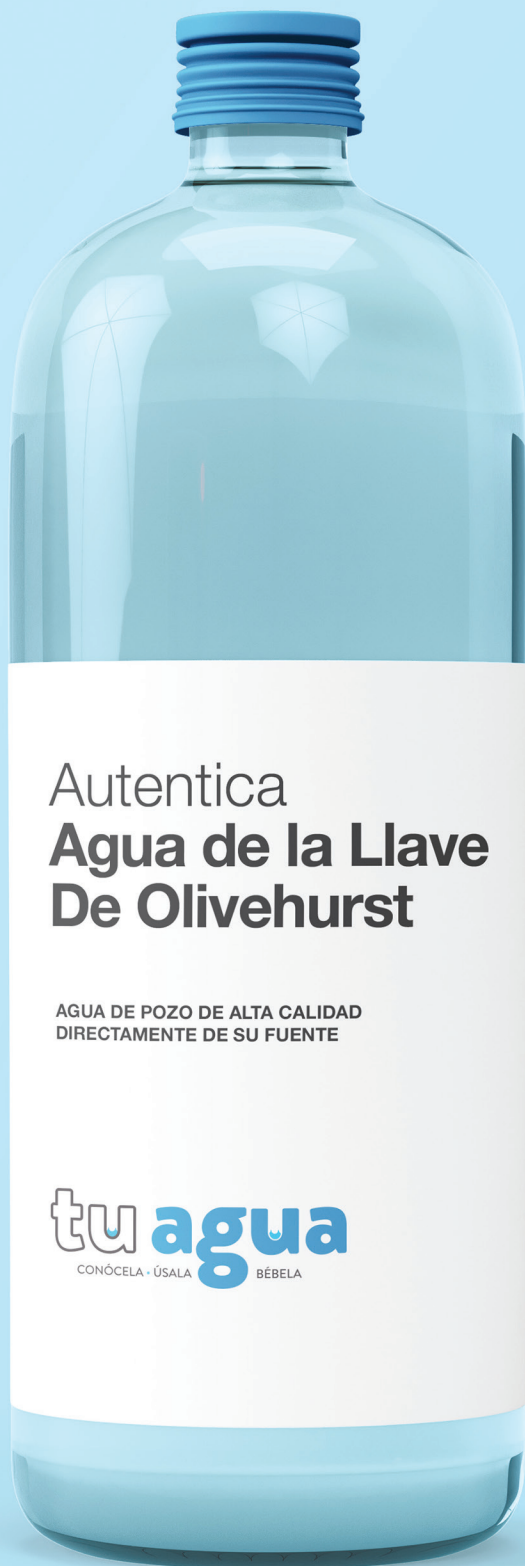
5 En años secos, el agua subterránea puede subir hacia la superficie y ayudar a reabastecer los ríos y lagos en la superficie.

2 La tierra absorbe una gran parte del agua.

3 El agua que se absorbe sigue bajando a un nivel subterráneo profundo, hasta quedar en espacios abiertos grandes, llamados cueductos, o depositada en el espacio entre gravas, rocas u otros minerales. El agua puede quedar depositada ahí por mucho tiempo, hasta cientos o miles de años.

4 El agua se puede extraer de estos depósitos con uso de pozos profundos. De ahí, el agua se purifica y se transporta a tu hogar.

tu agua
CONÓCELA • ÚSALA • BÉBELA



¡Toma agua de la llave y ahorra!

Mucha gente gasta hasta más de \$200 al mes comprando agua embotellada. Pero el agua que sale de la llave en Olivehurst es purificada, saludable y ya estas pagando por ella.

- El agua en Olivehurst no proviene del río. Es agua subterránea de pozo.
- El agua es purificada y revisada regularmente para asegurar que cumpla con todos los requisitos de salud.
- Al beber agua de la llave, ahorras tiempo, evitando salir a comprar agua embotellada.
- También ahorras mucho dinero.

tu agua
CONÓCELA • ÚSALA BÉBELA

tu agua
CONÓCELA • ÚSALA BÉBELA



Ayúdanos a conservar agua



¿Qué puedes hacer?

- **Toma baños más cortos** – Intenta no durar más de cinco minutos en la regadera.
- **Ahorra agua en el lavabo** – Cierra la llave mientras te lavas las manos o cepillas los dientes.
- **Lava frutas y verduras conscientemente** – Usa un plato hondo con agua para lavar tus frutas y verduras en lugar de lavarlas en el lavabo bajo agua corriente.
- **Usa electrodomésticos de bajo uso de energía** – Hay muchos descuentos disponibles para comprar electrodomésticos que usan menos agua y electricidad.

tu agua
CONÓCELA • ÚSALA BÉBELA



CONSERVA
AGUA | Tip #1

toma
baños
mas
cortos

CONSERVA
AGUA | Tip #2

**cierra la
llave mientras
te cepillas los
dientes**

CONSERVA
AGUA | Tip #3

**Usa tu
lavaplatos
de manera
eficaz**



CONSERVA
AGUA | Tip #4

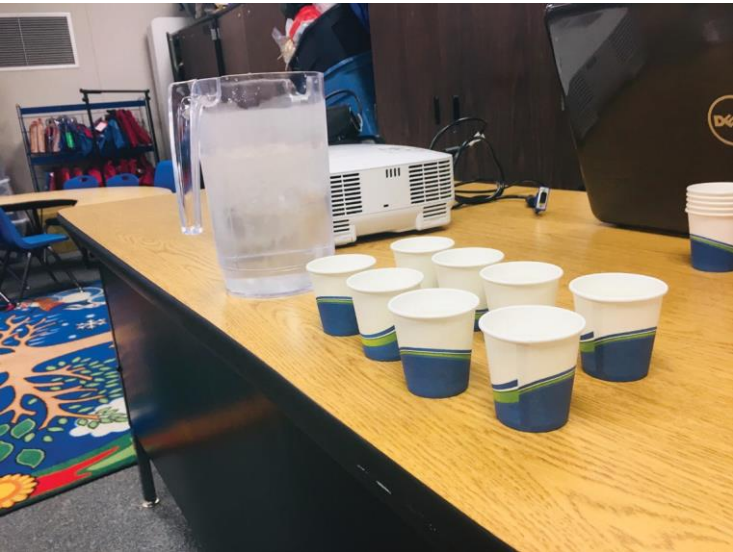
**Usa un recipiente
hondo on agua
para lavar frutas
y verduras**



ELAC Presentations



Presentations at non-English-speaking parents at elementary schools.



Provided parents samples of tap water from the faucet in the classroom to counter perceptions that the water did not taste good.



The water tastings went very well, with most parents reporting that the water tasted a lot better than they anticipated and realized that they didn't need to spend so much money on bottled water.

Cinco de Mayo



Participants at the Cinco de Mayo community event interact with our watershed model, learning how the decisions they make in their neighborhoods, such as polluting or not cleaning and recycling their used oil, ends up impacting the river and watershed.

Yuba-Sutter Fair



Booth setup at the Yuba-Sutter Fair



Interactive watershed model



Families interact with the watershed model

Ampla Health Fair

Teaching families at the AMPLA health fair event about water conservation and how to keep the watershed healthy.



Engaging kids in the hands-on watershed model to learn how their actions and decisions impact our watershed.





Data for When Your Fans Are Online is not available.

All Posts Published

Create Post

Reach: Organic / Paid ▾
Post Clicks
Reactions, Comments & Shares *i* ▾

Published	Post	Type	Targeting	Reach	Engagement	Promote
08/08/2019 4:51 PM	Aquí estamos participando en la feria de			15	0 2	Boost Post
08/06/2019 9:03 AM	Cuando te estas cepillando los dientes,			515	2 36	View Promotion
08/02/2019 1:05 PM	Lo que hacemos cada día puede afectar la calidad			1.1K	84 27	View Promotion
08/01/2019 4:19 PM	Aquí estamos en la feria de Yuba-Sutter hasta el			763	8 28	View Promotion
07/31/2019 9:28 AM	Toma baños más cortos. Un baño de diez minutos			2K	37 112	View Promotion
07/30/2019 7:00 AM	Mucha gente piensa que el agua de Olivehurst			4.3K	116 106	View Promotion
07/29/2019 5:38 PM	Hace dos semanas tuvimos el placer de			19	0 1	Boost Post
07/29/2019 3:04 PM	Ven y acompáñanos desde esté jueves hasta			20	0 2	Boost Post
07/29/2019 11:39 AM	Tu Agua - Olivehurst updated their website			17	0 0	Boost Post
07/29/2019 9:27 AM	Hay muchas maneras de disfrutar el agua limpia y			4K	118 16	View Promotion
04/11/2019 10:23 AM	Tu Agua - Olivehurst			0	0 0	Boost Post

Actions on Page
July 12 - August 8

1
Total Actions on Page ..a.100%



Page Views
July 12 - August 8

98
Total Page Views • 100%



Page Previews
July 12 - August 8



We have insufficient data to show for the selected time period.

Page Likes
July 12 - August 8

22
Page Likes ..a.100%



Post Reach
July 12 - August 8

9,379
People Reached ..a.100%



Story Reach
July 12 - August 8

Get Story Insights
See stats on how your Page's story is performing.



Recommendations
July 12 - August 8

We have insufficient data to show for the selected time period.

Post Engagements
July 12 - August 8

683
Post Engagement ..a.100%



Videos
July 12 - August 8

3,867
3- Second Video Views • 100%



Page Followers
July 12 - August 8

22
Page Followers • 100%



Orders
July 12 - August 8

0
Number of Orders • 0%

0
Earnings from Orders ..a. 0%

Appendix E. SRFA Water Education Case Study (OPUD)

Water Education Summary (SRFA DACI Phase 2)

OPUD

Project Component Name: OPUD Water Education-Based Outreach

Team Members: Brooke Ackah-Miezah, Nicodemus Ford, William Kangas

The initial phase of the OPUD Education program began at the end of Phase 1 – in September 2018. The Phase 1 work included development of the Phase 2 Work Plan, with a specific focus and strategy on relationship-based outreach and cultivation of partners – Principals and Vice-Principals, followed by relationship building with teachers.

The Phase 2 work effort spanned two school years (end of 2018/19, and the beginning of 2019/20). As a result, the initial activities shown in the following Work Plan (i.e. creating the school teams, conducting the Salmon Runs and developing the Experiment Boxes occurred at the end of Phase 2 (prior to 10/15/19), while the rest of the program will extend through the rest of the school year.

Overview

Based on well-documented research on the positive impacts of education on water conservation and water-literacy, the Oliverhurst Public Utility District/OPUD and the DACI Team initiated the development of a comprehensive school-based program aimed at empowering youth and families in the Olivehurst community.

This education program focused on augmenting and complementing the existing core curriculum to assist children to learn more about their water via diverse activities, experiments, and engaging in meaningful educational experiences around water education (i.e. answering the questions: Where does my water come from? Why should I conserve it? and Is safe to drink?).

Goals

This outreach effort is intended to educate these young consumers, while providing them with meaningful, educational and enriching experiences relating to water. This effort supports local children in becoming informed current, and future, water-users in the communities where they will live and thrive in the future.

- To improve science-based student learning, particularly in the area of water access, availability, conservation and eco-systems that support life.
- To inspire the next generation of youth, to be aware and knowledgeable when it comes to the water they drink and how it gets to them.
- To provide deep learning experiences, with the use of a Water-Related Field Trip, Experiment Boxes, a Water Skit, a Water Day, and a Water Ambassador Day at OPUD

board meeting to engage students and families alike, activating the local community with the Olivehurst Public Utility Department.

Benefits - Highlights

This project provides a number of benefits that deepen student understanding and teaches California and National Science Content Standards through field trips, co-development of lessons and units to be used in conjunction with Science Experiment Boxes; water filling stations, water bottles and materials and supplies are provided for all scheduled water learning activities.

School Team

The DACI Team actively sought to recruit school leaders and teachers to support the implementation of the program components. Recruited members included 4th grade teachers and educators committed to deepening their practice, aligning activities to core curriculum and standards, as well as work with the project team, to ensure activities were high quality and engaged community and families.

Salmon Run

South Yuba River Citizens (SYRCL -- pronounced circle) is a non-profit organization whose mission is to “unite the community and restore the Yuba River.” SYRCL River Science Staff and river guides provided an educational and engaging day which included a float trip down the lower Yuba learning about the river’s ecosystem, efforts to protect salmon and observing restoration projects. Students, teachers and other community members were welcomed to enjoy this hands-on learning opportunity connecting with local waterways.

Experiment Boxes

To deepen student understanding and awareness of where their water comes from, every youth that participated in the program has access to an Experiment Box: an interactive set of discovery and engagement tools, water testing items, lessons and other customizable scientific experiments that are fun and inspiring ways to increase students environmental literacies. Teachers used and will continue to use the Experiment Boxes in a variety of ways - working with project coordinators to design lesson plans and classroom activities that align to instructional and curricular goals.

Water Assembly Program

The Great Water Mystery is an interactive in-school assembly program that uses an engaging mystery story to teach youth about water conservation and where student water comes from. The program teaches California and National Science Content Standards through an engaging presentation using audience participation, dramatic slides and engaging demonstrations to inform students and teachers about the effects of our actions on our water supply. This element will be delivered in the 2020 timeframe.

Water Day

Students will have the opportunity to showcase their work including sharing their new-found water knowledge and environmental literacy, science project boards, and experiment box work.

Students and parents will be invited to attend an afternoon of fun water games with giveaways and interaction with OPUD leaders. This fun and interactive event (held during the 2020 timeframe)will be an enjoyable opportunity for those who have participated in the program as well as another reinforcement of and exposure to water knowledge and environmental literacy they have been taught and experiencing throughout the school year.

Water Ambassadors Day Presentation

As a culminating activity, several students will be selected to publicly celebrate and share their learning to board and community members at OPUD. This is a wonderful opportunity to build students speaking and presentation skills, understand that their work has a much larger impact and be publicly recognized by OPUD. Supports will be provided to teachers and students to help prepare for the day, including curriculum materials, one-on-one support and logistic and coordination of the event.

DWR / OPUD EDUCATION PROGRAM

PROJECT DESCRIPTION

A pilot program for 4th grade

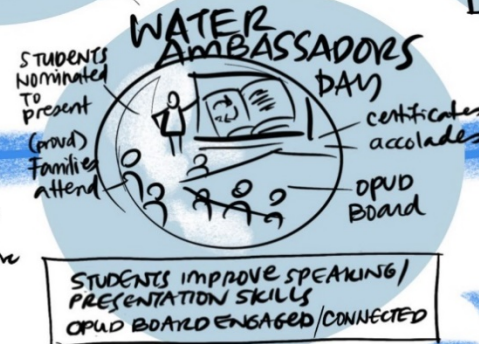
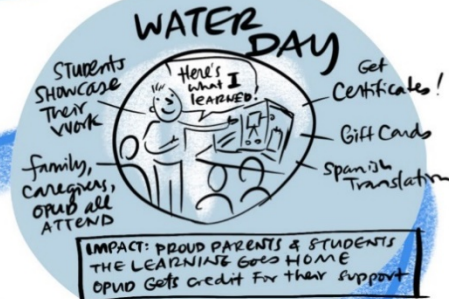
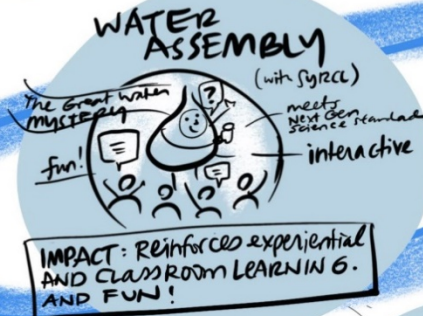
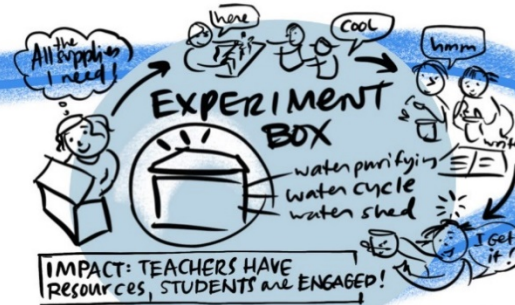
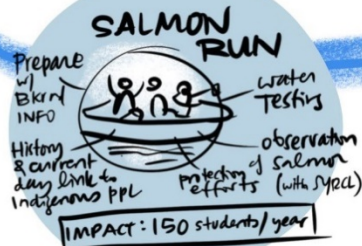
Collaborate with TEACHERS -

- TO EDUCATE STUDENTS IN A HANDS ON, ENGAGING WAY
- ALIGNED w/ Next Generation Science STANDARDS

And... WHICH RAISES AWARENESS about

- 1 The Water Cycle
- 2 Where Their Water Comes From
- 3 Water Conservation

WATER REFILL Station



INFORMS
Where we go Next

Expand to other schools & grades w/ OPUD DISTRICT...

Short Summary of Work Accomplished During Phase 2:

The Olivehurst Public Utility Department's Education Based Outreach Program accomplished several major milestones during Phase 2. Engaging with school-based staff requires a delicate balance of relationship building and technical know-how; using a participatory-relationship based approach, the team developed key relationships with, school leadership at each site, describing the programming, understanding local context and supporting needs with NGSS (Next Generation Science Standards) based instruction and then working closely with the teaching staff to develop customized, engaging curriculum and resources to help students better understand where their water comes from, how it gets to them as well as its safety.

Key Accomplishments:

- Developed and maintained key relationships with four (4) principals at all school sites
 - Drafted work plan and time line to engage students within OPUD service area in meaningful educational experiences around water, water quality , and water education
 - Maintained and established on-going relationships and communications with school principals at Ella, Arboga, Johnson Park and Olivehurst Elementary.
- Organized, secured and distributed six (6) experiment boxes and curriculum binders
 - Aligned lessons and units to the overall theme of water accessibility and availability (i.e., "Where does my water come from? How does my water get to me?")
 - Worked with NGSS curriculum consultant to develop content that fulfills the Next Generation Science Standards
 - Delivered experiment boxes and curriculum to teachers at Ella and Arboga Elementary on September 11, 2019
- Selected, organized and delivered seven (7) books related to water, ecosystems and watersheds
 - Engaged four teachers in selecting seven books aligned to standards
 - Drafted and distributed guiding questions for each book chosen
- Developed and Sustained Key Relationships with six staff members at two schools
 - Organized and facilitated meetings with teachers and school leaders
 - Facilitated strong communication with teachers and school leads
- Scheduled and attended graphic journaling facilitation for 2 schools (Ella Elementary and Arboga Elementary)
 - Ordered water journals for all 4th graders (180 students) at Ella El.and Arboga El. To document their learning throughout the year
- Partnered with SYRCL to organize and facilitate several meetings with teachers and principals
 - Scheduled recurring meetings with key teachers to prepare for Salmon Run Field Trip.

- Worked directly with teachers and school staff to tailor the salmon Run Fieldtrips to meet individual classrooms needs
- Scheduled and attended Pre-Salmon Run Assemblies to prepare, inform and alleviate concerns of teachers, students and parents who are attending Salmon run fieldtrip
- Scheduled and participated in Salmon Run Fieldtrips for all 4th graders in Olivehurst Public Schools

Deliverables:

- OPUD Education Based Outreach Program Work Plan
- OPUD Education Based Outreach Program Overview graphic
- Letter to Parents (English & Spanish)
- NGSS Experiment Box Curriculum Packet
- Experiment Box Supply List
- NGSS Correlated Literature Bundles
- NGSS Correlated Literature Bundle Text Dependent Questions
- Pre-Program Survey Questions (Teachers)
- Pre-Program Survey Questions (Students)

Appendix F. SRFA Tribal Engagement Needs Assessment Results Summary

Sacramento River Funding Area Tribal Needs Assessment

Final Report
(11/08/19)

This report was completed by the California Indian Environmental Alliance (CIEA) for the Disadvantaged Community Involvement Program of the Sacramento River Funding Area. It is being reviewed by SRFA Tribal respondents for accuracy. For more information or to obtain the Tribally-reviewed version of this report please contact Joanne Lee at jojoel.ciea@gmail.com.

California Indian Environmental Alliance (CIEA)

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www.cieaweb.org



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I. Introduction and Methodology

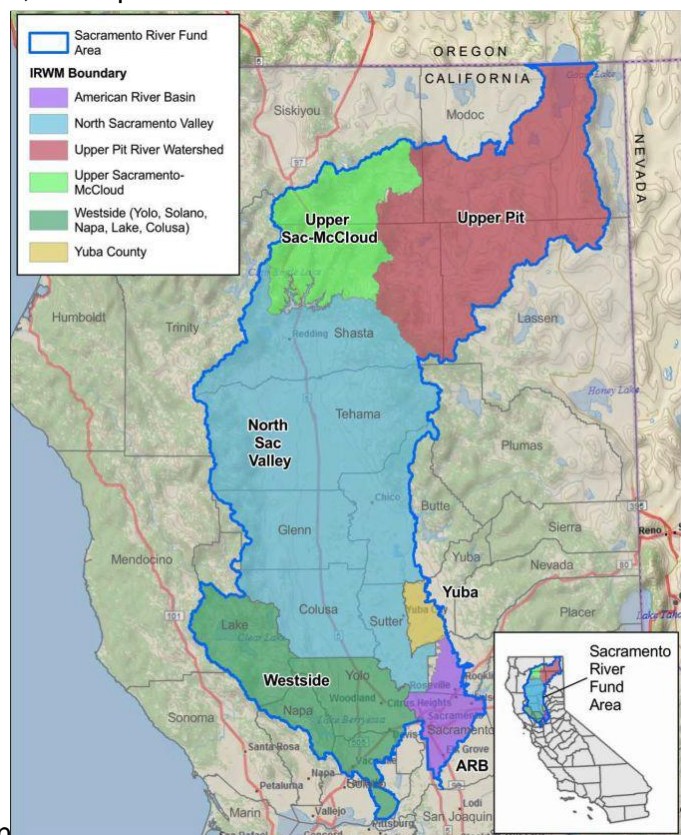
This *Sacramento River Funding Area (SRFA) Tribal Needs Assessment Report* is an initial assessment of the results of the targeted Tribal Needs Assessment surveys, follow-up interviews and meetings completed from April 2, 2019 through September 27, 2019 by the California Indian Environmental Alliance (CIEA) for Burdick and Company for the Sacramento River Funding Area (SRFA) Disadvantaged Community Involvement (DACI) program. This assessment was funded under the Department of Water Resources Integrated Regional Water Management (IRWM) Program. Twelve Tribes, or one quarter of SRFA Tribes combined answers from multiple staff persons to submit one survey each.

CIEA staff provided the survey using an online digital service, fillable pdf and paper surveys to Tribal Environmental Directors, Tribal Administration, leadership staff, and/or Tribal Water Operators, as appropriate by Tribe. Each Tribe who completed this survey has traditional territory within the SRFA, or their territory overlaps the SRFA and an adjacent funding area. Eight of the 14 Tribal respondents are in multiple SRFA IRWM regions or adjacent IRWMs in separate funding areas. The SRFA includes all or part of 6 IRWM Regions.

Following the receipt of these surveys CIEA interviewed 6 Tribes and combined those meeting notes into this summary report as part of the associated interview question. While respondents provided information on the following IRWMs, this report contains the results at the SRFA level. In Appendix A we provide results for at the IRWM level for each of the following IRWMs:

- American River Basin
- North Sacramento Valley
- Upper Pit River
- Upper Sacramento-McCloud
- Westside
- Yuba

The Tribal Needs Assessment results in this report and the information in the attached appendices are provided in aggregate to protect sensitive information and maintain the anonymity of the Tribes that responded. This enabled Tribes to share transparent and honest answers without the concern that there will be direct or indirect negative outcomes.



CIEA has also shared this report, appendices and individual needs assessment and notes with each Tribe who completed a Tribal Needs Assessment survey. Tribes will be encouraged to share their results with the SRFA DACI team, their IRWM RWMG, and others to help address their identified needs. SRFA Tribes requested that CIEA convene a Tribal Advisory Committee (TAC) to assist in interpreting the results of this survey and to prioritize the services they will be offered in Phase 3 of the DACI Program. This recommendation is aligned with basic environmental justice principles, supports Tribal sovereignty and self-determination, and reflects the policies of the State of California to support Tribal self-governance.

Figure 1: SRFA IRWM Regions Map, Source: Department of Water Resources (water.ca.gov)

There are multiple sections in the surveys that require follow-up interviews to identify what kind of support is needed. CIEA has conducted half of these interviews to date and responses have enabled us to clarify their initial answers on the Needs Assessment surveys. This information is included in the body of this report and in Appendix A by IRWM.

We also have included information gathered during meetings with SRFA Tribes to assist RWMGs of SRFA IRWMs, the DACI program Phase 3, and the DWR Program itself.

II. Needs Assessment Summary

The first two questions included the name of the respondent and which IRWM they are in. Results by IRWM region are found in Appendices A-1 through A-4.

Question (Q) 3-4. Contacts, Tribal Information, Traditional Territory & IRWM Self-Identification

Spatially, Tribal participation in IRWMs is challenging for a number of reasons related to IRWM boundaries. Simply stated, this is because the traditional territory footprint of Tribes do not align with IRWM boundaries.

We provided a link to the DWR IRWM map with the digital distribution of the survey, and shared the map at all of our in-person. Tribal respondents identified that traditional or historical use territories for their Tribe fall within SRFA IRWM regions:

- American River Basin
- North Sacramento Valley
- Upper Pit River
- Upper Sacramento-McCloud
- Westside
- Yuba

A little over half of the responding Tribes indicated that their ancestral homelands, areas of Tribal responsibility, are in more than one IRWM region either because of their current physical

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location, or because IRWM region boundaries cut across their Tribal traditional aboriginal territories. Responses can be attributed to the following adjacent IRWM regions and associated funding areas:

- Cosumnes, American, Bear, Yuba (CABY) - Mountain Counties Funding Area
- Mokelumne-Amador-Calaveras (MAC) - Mountain Counties Funding Area
- Madera - Mountain Counties Funding Area
- North Coast Resource Partnership (NCRP) - North Coast Funding Area
- San Francisco Bay Area (SFBA) - San Francisco Bay Funding Area
- Upper Feather River (UFR) - Mountain Counties Funding Area

Q 5 - 9. Status and Source of Tribal and/or Community services for drinking and wastewater services / Q16 - 17 Number of Hookups

Questions in these sections focused on the types of water and wastewater systems that Tribes are utilizing, whether or not the Tribe is a water or wastewater provider and who they provide water to, and how many hookups each has. In follow-up interviews we gathered information on who maintains the water and wastewater systems and the status. When reviewing responses about independent services for “drinking or wastewater” it immediately became clear that this should have been broken out into two questions. According to survey results 45 percent of responding SRFA Tribes do operate an independent drinking water “AND” wastewater system. In some cases follow-up interviews clarified which of the two services (water or wastewater) their answer could be attributed to. Additionally, in Mountain Counties and North Coast funding areas the survey does separate these questions, therefore for overlap area Tribes we were able to draw interregional information for this report.

Most of the participating Tribes stated that the services they provide serve only their specific Tribe. Three Tribes provide water and/or wastewater services to another Tribe, an outside community, or non-Tribal members living on their reservation.

Tribes expressed that the location of their Tribal lands are often too far from public water systems to receive potable water and in many cases septic is impacted by flood plains and other barriers because of the locations that federal, state governments, and that local communities have confined Tribes to.

Drinking Water

It is becoming increasingly important that small systems have resilient multi-sourced water systems. One Tribal respondent said that they have two wells which are sourced from the same aquifer; of these one is for potable drinking water while the other supplies water for irrigation. The Tribes with the largest numbers of hookups for water supply (1001-5000) said that they receive their drinking water from cities. In some cases city water purveyors have worked collaboratively with local Tribe; even working on a joint project.

Most respondents who operate their own independent water systems provide services for hookups in the 15-50 or 51-100 range. Of these one provides drinking water treatment and supply on the Rancheria, which includes non-Tribal residents who are eligible as DACs. Their system is EPA GAP and Tribally-funded.

Through follow-up interviews and from information received in the comment fields we are able to identify that most Tribes in the SRFA have drinking water from wells, purchase already treated water or chose the 'Other' category. Those Tribes who chose the 'Other' category indicated in interviews that this was because their water source is from city or county.

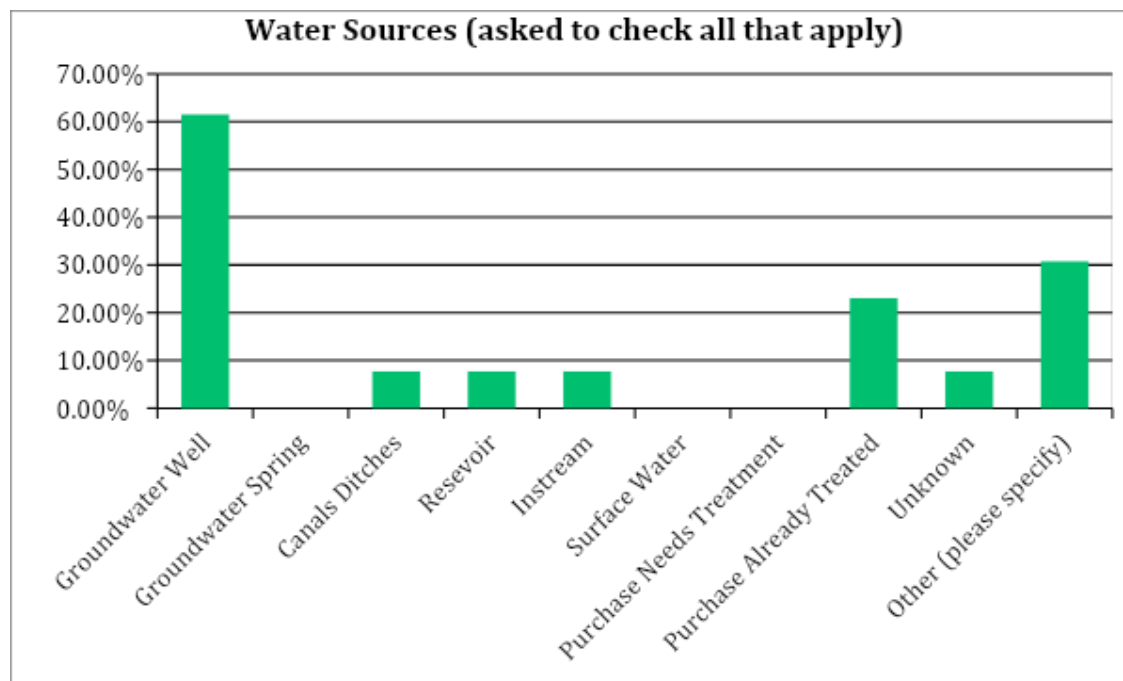


Figure 2: Water Sources

One Tribe stated that they do not have any drinking water source, because the water they do have is not potable and kills vegetation. They were informed by engineers from IHS that providing water to their community was not cost effective. Currently, this Tribe purchases and transports pre-treated water into their community. For this Tribe, many of their subsequent responses are related to this lack of water source (key need) and how it is related to community members choosing to move away because there is no opportunity for economic development without a sustainable water source.

Sixty-five percent of Tribes that receive water from non-Tribal providers indicated they would be interested in forming a partnership(s) with these non-tribal providers for projects and funding to improve these services.

Wastewater

The number of wastewater hook-ups did not directly correlate with the number of water hookups. We are able to deduce this information from follow-up and overlap survey questions DACI Needs Assessment Results, California Indian Environmental Alliance, www.cieaweb.org

from Mountain Counties and North Coast surveys. We identified that three Tribes have septic systems in place ranging in size from 3-38, 51-100 hookups. In some cases the system only had 3 septic lines. One respondent had 38 septic lines on their reservation and the residents are responsible for paying for service themselves; they would however like to join the county's wastewater system but this would require cooperation of a private landowner. Only one Tribe indicated they operate their own water treatment facility.

Q 13. Seasonal Variability and Security of Water Supply

Three respondents did not know if the production of their water sources was decreasing seasonally. Of the four that did not see variability, one of these did see a reduction in water supply in the northern portion of their territory. All four Tribes that saw seasonal variability are utilizing well water and saw a decrease in well production during summer. Of these one said their aquifer is recharged by creek water, which has lower flows in summer. Those in agricultural areas believed the decrease is due to increased farming in the area. Those in headwater areas did not see a reduced variability in their water, but are watching this closely in case there is a change.

In follow-up questions, we asked for more details about the security of Tribal water systems. If the Tribe received water from multiple water sources we asked if those sources are from the same or different aquifers. Many Tribes indicated their sources of water are from the same aquifer. Diversity of independent water sources increases the security of safe potable drinking water. Therefore, the need to secure a secondary or alternative source of water is almost universal. Only two Tribes stated that they did not need a secondary source of water. Of the respondents that stated they had or did not need a secondary source of water, one amended their response noting their drinking water is vulnerable because there are non-inspected automotive repair shops and other industries that are adjacent to one of their wells.

Q 10. Emergency Response Plans

This question asked if Tribes had an Emergency Response Plan (ERP), or if they receive services from a community provider that has one. Six Tribes responded that they do have an ERP, or equivalent, and of these two receive water from a water purveyor. Four said they do not have a plan. Three said they do not know if they have a plan and of these two received water from a water purveyor.

Q 16. Water Conservation Plan

Only three Tribes responded to this question. Of those, two said their water purveyor had a water conservation plan, and the third did not know. Some federally recognized Tribes have completed water conservation plan development through EPA Gap funding. For both state and federally recognized Tribes, there may be funding sources through the State Water Board or DWR.

Q 17. Wetlands or Other Natural Filtration Mechanism

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Only one Tribe indicated that they had a wetlands filtration or other natural filtration system. All of the other Tribes said they did not know or answered no. Of these six are interested in learning more about options for in-ground natural filtration, because the “filtering foliage and vegetation around creeks is gone.”

Q 18. Challenges

For the following questions the needs assessment asked respondents to indicate their level of concern for each category. If they indicated a “Strong” or “Extreme Concern” for any category we asked that they briefly explain. We have been interviewing respondents and other Tribes to receive more details to seek solutions to challenges and to guide Phase 3.

Responses did not show a set of concerns that are significantly weighted higher. Most needs are better evaluated at the IRWM level, therefore we have provided Regional Tribal Needs Assessment Reports in Appendix A for use by the Regional Water Management Groups, or governing body of each IRWM.

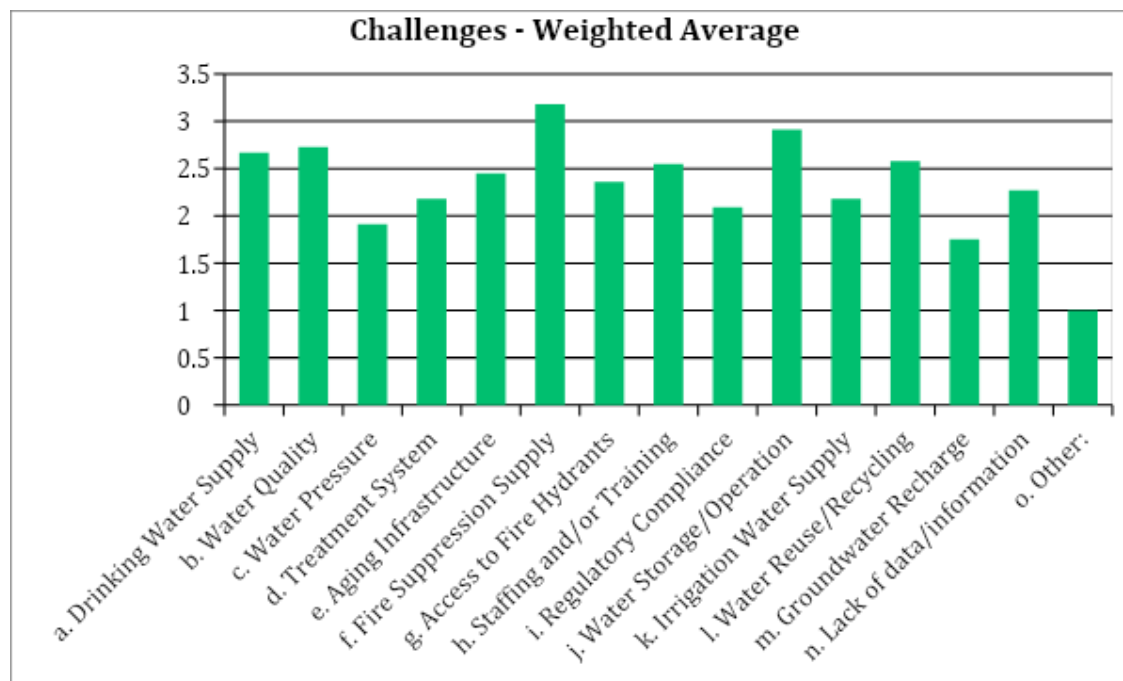


Figure 3: Challenges

Fire Suppression is the highest ranking response with Water Storage and Operation following a close second. The following are paragraphs on each of the challenges provided as a weighted average above.

a. Of those Tribes that indicated **drinking water supply** is an extreme concern, one does not have any potable water on their reservation and it is worth noting that this Tribe was forced into this section of their traditional territory. Because of the poor water quality and the resulting lack of economic opportunity, younger Tribal members move away. This drain of young members

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threatens the Tribes' ability to maintain cultural continuance. The lack of water for this community is an environmental justice issue that should be elevated to arrive at a multi-agency solution including a need for an inter-agency and multi-solution focused meeting for this community and take these recommendations to DWR. Other Tribes said they need more storage and treatment of drinking water. One respondent is seeking to change their Tribal water system setup so their stored water does not receive treatment twice.

b. Tribal respondents with concern about **water quality** indicated a need for water treatment of well water. For one Tribe receiving city water the Tribe is concerned about the chlorination and contamination from toxic chemicals. One community's water contains multiple toxins and the source water is so bad that Indian Health Services (IHS) said it would even kill plants. One respondent stated they need to sample their water which is used for agriculture, and that they are not sure if the fish the Tribal members catch have been exposed to toxic algal blooms or other toxins.

c. For **water pressure** the biggest concern is that water pressure is too low to support fire suppression in the form of fire hydrants, sprinklers or fire suppression in general. One Tribe stated they are receiving water through a gravity feed system from storage to residences.

d. Of those that indicated that their **Treatment system** is of limited concern, one Tribe in interview expressed that they had only provided that response since the operation and maintenance of their drinking water is unattainable. Another indicated their water treatment system is a strong concern because they have no ability for future expansion. One Tribe who receives county water is working on raising the PH levels of their drinking water because it results in the distribution of lead in their distribution line and drinking water in homes and in a preschool on their reservation.

e. Of those Tribes that indicated that **aging infrastructure** is strong concern one Tribe stated that they have infrastructure from the 1970s that is falling apart and that will need to be replaced because the parts are just too old for repair. They are working with a sister Tribe to identify resources to replace the infrastructure. One Tribe indicated their entire reservation has aging infrastructure. One Tribe who indicated infrastructure is of moderate concern stated that the system put in place by IHS does not work well. One Tribe requested a systems review. Some Tribes did express strong concern about old lead pipes in old homes, poor pumps in wells, and the inadequacy or lack of water holding systems.

f. / g. Tribes in all areas of the SRFA are concerned about **supply for fire suppression and access to fire hydrants**. Tribes stated they have limited or no storage for fire suppression, that they are in regions that have experienced intense fires within the last two years, that fire suppression and access to fire hydrants is an extreme concern, that they need water tanks for fire suppression, and back up pumps should the electricity go out. Respondents described situations where during a recent fire Tribal and non-Tribal residents on their reservation depleted their drinking water storage tank ahead of the fire department arriving to pump from their current tank. There is concern that fire hydrants do not have the pressure needed, and that water hydrants are locked and cannot be accessed by the Tribe in an emergency.

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h. Most Tribes responded to the question related to **staffing and training**, and we had many conversations during meetings with SRFA Tribes. Tribes indicated a strong need for staffing and training, particularly for operations and maintenance, updates on technology and that funding is needed for their staff. For the most part lack of staff is a problem and respondents wanted to retain trained staff instead of training staff who then leave to work for larger public water systems.

i. For those Tribes that indicated **regulatory compliance** is a strong concern respondents asked for guidance on what regulatory requirements should be completed for their water system. Some of the factors that indicate what compliance is necessary is based on the location of the water system and the Tribe's jurisdiction on that land, Tribal federal and state recognition status, number of individuals the system serves, the number of hookups, and the model/type of water system.

j. Responses related to **Water Storage and Operation** overlap with water supply, water quality and fire suppression questions above. Tribes indicated that they have water storage tanks in some cases, but they are not sufficient and they need additional storage. Others said storage tanks are old and needed replacement.

k. For those Tribes that said **irrigation water supply** is a strong concern, most will need follow-up because they did not provide comments. One comment we received is that there is a need to review irrigation as a big picture, to consider fee lands and how curtailment by the city or county, or the state of California could limit groundwater during drought. Another said their irrigation structure is too old to use in its current state, and the water is contaminated for irrigation use. Multiple Tribes expressed concern about impacts to water from *pesticides and herbicides*.

l. Comments received related to **water reuse and recycling** included information that reclaimed water is not enough for all irrigation uses and that Tribes are interested in grey water information, in receiving information on what options are available for water reuse or recycling, and would like information on rainwater capture. Tribes are interested in possible training, technical assistance or support for a submission as a pilot or to apply for an implementation project.

m. Of the Tribes who indicated **groundwater recharge** is a concern, comments included that overdrafting can be attributed to agriculture overuse, low recharge in the basin and that junior water rights users are pulling from the system. Another Tribe indicated they are concerned about the rise in vineyards.

n. Tribes who indicated that **lack of data** is a strong concern wanted information on how the groundwater is dropping, what other sources of drinking water can be installed, a need for the county to track old wells because of toxins and debris that go into the water. Tribes generally need more information on the kinds of data out there to help with decision-making.

o. We also asked an open-ended question in this grouping. Three respondents chose “Other” and two provided comments. One said they would like more information about the legal aspects of water related to groundwater rights and changing water rules. Another indicated that staff training in general is needed. We received comments from the third during follow-up interview that they are in need of information on air quality permits and whether trainings on this could be EPA Gap funded.

Q 19. Technical Assistance and Training Needs

The following questions are related to technical assistance and training needs. As in question number 16 above, there is not a set of needs that stood out as significantly higher than the others. In general, SRFA Tribes identified that there are opportunities for training but that the training should be brought closer to their location, should be hosted by Tribes and Tribes should assist in choosing training dates. Respondents also commented that the dates that trainings are offered have been problematic, often conflicting with other Tribal meetings, or meetings that are mandatory such as quarterly meeting required of Tribal environmental staff and directors with their federal EPA project officers.

Follow-up is needed with most Tribes who indicated they need training because there are few comments in their assessment and we need to receive more detailed information on the trainings to provide. We have completed approximately half of these interviews at the time of this report.

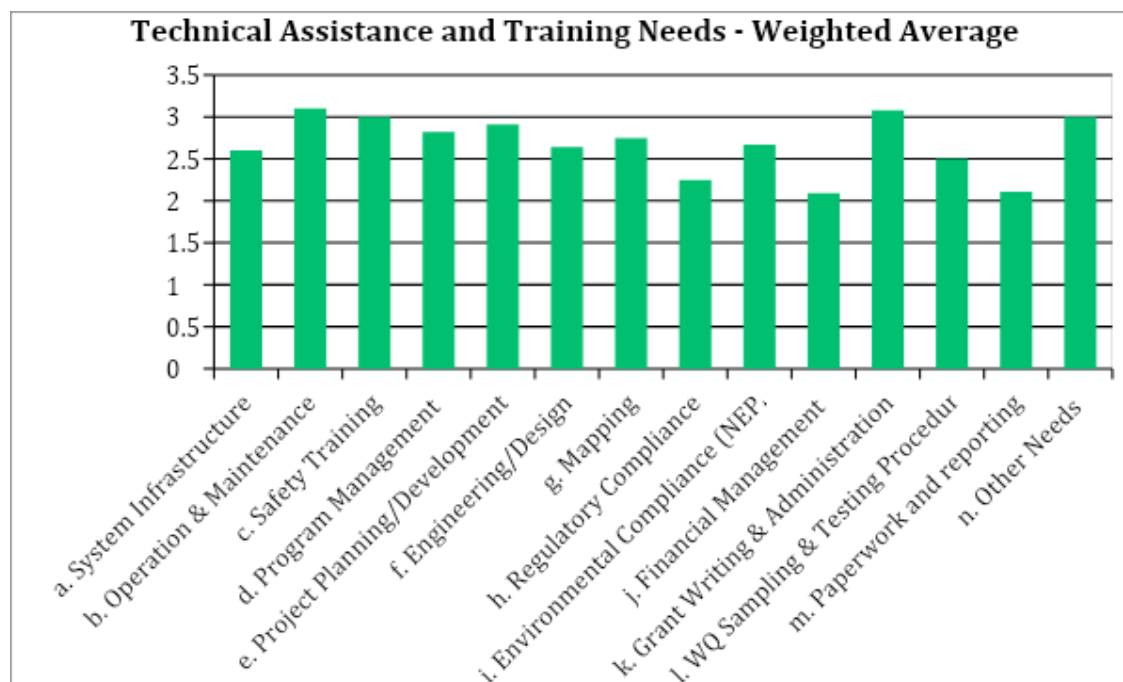


Figure 4: Technical Assistance and Training Needs

a. One respondent indicated that there is a need for **System Infrastructure** training because they have an operator but it is not through the Tribe. Another said they wanted to know how to work their system properly and to increase understanding of their system.

b. **Operations and Maintenance** is indicated as an extreme by many Tribes. In general Tribes informed us that retaining operations and maintenance staff is challenging. Comments included that there is no economic development in the area and there are no funds for Operation and Maintenance. Although there are federal grants the current IHS provider is of “little to no help because they have one person servicing most of California” and they can only support federally recognized Tribes. One respondent commented that they have no operations and maintenance staff available, and because of this everything goes through their housing director. This Tribe indicated they would welcome a regional solution. Tribes with small water systems (1-50 hookups) are interested in coordinating with other Tribes in their area to hire shared operations and maintenance staff or to have a network of Tribal staff in their area to serve as backup. For those who receive water from non-Tribal providers, four Tribes said they would be interested in forming a partnership with these providers for projects to improve services. Two other respondents indicated that they receive some support from Rural Community Assistance Corporation (RCAC)

c. Responses related to water operation **safety training** included that Tribes have a certified member on staff that can conduct trainings and be their water operator, but that they do not have a system. Another indicated there is a local need for Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training.

d. In response to the **program management** training option, federally recognized Tribes provided information for program management funding sources stating that they receive support through federal Environmental Protection Agency (EPA) 106 and 319 funds. They also stated that that they have difficulty retaining qualified staff. One respondent stated there is an extreme need for Tribes to benefit from technical training to create Tribal programs to participate in their IRWM(s).

e. For **project planning and development** Tribes indicated they are currently working with Indian Health Services (IHS) on design and infrastructure. One state that they put in a proposal to IHS fifteen years ago and did not know why it was never completed. Another said they are working with California Rural Water Association for planning. Other respondents who said project planning and development is an extreme need related to IRWMs and that their Tribe would benefit from training to create IRWM projects.

f. Tribes indicated that **engineering and design** is a strong need but did not provide comments. Interviews resulted in information that one Tribe is working with IHS but could use support in getting their project elevated because they wonder if the issue is that IHS deemed their project to not be cost effective.

g. Tribes did indicate they are interested in **mapping**, but did not give details on the level of training they need. There are many types of users including those who gather data points,

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geospatially stretching historical maps, or who use data already entered. Without additional information it is difficult to schedule a mapping courses.

h. For those who indicated that **regulatory compliance** support is a need only one respondent provided comment that they used to be in compliance as a federal system, but sampling found E. coli in their system. Because it would have been too expensive to fix they no longer have drinking water.

i. Tribes that identified **environmental compliance** as a need and stated that they didn't know if they compliance requirements are necessary for their proposed project. To provide this information we need to know more about the jurisdiction and nature of the project to provide them with this information. Follow-up calls have been initiated. We did receive responses that templates and/or trainings on California Environmental Quality Act (CEQA) and/or National Environmental Policy Act (NEPA) compliance would be useful. In some cases Tribes need to complete a hybrid CEQA/NEPA, which can take longer and there is an added challenge for Tribes to find a state or federal agency to be the lead.

j. The **financial management** needs expressed are attributed to IRWM project budgeting, and creating rate structures for water systems.

k. Tribes that indicated **grant writing and/or administrative support** is needed and stated this is primarily due to a lack of staff time available to complete proposals. Other comments are that Tribes need money for planning and templates for successful grant applications. We also received comments that it is "not writing grants that is the issue, it is finding grants." This respondent would like a grants list. Additional Tribal respondents expressed that IRWM proposal development is different and workshops that include hands on training re IRWM proposal development would be useful.

l. Comments related to **Water Quality Sampling and Testing Procedure** trainings are from Tribes that indicated need water testing compliance training. There are also comments from federally recognized Tribes on how they fund their water quality monitoring programs, through US EPA Clean Water Act Section 106 funding. The 106 program focuses on characterizing all (surface and groundwater) water quality on Tribal lands.

m. Some Tribes stated they did not have enough staff to keep up with completing **paperwork and reporting**, and that it would be helpful to receive support for project creation and reporting.

n. Responses to the open-ended '**Other**' choice were gathered in interviews and during Tribal meetings and are primarily related to responses by Tribes in the southern regions of the SRFA interested in a **Regional Resource Center** to be a hub for future technical assistance. A centrally located tool sharing or tool lending library are of interest.

Q 20-26: Involvement in local IRWM

In this group of questions, we received information about respondents local IRWM and how involved they are in it. Some Tribes indicated that they did not receive information about their local IRWMs, while others stated they have been adequately informed. Some Tribes indicated they had no involvement because their IRWM did not “engage in Tribal inclusion efforts.”

In addition to the Needs Assessment questions related to Tribal participation in IRWMs, during the Tribal Meetings participants discussed what is needed to increase Tribal participation in the IRWM program. The overall sentiment is that Tribal participation must be a consistent element in the IRWM governance structure and that Tribal perspectives need to be included in all IRWM Plans.

In one case a Tribe was discouraged from participating in their local IRWM, and is told to work with an adjacent IRWM instead because that is where the Tribe is physically/located at this time. This kind of discouragement ignores the history of displacement and forced removal from Tribal homelands. The history of colonization, settlement and dispossession has pressed Tribes into nonsensically small portions of their original traditional territories. This dismissal additionally ignores the responsibility that each Tribe has to steward their own traditional territories and doesn't allow the Tribe the resources to sustain themselves. There are multiple Tribes that have traditional territory in more than one IRWM region and sometimes in overlapping IRWM funding areas, however Tribes should not be forced to choose only one IRWM to participate in, especially since projects are to be submitted to the IRWM that the project footprint is within that IRWM area.

In follow-up interviews and meetings the question related to Tribal involvement in IRWM programs also prompted conversations about changes in the IRWM PSP for Proposition 1 for IRWM Grant Solicitation including removal of barriers to Tribes in receiving IRWM funds. Several continued areas of concern were identified and are related to Tribes participation in IRWM governance structures, including stronger encouragement of local agencies/governments to remove limited waivers of sovereign immunity for participation in IRWMs. DWR representatives stated that they removed this requirement from the PSP and hoped it would be an example to regional agencies to do so as well. Tribes have expressed the need for a statewide Tribal Round Table of Regions and/or encouragement of Tribes to participate meaningfully in the existing Round Table of Regions. Tribes also encourage the creation of templates that can be shared across IRWM regions.

Q 27-28: IRWM Project Submissions

These questions asked Tribes if they had ever submitted projects to their local IRWM, and if these projects were funded. One Tribe stated that they submitted a project, however all they had been told is that their project was not funded. They did know if it would automatically be reconsidered in future funding rounds, and they were not told what elements were lacking or how their project had been scored too low to have been included in the Proposition 1, Round 1 funding package. Many other Tribal representatives indicated that they did not know if they had ever submitted projects, or if the projects had been funded.

We asked respondents if they had a project ready for IRWM Project Submission for Round 2. Only two respondents indicated that they have a project ready to submit, and of these one indicated that they need a lot of assistance because they do not know where to begin. We were able to identify additional Tribal projects by looking through the needs assessments and in Phase 3,

Support for IRWM Project Proposal development was explicitly requested by multiple Tribes. This includes receipt of clear information about what Tribes need to include and the steps to submit projects to each SRFA IRWM region.

Tribes expressed that their perspectives have not been weighted appropriately in project selection criteria to allow for IRWM project funding. For example, some Tribes expressed that they are more interested in natural treatment systems rather than wastewater systems, and interested in water restoration rather than conveyance. These would need to be included in the IRMW Plan.

In order to be chosen to have an IRWM projects submitted to DWR for funding, there are factors that can result in a project proponent getting a higher score. One of these is that if a project proponent indicates that their project benefits a Tribe there may be additional points available. Tribes expressed examples of misuse of this criterion since project proponents do not have to provide documentation of Tribal benefit or tribal support.

Because Tribal IRWM implementation projects may be in one or more IRWM region or funding area, but funding is applied for in one region for each project, it is important for Tribes to know which IRWM their proposed project falls in so they know to which IRWM to submit projects to. The wide range of Tribal territories provide an opportunity for interregional projects between the IRWMs within the SRFA.

Q 29-32: Shared Project Submissions/Additional Concerns or Technical Assistance

This section asked Tribes if they would be willing to work collectively to submit a proposal and/or share water operators with other Tribes within the region. No Tribes said they wanted to create a collective proposal yet. However, many Tribes indicated that they are interested in sharing water operators and in discussing a possible agreement to share water operator staff at the regional level. This is especially of interest to Tribes where the workload and/or the amount of funds available to pay staff has only supported a part-time person.

III. Meetings with SRFA Tribes

The following are the additional questions, concerns and comments gathered from meetings and conversations held with Tribes of the Sacramento River Funding Area between March 2018 and September 2019. Many of the conversations held with Tribes at our meetings followed the structure of the Needs Assessment Survey so that Tribes could discuss and provide answers to the assessment as a group. Recommendations from these meetings are included in the appropriate sections below under the full ***IV. Recommendations and Next Steps*** section,

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adjacent to related recommendations to address needs identified in the Tribal Needs Assessments and in follow-up interviews.

Needs Assessment

From the first DACI Orientation meeting held in Westside on April 24, 2018 Tribes were concerned that participating in the program would not result in Tribes receiving technical assistance and that funds should be set aside for Tribes specifically so that Tribes will receive support from this program. CIEA was asked “how will the survey(s) benefit Tribes and Tribal members, and what will be offered through the DACI Program?” Also, “*why complete another survey that may not result in issues being addressed?*” These questions are not surprising because Tribes and Tribal members have been studied repeatedly, but the outcomes of those studies often benefit Tribal Peoples or Tribal individuals.

We were advised to use qualifying statements so as not to promise assistance that might not be available. Tribes expressed they were discouraged by the qualifying word “may” in the following statement that CIEA was told to include in the outreach PowerPoint: “Needs Assessment May Result in Potential Technical Assistance & Capacity Building.” This created a challenge and required that we give extensive explanations to describe what benefits would be received if they participated in the DACI or related IRWM programs.

In follow-up interviews and meetings participating Tribes identified CIEA as the organization they would prefer to conduct initial follow-up questions after the completion of a Needs Assessment. These indicated that once the needs assessment and follow-up interview is completed a federal or state agency, CA Rural, RCAC or another contractor of the Tribes’ choosing should then provide phone or onsite evaluations and recommendations for workplan activities which the DACI program could provide in Phase 3 by request from the evaluated Tribe.

When we asked Tribes how they would like to advise the results of the needs assessment, the program and have a voice in the services being provided, Tribal participants said that a convening of Tribes throughout the region would be most beneficial. Such a group would insure that the needs assessment is not being misinterpreted, and it will allow Tribes to collectively decide what will be provided to them in Phase 3. Tribes are willing and best positioned to interpret the results of the Tribal Needs Assessment for their own People and to collectively identify solutions that will work for Tribes. To provide this opportunity this Tribal Needs Assessment report is being provided to participating SRFA Tribes. Generally, CIEA would initiate a 30 day participant review process.

Tribes also asked for results from regional water purveyors to see what needs were identified in their region, and/or to hear more about the water they may be receiving.

DACI Program and Technical Assistance Program Eligibility

During meetings and interviews Tribes asked the following questions consistently regarding eligibility for participation in the DACI program:

1. Is their Tribe eligible to receive support through the DACI program?

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2. How small is too small of a water system to receive technical support through this program?
3. How many people would need to be served by a water system to be eligible?
4. What funds can the DACI program provide to augment other funding sources and/or elevate capacity for Tribes to receive support?
5. Is the DACI program technical assistance only offered to Tribes who operate or receive water/wastewater services through a Public Water System as defined by the California State Water Board?

According to Proposition 1 IRWM Guidelines “the Disadvantaged Community Involvement Program is designed to ensure the involvement of disadvantaged communities (DACs), economically distressed areas (EDAs), or underrepresented communities (collectively referred to as DACs) in IRWM planning efforts.” Further it is up to each funding areas DACs program to define “Underrepresented Communities” and to choose what activities their program will support for which communities. Participants agreed that in general most Tribes could be described as “underrepresented” in watershed management, visibly, politically, and in regional and state representation. Tribes in the SRFA repeatedly reiterated that the DACs program should consider all Tribes as eligible in the DACs program as underrepresented communities.

Tribal meeting participants early on established that the DACI program, should prioritize support and technical assistance to Tribes who are not state or federally recognized, or who are too small to receive funds as a public water system. This perspective is aligned well with the overall purpose of the DACs program as Tribes had envisioned it which is to support those in need, and to supplement what other state and federal programs cannot fund.

According to the Guidelines there is not an eligibility requirement whether you are considered a public water system or not. The size or number of hookups that a water system has should not determine eligibility for Tribes and/or DACs to receive support through the program. As part of our interviews with Tribes who completed a Needs Assessment and in Tribal meetings we determined that there is a need to assist Tribes with small water systems with far less than 20 hookups. The majority of state funding sources are only eligible for public water systems, defined by the State Water Resources Control Board (SWRCB) as a “system that provides water for human consumption to 15 or more connections or regularly serves 25 or more people daily for at least 60 days out of the year.” [Source: www.waterboards.ca.gov/drinking_water/programs/documents/ddwem/DDWdistricofficesmappd f] Because our questionnaire asks if Tribes have from 1-50 hook-ups we do not gather information to know if the Tribe is being limited because they have less than fifteen (15) connections or if they serve twenty-five (25) people or more. Of the surveys received there are Tribes who have systems that would not be eligible under this criterion.

Federally-recognized Tribes with water and wastewater systems are generally regulated by the US EPA and receive assistance through either the BIA or IHS. However, since the passage of Proposition 1 Tribes have been encouraged by these federal agencies to seek state funding to augment federal programs. Occasionally, Tribes have opted to connect to existing non-Tribal systems if their location allows for it and in these cases, agreements are made to allow for the provider to deliver services on Federal trust land. Non federally-recognized Tribes do not own

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land held in trust by the federal government and are not being provided the same assistance as federally-recognized Tribes.

There are some technical assistance and training programs already being offered by the federal Environmental Protection Agency (EPA), California EPA, SWRCB, IHS Sanitation Deficiency Service (SDS) program, and through RCAC and Cal Rural. Such programs are funded to support Tribes already, however in interviews, meetings and in the needs assessments themselves, we have found that not all Tribes are eligible to receive those services because there needs to be a public health issue, there is a system size limit, a compliance requirement barrier or due to Tribal capacity.

In some cases there are initial technical assistance needs to be completed before funding sources can be initiated. Examples of these include the IHS SDS list or the U.S. EPA Region 9 Sanitary Survey Report. The IHS SDS is an inventory of the American Indian water, sewer and solid waste sanitation deficiencies in American Indian homes. The purpose of the US. EPA sanitary survey is to determine if sanitary deficiencies are present in a water system and to verify the system's compliance with the Safe Drinking Water Act (SDWA) regulations. Such deficiencies are defects in a water system's infrastructure, design, operation, maintenance, or management. The most serious sanitary deficiencies identified in water systems are causing, or have the potential to cause introduction of contamination into the water delivered to consumers.

Governance Structure Participation and inclusion in the IRWM Plan Updates

Tribes in some IRWMs do not want to fall under a RWMG IRWM umbrella without Tribal representation in the RWMG. Providing designated space for Tribal participation in IRWMs would change the perception by Tribes about some IRWMs, that there is no one to advocate for them when projects are submitted. There are decades-long issues with Tribes being unrepresented in decision making bodies. The best way to move forward is to encourage and include Tribal representatives at the highest levels of decision-making bodies.

There are examples of successful Tribal participation in governance structures including Tribal processes for representative and alternate representative selection. We discussed these at the SRFA regional meetings to prepare Tribes in participating in their RWMG bodies.

In follow-up interviews and meetings the question related to Tribal involvement in IRWM programs prompted conversations about changes in the IRWM PSP for Proposition 1 for IRWM Grant Solicitation including removal of barriers to Tribes in receiving IRWM funds. The number of recommendations that DWR integrated into this PSP was encouraging. Several continued areas were identified related to Tribes participation in IRWM governance structures, a Tribal Round Table of Regional and/or participation of Tribes in the existing Round Table of Regions, stronger encouragement by local agencies to remove limited waivers of sovereign immunity (verses the removed state requirement from the PSP), and the creation of templates that can be shared across IRWM regions.

Tribal Oversight of the SRFA DAC Program including TAC/TAWG

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From the beginning Tribes have expressed distaste for the program name of “Disadvantaged Communities” (DACs) since “disadvantaged” has a negative connotation and doesn’t reflect the condition of all Tribes or Tribal members. Tribes have asked that we call the Tribal program the Disadvantaged Communities and Tribal Involvement Program, or DACTI program. Adding the word “Tribes,” best captures the unique political status of Tribes, who are not just stakeholders. Tribal governments have responsibilities to their Tribal citizenship, and state and federal agencies have responsibilities to Tribes as acknowledged in the US Constitution, in multiple federal legal decisions, and by Executive Order by the US President and the Governor of California. At the request of Tribal participants we began calling the DACI program, the DACTI program so as not to offend Tribal participants.

SRFA Tribes continue to express agreement that a funding area wide TAC, or TAWG would be the best way to guide the Tribal DACI program. Such a body would both encourage Tribes to participate in the DAC program, and in their own regional IRWMs. It is believed that it would be more useful to share solutions with a wider number of Tribes at the funding area level other than solely participating with Tribes in their own IRWM region. Since a large number of SRFA Tribes have traditional territories that overlap with other IRWMs, and that a larger work group would assist Tribes in learning about what adjacent IRWMs are working on. As of June 2019 there were ten Tribes in the SRFA interested in joining a funding area wide SRFA TAC to support Phase 3 of this DACTI Program, and to ensure that Tribes in the region benefit from the remaining year of the program and receive needed technical assistance, workshops and trainings. SRFA Tribes have asked repeatedly what funding is available to complete Phase 3 of the DACI program and could use some information to assist in planning.

Tribes understood that the SRFA had limited funds for this program, but they hoped that the completion of a Needs Assessment and the creation of a Tribal Advisory Committee (TAC) would occur as the first steps to the program so that Tribes could guide Phase 2 of the program. Mid-way through the Phase 1 of DACI program CIEA was given a stop work order at the exact time that the TAC was ready to launch, and just when the Needs Assessment was ready to be administered. CIEA passed on the message to the waiting Tribes that we were to hold back. Tribes again expressed concern that this would result in SRFA Funds being spent while Tribes were being asked to wait. During a meeting with Burdick and Company, and Cramer Fish Science staff on September 21, 2018 we established that the Tribal Needs Assessment could proceed because Tribes did operate small water systems and that CIEA had intended to work directly with each Tribe and not to administer the survey to individual Tribal members directly. We also confirmed that the wider SRFA DACI team would assist in securing funds to support Technical Assistance for Tribes regardless of this delay. It is still unclear what amount of outside funding will be needed to meet identified Tribal needs. In an attempt to find supplementary funds CIEA outreached to DWR’s policy advisory Anecita Agustinez, these conversations are ongoing.

IV. Recommendations and Next Steps

The following recommendations and next steps are in the order of the above materials with requested trainings listed together.

- We received surveys from fourteen of over forty-SRFA Tribes and recommend that other Tribes be given the opportunity to complete these surveys. Perhaps the development and Tribal oversight by a TAC/TAWG will increase interest in this program
- Tribes identified CIEA as the organization they would prefer to conduct initial follow-up questions after the completion of a Needs Assessment. Half have been completed
- We recommend that follow-up interviews are completed before the end of the first quarter of Phase 3 of the DACI Program. This includes calls with all Tribes who indicated challenges that were an Extreme or Strong concern
- Convene the TAC/TAWG to review this needs assessment, and provide recommendations for selection criteria and distribution of technical assistance support in the DACI Phase 3 workplan. Tribal advisors should be included in determining how remaining Phase 3 Tribal Technical Assistance and Capacity Building funds will be spent
- Once the needs assessment and follow-up interviews are completed a federal or state agency, CA Rural, RCAC or another contractor of the Tribes' choosing could provide phone or onsite evaluations and recommendations for workplan activities. The DACI program could provide in Phase 3 by request from the evaluated Tribe
- Leverage other funding mechanisms through the DACI program
- Recognize that the DACI, or DACTI program, is unique and that it has the potential of filling a service gap that many Tribes have been unable to find support for. Tribes recommend that federally recognized and federally unrecognized Tribes are supported through the DACTI program, and that un-federally recognized Tribes be specifically considered for assistance since other federal options are generally not afforded to them
- In general we should encourage communication between water providers and Tribes they service. Provide contact information for regional water providers so that Tribes can reach out to address needs, potentially develop collaborative projects, and to find out about water quality of the water Tribes are receiving
- Obtain and share with Tribes the results of the needs assessments from water purveyors in each IRWM region. Ask water purveyors if they know which Tribes they serve and when was the last time they met with those Tribes
- For water source resiliency there is a need to Tribes to secure secondary and/or alternative sources of water from different water sources or aquifers
- Where Tribes would like to connect to city or county water or wastewater systems, encourage cities and counties to coordinate with private landowners that are in between Tribal lands and those systems
- Encourage groundwater recharge, including upland meadow restoration and reintroduction of species that sequester water like beaver and hardwood native species of trees, alternative storage solutions, explore overuse and need to protect against water diversions and to institute regional conservation from source to receiving waters

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- Encourage cities and counties, or other water purveyors to redistribute Emergency Response Plans (ERP) and/or Water Conservation Plans to Tribes they serve or are adjacent to
- Encourage Tribes to seek EPA GAP funding to complete an ERP or equivalent
- Encourage Tribes to create a water conservation plans through EPA GAP funding or SWRCB funds
- Identify and distribute options and examples of natural filtration systems and look in IRWM Plans to see if these are eligible for IRWM funding through implementation grants
- For Tribes with limited or no options to restore or identify potable water we recommend convening an interagency innovative solution task force made up of IHS, EPA, BIA, SWRCB, Bureau of Reclamation and other DWR programs to seek innovative new solutions
- Identify a bulk storage tank purchase solution because this need is shared by many Tribes in the SRFRA region. This need is for both potable and non-potable water sources. In some cases Tribes need these tanks to be separate so that fire repression sources are protected.
- For water and waste system needs each should be reviewed with the responding Tribe, discuss what options they previously considered, provide a site visit by a technical service provider with their approval, develop or update workplans and apply for support under IHS, EPA, BIA, SWRCB, IRWM implementation, a DACI pilot, or other programs
- Similarly, for those Tribes that poor pumps, lack of water storage, and/or water pressure is an issue for drinking water or for fire suppression we will need to schedule site visits with appropriate assistance providers to either upgrade their system or hire engineers to redesign them. Where this is a fire suppression issue there may be other funding sources other than IHS, EPA, BIA, SWRCB or IRWM programs, depending on the details of the issue and scope of the project. Interviews with these Tribes is the next step to identify if a site visit is needed or if a project could be submitted for funding.
- Provide printed or digital instructional information and/or schedule regional trainings on natural filtration systems and distribute region wide
- For operations and maintenance needs we can offer training closer to the Tribes, more focused for Tribal needs, hold regional meetings to initiate shared regional operations and maintenance staff solutions
- For those whose water PH levels are eroding their pipes, where there is lead in their distribution lines, or for other serious health risk issues we should contact the water purveyor, or for small Tribal systems contact IHS to see how this project can be elevated in their SDS list, addressed through the SWRCB or consider if the project could be eligible for DAC or IRWM implementation support. The later solution could be an option for Tribes who are unrecognized or whose systems are not eligible for other funding
- Similarly we need to follow-up with all Tribes that said their infrastructure is falling apart to find out information about the specific need, including the scope of upgrades and identify an appropriate funding source
- Discuss systems installed recently by IHS with those who indicated these new systems are not working well. Identify if other installations may have similar issues or if this is an anomaly. Goal is to confirm that future installations for Tribal systems will not have similar issues and that impacted Tribes receive support to correct deficiencies

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- To insure access to water/fire hydrants in emergencies we recommend that Tribal staff and/or leadership are trained as regional fire responders, that these responders have the appropriate fire hydrant wrench(es) and access, and are linked into a network of water tender “tankers” that are stored for use in the local area
- Support installation of emergency storage tanks, generators for water pumps and look into solar powered systems and electrical storage
- Coordinate with IHS, RCAC and Ca Rural for those that need tank inspections
- Provide primers and information about water reuse, recycling, rainwater capture and/or provide trainings, technical assistance or support for a pilot or IRWM implementation project submission
- Provide Tribes with information on how to engage with their regional GSA under the Surface Groundwater Management Act program – contact DWR (Anecita Agustinez) for these materials and distribute
- Identify sources for groundwater data (more will be available through GSAs), ask counties to track old wells because there is lead and toxins going into the water.
- Research or develop a primer on the legal aspects of water related to groundwater rights and changing water rules
- Work with EPA, SWRCB and DWR to complete our list of programs and grants that Tribes could apply for – DWR’s Tribal Policy Advisor and CIEA have started this already, we need to compile our lists and complete this task
- Complete list of Tribally vetted contractors to provide Technical Assistance and confirm with each Tribe to receive assistance which contractors they prefer before scheduling the support
- Coordinate meetings with Tribes interested in sharing a water operator(s) as part of TAC/TAWG meetings or separate

Training Recommendations (Question 19)

For Tribes seeking trainings we recommended that the DACI program provide a list of courses we could offer based on identified regional needs and have Tribes choose from them (*see list from Question 19 below*). Before hiring contractors, or before scheduling technical assistance, trainings or workshops Tribes would like to provide recommendations, directly or whenever possible by consensus through the TAC/TAWG. It is the TAC/TAWGs goal to confirm that the activities of Phase 3 of the DACTI program will truly meet that needs of Tribes and Tribal communities. We would then schedule trainings these near the largest number of interested participants, and provide travel for those further away. To increase Tribal participation we will seek Tribes to host the trainings and coordinate training dates so not to conflict with other mandatory meetings. We can consider providing trainings as webinars when possible, but Tribes indicated there is value to in person conversations where participants can share experiences and identify opportunities to share resources.

The following Trainings, Technical Assistance and Workshops were identified through a needs assessment, follow-up interviews and/or in meetings with Tribes:

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- Schedule water operators' trainings closer to Tribes and coordinate with Tribes ahead of time for potential shared operators especially for small systems, while there are organizations and agencies that can provide this. These staff persons are stretched and as part of capacity-building Tribes would prefer their own operators.
- Provide Tribes with a template letter working with SWRCB and Intertribal Council of Arizona so Tribes can advocate that their free certified water operation training can be applicable in California.
- Hazardous Waste Operation and Emergency Response (HAZWOPER) training, coordinate with Tribes to be sure the training contains the elements respondents are looking for. These can be tailored.
- Program Planning and Management in general and IRWM related, could perhaps invite any who may want to apply to attend Round 1 recipient trainings to see how the process works ahead of time.
- Contract with multiple Engineering and design providers, match with list of Tribal needs and coordinate with existing programs of IHS, EPA, SWRCB, CalRural, RCAC etc. and Tribe to receive support, which could be in the form of training(s) or service.
- Mapping trainings can range from very detailed map creation to how to use existing data/programs. We do need to gather more information and bring courses that were well received to be repeated near those that need this.
- Provide resources to identify what compliance is needed for different types of small water systems. Information may be different for Tribes because of status of recognition, number of individuals they serve, type of system, jurisdiction and what agency oversees their compliance. Provide this in a primer and/or training and offer CEQA, NEPA and hybrid support.
- Provide financial management support on the organizational/Tribal and project levels.
- Provide rate structure training for water systems.
- Grant writing trainings, templates of successful grants for IRWM proposals and in general, and lists of grants that Tribes could apply for. CIEA, DWR, Department of Toxic Substances Control (DTSC), EPA, and SWRCB have each been gathering these lists; we propose combining them and linking these in a web hub. Funding to do this could come from multiple sources and SRFA DACI program can link to that site.
- Provide water quality and fish tissue sampling and testing procedures (coordinate with state agencies such as EPA and programs such as Clean Water Act Section 106, Office of Environmental Health and Hazard Assessment (OEHHA) and the California Department of Public Health – Environmental Health and Hazard Investigations Branch (CDPH-EHIB)
- Include staff time into all proposals for paperwork and reporting.

Recommendations to increase Tribal participation in IRWM programs

- Tribes recommend DACI program names be changed to DACTI to be more inclusive and respectful of the unique political status of California Tribes. Tribes continue to remind us at DACI meetings that Tribes are governments and not stakeholders.
- Tribes feel that RWMGs can increase Tribal participation in IRWM by sending invitations early by email from three weeks to one month at minimum, and through periodic

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follow-up with phone calls to each Tribe to personally ask each contact to come to the meeting.

- Utilize the “SRFA Tribal Contact List” to outreach to Tribes in each IRWM region directly.
- RWMGs can dedicate staff to update their contact lists so that Tribes receive meeting invitations, project solicitations and up to date information that enables them to participate in the IRWM Program.
- We recognize there may be a cost associated therefore through the Roundtable of Regions or other mechanism IRWMs should recommend that future IRWM funding includes support for Tribal engagement funds specifically. Note that in the contact list multiple staff and Tribal council persons are included whenever possible including the Tribal Environmental or Natural Resources Director, Tribal Administrator, Member(s) of council, and Tribal Historic Preservation Officers, or others as identified by the Tribe
- Tribes expressed that to participate in their local IRWM travel stipends or support may be needed for those Tribes with limited resources and had hoped that the DACI program could support this effort while it is operational.
- We recommend that Tribes are included in the decision-making bodies, or RWMGs of their IRWM(s) and that there are seats established for Tribal participation in the RWMG of each SRFA IRWM, and in any project selection committees.
- There should be a clear path to navigate the process for Tribes to participate in IRWMs as active voting members of IRWM RWMGs and IRWM workgroups. In outreach materials each IRWM should say what the membership requirements are.
- Tribes expressed an importance for RWMGs to understand that Tribes have a unique political designation as sovereign governments. Federal, state and local governments have constituencies and responsibilities to protect those interests. Tribes have similar responsibilities with the added challenge of maintaining cultural continuance of their People.
- Tribes must be included in all cases where regional governments are included in IRWM decision-making structures.
- Each RWMG should work with Tribes in their region to develop a system which allows each Tribal decision-making body participant to have an alternate, and establish meetings dates coordinated with existing mandatory scheduled events, such as required quarterly meetings of Tribes with their federal EPA Tribal Project Officers.
- Tribes should be encouraged to participate in all of the IRWMs that overlap Tribal traditional territories, or homelands.
- Each RWMG should link their website to the DWR Water Management Tool so that Tribes can see which IRWMs they should be a part of. For many Tribes their Traditional territories overlap more than one IRWM so interregional funding is important, and as it is now most IRWM regions do not score higher points to interregional projects
- To prepare for Round 2 project submissions in Phase III of the DACI Program we should follow-up with all Tribal proponents who submitted as well as with the RWMGs to see what can be understood about the last funding round.
- Tribes would like a pre-review process or clear checklist so the RWMGs can advise project proponents if they are missing any attachments.
- RWMGs should include language in their IRWM Plan to incentivize funding projects from Tribes, and encourage projects that support cultural beneficial uses, access to water and DACI Needs Assessment Results, California Indian Environmental Alliance, www.cieaweb.org

that Traditional Ecological Knowledge be applied by Tribes. This can be in the scoring criteria for project selection, and could be supported by intentionally involving Tribes as project partners.

- Submit IRWM projects for inclusion in the IRWM Plan and work with RWMGs to confirm steps to update the plans. This is important where IRWM regions require that projects are include in their IRWM Plan before funding them.
- Ask each IRWM region if there were Tribal projects that were submitted by either a Tribe or by another entity partnering with a Tribe. Inform how many Tribal projects were approved in their region during Round 1.
- Contact Tribes who did submit and whose projects were not funded to see if they are interested in resubmitting.
- Need to expedite project submissions to encourage Round 2 Proposition 1 IRWM project submissions for which the PSP may come out as early as December 2019. Before then, in November, Tribes will need updated information about the upcoming process for Round 2 project submission for each IRWM in the SRFA. RWMGs should provide feedback to Tribes who did not receive funding on why their projects were not funded so they can apply in Round 2.
- Identify if Cost Benefit Analysis could be funded through DACI program in Phase 3 to prepare Tribes for a Proposition 1 Round 2 submission
- Project proponents should be required to provide a letter or support from the Tribe(s) listed whenever they state that their project will benefit Tribes. This is especially important when project can receive increased project ranking if benefits Tribes or DACs.
- Tribal projects may straddle IRWMs in adjacent funding areas. There used to be interregional funds available through DWR, however these funds did not provide benefits to Tribes as well as DWR and California Tribes had hoped. This idea should not be discarded.
- Future IRWM rounds should incentivize interregional IRWM collaboration. It would be beneficial for multiple IRWMs within a funding area to collaborate and share resources for overlapping projects. IRWMs could choose to collaborate with neighboring IRWMs to co-fund projects where the project footprint or benefit overlaps with other adjacent IRWMs to result in more broad watershed-wide solution-oriented projects.
- Future IRWM bond authors include support for Tribes in multiple IRWMs since several Tribes indicated they did not have the resources to participate in their IRWM, and when they have two to four to participate in this issue is compounded.

Appendix A Needs by IRWM

American River Basin IRWM SRFA Tribal Needs Assessment

Summary

Appendix A-1

The Sacramento River Funding Area (SRFA) has six Integrated Regional Water Management (IRWM) regions, so we have compiled information and provided comments of Tribes by their respective IRWM region based on physical location and traditional territories indicated by the Tribes themselves. **This appendix, A-1 is for the American River Basin (ARB).**

Q3-Q4. Contacts, Tribal Information, IRWM, Traditional Territory & IRWM

Self-Identification

Spatially, Tribal participation in IRWMs is challenging for a number of reasons related to IRWM Tribes identified that in addition to the Sacramento River Funding Area, they also had Traditional territories in adjacent funding areas

Q5 - Q9. Status and Source of Tribal and/or Community services for drinking and wastewater services / Q16 - 17 Number of Hookups

Drinking Water

For drinking water we were able to confirm that several responses were related to this type of water system specifically through follow-up interviews or through the associated comment field. Most Tribes in the SRFA have well-sourced drinking water.

In the ARB region indicated that they have 1-50 hookups for drinking water, however they did not indicate if their system was operated independently.

Wastewater

Information about wastewater systems was not as clear, because there are less subsequent questions to get more information in this questionnaire. We could get some information regarding the number of wastewater hook-ups, which did not correspond to the same number of water hookups for the same respondent. The ARB respondents skipped this question entirely. For the others we could gather some information by comparing with adjacent responses or through interviews.

Q 13. Seasonal Variability and Security of Water Supply

Both ARB respondents said that there was a decrease in water supply during the summer months. Both of these respondents said their water supply is well water, and one of these also uses instream and reservoir water.

Q10: Emergency Response Plans

In the ARB one respondent indicated that they do have an ERP, or equivalent, but that Tribe did not answer the question about whether or not they operated an independent water system. A second Tribe in the ARB said they did not know if they had an ERP therefore, we recommend

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providing support for this Tribe to find out more. If the result is that they do not have one we recommend that they work with their local city and/or county for the homes that receive services from their local outside water purveyor. We also recommend that they seek EPA GAP funding to complete an ERP or equivalent for their tribal offices and childcare center.

16. Water Conservation Plan

One ARB Tribe indicated that they do not have a water conservation plan and the other indicated that they did not know.

17. Wetlands or Other Natural Filtration Mechanism

Only one (1) Tribe located in the ARB indicated that they had a wetlands filtration or other natural filtration system.

Q18: Challenges

For the following questions the needs assessment asked respondents to indicate their level of concern for each category. If they indicated a “Strong” or “Extreme Concern” for any category we asked that they briefly explain. Most respondents did not include a comment so follow-up interviews were initiated to receive more details for these responses. These are still on-going. Generally, answers that included there was limited or no concern we would not require follow-up. For non-response/skipped answers we did ask during follow-up interviews if they skipped because it was not relevant, they did not know or if the question was unclear and added their comments to the appropriate needs assessment if received.

If the ARB Tribes indicated “Extreme” or “Strong” concern, we recommend that we continue to follow-up with them after this report has been submitted to identify if there is any technical assistance or IRWM implementation projects that can be developed.

a. Drinking Water Supply

Two (2) American River Basin Tribes indicated drinking water was of moderate concern. One of these one (1) overlaps with the MAC and the other with Madera. Neither provided additional information by follow-up interview.

b. Water Quality

The two (2) American River Basin Tribes respondents indicated that water quality was of moderate concern. One of these overlaps with the MAC and the other with Madera. These individuals did express a need for water treatment.

c. Water Pressure

Of the two (2) Tribes in the American River Basin, for one (1) in the MAC overlap, water pressure is of moderate concern and for the one in the Madera it is of limited concern.

d. Treatment Systems

One of the two (2) American River Basin Tribal respondents indicated that their treatment was of limited concern. In their earlier survey responses they indicated they had 1-50 hookups for sewer, that they have a wetlands or other natural filtration mechanism however, they did not answer the question about who provided this service, or if they provided this to their own members.

e. Aging Infrastructure

Both Tribes indicated limited concern. Follow-up is necessary.

f. Fire Suppression Supply & g. Access to Fire Hydrants

We are reporting results of sub-questions f. And g. together since fire suppression supply and access to fire hydrants are related, and the comments often reference both sections.

Two (2) ARB Tribal respondents indicated that fire suppression and access to fire hydrants are a strong concern. Of these the Tribe in the Madera overlap area stated that this is because they have no storage for fire suppression. We recommend following up to identify if the DACI program can provide support or if these Tribes can submit an IRWM implementation project to receive support.

h. Staffing and/or Training

Most Tribes responded to this question and we had robust conversations during meetings with SRFA Tribes. Participants recommended that the SRFA DACI program provide a list of courses that we could offer. Tribes could then indicate which they are interested in and we could schedule the trainings near the largest numbers of interested Tribes. To increase Tribal participation in these trainings, they recommended that we provide support for travel and that we attempt to schedule trainings when other Tribal meetings and trainings are not happening.

One ARB respondent (MAC overlap) Tribe indicated that staffing and training are of strong concern without providing comment and the other ARB (Madera overlap) Tribe indicated moderate concern. Follow-up while populating the list of training to offer through the DACI program will be useful for ARB Tribes.

i. Regulatory Compliance

One (1) American River Basin (MAC overlap) Tribe indicated that regulatory compliance was a strong concern, but follow-up is needed since they did not provide additional information.

j. Water Storage/Operation

This question related to Water Storage and Operation overlaps with water supply, water quality and fire suppression questions above.

Of the two (2) ARB respondents, one (1) in the MAC overlap region indicated that the need for water storage was a strong concern, but did not provide additional information. Water storage

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tanks could be an IRWM implementation project if the respondent can articulate the need to their Round 2 IRWM Implementation project selection committee.

k. Irrigation Water Supply

One (1) American River Basin (MAC overlap) Tribe indicated that irrigation water supply was a strong concern and will need follow-up.

l. Water Reuse/Recycling

One (1) of the American River Basin (MAC overlap) Tribes indicated that water reuse and recycling was strong concern, but did not provide details so a follow-up interview would be a good idea to potentially identify an IRWM implementation project for Round 2 Implementation IRWM project submission.

m. Groundwater Recharge

One (1) of the two (2) American River Basin (MAC overlap) Tribes indicated that groundwater recharge is a strong concern, but did not provide comments so we will need to follow-up.

n. Lack of Data/Information

One ARB Tribe indicated moderate concern and the other indicated limited concern.

o. Other

None to report.

Q19: Technical Assistance and Training Needs

The following questions are related to technical assistance and training needs. Although some training needs were identified in the previous section. In general, SRFA Tribes identified that there are opportunities for training but that the trainings should be brought closer to their location. Respondents also commented that the dates that trainings are offered have been problematic. The DACI program should schedule trainings that do not conflict with other Tribal meetings, or meetings that are mandatory such as quarterly meeting required of Tribal environmental staff and directors with their federal EPA project officers.

a. System Infrastructure

Of the two (2) ARB respondents the Tribe in the MAC overlap indicated that system infrastructure was a strong need but we need to follow-up to identify what this need is.

b. Operation and Maintenance

One (1) ARB (MAC overlap) Tribe indicated strong need and have been contacted for follow-up. The other indicated limited need.

We were able to gather additional information about operation and maintenance needs through the DACI orientation meetings, interviews and regional meetings. Tribes informed us that

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retaining operations and maintenance staff is challenging. In general Tribes with small water systems (1-50 hookups) were interested in coordinating with other Tribes in their area to hire shared operations and maintenance staff or to have a network of Tribal staff in their area to serve as backup.

c. Safety Training

Of the ARB respondents, the Tribe in the MAC overlap indicated a moderate need while the other in the Madera overlap area indicated a limited need.

d. Program Management:

Both ARB respondents indicated a moderate need.

e. Project Planning/Development

Both ARB respondents indicated a moderate need.

f. Engineering/Design

Of the ARB respondents, the Tribe in the MAC overlap area indicated a strong need while the other in the Madera overlap area indicated a moderate need. A follow-up conversation may result in knowing what kind of project the Tribes have in mind to know what engineering or design support is needed.

g. Mapping

Both ARB respondents indicated a moderate need.

h. Regulatory Compliance

Of the ARB respondents, the Tribe in the MAC overlap indicated a moderate need while the other in the Madera overlap area indicated a limited need.

i. Environmental Compliance

Of the two (2) ARB respondents the Tribe in the MAC overlap area indicated that environmental compliance support is a strong need because they do not know if they need to have it for one of their projects. In Phase 3 we will assist in determining this after a quick call to hear about this project coupled with information about the jurisdiction of the project. We also recommend that we assist in identifying a contractor to assist with an estimate for this service.

j. Financial Management

Of the ARB respondents the Tribe in the MAC overlap area indicated there is a moderate need for support in financial management including budgeting and creating rate structures for water systems.

k. Grant Writing/Administration

One of the two (2) ABR Tribes in the Madera overlap area indicated a strong need because of lack of staff and the necessity of grant writing.

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I. WQ Sampling and Testing Procedure

The American River Basin respondents chose that there was moderate and no need

m. Required paperwork and reporting

Both ARB respondents indicated a limited need.

Q20-26: Involvement in local IRWM

One ARB Tribe with Madera overlap stated they are often involved and have a voting member while the other indicated that they are not involved but that they have a regional participant committee member for input and guidance on the plan update.

Q27-28: Prepare for Round 2 IRWM Project Submissions

These questions asked Tribes if they had ever submitted projects to their local IRWM and if these projects were ever funded. Most respondents skipped these questions, answered no, or did not know. To assist Tribes and CIEA will need the status of Round 2 project submission processes for each IRWM in the SRFA.

One ARB Tribe indicated that they did submit a project and it was funded but they did not provide additional information. The other ARB Tribe indicated that they have not submitted a project but that they intend to and follow is needed to find out the status of the submission. Both Tribes have been contacted for follow response.

Q29-32: Shared Project Submissions and Additional Concerns

For questions 29 through 32, CIEA asked Tribes their willingness to submit a proposal and/or share water operators with other Tribes within the region. Many Tribes indicated that they are interested in sharing operators.

One ARB Tribe indicated they needed legal/water rights, water operator/wastewater treatment compliance/ water recycling

CIEA will follow-up with all respondents who were interested in this in order to set up a group or regional discussions for possible agreement to share water operator staff.

This report was completed by the California Indian Environmental Alliance (CIEA) for Burdick and Company. It is being reviewed by SRFA Tribal respondents for accuracy along with their individual needs Assessments. For more information contact Joanne Lee at jojoel.ciea@gmail.com.

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North Sacramento Valley, Upper Sacramento-McCloud, and Upper Pit River IRWM SRFA Tribal Needs Assessment Summary

Appendix A-2

The Sacramento River Funding Area (SRFA) IRWM has six Integrated Regional Water Management (IRWM) regions, so, CIEA has compiled information and provided comments of Tribes by their respective IRWM region based on physical location and traditional territories indicated by the Tribes themselves. Because Tribal Respondents overlapped three IRWMs this **appendix, A-2 is for the North Sacramento Valley (NSV), Upper Sacramento-McCloud (US-MC) and Upper Pit River (UPR) IRWM.**

Q3-Q4. Contacts, Tribal Information, IRWM, Traditional Territory & IRWM

Self-Identification Spatially, Tribal participation in IRWMs is challenging for a number of reasons related to IRWM boundaries. Tribal respondents self-identified that they were in multiple SRFA IRWM regions.

Q5 - Q9. Status and Source of Tribal and/or Community services for drinking and wastewater services / Q16 - 17 Number of Hookups

Drinking water

For drinking water we were able to confirm that several responses were related to this type of water system specifically through follow-up interviews or through the associated comment field. Most Tribes in the SRFA have well-sourced drinking water. One North Sacramento Valley (NSV) Tribe respondent said that they have two wells which are sourced from the same aquifer; of these one is for potable drinking water while the other supplies water for irrigation.

We received three (4) responses from NSV Tribes indicating that they did not have independent services for their Tribe. Of these, one Tribe in the Upper Sacramento-McCloud (US-M) and Upper Pit River (UPR) IRWMs overlap area and they stated that they have from 1001-5000 hookups for water supply, and that they receive their drinking water from City of Shasta Lake public water system and “the city has been very supportive,” even working on a joint project. The second one in the Upper Pit River overlap said they are without their own independent services in the NSV stated they receive their services from the City of Redding and did not include information about the number of hookups. In interviews, the third respondent on the Westside overlap that indicated they do not operate their own independent services, stated that they do not have any drinking water source, because the water they do have is not potable and it kills plants if used for irrigation. They indicated that there is a drinking water source uphill but the engineers from Indian Health Services (IHS) determined that providing water to this community was not cost effective. Currently, they purchase and transport in pre-treated water. For this Tribe, many of their subsequent responses were related to this lack of water source (key need) and how it is related to community members choosing to move away because there is no opportunity for economic development without a sustainable water source. This Tribal

community is in dire need of an innovative solution if they are to grow. The fourth respondent who indicated no provided an additional comment, “NA, no reservation.” Two of the NSV respondents indicated that they operated their own independent water systems and for both the number of hookups is in the 15-50 range.

Wastewater

Information about wastewater systems was not as clear, because there are less subsequent questions to get more information in this questionnaire. We could get some information regarding the number of wastewater hook-ups, which did not correspond to the same number of water hookups for the same respondent. From the responses from the Tribes, we could gather some information by comparing with adjacent responses or through interviews.

In the NSV, one Tribe confirmed they operate their own water treatment facilities. Another NSV Tribe stated they do have a “water treatment plan” and CIEA recommends a follow-up call to identify if they might have a related IRWM project for the NSV Round 2 IRWM Implementation Project submissions, since they did not indicate they have a waste system in place.

Q 13. Seasonal Variability and Security of Water Supply

One NSV Tribe with overlapping territories in the Upper Sacramento-McCloud and Upper Pit River indicated yes but stated “they did not know.” Two NSV Tribes said there was no seasonal variability for their system. One Tribe stated “no issue because of proximity to Sacramento River,” while the other Tribe with a Westside Overlap stated “didn’t drop much in water total.” Two NSV Tribes indicated they did not know with one of these Tribes being in the Upper Pit River overlap area. The other NSV Tribe said that there was an issue because groundwater levels have been dropping on their northern border; which is reflected in their creek nearby since it has been drying up where it hadn’t before. They believe this is from increased farming in the area. One NSV respondent skipped the question.

In follow-up questions, we asked for more details about the security of Tribal water systems. CIEA asked Tribes who indicated that they received water from multiple water sources if those sources were from the same or different aquifers. Based on the answers provided, many Tribes’ sources of water were from the same aquifer. Diversity of independent water sources increases the security of safe potable drinking water. Therefore, the need to secure a secondary or alternative source of water was almost universal. One NSV Tribe stated that they did not need a secondary source of water. The responding NSV Tribe is currently drawing drinking water from wells, reservoir, and instream sources. They are confident that as long as the Sacramento River’s water flow is protected from over-drafting and diversions, so that the water table is intact, they are not in need of additional water sources.

Q10: Emergency Response Plans

Question 10 asked if Tribes had an Emergency Response Plan (ERP) or if they receive services from a community provider that has one. Grouped responses were as follows:

In the NSV only two (2) of the six (6) Tribal respondents has an ERP. Neither of these respondents operate their own water system. One of these is connected to an outside purveyor and the other does not have potable water. Three (3) respondents said they do not have an ERP and of these both operate their own independent water system. Of these, one has started to create this plan and the other is interested if they can identify funding. The sixth does not know if they have an ERP and they get their water from the City of Shasta Lake so the City might be able to share any ERP's that are in place.

Q16. Water Conservation Plan

In the NSV only two (2) of the six (6) Tribal respondents have a water conservation plan with their counties, with one of the Tribal respondents, who said yes, being in the Westside overlap. Three respondents stated they did not know if they had a water conservation plan with one respondent being in the Upper Sacramento-McCloud and Upper Pit River overlap, the other in the Upper Pit River overlap, and one in the NSV only. One respondent skipped the question.

Q17. Wetlands or Other Natural Filtration Mechanism

In the NSV only one (1) of the six (6) Tribal respondents said yes their water system have a wetlands filtration system or other natural filtration mechanism with this Tribal respondent in the Upper Pit River overlap. Two Tribal respondents indicated no, with one of the respondents being in the Westside overlap. Two respondents indicated they did not know with one of the Tribal respondents in Upper Sacramento-McCloud and Upper Pit River overlaps. One respondent skipped the question.

Q18: Challenges

For the following questions the needs assessment asked respondents to indicate their level of concern for each category. If they indicated a "Strong" or "Extreme Concern" for any category we asked that they briefly explain. Most respondents did not include a comment so follow-up interviews were initiated to receive more details for these responses. These are still on-going. Generally, answers that included there was limited or no concern we would not require follow-up. For non-response/skipped answers we did ask during follow-up interviews if they skipped because it was not relevant, they did not know or if the question was unclear and added their comments to the appropriate needs assessment if received.

For NSV Tribes who indicated "Extreme" or "Strong" concern, we recommend that we continue to follow-up with them after this report has been submitted to identify if there is any technical assistance or IRWM implementation project that can be developed.

a. **Drinking Water Supply:** no supplementary information

b. Water Quality

The same NSV (Westside overlap) Tribe that indicated an extreme concern for drinking water in question 17, subsection a., also indicated that water quality was an extreme concern during their follow-up interview. They stated that their water contains multiple toxins and the source

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water is so bad that it will kill plants. This should be a priority project. One (1) NSV Tribe indicated that water quality was of moderate concern but did not provide comments. Three (3) NSV Tribes (including the Upper Pit River overlap area) indicated they had no concern, however of these one (1) indicated that they do not sample their water which is used for agriculture at this time and that they are not sure if the fish the Tribal members catch have been exposed to toxic algal blooms. We would like to follow-up with these Tribes to assist. One NSV respondent with Upper Sacramento-McCloud and Upper Pit River overlap skipped the question.

c. Water Pressure

One (1) NSV Tribe indicated that water pressure was of moderate concern but did not provide additional comments. Two (2) NSV Tribes indicated water pressure was of limited concern. Of these respondents, the Tribe in the Westside overlap area stated that they were receiving water through a gravity feed system from storage to residences. The other two (2) NSV Tribes indicated that this was no concern and did not provide additional comments. One NSV respondent skipped the question.

d. Treatment Systems

One (1) respondent from the NSV (Westside overlap) area indicated that their treatment system is an extreme concern, and during the follow-up interview the Tribe indicated that they do not have a wastewater treatment system because the operations and maintenance is unattainable. Another NSV Tribe indicated strong concern as they are worried about their ability for future expansion. It would be worth following up with these respondents to see if share regional operations and maintenance staff would be helpful. One NSV Tribe with Upper Sacramento-McCloud and Upper Pit River overlaps indicated moderate need but did not provide additional comments. Two NSV Tribes indicated no concern with one respondent with Upper Pit overlap. One NSV respondent skipped the question.

e. Aging Infrastructure

One (1) NSV Tribe with Westside overlap indicated aging infrastructure was strong concern. They stated that they have infrastructure from the 1970s that is falling apart and will need to be replaced instead of repaired because the parts are just too old and that they are working with a sister Tribe to identify resources to replace the infrastructure. Of the two (2) NSV Tribes who indicated this was moderate concern, one (1) Tribe indicated the entire reservation has aging infrastructure. One (1) NSV Tribe indicated limited concern about aging infrastructure since their system has been there since 1994. Their tank sometimes has some corrosion, they have a cleaning and inspection scheduled in November 2019. One NSV Tribe with Upper Pit River overlap indicated no concern. One NSV Tribe skipped the question.

f. Fire Suppression Supply & g. Access to Fire Hydrants

We are reporting results of sub-questions f. And g. together since fire suppression supply and access to fire hydrants are related, and the comments often reference both sections.

One of the NSV Tribal respondents was not asked questions related fire suppression and access to fire hydrants because they had completed the Mountain Counties Tribal survey before these questions had been added. We have contacted this Tribe to obtain this information and are waiting for a response.

One (1) NSV Tribal respondents in the Westside overlap area; a region that has experienced intense fires within the last two years, indicated strong need. The NSV Tribe with traditional territory in the Westside overlap area is the NSV Tribe that is without a potable water source. They indicated that they need a 50,000-gallon tank for fire suppression to meet the increased danger of fires in the region and we should definitely seek funding to provide support for this community.

The NSV Tribe who is also in the Upper Sacramento-McCloud and Upper Pit River regions indicated that fire is a strong concern, but that fire hydrants were of moderate concern and did not provide additional comments to their responses. The remaining three (3) NSV Tribes responded that this was of moderate to no concern however, of these of these one (1) Tribe said they have a diesel back up pump for fire suppression should the electricity go out.

h. Staffing and/or Training

One NSV Tribe indicated a strong need for staffing and training, particularly for operations and maintenance. They indicated they can receive training and certification for water operators free through the Intertribal Council of Arizona, however, the California State Water Resources Control Board (SWRCB) does not accept this certification for public water systems that they regulate. Two (2) NSV Tribes stated that this was of moderate concern, the one in the Westside overlap area stated that they have staff that are certified to be a water operator, however they do not have a system to run. One (1) NSV Tribe indicated that staffing and training was of limited concern, this one (1) said that technology is always changing. One (1) NSV Tribe with Upper Pit River overlap indicated no concern. One (1) NSV Tribe skipped the question.

i. Regulatory Compliance

One (1) NSV (Westside overlap) Tribe indicated strong concern and follow-up is needed. A second NSV Tribe indicated moderate concern about their regulatory compliance and has a date scheduled for the Bureau of Indian Affairs (BIA) to complete a site visit in order to verify they are in compliance and that their sampling is up to date. Two (2) NSV Tribes indicated limited concern with one stating that “domestic has not been out of compliance but agriculture side could change;” the other Tribe who indicated limited concern is in Upper Sacramento-McCloud and Upper Pit River overlaps but the respondent did not provide additional comments. One NSV Tribe with Upper Pit River overlaps indicated no concern. One NSV Tribe skipped the question.

j. Water Storage/Operation

This question related to Water Storage and Operation overlaps with water supply, water quality and fire suppression questions above.

Two (2) NSV Tribes indicated that it was strong concern. Of these, The Tribe in the NSV (Westside overlap) stated that they currently have a 10,000-gallon tank, but that it is not sufficient and they need an additional 50,000 gallon tank. The other one with Upper Sacramento-McCloud & Upper Pit River overlaps did not provide additional information and follow-up is needed. One (1) of the two (2) NSV Tribes who indicated that water storage and operation was of limited concern, stated that they have back-up but it maybe old and that they need support for upcoming expansion. One NSV Tribe with Upper Pit River overlaps indicated no concern. One NSV Tribe skipped the question.

k. Irrigation Water Supply

Four (4) NSV Tribes indicated irrigation was a moderate concern, of these one commented that there is a need to review irrigation as a big picture, to consider fee lands and how curtailment by the city or county of Sacramento, or the state of California could limit groundwater during drought. The second Tribe in the NSV (Westside overlap) stated their water “is contaminated for irrigation, too expensive to try to clean up, and that the structure is too old to use in its current state.” The third NSV tribe stated “during fire, groundwater concern because they have two big wells, 1 is for the casino, domestic, fire, and irrigation and the 2 one is 100% adequate for the golf course.” The last NSV Tribe with Upper Sacramento-McCloud and Upper Pit River overlaps did not provide additional comments. One NSV Tribe with Upper Pit River overlap indicated no concern. One NSV Tribe skipped the question.

l. Water Reuse/Recycling

Of the four (4) NSV Tribes who indicated that water reuse and recycling was of moderate concern one (1) of these Tribes does use reclaimed water but it is not enough for their irrigation uses; they send to a neighboring hunting club. The Tribe in the NSV (Westside overlap) area stated their structures are too old for irrigation, that they have too much waste to cleanup and that the system is too expensive to clean. The other two respondents, one in the Upper Sacramento-McCloud & Upper Pit River overlaps did not provide additional comments. One (1) of the NSV Tribes indicated that water reuse and recycling was of limited concern, and stated that they did do some water recycling, wastewater treatment for landscaping although it was minimal. One NSV Tribe with Upper Pit River overlap indicated no concern.

m. Groundwater Recharge

One NSV Tribe indicated moderate concern but did not provide additional comments. Of the three (3) NSV Tribes who indicated recharge was of limited concern, one Tribe stated that farm areas around them do pull from groundwater. The second respondent, in the Westside overlap stated they are close to the “top of the watershed” so there is not much competition over water drafting. The last respondent, in the Upper Sacramento-McCloud & Upper Pit River overlaps did not provide additional comments. Of the two (2) NSV Tribes who indicated recharge was of no

concern, one (1) stated that they need information on their regional Surface Groundwater Management Act GSA. The Tribe in the Upper Pit River overlap did not provide further comments.

n. Lack of Data/Information

Two (2) respondents in NSV indicated the lack of data was strong concern, of these one (1) needed more funding to collect data and wanted information on how the groundwater is dropping. The other Tribe in the NSV (Westside overlap) stated they do not have a drinking water system and they simply do not know if there are services for drinking water available or how to find services for drinking water because of the lack of data information. Two NSV Tribes indicated limited concern, with one Tribe being in the Upper Sacramento-McCloud & Upper Pit River overlaps. One NSV Tribe with Upper pit River overlap indicated no concern. One NSV Tribe skipped the question.

o. Other

Out of the fourteen (14) respondent Tribes, one (1) NSV Tribe included a comment in the other category that they would like information about legal aspects of water related to groundwater rights and changing water rules.

Q19: Technical Assistance and Training Needs

The following questions are related to technical assistance and training needs. Although some training needs were identified in the previous section. In general, SRFA Tribes identified that there are opportunities for training but that the trainings should be brought closer to their location. Respondents also commented that the dates that trainings are offered have been problematic. The DACI program should schedule trainings that do not conflict with other Tribal meetings, or meetings that are mandatory such as quarterly meeting required of Tribal environmental staff and directors with their federal EPA project officers.

a. System Infrastructure

One (1) NSV (Upper Sacramento-McCloud & Upper Pit River overlap) Tribe indicated strong need with no additional comments, requiring a follow-up interview. Of the four (4) Tribes in the NSV who indicated that there was limited need, the Westside overlap Tribe indicated that there was a need for infrastructure because they have an operator but it is not through the Tribe. The other three, with one in the Upper Pit River Overlap, did not provide additional comments. One NSV Tribe skipped the question.

b. Operation and Maintenance

One (1) Tribe in the NSV (Westside overlap) indicated extreme need because there is no economic development in the area and there are no funds for Operation and Maintenance. They are serviced only through federal grants or BIA self-determination. The current IHS provider is of “little to no help because they have one person servicing most of California.” One (1) NSV

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(Upper Sacramento-McCloud & Upper Pit River overlap) Tribe indicated maintenance was a strong need but did not provide additional comments. Three NSV Tribes, with one in the Upper Pit River, indicated limited need. One NSV Tribe skipped the question.

From surveys NSV Tribes in general indicated that they have their own operations and maintenance staff. Of these one (1) operates and maintains their own wastewater systems with some support from Rural Community Assistance Corporation (RCAC).

For those who receive water from non-Tribal providers four (4) Tribes said they would be interested in forming a partnership with these providers for projects to improve services. In NSV two (2) respondents said yes, two (2) said no, and three (3) skipped the question. Of note, one (1) of the yes respondents is in the Upper Pit River overlap area. One (1) of the NSV respondents stated that there was no close provider to partner with.

c. Safety Training

One (1) NSV with Upper Sacramento-McCloud & Upper Pit River overlap area indicated strong need but did not provide additional information and will need follow-up. One (1) NSV Tribe in the Westside overlap area indicated moderate concern. They stated that they have a certified member on staff that can conduct trainings and be the operator, but that they do not have a system. Three NSV Tribes, one with Upper Pit River overlap, indicated limited need with no additional comments. One NSV Tribe skipped the question.

d. Program Management

One (1) NSV (Upper Sacramento-McCloud & Upper Pit River overlap) Tribe indicated that program management training is a strong need and we will need to follow-up to see if the DACI program can support this need. Three (3) NSV Tribes indicated limited need. The one in the Westside overlap stated that they support their program through by EPA 106 and 319 funds. The second Tribe stated they also have difficulty retaining qualified staff. The last Tribe in the Upper Pit River overlap did not provide additional comments. One NSV Tribe indicated no need. One NSV Tribe skipped the question.

e. Project Planning/Development

Of the NSV Tribes, the one (1) in the Upper Sacramento-McCloud & Upper Pit River overlap area indicated that this support was strong need. The NSV Tribe in the Westside area indicated that this support was a moderate need, that they are currently working with IHS on design and infrastructure and that they put in a proposal to IHS fifteen years ago but they do not know why it was never completed. Three (3) NSV Tribes, with one in the Upper Pit River overlap, indicated that there are limited needs for project planning support and of these stated they work with California Rural Water Association and are happy with their regions Cal Rural support team. One (1) NSV Tribe skipped the question.

f. Engineering/Design

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In the NSV the respondent in the Upper Sacramento-McCloud & Upper Pit River overlap areas indicated strong for engineering and design and will need follow-up support because they did not provide additional comments. The Tribe in the Westside overlap area indicated that this is a moderate need again stating that they are working with IHS on design and infrastructure, but could use support in getting their IHS project elevated and they wonder if the issue is that IHS deemed their project to not be cost effective. Of the three (3) NSV Tribes, one with Upper Sacramento-McCloud & Upper pit River overlaps, one of them indicated that engineering is a limited need, one (1) stated they use IHS, RCAC, and other consultants. One (1) NSV respondent skipped the question.

g. Mapping

One (1) NSV (Upper Sacramento-McCloud Upper Pit River overlap) Tribe indicated that mapping was a strong need and we need to follow-up to identify what mapping needs they have. Two (2) NSV Tribes indicated this was a moderate need but did not provide additional comments. Two (2) NSV Tribes indicated no need but the one in the Westside overlap stated they do not complete mapping “in house” and the other indicated they use Google pro in house. One NSV Tribe with Upper Pit River overlap indicated limited need.

h. Regulatory Compliance

Of the NSV Respondents one (1) in the Upper Sacramento-McCloud & Upper Pit River overlap areas indicated that regulatory compliance support was a strong need, which will require follow-up since they provided no comments. The Respondent in the NSV in the Westside overlap areas indicated no need but they stated they could use some support since they used to be in compliance as a federal system but sampling found E. coli in their system and it would have been too expensive to fix so they no longer have drinking water. Two (2) NSV Tribes indicated moderate need but did not provide additional comment. One (1) NSV Tribe with Upper Pit River overlap indicated limited need but did not provide additional comments. One (1) NSV Tribe indicated no need.

i. Environmental Compliance (NEPA/CEQA)

Of the four (4) Tribes in the NSV, with one in the Upper Sacramento-McCloud & Upper Pit River overlaps, that indicated this is a moderate need, the Tribe in the Westside overlap area stated that they are working on getting a new NEPA document for a project now. Another NSV Tribe stated they use consultants for environmental work from a consultant out of Sacramento. Two NSV Tribes with one in the Upper Pit River overlap indicated limited needs but did not provide additional comments.

j. Financial Management

Five (5) NSV Tribes indicated limited needs with the Tribe in the Westside overlap stated no funds to run system and that it cost \$28 a month for sanitation connection per hook-up. One NSV Tribe with Upper Sacramento-McCloud & Upper Pit River overlaps skipped the question.

k. Grant Writing/Administration

One (1) NSV Tribe with Upper Sacramento-McCloud & Upper Pit River overlap indicated that grant writing and/or administrative support is an extreme need but did not provide additional comments. Two (2) others, with one in the Westside overlap, indicated this is a moderate need with the other respondents stated need money for planning/templates for successful grant applications. Three (3) NSV Tribes, with one in the Upper Pit River overlap, indicated limited need and did not provide additional comments.

l. WQ Sampling and Testing Procedure

Of the NSV Tribes one (1) respondent in the Upper Sacramento-McCloud Upper Pit River overlap area indicated that there is a moderate need for Water Quality Sampling and Testing Procedure Trainings but did not provide additional comments. Of the five (5) Tribes in the NSV that indicated that this is of limited need, one (1) Tribe with Westside overlap said that is because they have a water quality monitoring program through US EPA Clean Water Act Section 106 funding. This program focuses on characterizing all (surface and groundwater) water quality on Tribal lands.

m.Required paperwork and reporting

Of the NSV Tribes four (4) indicated limited concern with one stating they switched to LACO for environmental report for casino expansion. Another with Westside overlap indicated they have a data collection who does a lot of the paperwork. Two (2) NSV Tribe with one Upper Sacramento-McCloud & Upper Pit River overlaps skipped the questions.

Q20-26: Involvement in local IRWM

Four (4) NSV Tribes indicated that they did advised their local IRWMs in some shape or form and two (2) of those NSV Tribes stated they were adequately informed about their IRWMs. Four (4) NSV Tribes indicated they had rarely to no involvement and that IRWMs did not engage in Tribal inclusion efforts.

In one case, a NSV Tribe was discouraged from participating in the Westside IRWM, and told to work with an adjacent IRWM instead because that is where the Tribe is physically/located at this time.

Q27-28: Prepare for Round 2 IRWM Project Submissions

These questions asked Tribes if they had ever submitted projects to their local IRWM and if these projects were ever funded. Most respondents skipped these questions, answered no, or did not know. Only two (2) respondents indicated that they have a project ready to submit. The other four (4) NSV Tribes indicated they did not have a project ready to submit.

Q29-32: Shared Project Submissions/Additional Concerns

For questions 29 through 32, CIEA asked Tribes their willingness to submit a proposal and/or share water operators with other Tribes within the region. Many Tribes indicated that they are interested in sharing operators and resources.

CIEA will follow-up with all respondents who were interested in this in order to set up a group or regional meeting to discuss a possible agreement to share water operator staff.

This report was completed by the California Indian Environmental Alliance (CIEA) for Burdick and Company. It is being reviewed by SRFA Tribal respondents for accuracy along with their individual needs Assessments. For more information contact Joanne Lee at jojoel.ciea@gmail.com.

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Westside IRWM SRFA Tribal Needs Assessment Summary

Appendix A-3

The Sacramento River Funding Area (SRFA) has six Integrated Regional Water Management (IRWM) regions, so we have compiled information and provided comments of Tribes by their respective IRWM region based on physical location and traditional territories indicated by the Tribes themselves. **This appendix, A-3 is for the Westside.**

Q3-Q4. Contacts, Tribal Information, IRWM, Traditional Territory & IRWM

Self-Identification

Spatially, Tribal participation in IRWMs is challenging for a number of reasons related to IRWM Tribes identified that in addition to the Sacramento River Funding Area, they also had Traditional territories in adjacent funding areas

Q5 - Q9. Status and Source of Tribal and/or Community services for drinking and wastewater services / Q16 - 17 Number of Hookups

Drinking Water

Of the Four (4) Westside respondents that said that they operate their own independent drinking water services only one is drawing from just their own source. The ranges for water hookups for these respondents were 16-50, 51-100, and 5 hookups for irrigation only. The other Westside respondents stated that their water service is linked into the Callayomi Water District, County of Lake, the Kelseyville Finley, or the Special Districts sewer systems. In interviews one of the Westside Tribes who operated their own drinking water services indicated that they provide drinking water treatment and supply through thirty-eight (38) connections on the Rancheria, and that half of those that receive this service are non-Tribal Lake County residents who are eligible as DACs. Their system is EPA GAP and Tribally funded.

Wastewater

From follow-up interviews two Westside Tribes had septic systems in place. One of these respondents only had three (3) septic lines. The second had thirty-eight (38) septic lines on their Rancheria and each home takes care of their own wastewater system although the Tribe has been interested in joining the County of Lake wastewater system for the last fifteen years, but that the system would have to access land held privately by one landowner and the county has not taken imminent domain or worked out an agreement with the landowner. Half of the residents are non-Tribal residents who are eligible as DAC. A third respondent in the Westside region did not indicate the number of hook-ups but did indicate that the County of Lake provides their wastewater treatment. The fourth respondent said they have 51-100 hook-ups for sewer but from the way the questions were arranged it was unclear if the Callayomi Water District provides wastewater system support to the Tribe or if that answer was connected solely to the drinking water system.

Q 13. Seasonal Variability and Security of Water Supply

In the Westside two (2) respondents said they did not know if there was seasonal variability in their system and the fourth said yes they do see a decrease. For the Tribes that do see variability, in their interview they said that the creek volume is less in summer, and since they do not want to stress their wells residents are allowed less water in summer as a precaution. Their wells have not been tested but they can tell that the rate of production from their wells decrease in the summer. Their aquifer is recharged by creek water, which has a lower flow in the summer.

The Tribe in Westside believes that they have secondary sources because there are three (3) wells servicing their reservation which are likely drawing from multiple aquifers.

Of note in the Westside, there were originally three (3) respondents that stated they did not need a secondary source of water; however, during follow-up interviews one (1) of the of the respondents amended their response because there are automotive repair shops and other industries that are adjacent to one of their wells and these shops and industries are not inspected regularly by the city or county. Because of the lack of inspection and protective provisions they are concerned that their source of drinking water is vulnerable to pollution.

Q10: Emergency Response Plans

In the Westside we received four (4) responses. Three (3) Westside Tribes do have an ERP and one respondent said theirs was part of the wider County plan. The second is in the middle of updating their plan with EPA GAP funding. The third has a Hazard Mitigation Plan and Emergency Operations Plan for their facilities and also indicated that in case of fire their facilities have a back-up generator .so community members could move or be moved to that location in emergency if their homes could be shut off during an emergency. This Tribe did indicate that they still need support in this area, and that there is still lots of work to be done. For the respondent that did not respond to this question we recommend following up to encourage them to develop a plan if they do not have one, especially since they indicated that they have their own independent system.

16. Water Conservation Plan

Two (2) Westside Tribes said their water purveyor had a water conservation plan and of these one (1) provided their own water to Tribal members; the other receives water from Callayomi Water District. Another Westside respondent said they did not know if they have a water plan.

17. Wetlands or Other Natural Filtration Mechanism

Four (4) of the Westside respondents indicated that they did not have a natural filtration system in place and of these two (2) were interested in doing this naturally through in-ground natural filtration. One (1) of these noted that the “filtering foliage and vegetation around creeks is gone.” One (1) of these was not interested in setting up such a system.

Q18: Challenges

For the following questions the needs assessment asked respondents to indicate their level of concern for each category. If they indicated a “Strong” or “Extreme Concern” for any category DACI Needs Assessment Results, California Indian Environmental Alliance, www.cieaweb.org

we asked that they briefly explain. Most respondents did not include a comment so follow-up interviews were initiated to receive more details for these responses. These are still on-going. Generally, answers that included there was limited or no concern we would not require follow-up. For non-response/skipped answers we did ask during follow-up interviews if they skipped because it was not relevant, they did not know or if the question was unclear and added their comments to the appropriate needs assessment if received.

There was one (1) Westside respondent that skipped this set of questions but said they would be interested in providing responses during an interview, we completed half of their interview and will complete it to identify technical assistance and implementation project development support needs.

a. Drinking Water Supply

Each Westside Tribe who answered this question indicated a different level of concern choosing Extreme, Moderate, or Limited Concern. The Tribe who indicated that this was a moderate concern stated they use well water and would like more storage and treatment. One Westside Tribes also in the NCRP overlap area, provided further information about a project that could be developed into an IRWM implementation project. This project would be to change their Tribal water system setup. Currently the system creates stagnant water that results in the need for retreatment. They indicated that support is needed to fix this problem. We are trying to reach the Tribe who indicated it was an extreme concern to gather more information about their concerns and needs.

b. Water Quality

One (1) Westside (NCRP & SFBA overlap) Tribe indicated that water quality was an extreme concern. Two (2) Tribes in the Westside IRWM indicated moderate concern. The Tribe in the Westside (NCRP overlap) stated they use well water and would like more storage and treatment.

c. Water Pressure

The responding Tribes in the Westside indicated that water pressure was a strong concern. Of these the Tribe in the NCRP overlap area indicated that this was because they do not have the water pressure to put in fire hydrants, sprinklers or fire suppression in general. We intend to interview the second of these because they did not provide additional information and there may be some support the DACI program can provide. Another Tribe in the Westside indicated that water pressure was of limited concern and provided information that the county has had everyone install water pressure valves.

d. Treatment Systems

One (1) Tribe in the Westside (NCRP) overlap area stated that their well water is a concern and they would like more storage and treatment. Two (2) additional Westside Tribes indicated that their treatment system was of moderate concern. Of these one (1) of the Tribes is working on

raising the PH levels of their drinking water because it is causing lead in their distribution line and drinking water. Their water system has been on the Indian Health Services' (IHS) Sanitation Deficiency System (SDS) list for fifteen (15) years. In addition, the preschool on the reservation is on a county water system and the Tribe has detected lead in the water. Perhaps the DACI program can provide some Technical assistance to this Tribe to get their need fully evaluated so that IHS can address this deficiency.

e. Aging Infrastructure

One (1) Westside (NCRP & SFBA overlap) Tribe indicated strong concern with no additional comments so follow-up is recommended during the first quarter of phase 3 of the DACI Program. One (1) of the three (3) Westside Tribes who indicated aging infrastructure was of limited concern, stated that their water was not to be used for drinking water. For this Tribe it is of moderate concern because IHS gave them support, however the system put in place does not work well. In the first quarter of Phase 3 we intend to talk with IHS and the Tribe about how the system can be improved. The Westside (NCRP overlap) Tribe indicated limited concern that they are aware of their aging infrastructure and try to plan accordingly but it is not a concern at the moment. Another Westside (NCRP overlap) Tribe stated limited concern but the modular home would like their systems reviewed. Cal Rural or another service provider may be able to provide support for a systems review.

f. Fire Suppression Supply & g. Access to Fire Hydrants

We are reporting results of sub-questions f. And g. together since fire suppression supply and access to fire hydrants are related, and the comments often reference both sections. There were three (3) Westside Tribal respondents who do not overlap with the NSV region. Of these the Westside Tribe in the NCRP & SFBA overlap area indicated that fire was an extreme concern but did not provide more information. We therefore are attempting to follow-up to identify if their needs can be met in part through the DACI program or if they can apply for an IRWM implementation project. The second Westside Tribe that is not in a NSV overlap area, also has traditional territory in the NCRP overlap area. They indicated that their needs related to fires was of moderate concern, however they do need another storage tank for fire suppression because during the last fire residents on their reservation depleted their storage tank ahead of the fire department arriving to pump from their current tank. If they had a non-potable source that was not attached to the homes, it would provide a dedicated fire suppression water source. The third Westside Tribe does not overlap with another region and according to PG&E their area is of the highest fire hazard area. They indicated a strong need for additional storage for fire suppression especially since their fire hydrants do not have the pressure needed, and that these are linked to county so water hydrants are locked, which means that Tribe cannot turn them on in an emergency. We recommend a meeting with the county and potentially dedicated persons on site to be part of local community fire team with access to these hydrants.

h. Staffing and/or Training

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Two (2) Westside Tribes indicated that staffing support was strong concern. Of these one (1) Westside (NCRP overlap) Tribe indicated that staff familiar with housing and environmental program are needed but that they do not have the funds to hire them. The other Westside Tribe indicated that staff and staff training was of moderate concern since they have been getting RCAC to fill the gaps although they also said that all training is necessary and that funding is needed. A third Westside (NCRP overlap) Tribe had indicated staffing was a limited concern but would like to have another operator on staff.

I. Regulatory Compliance

One (1) Westside (NCRP overlap) Tribe indicated that regulatory compliance was a strong concern and that they could use some support in identifying what compliance is required for their system. The third Westside Tribe indicated this area was of limited concern and that they currently work close with RCAC. One (1) Westside Tribe in the (NCRP overlap) indicated they have no regulatory compliance needs, but only because the water they pump is not potable so samples are not required.

j. Water Storage/Operation

Two (2) Westside Tribes indicated water storage was a strong concern. Of the two (2), one (1) Tribe stated another tank for fire was a need. The second which is in the NCRP & SFBA overlap areas did not provide additional comments, and will need follow-up. One (1) Westside Tribe indicated this was of moderate concern because they are getting a new tank within the year.

k. Irrigation Water Supply

Two (2) Westside Tribes indicated moderate concern, one Westside (NCRP overlap) provided additional comments to come and the Westside (NCRP & SFBA overlap) Tribe did not provide additional information. One (1) Westside Tribe indicated limited concern with no additional comments. One (1) Westside (NCRP overlap) Tribe indicated no concern with no additional comments.

l. Water Reuse/Recycling

Two (2) Westside Tribes indicated that water reuse and recycling was of moderate concern, of the two one (1) stated that they were interested in grey water information. One (1) Westside (NCRP overlap) Tribe indicated this topic was of limited concern however, they were still interested in receiving information on what options are available for water reuse or recycling; perhaps in the form of a primer.

m. Groundwater Recharge

One (1) Westside Tribe indicated that groundwater recharge is a strong concern which they attributed to agriculture drafting and low recharge in the basin, which is a moderate priority basin per the GSA program thresholds. One (1) respondent in the Westside (NCRP overlap) indicated recharge is of no concern and provided additional information about what they know: “we have junior level data loggers every hour for the Rancheria and every half hour for casino in

all our wells. The recharge rate is stable so far.” One (1) Westside (NCRP overlap) Tribe indicated no concern so far, although they are concerned about the rise in vineyards.

n. Lack of Data/Information

One (1) Westside Tribe indicated that the lack of data is a strong concern and that they need the county to track old wells because those lead to toxins and debris going into the water. Impacts on aquifer is concerning because of chemicals near the well. Of the two (2) Westside Tribes who indicated this was of moderate concern, the Westside and NCRP overlap Tribe stated they need more information on the kinds of data out there to help with decision-making, what information is available, and that they would like training on how to run a water system.

Q19: Technical Assistance and Training Needs

The following questions are related to technical assistance and training needs. Although some training needs were identified in the previous section. In general, SRFA Tribes identified that there are opportunities for training but that the trainings should be brought closer to their location. Respondents also commented that the dates that trainings are offered have been problematic. The DACI program should schedule trainings that do not conflict with other Tribal meetings, or meetings that are mandatory such as quarterly meeting required of Tribal environmental staff and directors with their federal EPA project officers.

a. System Infrastructure

Two (2) Westside Tribes indicated that system infrastructure was strong need. Of the two, the Tribe in the Westside (NCRP overlap) stated they wanted to know how to work their system properly but they have plenty of water and the other Westside (NCRP & SFBA overlap). This Tribe did not provide additional comments so we do need to follow-up in the first quarter of Phase 3 DACI program. The Westside Tribe in the NCRP overlap area stated they always love training and learning to increase awareness of their system.

b. Operation and Maintenance

Two (2) Westside Tribes indicated that training in operation and maintenance is a strong need. Of these, one (1) respondent in the NCRP overlap area stated they do not have operations and maintenance staff available, everything goes through their housing director, and they would welcome a regional solution. The second Tribe that indicated that there was a strong need is in the NCRP & SFBA overlap area but will require a follow-up interview since they did not provide comments. Another Westside Tribe indicated that operation and maintenance training is a moderate need although they are always looking for good trainings, in particular they would like assistance in identifying funding for operations and maintenance.

c. Safety Training

In the Westside Tribes indicated there is a strong need for water operation safety.

d. Program Management (watershed management, etc.)

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One (1) Westside (NCRP overlap) Tribe indicated a strong need in program management training and stated they would like a list to choose from and would like the DACI program to bring courses closer.

e. Project Planning/Development

In the Westside the Tribe in the NCRP overlap area indicated that project development support is a strong need and two (2) others indicated that there was limited need for proposal development.

f. Engineering/Design

One (1) Westside Tribe in the NCRP overlap area indicated that engineering support is a strong need and we have initiated outreach to find out more information about this need.

g. Mapping

This was not a major need for Tribes in the Westside however one Tribe indicated that there is Strong need.

h. Regulatory Compliance

One (1) Westside (NCRP overlap) Tribe indicated that regulatory compliance is a strong need. Two (2) other Westside Tribes indicated this support was limited need.

i. Environmental Compliance (NEPA/CEQA)

Of the Westside respondents one (1) indicated that there is a strong need for support in this area, but did not provide comments. The other in Westside Indicated that this is a moderate need, but that they would like templates.

j. Financial Management (budget, rate structure)

The three (3) Westside Tribes respondents indicated limited need

k. Grant Writing/Administration

In the Westside of the two (2) that said this was of limited need one (1) indicated that it was the primary need from the DACI program and stated that it was not writing grants that is the issue, it is finding grants. This respondent would like a grants list.

l. WQ Sampling and Testing Procedures

Two (2) Westside Tribes indicated WQ sampling trainings and testing procedures is a moderate need, although they did not provide additional comments.

m. Required paperwork and reporting

One (1) of the Westside respondents indicated there was not enough staff to keep up with completing paperwork and reporting.

Q20-26: Involvement in local IRWM

For questions 20 through 26, Tribes were asked how they received information about their local IRWM and how involved they were in it. Some Tribes indicated that they did not receive information about their local IRWMs and others stated they were adequately informed about it. Others indicated they had no involvement and that other IRWMs did not engage in Tribal inclusion efforts.

In one case a Tribe was discouraged from participating in the Westside IRWM, and told to work with an adjacent IRWM instead because that is where the Tribe is physically/located at this time. This kind of discouragement ignores the history of displacement and forced removal from Tribal lands that have marginalized Tribes into small portions of their original traditional territories. This dismissal additionally ignores the responsibility that each Tribe has to steward their own traditional territories. There are multiple Tribes that have traditional territory in more than one IRWM region and sometimes in overlapping IRWM funding areas. Tribes should be encouraged to participate in all IRWM regions that they historically have stewarded to provide expertise and guidance for water resiliency and management. Tribes should actively be included in each IRWM governance structure and the project selection body for each IRWM region in which they have traditional territory. Tribes should not be discouraged from participation in these IRWMs regardless of current physical location.

Q27-28: Prepare for Round 2 IRWM Project Submissions

For these questions Tribes within the Westside had varying levels of where they are in the process. One Tribe indicated that they do not know what they could be able to fund because they do not interact with the IRWM and that they do not know if they are eligible and would like the criteria on what makes them eligible candidates. Another Tribe stated that they have submitted a proposal by other staff however it was later rescinded because they were able to secure funding from another source however, they do have another project ready for submission and would like assistance in getting it done. One Tribe indicated no and the other tribe skipped.

Q29-32: Shared Project Submissions/Additional Concerns

For questions 29 through 32, CIEA asked Tribes their willingness to submit a proposal and/or share water operators with other Tribes within the region. Many Tribes indicated that they are interested in sharing operators. CIEA will follow-up with all respondents who were interested in this in order to set up a group training, and/or a regional to discuss a possible agreement to share water operator staff.

In question 29 Tribes were asked if a Tribal Working Group at the funding area level would be beneficial. Three (3) Westside Tribes indicated that yes, this would be useful and one skipped the question. They indicated that sharing solutions with a wider number of Tribes than are in their own IRWM region would be useful. Because a large number of SRFA Tribes have traditional territories that overlap with other IRWMs, a larger work group would assist Tribes in learning about what adjacent IRWMs are working on without having to attend meetings for all

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IRWMs. Tribes indicated that yes, it would be beneficial to have a Tribal Working Group to address the funding area as a whole.

For question 30, one (1) respondent answered with additional concerns stating again that they needed “legal/water rights, water operator/wastewater treatment compliance/water recycling..

This report was completed by the California Indian Environmental Alliance (CIEA) for Burdick and Company. It is being reviewed by SRFA Tribal respondents for accuracy along with their individual needs Assessments. For more information contact Joanne Lee at jojoel.ciea@gmail.com.

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Yuba IRWM SRFA Tribal Needs Assessment Summary

Appendix A-4

The Sacramento River Funding Area (SRFA) IRWM has six Integrated Regional Water Management (IRWM) regions, so, CIEA has compiled information and provided comments of Tribes by their respective IRWM region based on physical location and traditional territories indicated by the Tribes themselves. **This appendix, A-4 is for the Yuba IRWM.**

Q3-Q4. Contacts, Tribal Information, IRWM, Traditional Territory & IRWM

Self-Identification

Spatially, Tribal participation in IRWMs is challenging for a number of reasons related to IRWM boundaries. Tribal respondents self-identified that they were in multiple SRFA IRWM regions.

Q5 - Q9. Status and Source of Tribal and/or Community services for drinking and wastewater services / Q16 - 17 Number of Hookups

Drinking water

For drinking water we were able to confirm that several responses were related to this type of water system specifically through follow-up interviews or through the associated comment field. Most Tribes in the SRFA have well-sourced drinking water.

One Respondent from the Yuba region with Upper Feather River overlaps indicated that they operate their own independent system and were in the 1-50 hook-up range, but that they also were connected to Oroville City and county water providers. One Yuba with NSV & CABY overlaps skipped the question, CIEA will need to follow-up.

Wastewater

Information about wastewater systems was not as clear, because there are less subsequent questions to get more information in this questionnaire. We could get some information regarding the number of wastewater hook-ups, which did not correspond to the same number of water hookups for the same respondent.

One Yuba with Upper Feather River overlap respondent stated that they have from 1-50 hookups although it is unclear if the response was related to wastewater, drinking water or both. One Yuba with NSV & CABY overlaps skipped the question.

Q 13. Seasonal Variability and Security of Water Supply

Both Yuba respondents had not noticed variability in their water supply and both of these said their supply is well water. Of these, the one (1) with NSV & CABY overlaps stated they also utilized water from canals and ditches.

Q10: Emergency Response Plans

Question 10 asked if Tribes had an Emergency Response Plan (ERP) or if they receive services

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from a community provider that has one. There were two (2) respondents in the Yuba IRWM area. Of the two (2), the Tribe with the Upper Feather River overlap did have an ERP through their water purveyor. The second Tribe with NSV & CABY overlap indicated that they did not have an ERP.

Q16. Water Conservation Plan

Of the two (2) Yuba respondents, the Tribe in the Upper Feather River overlap indicated they have a water conservation plan. The Tribe in the NSV & CABY overlap indicated they do not have a water conservation plan.

Q17. Wetlands or Other Natural Filtration Mechanism

For question 17, the Yuba Tribe with the Upper Feather River overlap indicated that their water system does not have a wetlands filtration system or natural filtration mechanism. The Yuba Tribe with NSV & CABY overlaps indicated they do not know, CIEA will need to follow-up with both respondents.

Q18: Challenges

For the following questions the needs assessment asked respondents to indicate their level of concern for each category. If they indicated a “Strong” or “Extreme Concern” for any category we asked that they briefly explain. Most respondents did not include a comment so follow-up interviews were initiated to receive more details for these responses. These are still on-going. Generally, answers that included there was limited or no concern we would not require follow-up. For non-response/skipped answers we did ask during follow-up interviews if they skipped because it was not relevant, they did not know or if the question was unclear and added their comments to the appropriate needs assessment if received.

For Yuba Tribes that said the category is an “Extreme” or “Strong” concern we recommend that we continue to follow-up with them after this report has been submitted to identify if there is any technical assistance or IRWM implementation project that can be developed.

a. Drinking Water Supply

One Yuba Tribe with (NSV & CABY overlap) had a moderate concern about chlorination and contamination by toxic chemicals in the city water they receive. The Yuba Tribe with Upper Feather River overlap indicated no concern.

b. Water Quality

Of the two (2) Yuba Tribes, one in the (NSV & CABY overlap) indicated moderate concern and stated they were concerned about chlorination and added levels of toxic chemicals in city water and also had concerns with the water levels, and the water quality of well water. The other Tribe with Upper Feather River overlap did not provide additional comments.

c. Water Pressure

One Yuba (NSV & CABY overlap) Tribe expressed moderate concern that they had low well water pressure. For this Tribe, CIEA would like to follow-up. One Yuba Tribe with Upper Feather River overlap indicated no concern.

d. Treatment Systems

The Yuba (NSV & CABY overlap) Tribe has a moderate concern about the adequacy of their well water filters. The Yuba with Upper Feather River overlap indicated no concern.

e. Aging Infrastructure

One (1) Yuba (NSV & CABY overlap) Tribe indicated strong concern about old lead pipes in old homes, poor pumps in wells, and the inadequacy or lack of water holding systems. One Yuba Tribe with Upper Feather River overlap indicated limited concern but did not provide additional comments.

f. Fire Suppression Supply & g. Access to Fire Hydrants

We are reporting results of sub-questions f. And g. together since fire suppression supply and access to fire hydrants are related, and the comments often reference both sections.

The Yuba Tribe with NSV & CABY overlaps indicated that fire suppression supply is an extreme concern and that access to fire hydrants are a strong concern because outlying areas have no suppression ability and when the electricity goes out the pumps do not work. The Yuba Tribe with Upper Feather River overlap indicated that fire suppression supply is a limited concern and that access to fire hydrants are no concern but they did not provide additional comments.

h. Staffing and/or Training

The Yuba Tribe with Upper Feather River overlap indicated that training and staff support were of moderate concern but did not provide additional comments. The Yuba Tribe with NSV & CABY overlap stated this was a limited concern and wrote they are not running a water system but need to know safety HAZWOPER training.

i. Regulatory Compliance

The two (2) Yuba Tribes indicated they have no concerns in regulatory compliance.

j. Water Storage/Operation

This question related to Water Storage and Operation overlaps with water supply, water quality and fire suppression questions above.

One (1) Yuba Tribe with NSV & CABY overlap stated that water storage and operation was an extreme concern for rural Tribal residences. One (1) Yuba Tribe with Upper Feather River overlap indicated that there was no concern in their need for storage or operation of storage.

k. Irrigation Water Supply

One (1) Yuba Tribe with NSV & CABY overlap indicated limited concern about pesticides/herbicides that are used in NID water. One (1) Yuba Tribe with Upper Feather River overlap indicated no concern.

l. Water Reuse/Recycling

Two (2) Yuba Tribes indicated strong concerns. The Tribe with NSV & CABY overlaps indicated water reuse and recycling was a strong concern because there is no reuse system in place. The Tribe would like information on rainwater capture, possible training, technical assistance or support for a submission as a pilot or to apply for an implementation project. The Tribe with Upper Feather River overlap indicated that water reuse and recycling is a strong concern, but didn't provide details.

m. Groundwater Recharge

The Yuba Tribe with NSV & CABY overlaps indicated limited concern with no further comments. The Yuba Tribe with Upper Feather River overlap indicated they were not concerned about groundwater recharge.

n. Lack of Data/Information

Two (2) Yuba Tribes indicated that lack of data was of limited concern neither respondent provided additional comments.

Q19: Technical Assistance and Training Needs

The following questions are related to technical assistance and training needs. Although some training needs were identified in the previous section. In general, SRFA Tribes identified that there are opportunities for training but that the trainings should be brought closer to their location. Respondents also commented that the dates that trainings are offered have been problematic. The DACI program should schedule trainings that do not conflict with other Tribal meetings, or meetings that are mandatory such as quarterly meeting required of Tribal environmental staff and directors with their federal EPA project officers.

a. System Infrastructure

One (1) Yuba Tribe with Upper Feather River overlap indicated they had no need. The other Yuba Tribe with NSV & CABY overlaps skipped this question.

b. Operation and Maintenance

One (1) Yuba Tribe with Upper Feather River overlap indicated training of operation and maintenance is a moderate need, and that they would like support for staff to receive water operator certification. The other Yuba respondent skipped the question.

c. Safety Training

In the Yuba, the respondent with NSV & CABY overlaps indicated there is an extreme need for HAZWOPER training. The Yuba Tribe with Upper Feather River overlap indicated there is a moderate need but did not provide additional comments.

d. Program Management

One (1) Yuba Tribe with NSV & CABY overlaps indicated extreme need for Tribe to benefit from technical training to create programs in their IRWM. The Yuba Tribe with Upper Feather River overlap indicated program management was a limited need.

e. Project Planning/Development

Of the Yuba respondents, the Tribe with NSV & CABY overlaps indicated that project planning and development was an extreme need and that the Tribe would benefit from technical training to create programs in their IRWM. The Yuba Tribe with Upper Feather River overlap indicated no need.

f. Engineering/Design

The two (2) Yuba Tribes indicated no need for engineering and design.

g. Mapping

One (1) Yuba Tribe with NSV & CABY overlaps indicated extreme need for Tribe to benefit from mapping and training in GIS. The other Yuba Tribe with Upper Feather River overlap indicated limited need.

h. Regulatory Compliance

Both of the Yuba Tribes indicated that there was no need for regulatory compliance.

i. Environmental Compliance

The Yuba Tribe with NSV & CABY overlaps indicated this is a moderate need and stated that a training in completing both would be helpful. The other Yuba respondent indicated no need.

j. Financial Management (budget, rate structure)

Both Yuba Tribes indicated that financial management (budget, rate, structure) is no need but the Tribe with NSV & CABY overlaps stated that there is no need because they do not have a budget.

k. Grant Writing/Administration

One (1) Yuba Tribe with NSV & CABY overlaps indicated that grant writing/administration is an extreme need but did not provide further comments. We have reached out to this Tribe to find out if it is grant writing and administration for the IRWM program specifically or in general so that we can identify a resource for providing this support either through the DACI or other programs. The other Yuba Tribe with Upper Feather River overlap indicated no need.

l. WQ Sampling and Testing Procedure

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One (1) Yuba Tribe with NSV & CABY overlaps Tribe indicated that there was a strong need but did not provide additional comments. One Yuba Tribe with Upper Feather River overlap indicated moderate need for future water testing compliance.

m. Required paperwork and reporting

The Yuba Tribe with NSV & CABY overlaps did not provide the level of need but left a comment that stated that this would be helpful for project creation and reporting while the other Yuba Tribe stated there was no need.

Q20-26: Involvement in local IRWM

One Yuba Tribe with NSV & CABY overlaps stated that they are very involved and is learning how to involve the Tribe's comments and needs into their IRWM. They also stated "they think they should be more persistent and direct." The other Yuba Tribe indicated that they are rarely involved and skipped the remaining questions related to involvement in local IRWM.

Q27-28: Prepare for Round 2 IRWM Project Submissions

These questions asked Tribes if they had ever submitted projects to their local IRWM and if these projects were ever funded. Most respondents skipped these questions, answered no, or did not know. To assist Tribes and CIEA will need the status of Round 2 project submission processes for each IRWM in the SRFA.

Both Yuba Tribes indicated that they did not a project ready to submit. Both Tribes had been contacted for follow-ups.

Q29-32: Shared Project Submissions/Additional Concerns or Technical Assistance Needs

For questions 29 through 32, CIEA asked Tribes their willingness to submit a proposal and/or share water operators with other Tribes within the region. Many Tribes indicated that they are interested in sharing operators.

Both Yuba Tribes completed a Mountain Counties Funding Area survey, which at the time that survey was completed did not include a question related to shared project submissions or wanting to their Tribe to have a Tribal Working Group at the funding area level.

CIEA will follow-up with all respondents who were interested in this in order to set up a group training, and/or a regional to discuss a possible agreement to share water operator staff.

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