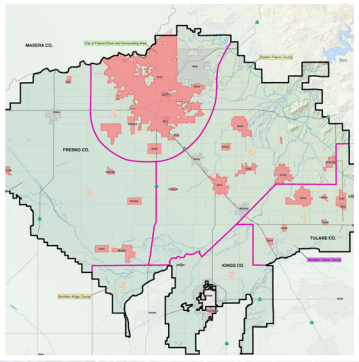
Kings Basin Water Authority

Disadvantaged Community Pilot Project Study

Final Report – August 2013



California Department of Water Resources
Division of Integrated Regional Water Management
South Central Region Office
Grant Agreement 4600009465

KINGS BASIN
Water Authority

DEPARTMENT OF WATER RESOURCES
DIVISION OF INTEGRATED REGIONAL WATER MANAGEMENT
SOUTH CENTRAL REGION OFFICE
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FINAL REPORT

Kings Basin Water Authority

Disadvantaged Community Pilot Project Study

Grant Agreement 4600009465

January 2012 through August 2013

Prepared by:

COMMUNITY WATER CENTER
EL CENTRO COMUNITARIO POR EL AGUA

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company

Self-Help Enterprises

FINAL REPORT
AUGUST 2013

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Individuals

- Abigail Solis – Community Water Center
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Entities

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- Armona Community Service District
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- California Department of Public Health
- California Rural Legal Assistance
- CSU Fresno Volunteer Students
- City of Dinuba
- City of Hanford
- City of Orange Cove
- City of Raisin City
- City of Reedley
- City of San Joaquin
- City of Selma
- Committee for a Better Seville
- Community United (Lanare)
- County of Fresno
- Cutler Public Utility District
- Cutler-Orosi School District
- Del Rey Community Service District
- Department of Water Resources
- East Orosi Community Service District
- Easton Community Services District
- Easton Community Revitalization Corporation
- Home Garden Community Service District
- Lanare Community Service District
- La Voz del Monson (The Voice of Monson)
- London Community Service District
- Monson Community Members
- Orange Center Elementary School District
- Orosi Public Utility District
- Raisin City Elementary School District
- Riverdale Public Utility District
- San Joaquin Valley Rural Development Center
- Sanger Unified School District
- Seville Community Members
- Sultana Community Service District
- Stratford Public Utility District
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[1] Writing and data analysis for the Evaluation Section was conducted by Dr. Carolina Balazs. Data for the evaluation section was compiled by Dr. Carolina Balazs, with research assistance from Francisca Henriquez.

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ACRONYMS

CDP ..... Census Designated Place
CDPH ..... California Department of Public Health
CRLA ..... California Rural Legal Assistance
CSA ..... County Service Area
CSD ..... Community Services District
CWC ..... County Water Center
CWD ..... Community Water District
DAC ..... Disadvantaged Community
DBCP ..... Dibromochloropropane
DWR ..... Department of Water Resources
FEMA ..... Federal Emergency Management Agency
GIS ..... Geographic Information Systems
IRWM ..... Integrated Regional Water Management
IRWMG ..... Integrated Regional Water Management Group
IRWMP ..... Integrated Regional Water Management Plan
KB ..... Kings Basin
KBWA ..... Kings Basin Water Authority
KRCD ..... Kings River Conservation District
LAFCO ..... Local Agency Formation Commission
ND ..... Not Detectible
MCL ..... Maximum Contaminant Level
MHI ..... Median Household Income
MHP ..... Mobile Home Park
MSR ..... Municipal Service Review
P&P ..... Provost & Pritchard Consulting Group
PPM ..... Parts Per Million
PUD ..... Public Utility District
SB ..... Senate Bill
SDAC ..... Severely Disadvantaged Community
SHE ..... Self-Help Enterprises

SJV ..... San Joaquin Valley

SR ..... Subregion

SWRCB..... State Water Resources Control Board

TLB..... Tulare Lake Basin

TMF ..... Technical Managerial & Financial

WC..... Water Company

WD ..... Water District

WS ..... Water System

WWD..... Waterworks District

EXECUTIVE SUMMARY

DAC Pilot Setting

In partnership with the Department of Water Resources (DWR), the Kings Basin Water Authority (KBWA) has undertaken the Kings Basin Disadvantaged Communities Pilot Project Study (KBDAC Study or Study) to develop an inventory of the Disadvantaged Communities (DACs) within the Kings Basin Region (portions of Fresno, Tulare and Kings Counties) and learn how to better integrate and engage the DACs in the Integrated Regional Water Management (IRWM) planning process.

The objectives of the Study are defined as:

1) Develop a comprehensive inventory of all disadvantaged communities and their water-related needs, initiate first-time intentional outreach to all identified DACs, and integrate contact info into the Kings Basin IRWMP mailing lists;
2) Engage and integrate DACs effectively into the Kings Basin IRWMP by developing Subregion groups to conduct integrated regional water management planning to address priority DAC needs within the Kings Basin IRWMP; and
3) Develop conceptual [pilot] project descriptions and cost estimates to include in the Kings Basin IRWMP master project list and facilitate partnerships between DACs and other IRWMP Members and Interested Parties.

Due to the lower income levels generally found in the San Joaquin Valley, most communities in the Kings Basin Region meet the definition of a DAC. However, there is a significant difference in capacity, water supply and infrastructure needs between an extremely large DAC, such as the City of Fresno, with approximately half a million people and a small severely disadvantaged community (SDAC) with populations of less than a dozen residents, such as a mobile home park or community services district.

What is a DAC?
A community with an annual Median Household Income (MHI) that is less than 80 percent of the statewide annual MHI is categorized as disadvantaged (DAC); an annual MHI that is less than 60 percent of the statewide MHI is categorized as a severely disadvantaged community (SDAC).

The Kings Basin Region has over 100 DACs. In order to more effectively reach out and engage this number of DACs, the Kings Basin Region was divided into five Subregions (see **Figure 1-1**): Northern Tulare County, Fresno/Clovis and Surrounding Areas, Western Fresno County, Eastern Fresno County and Northern Kings County with a separated inventory of entities and DACs/SDACs (see left). Entities include special district, schools, mobile home parks, cities, unincorporated communities, assemblage of residences with a community water system. With the statewide annual Median Household Income (MHI) of $60,392, the DAC annual MHI threshold is $48,314 and the SDAC annual MHI threshold is $36,235.

Subregion	Entities	DACs/SDACs
Northern Tulare County	30	15
Fresno/Clovis and Surrounding Areas	78	38
Western Fresno County	44	22
Eastern Fresno County	68	30
Northern Kings County	17	5

DACs have many limiting characteristics beyond income level including: inability to achieve economies of scale;

low revenues; small or nonexistent reserve funds; dependence on a single source of water; limited pool of informed/educated individuals; lack of equipment; lack of access to technology in an increasingly technological world; limited ability to hire paid staff or consultants; limited understanding of regional or state dialogue concerning water policy; and lack of office space and a secure location for board meetings, records storage and computer equipment. In additional to DACs, many rural schools were found to have similar problems with water infrastructure that were located within or near DACs. These schools were included in the inventory process for the purposes of this Study.

Prior to the KBDAC Study, a general awareness of DACs problems and needs existed, however, through the research and outreach, additional information was collected by asking the following questions:

1) What type of issues currently exist with respect to water system, wastewater and/or stormwater and drainage needs?

2) Do you currently have any flooding problems?

Following the outreach, the main water-related problems and needs of the DACs were assembled into five main categories; wastewater; drinking water; stormwater; infrastructure; and, Technical, Managerial and Financial (TMF) capacity. The main wastewater issues included septic system failures, permitted flow exceedances, and wastewater effluent violations. The drinking water issues include Maximum Contaminant Level (MCL) violations of nitrate, arsenic, uranium, dibromochloropropane (DBCP), and other contaminants, and lack of source redundancy for emergency or daily demands. Infrastructure needs included old, poorly maintained systems or inadequate infrastructure.

Additional information was learned through the outreach process including challenges contacting mobile home parks, communities served by private wells and schools with independent water systems. Utilizing existing relationships to identify key community leaders helped reduce the barriers to DAC participation. These barriers included language and technical knowledge constraints. The existing relationships allowed ease of initial contact with community members and the development of new relationships to garner community participation in the KBDAC Study.

Work Performed

The Study included four tasks, outlined by the grant agreement with DWR. The first task was to identify Subregions, wherein the Kings Basin Region was reviewed and various options for dividing it into smaller, more manageable Subregions were evaluated. Ultimately, five Subregions were selected, based on geographic proximity.

Pilot Project
A Pilot Project was developed for each Subregion within the Kings Basin Water Authority boundary. Based on public outreach, Pilot Projects were selected, developed and presented to the stakeholders in each Subregion. Each Pilot Project is a preliminary presentation of data and exploration of alternatives associated with an identified problem.

The second task, Data Collection and Outreach, included two major activities: community data collection and DAC outreach. The community data collection activity focused on culling information from existing data sources including DWR, California Department of Public Health (CDPH), United States Census Data, American Community Surveys, and the Tulare Lake Basin DAC Study. The second component, DAC outreach, involved the Project Team members contacting lead representatives from the identified DACs and gain additional information about their communities.

The third task consisted of community meetings, the preparation of a Pilot Matrix, determination of a Pilot Project, and the preparation of a Pilot Project report for each Subregion. The structure of the community meetings included three progressive meetings that resulted in the preparation and presentation of the Pilot Project Report to the community, as shown in the graphic to the right.

Meeting 1: Kick-off for the Subregion
⮟
Meeting 2: Discuss local water-related problems and develop a list of potential Pilot Projects.
⮟
Meeting 3: Present a summary of potential projects and aid the community members in selecting a Pilot Project.
⮟
Pilot Project Preparation: Technical Project Team members prepared the technical report based on the selected Pilot Project.
⮟
Meeting 4: Present the Pilot Project to the Subregion

The KBDAC Study resulted in five Pilot Projects Reports, which helped 12 communities and involved more than 40 DACs.

Outcomes, Results, Benefits and Costs

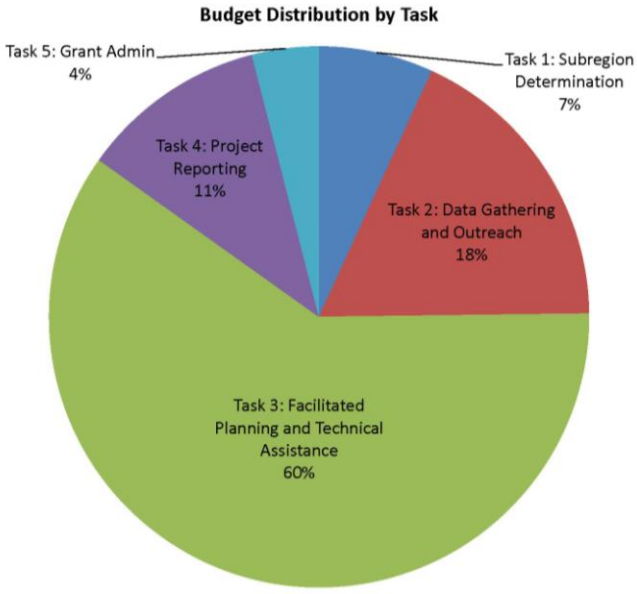
Once the community meetings and Pilot Project Reports were completed, an evaluation gauging the success of all components of the Study in relationship to the objectives set forth by DWR was performed as outlined in the grant. The Study was evaluated using a data set and several feedback tools: participation data; participant surveys; key participant interviews; and, a Project Team debriefing meeting.

DAC Engagement
Participants reported that their knowledge of IRWMP planning, funding, and benefits of regional collaboration and trust of neighbors and governments increased as a result of the Study.

Success in relation to the objectives was evaluated by dividing each objective into several more manageable, associated goals. Each goal was then evaluated based on the four premises. Through the evaluation process it was determined the KBDAC Study engaged over 110 participants and 31 communities with the Northern Tulare County Subregion having the most overall participation and the Western Fresno Subregion having the most consistent participation.

Sustainability

The momentum induced by the KBDAC Study is unparalleled in the Kings Basin Region and DWR specifically asked that this Study investigate how to sustain the momentum and the Pilot Project progress in the communities. To help ensure success in sustaining the Study goals, adjusting the outreach method to match characteristics of the DACs will be helpful.



The second component of sustainability is funding based. The Study had a budget of $500,000, of which 60 percent was committed to Task 3 (Facilitated Planning and Technical Assistance). The remainder of the budget was divided amongst Tasks 1, 2, 4 and 5 (see right). Future studies can learn from the budget expended on this Study; Task 3, with the largest

single portion of the budget, was critical in meeting the intent of the Study.

IRWMP Funding is only one component of a larger funding picture/opportunity. This Study was undertaken specifically to look at DACs and the relationship with the IRWMG. Additional funding sources are California Department of Public Health (CDPH) Safe Drinking Water State Revolving Fund (SDWSRF), CDPH Proposition 84, State Water Resources Control Board Clean Water SRF, Housing and Urban Development (HUD) Community Development Block Grant (CDBG), and United State Department of Agriculture (USDA) Rural Utilities Service (RUS).

Conclusions, Next Steps and Recommendations

Upon completion of the Study, several major successes of the Study should be noted:

1) A comprehensive inventory of DACs within the Kings Basin has been prepared and included in this report;
2) At least two new DACs are planning to join the KBWA as Interested Parties;
3) Communication between Northern Tulare County entities significantly improved – prior to the Study the relationship between DACs in the Subregion was reactive; by the end of the community meetings, seven entities committed to working together and exploring sharing services;
4) A survey conducted as one of the Pilot Projects provided concrete information for the community of Easton regarding a community water system. The results of the community survey that was performed will enable the community to move forward in an educated manner to solve their drinking water problems;
5) Inter-community altruism in the Western Fresno County Subregion was facilitated. Despite several communities having severe water-related problems to be solved, the communities unanimously agreed to promote finding a solution for Lanare Community Service District's (CSD) wastewater issues. This showed these communities truly understood the spirit of collaboration; finding a solution to the highest priority issue, even if that solution does not directly benefit each individual community;
6) Provided assistance to Orange Cove to allow the community to further explore options to solve their water supply issue, which can be critical depending on the maintenance schedule of the Friant-Kern Canal; and
7) Encouraged and enabled Armona CSD to join the IRWMP as an Interested Party, pending KBWA initiating the process of altering the IRWMP boundary.

Several "Next Steps" were developed from observations witnessed during the KBDAC Study efforts, from specific comments or from questions discussed during the development of the Pilot Projects. These "Next Steps" have been identified to carry the objectives of this Study forward.

1) Compile and Store KBDAC Study Data in one accessible location;
2) Distribute the Final Report and make it available on the KBWA website;
3) Include DAC contacts in KBWA mailing list for future meeting announcements, funding information, and other information; and,
4) Next Steps for DACs specifically:

a) Continue to educate themselves on the IRWMP process and stay engaged;
b) Attend IRWMP meetings;
c) Become an Interested Party or Member of the KBWA; and,
d) Consider pursuing projects identified in the Pilot Matrices for each Subregion.

In order to satisfy the grant, the Study was also tasked with "recommend[ing] how other regional groups may be successful at approaching and engaging DACs in the IRWMP process", a series of higher level recommendations have been prepared for the KBWA and DWR to consider implementing, as appropriate. Some of these recommendations include staffing a Regional DAC Coordinator; using NGOs or CBOs for outreach and DAC contacts; providing technical and/or financial support for DACs to prepare funding applications; considering DAC characteristics when reviewing funding applications; including an inventory of private well communities in the scoping of future DAC studies; as deemed beneficial utilizing non-email forms of communication to DACs; and, conducting pre-application and grant application workshops or trainings.

1 DAC PILOT PROJECT SETTING

Disadvantaged communities (DACs) in the Kings Basin Region face widespread drinking water and wastewater challenges. In many cases local Integrated Regional Water Management (IRWM) planning groups have experienced challenges engaging disadvantaged communities within their planning areas. The Kings Basin DAC Pilot Project Study (KBDAC Study or Study) was undertaken to enable the Kings Basin Water Authority (KBWA) to investigate and develop solutions for DACs that could be integrated into IRWM planning efforts for the Kings Basin Region.

The KBWA is managing the Study in conjunction with a Project Team of consultants, including Provost and Pritchard Consulting Group, Community Water Center, and Self Help Enterprises.

1.1 Definition of Terms

Disadvantaged Community: As stated in the IRWM Plan (KBWA 2012), "Disadvantaged communities, or economically disadvantaged communities, are prevalent in the Kings Basin and have many critical water supply and water quality needs." The process for identifying and including DACs in the development of the Kings Basin IRWMP was based on the criteria defined in California Water Code §79505.5(a); "community with an annual median household income that is less than 80 percent of the statewide annual MHI" as disadvantaged. The IRWMP used 2010 United States Census data and 80 percent of the statewide annual MHI ($60,392) to conclude that the threshold MHI for a DAC is $48,314. Severely disadvantaged communities (SDACs) are defined in California Water Code §13476(j) as those communities with an MHI less than 60% of the statewide MHI. Based upon the census data noted above, the SDAC MHI threshold is $36,235.

Department of Water Resources (DWR): DWR is responsible for managing and protecting California's water. DWR works with other agencies to benefit the state's people, and to protect, restore and enhance the natural and human environments. DWR entered into a grant agreement with the KBWA to conduct outreach to disadvantaged communities within their region.

Economy of Scale: The increased efficiencies inherent in providing services or delivering products by increasing the number of units over which the fixed costs are spread. Often operational efficiency is improved with increasing scale, leading to lower variable and overall costs.

Integrated Regional Water Management Group (IRWMG): An IRWMG is a local group of agencies and communities dedicated to regionally managing the water resources in its area, including coordinating projects to maximize regional benefits to the groundwater and surface water resources.

Irrigation District: An agency that manages the irrigation waters within its boundaries, including water deliveries, canals, and pipelines.

Kings Basin DAC Pilot Project Study (KBDAC Study or Study): The KBDAC Study was initiated by DWR to assist in developing methods to improve DAC participation throughout the State, as well as, develop methods to improve DAC participation in the Kings Basin IRWMP, as set forth in the DWR IRWM Program Guidelines dated August 2010.

Subregion Pilot Projects: A pilot project was developed for each Subregion within the Kings Basin IRWMP boundary. Based on public outreach, Pilot Projects were selected, developed and presented to the stakeholders in each Subregion. Each Pilot Project is a preliminary presentation of data and exploration of alternatives associated with an identified problem.

1.2 Legislative Authority

In 2006, Proposition 84, The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Act), was established and incorporated into California Public Resources Code §75001-75009. Proposition 84 was the people of California's declaration that protecting the state's drinking water and resources is vital to the public health, the state's economy, and the environment. The Act further declared that the state's waters are vulnerable to contamination by dangerous bacteria, polluted runoff, toxic chemicals, damage from catastrophic floods and the demands of a growing population. Therefore, actions must be taken to ensure safe drinking water and a reliable supply of water for farms, cities and businesses, as well as to protect California's rivers, lakes, streams, beaches, bays and coastal waters, for this and future generations.

Through Proposition 84, the people of California further declared that it is necessary and in the public interest to do all of the following:

1) Ensure that safe drinking water is available to all Californians by:
    a) Providing for emergency assistance to communities with contaminated sources of drinking water;
    b) Assisting small communities in making the improvements needed in their water systems to clean up and protect their drinking water from contamination;
    c) Providing grants and loans for safe drinking water and water pollution prevention projects;
    d) Protecting the water quality of the Sacramento – San Joaquin Delta, a key source of drinking water for 23 million Californians;
    e) Assisting each region of the state in improving local water supply reliability and water quality; and,
    f) Resolving water-related conflicts, improving local and regional water self-sufficiency and reducing reliance on imported water.
2) Protect the public from catastrophic floods by identifying and mapping areas most at risk, inspecting and repairing levees and flood control facilities, and reducing the long-term costs of flood management, reducing future flood risk and maximizing public benefits by planning, designing and implementing multi-objective flood corridor projects.
3) Protect the rivers, lakes and streams of the state from pollution, loss of water quality, destruction of fish and wildlife habitat.
4) Protect the beaches, bays and coastal waters of the state for future generations.
5) Revitalize our communities and make them more sustainable and livable by investing in sound land use planning, local parks and urban greening.

The Act further declares that the growth in population of the state and the impacts of climate change pose significant challenges (§75003.5). These challenges must be addressed through careful planning and improvements in land use and water management that both reduce contributions to global warming and improve the adaptability of our water and flood control systems. Improvements include better integration of water supply, water quality, flood control and ecosystem protection, as well as greater water use efficiency and conservation to reduce energy consumption.

1.3 Existing Studies

During the same time period as the KBDAC Study, several other studies were published or initiated concerning similar or related material. The significant ones are noted in the following sections. These studies were not necessarily used as references for this Study but may have, at times, been utilized for general information, as a resource for data and to verify concepts or data assumptions.

1.3.1 Tulare Lake Basin DAC Study

The Tulare Lake Basin DAC Study (TLB Study), which overlaps the Kings Basin entirely, is a similar study being conducted simultaneously with the KBDAC Study but with a much broader scope. The purpose of the TLB Study is to identify Feasibility Studies and Pilot Projects with the end goal of developing an integrated water quality and wastewater treatment program to address the needs of DACs in the entire basin. The KBDAC Study used a database shared with the TLB Study for consistency and to eliminate the duplication of efforts.

1.3.2 Addressing Nitrate in California's Drinking Water

The Addressing Nitrate in California's Drinking Water Report, often referred to as the "Harter Report" in reference to its primary author, was written in response to the 2008 passage of Senate Bill SBx2-1, which required the State Water Resources Control Board (SWRCB) to prepare a report to the legislature to improve the understanding of the causes of [nitrate] ground water contamination, identify potential remediate solutions and funding sources to recover costs expended by the State…to clean up or treat groundwater, and ensure the provision of safe drinking water to all communities (Harter Report, 2012). The University of California was contracted to prepare the report with a focus on the nitrates in the groundwater of the Tulare Lake Basin and a portion of the Salinas Valley.

1.3.3 Communities that Rely on Contaminated Groundwater

Communities that Rely on Contaminated Groundwater is a report written in response to Assembly Bill (AB) 2222, which required the SWRCB to submit a report to the legislature that identifies: communities in California that rely on contaminated groundwater as a primary source of drinking water; the principal contaminants and constituents of concern; and potential solutions and funding sources to clean up or treat groundwater; or, provide alternative water supplies (SWRCB Report 2012). The report identifies 682 communities with contaminated groundwater as their primary source and focuses on groundwater quality, not necessarily the quality of water served to the populations within the identified communities. Due to availability of data, the report does not discuss private water supplies or systems not regulated by the State. The proposed solutions in the report fall into three categories: pollution prevention, cleanup, and provision of safe drinking water through alternative water supplies or treatment.

1.4 Problem Statement

The Kings IRWM includes a large number of DACs that face a wide array of water, wastewater and storm water problems. To better understand these problems an inventory of these DACs and the problems they are facing had not been developed; the KBDAC Study was tasked to provide such an inventory.

For many reasons, many DACs have struggled to engage with each other, neighboring agencies, or the IRWM process. There seems to be some consistent reasons, which are listed below, however these reasons should not be considered pervasive throughout the IRWMG.

1) DACs lack technical expertise, struggle to operate and maintain their systems, and have often lacked the resources to engage with other entities;
2) The difficulty DACs have operating and maintaining their systems can be viewed as a financial or resource liability when attempting to develop interagency relationships or a regional solution;
3) A history of small DACs and larger non-DACs not relating positively due to geographic, political, and/or economic reasons; and,
4) A sense of distrust between agencies, boards and/or municipalities.

Due to these real or presumed views, the efforts to work together have been challenging and can make it difficult to forge new relationships. This problem statement is not meant to be disparaging but to be a first step toward resolution. Case studies that have shown many of these issues can be resolved with the right outreach, transparency and technical assistance. Limited human, financial and water resources are driving all water management strategies to consider solutions that can resolve problems utilizing shared solutions amongst multiple agencies. The Study is one of the first steps in aiding the integration of DACs into the IRWM process and to clarify the real issues within the DACs of the Kings Basin Region.

1.5 Initial Objectives

DWR identified the following objectives for the KBDAC Study:

1) Develop a comprehensive inventory of all disadvantaged communities and their water-related needs, initiate first-time intentional outreach to all identified DACs, and integrate contact info into the Kings Basin IRWMP mailing lists.
2) Engage and integrate DACs effectively into the Kings Basin IRWMP by developing Subregion groups to conduct integrated regional water management planning to address priority DAC needs within the Kings Basin IRWMP.
3) Develop conceptual [pilot] project descriptions and cost estimates to include in the Kings Basin IRWMP master project list and facilitate partnerships between DACs and other IRWMP Members and Interested Parties.

In addition, the Study was tasked to complement and leverage the TLB DAC Study, administered through Tulare County. The two Studies progressed in collaboration to ensure the information developed in each Study could inform and assist the other.

1.6 DAC Characteristics within Kings Basin

Due to the lower income levels generally found in the San Joaquin Valley and the Kings Basin Region, most communities in this Kings Basin Region meet the definition of a DAC. However, there is a significant difference in capacity between an extremely large DAC, such as the City of Fresno, with approximately half a million residents and a small severely disadvantaged community (SDAC) with populations with less than a dozen residents, such as mobile home parks or small community service districts. A rural school with their own independent water system is also considered a DAC for the

purposes of this Study. As a result of this observation, an emphasis has been placed on understanding the common and unique needs and challenges of the smaller DACs and SDACs.

The San Joaquin Valley is traditionally rural and, although cities in the Kings Basin Region are growing, the agricultural nature of the Kings Basin Region ensures that much of the population remains dispersed throughout the vast expanse of the Valley. The Kings Basin Region contains a large number of scattered tiny towns, often founded and still populated by farmworkers, which can only continue to exist if their basic infrastructure needs can continue to be met. Water is the most essential of these needs and the entities that provide domestic water service to rural towns (usually small special districts or mutual water companies) have very limited capacity. Operating a well and maintaining a simple distribution system is one thing, but when water treatment plants or other sophisticated improvements are needed, these small systems struggle to financially support and operate their system. They lack the economy of scale to spread costs over many users, and they often lack commercial or industrial users who could contribute revenues. Another observation of the Study was that privately owned mobile home parks and farm labor housing are often confronted with the reality of closing their housing due to the insurmountable expense of water treatment.

In addition to economy of scale, other unique challenges faced by small DACs and SDACs include:

1) Geographic isolation, making consolidation challenging;
2) Low revenues and high delinquency rates;
3) Small or nonexistent reserve funds;
4) Dependence on a sole source of water;
5) A limited pool of informed/educated individuals who can run the water systems and governing boards;
6) Lack of equipment and other resources;
7) Lack of access to technology in an increasingly technological world;
8) Limited ability to hire paid staff or consultants;
9) Limited understanding of regional or state dialogue around water policy; and,
10) Lack of office space and a secure location for board meetings, records storage and computer equipment

Many DACs in the Kings Basin Region have a long history of water quality violations for a variety of causes including nitrate, uranium, arsenic, volatile organics and of other constituents. The contamination in many DACs is so extreme that the communities are, at times, issued “unsafe to drink” or “boil water” orders requiring the use of bottled water exclusively for consumption purposes. This places an increased burden on household incomes.

Water quality contaminants in rural DACs and SDACs originate from a variety of sources. Some are naturally occurring, such as arsenic or uranium; other contaminants are related to land use including point source and nonpoint source discharges from industrial, commercial, agriculture, and human wastes. The potential solutions are as varied as the contamination sources, and are difficult to standardize across multiple communities due to variables such as geographic location, local hydrologic conditions and chemistry, water system size, water source, and local preference. Solutions often

include: drilling new or deeper wells, modifying existing wells to access different parts of the aquifer, treatment facilities including blending, and consolidation in a variety of forms.

Due to financial constraints resulting from community demographics, it is often difficult, if not impossible, for a DAC to offer the competitive salaries required to maintain a skilled staff. However, due to the income levels within a DAC, water purveyors are extremely restricted in their ability to raise rates in order to provide for higher salaries. The result is a self-perpetuating cycle where the DAC citizens continue to pay for services that can be substandard or virtually non-existent, and the water purveyor struggles to meet basic expenses.

Technical, Managerial and Financial (TMF) Capacity is a term that will be used as an indicator of general health and capability of a public entity such as a Water District or Community Services District. TMF Capacity refers to the ability of a community to have Board leadership and personnel with the necessary technical and managerial skills to run the facilities as well as the financial wherewithal of the community to afford safe drinking water, provide sewer service or prevent flooding. TMF Capacity is an ongoing challenge for DACs. Small DACs can rarely afford to hire a system manager, so system management often falls by default to volunteer Board members or to an administrative employee who lacks proper technical training or experience. Staff turnover, technical deficiencies and sometimes poor management often result from this situation.

Economies of scale refer to the cost advantages that can accrue to larger enterprises due to their relatively large number of customers. In most cases, small DACs often are unable to benefit from economies of scale. They shoulder many of the same costs for maintenance, permitting, pumping and staffing as any other larger water systems, but with a smaller, poorer customer base over which to spread the cost.

These are only a few examples of the common TMF challenges with which DACs cope. Closer perusal of individual communities reveals unique situations that carry unique problems and unique solutions. TMF is a focus area of both the KBDAC Study and the TLB DAC Study.

1.6.1 Identification of DACs

The Kings Basin Region encompasses portions of three counties: Fresno, Kings and Tulare. During the early stages of the Study, several approaches to dividing the Kings Basin Region into smaller Subregions were explored including, community size, water issue (i.e. stormwater, drinking water, etc), geography, and other possible criteria.

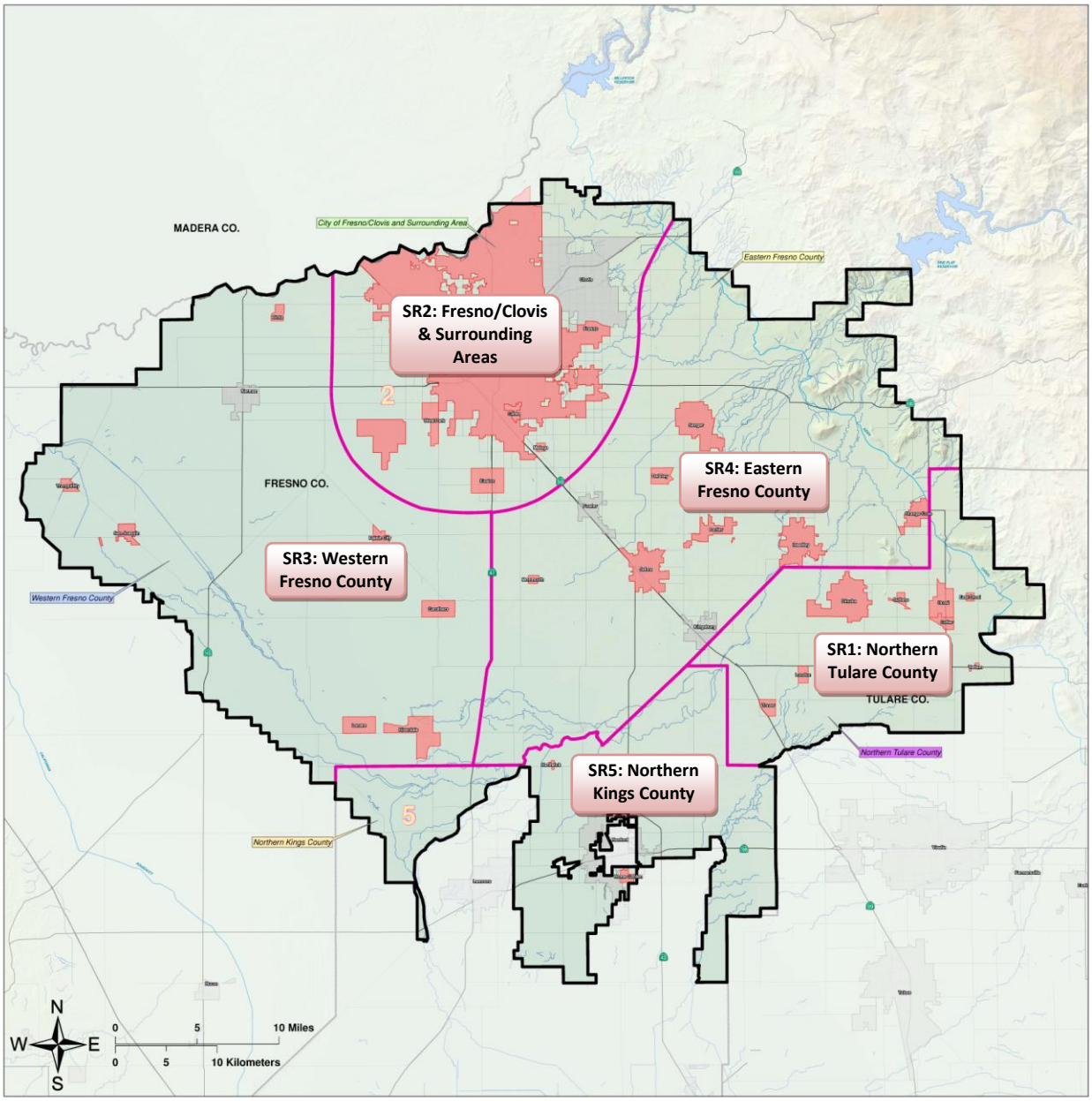
Ultimately, five geographically proximal Subregions (SR) were determined: Northern Tulare County, Fresno/Clovis and Surrounding Areas, Western Fresno County, Eastern Fresno County and Northern Kings County. Sections 1.6.2 through 1.6.10 provide the complete listing of DACs[2] within each Subregion and a comparison of what issues were associated with each DAC prior to the KBDAC Study.

The MHIs associated with each community derive from a variety of sources including the 2000 and 2010 United States Census, American Community Survey (various 5-year segments) and community income surveys. In each community, an attempt was made to determine the most accurate and representative MHI.

[2] In each Subregion, the smaller DACs and SDACs (typically unincorporated areas) were the focus for data collection and outreach.

The selected Subregions and their boundaries are shown in **Figure 1-1** and are further discussed in **Sections 1.6.2** through **1.6.6**.

Figure 1-1: Study Location



1.6.2 Subregion 1: Northern Tulare County

The Northern Tulare County Subregion is comprised of approximately 30 identifiable entities including 15 DACs/SDACs. The range of median household incomes in the Subregion is $14,000 to $50,096, with an average of $33,897. The non-DAC entities within the Subregion include El Monte Village Mobile Home Park (MHP), Kings River Estates, Norseman MHP, Fairway Mutual Water Company (MWC).

Table 1-1: SR1 Northern Tulare County DAC Inventory

Entity Name[1]	Entity Category	Population	MHI
Delft Colony	SDAC	454	N/A
East Orosi CSD	SDAC	426	$26,163
Gleanings For The Hungry	DAC	31	$42,321
Griggs Street	DAC	28	$45,485
London CSD	SDAC	1,869	$27,830
Seville	SDAC	480	$14,000
Sultana CSD	SDAC	775	N/A
Traver	DAC	700	$37,212
Western Sky MHP	DAC	108	$45,485
2512	NON	16	$50,096
Monson	DAC	200	$15,000
Yettem	DAC	211	N/A
Orosi PUD	SDAC	8,770	$34,394
Cutler PUD	SDAC	5,000	$31,105
Dinuba	DAC	21,950	$40,463
Lopez Labor Camp	DAC	50	$31,105

Notes:
N/A: Not available due to inaccuracy with Census data
[1] Entity names that are only a number refer to unidentified communities that are most likely private well owner communities.

1.6.3 Subregion 2: Fresno / Clovis Metropolitan Area

The Fresno/Clovis and Surrounding Areas Subregion is comprised of approximately 78 identifiable entities including 38 DACs/SDACs. The range of median household incomes in the Subregion is $17,667 to $50,528, with an average of $34,510. The non-DAC entities within the Subregion include Belmont Water Corporation, Westbrook MHP, New Horizons MHP, Sierra MHP, Herndon Water Company, Belmont Manor, Fresno County Service Area (CSA) 10a – Mansionette Estates, Waterworks District (WWD) #42, West McKinley Water System, Sunnyside, Tarpey Village and Clovis.

Table 1-2: SR2 Fresno/Clovis and Surrounding Areas DAC Inventory

Entity Name[1]	Entity Category	Population	MHI
Sunnyside Convalescent Hospital	SDAC	116	$33,359
Country View Alzheimer Center	DAC	100	$44,821
Watertek-Metropolitan	SDAC	60	$17,667
Alhambra 1 MHP	SDAC	50	$35,572
Millbrook Mobile Home Village	DAC	50	$38,809
Shady Acre Trailer Park	SDAC	50	$34,273
Three Palms MHP	SDAC	202	$30,104
Todd's Trailer Court	SDAC	50	$34,273
Woodward Bluffs MHP	DAC	300	$43,625
William Hopkins Water System	DAC	25	$44,909
Bakman Water Company	SDAC	2,500	$31,670
Malaga CWD	SDAC	900	$33,092
Parkland A.G.	SDAC	13	$25,000
Easton Estates Water Company	DAC	371	$39,213
Elm Court	SDAC	40	$29,063
Green Acres Mobile Home Estate	DAC	300	$38,720
Monte Verdi	DAC	500	$40,395
Centennial Apartments	DAC	100	$37,371
Hacienda	SDAC	2	$24,809
Shady Lakes MHP	SDAC	130	$28,971
Golden State Trailer Park	SDAC	50	$24,809
The Willows	DAC	10	$47,471
Clover MHP	SDAC	50	$23,003
Sunset West MHP	DAC	239	$38,720
168	SDAC	35	$29,448
152	SDAC	35	$34,273
196	SDAC	35	$32,102
191	SDAC	35	$32,102
197	SDAC	35	$18,364
192	SDAC	35	$18,364
180	NON	35	$50,528
Easton CSD	DAC	1966	$40,426
West Park	DAC	158	$44,444

Entity Name[1]	Entity Category	Population	MHI
Beran Way	DAC	158	$38,036
Calwa	DAC	762	$25,733
Mayfair	DAC	1,300	$38,826
Old Fig Garden (SEC Shaw and Maroa Avenues, Fresno)	DAC	290	$45,591
Fresno	DAC	500,121	$43,440

Notes:
[1] Entity names that are only a number refer to unidentified communities that are most likely private well owner communities.

1.6.4 Subregion 3: Western Fresno County

The Western Fresno County Subregion is comprised of approximately 44 identifiable entities including 22 DACs/SDACs. The range of median household incomes in the Subregion is $23,274 to $46,289, with an average of $32,566. There are no non-DACs identified within this Subregion.

Table 1-3: SR3 Western Fresno County DAC Inventory

Entity Name[1]	Entity Category	Population	MHI
Bar 20 Partner	SDAC	60	$35,000
Valley Care and Guidance	DAC	158	$39,770
Double L Mobile Ranch Park	SDAC	80	$29,333
Riverdale PUD	DAC	3,000	$39,555
Raisin City	SDAC	380	$26,563
Linda Vista Farms	SDAC	40	$26,300
Maddox Dairy	SDAC	3	$31,543
Fred Rau Dairy	SDAC	80	$34,402
Biola CSD	SDAC	1,623	$23,274
Caruthers CSD	SDAC	2,497	$29,750
Lanare CSD	DAC	589	$36,806
Tranquillity PUD	DAC	820	$24,352
Date Street	SDAC	50	$29,333
Alkali Flats	DAC	300	$28,238
Perry Colony	DAC	150	$28,889
Burrel	DAC	40	$34,271
235	DAC	35	$36,566
Kamm Ranch Company	SDAC	1	$34,402
Ruby's Valley Care Home	DAC	158	$41,118
Shasta MHP	SDAC	20	$35,000
Kerman	DAC	13,751	$46,289
San Joaquin	SDAC	4,025	$25,702

Notes:
[1] Entity names that are only a number refer to unidentified communities that are most likely private well owner communities.

1.6.5 Subregion 4: Eastern Fresno County

The Eastern Fresno County Subregion is comprised of approximately 68 identifiable entities including 30 DACs/SDACs. The range of median household incomes in the Subregion is $20,000 to $88,490, with an average of $39,261. The non-DACs identified within this Subregion include Alice Manor, Garden Apartments, Sandy Point MHP, Sherwood MHP, Kings River MHP, Manning Gardens Convalescent, Tract 1199 Water System, Riverbend MHP, Cumorah Knolls, Quail Lake Estates, Wildwood Island, 232, Laton, Bigger S Ponderosa Trailer Park, Cove Island Resort, Driftwood MHP, Oak Knolls Trailer Park, Bowles, Fowler and Kingsburg.

Table 1-4: SR4 Eastern Fresno County DAC Inventory

Entity Name[1]	Entity Category	Population	MHI
Kings Park Apartments	SDAC	120	$26,635
George Cox Water System	NON	40	$49,063
Zonneveld Dairy	SDAC	141	$30,365
Camden Trailer Park	SDAC	82	$20,000
Doyal's MHP	SDAC	22	$35,000
Clarin Apartments	SDAC	100	$30,602
Del Rey	DAC	1,639	$43,281
204	SDAC	35	$27,192
206	SDAC	35	$28,504
173	DAC	35	$38,339
190	SDAC	35	$35,651
178	DAC	35	$38,339
186	SDAC	35	$35,651
Centerville	NON	14	$88,490
236	SDAC	35	$33,613
227	SDAC	35	$34,242
219	DAC	35	$43,237
2489	DAC	35	$42,194
216	SDAC	35	$32,276
215	DAC	35	$39,765
214	DAC	35	$39,765
218	DAC	35	$41,177
Gravesboro	SDAC	45	$34,098
Monmouth	DAC	40	$46,696
Viking Trailer Park	NON	80	$68,403
Sanger	DAC	24,484	$41,987
Selma	DAC	23,395	$42,459
Parlier	DAC	14,656	$36,388
Reedley	DAC	14,656	$46,776
Orange Cove	SDAC	9,078	$27,642

Notes:
[1] Entity names that are only a number refer to unidentified communities that are most likely private well owner communities.

1.6.6 Subregion 5: Northern Kings County

The Northern Kings County Subregion is comprised of approximately 17 identifiable entities including five DACs/SDACs. The range of median household incomes in the Subregion is $23,000 to $47,500, with an average of $36,583. The non-DACs identified within this Subregion include the Four Season MHP and the community of Grangeville.

Table 1-5: SR5 Northern Kings County DAC Inventory

Entity Name	Entity Category	Population	MHI
Hardwick WC	SDAC	140	$23,000
Home Garden CSD	SDAC	1,750	$33,092
Lacey Courts MHP	DAC	50	$37,203
Hamblin	DAC	240	$47,500
Armona CSD	DAC	3,239	$42,122

1.6.7 Water-Related Problems

The water-related problems in the Kings Basin are varied both in type and severity. For the purposes of this KBDAC Study three main categories of water-related issues were investigated: stormwater; sanitary sewer; and, drinking water.

Data was gathered from state and county agencies and local communities and complied into several 'coded' tables, shown in the following tables. Most of the water quality information was obtained from the CDPH Electronic Data Transfer website, previously compiled as part of the TLB Study. The tables rank the severity of each issue from green to red, with green meaning 'not an issue of concern', yellow being a moderate issue and red being a very severe issue.

This data was provided[3], typically in the second meeting in each Subregion (see Section 2 for additional information on meeting structure) and used for two purposes. First, to determine the strength of the data, giving the participants a venue to voice concerns over any perceived issue that was not shown or to convey that a particular issue had been solved or was not that concerning. The second purpose was to aid in the discussion of potential solutions for the Subregion.

The following sections present the data and related exhibits associated with each Subregion.

[3] Data was compiled from the initial stages of the project and updated through the community meetings and further data gathering efforts. Once compiled, edit and included in the Pilot Project Reports, the data was not updated additionally. By nature, many portion of this data are ever-changing and the numbers presented herein are accurate as of the date associated with the Pilot Project Reports.

1.6.7.1 Subregion 1: Northern Tulare County

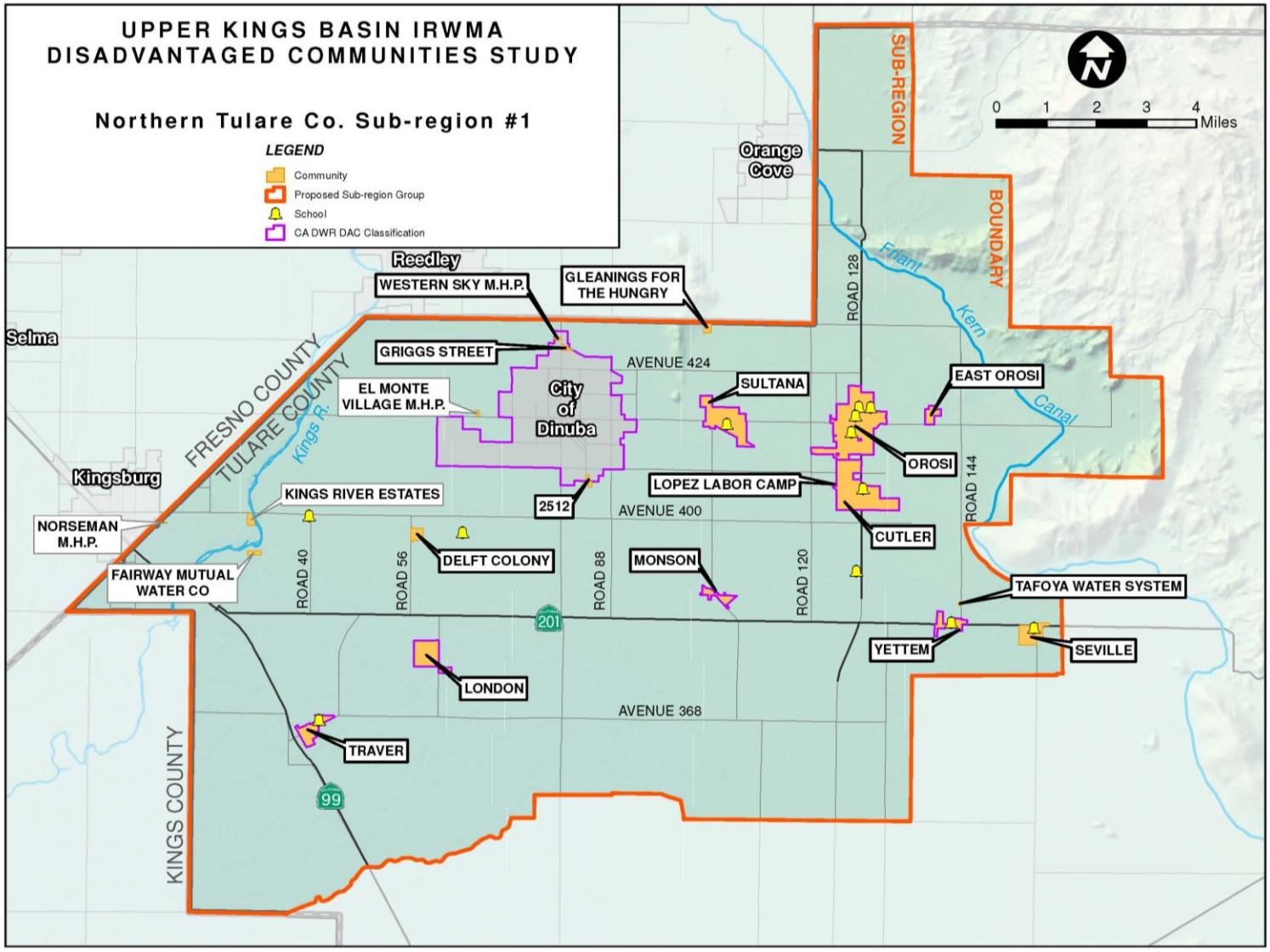
The primary issues of concern in the Northern Tulare County Subregion are lack of source redundancy, flood risks and drinking water quality. Of the communities listed in **Table 1-6**, 16 have at least one issue that is noted as severe, nine have more than one.

Table 1-6: SR1 Northern Tulare County Water Issues

Community Name	Water Type	DAC Status[1]	Active Sources	Flood Risk (FEMA or DWR)	Characteristics of Wastewater Facilities			Water Quality (2008-2010)			Total Count Of Reds
					Excessive Infiltration	Exceedance of permitted flow	WW Violation[5]	Nitrate MCL Exceedance[2]	Total Coliform Rule MCL	DBCP MCL Exceedance[2]	
2512	GW	DAC		No	No facility	No facility	No facility	ND	No	ND	0
Delft Colony	GW	SDAC	2	No	Possible	No	>30	No	No	ND	0
El Monte Village M.H.P.	GW	SDAC	1	No	No facility	No facility	No facility	Yes	No	ND	2
Fairway Mutual Water Co	GW	NON	2	No	No facility	No facility	No facility	No	No	ND	0
Gleanings For The Hungry	GW	DAC	1	No	No facility	No facility	No facility	Yes	Yes	ND	3
London CSD	GW	DAC	3+	No	Possible	No	>30	No	No	ND	0
Norseman M.H.P.	GW	DAC	1	No	No facility	No facility	No facility	ND	No	ND	1
Cutler PUD	GW	SDAC	2	Yes	Yes	Possible	>30	Yes	No	Yes	4
East Orosi CSD	GW	SDAC	2	Yes				Yes	Yes	ND	3
Griggs Street[3]		DAC		Yes	No facility	No facility	No facility				1
Kings River Estates	GW	NON	2	Yes	No facility	No facility	No facility	No	No	ND	1
Lopez Labor Camp[4]	GW	DAC	1	Yes	No facility	No facility	No facility	Yes	No	ND	3
Monson	GW	SDAC		Yes	No facility	No facility	No facility	ND	No	ND	1
Orosi PUD	GW	SDAC	3+	Yes				Possible	No	ND	1
Seville	GW	SDAC	1	Yes				Yes	Yes	ND	4
Sultana CSD	GW	DAC	2	Yes				No	No	Yes	2
Traver	GW	DAC	2	Yes	Possible	No	>30	Yes	No	ND	2
Yettem	GW	DAC	2	Yes				Yes	No	ND	2

NOTE:
Blank=no data provided, Green = Not Area of Concern, Yellow = Moderate Severity, Red = High Severity, ND=no data
[1]DAC = Disadvantaged Community; SDAC = Severely Disadvantaged Community; NON = Non-DAC/SDAC
[2]ND = Constituent is Non-detectable when sampled, therefore no MCL violation is recorded
[3]Griggs Ave is provided water by the City of Dinuba, but remains unsewered.
[4]Lopez Labor Camp is partially consolidated with Cutler PUD.
[5] No. of violations in last three Fiscal Years, 0=green, 1-30 = yellow, 31 or more = red

Figure 1-2: SR1 Northern Tulare County



1.6.7.2 Subregion 2: Fresno/Clovis and Surrounding Areas

The primary issues of concern in the Fresno/Clovis and Surrounding Areas Subregion are lack of source redundancy, flood risks and drinking water quality. Of the communities listed in **Table 1-7**, 21 have at least one issue that is noted as severe, seven have more than one.

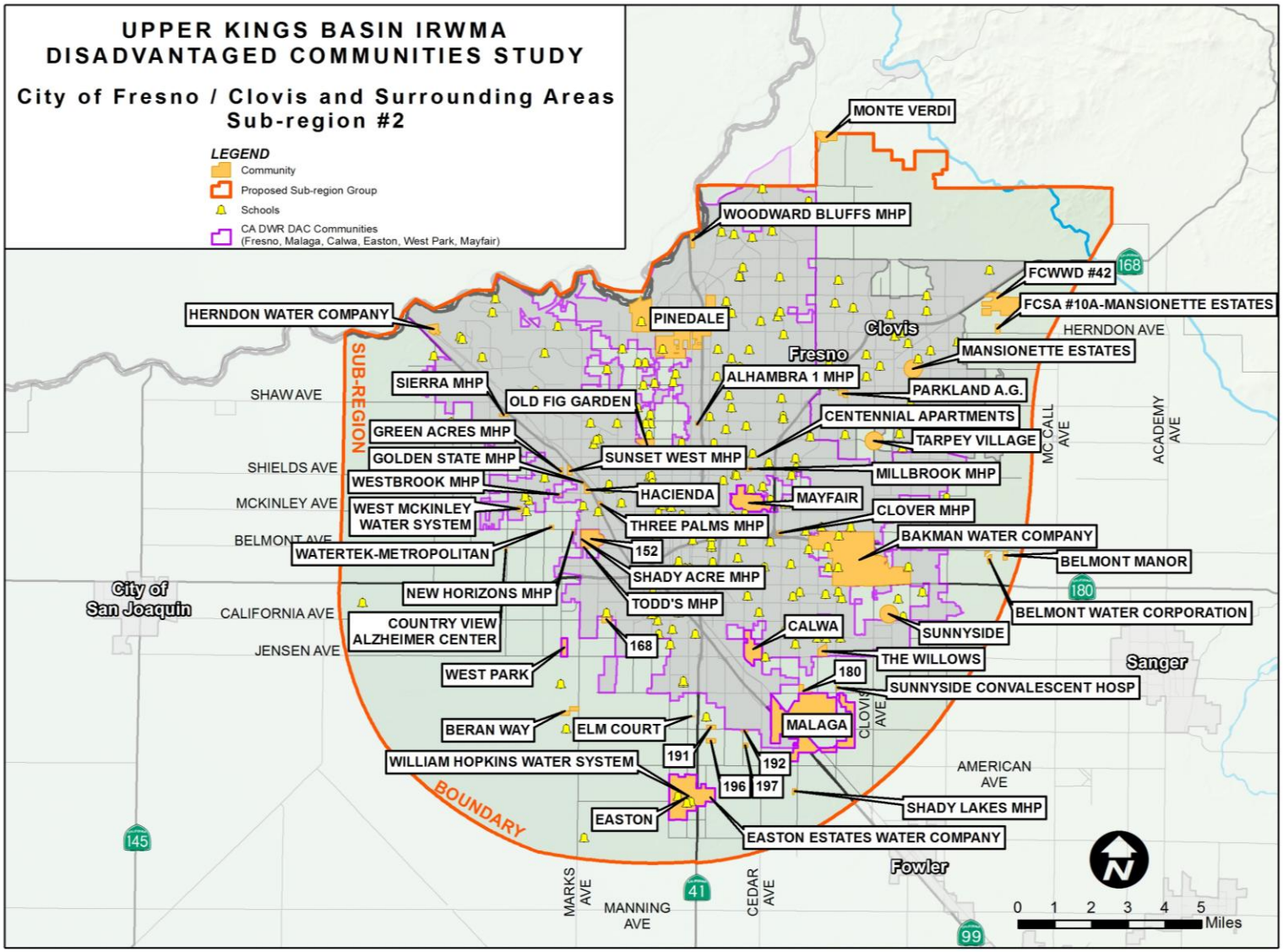
Table 1-7: SR2 Fresno/Clovis and Surrounding Areas Water Issues

Water System Characteristics					Wastewater Characteristics			Water Quality (2008-2010)				
Community Name	Water Type	DAC Status[1]	Active Sources	Flood Risk (FEMA or DWR)	Potentially Has Exceedance Of Permitted Flow	Potentially Has Excessive Infiltration	WW Violations[2]	Total Coliform	Arsenic	DBCP	Nitrate (>1/2 MCL)	Total Yes Count
Bakman Water Company	GW	DAC	14	Yes						Yes	Yes	3
Easton CSD		DAC		No				Yes		Yes	Yes	3
Woodward Bluffs MHP	GW	DAC	1	Yes				Yes	No	No	No	3
WWD #42	GW	NON	4	Yes					No	No	Yes	2
Malaga CWD	GW	DAC	6	Yes	No	Yes				Yes	Yes	3
Mansionette Estates	GW	NON	2	Yes				Yes				2
Millbrook MHP	GW	DAC	1	Yes								2
191		SDAC		Yes								1
192		SDAC		Yes								1
196		SDAC		Yes								1
Belmont Water Corporation	GW	NON	1	No						No	Yes	1
Elm Court	GW	SDAC	1	No						No	No	1
Acres Mobile Home Estate	GW	DAC	1	No					No	No	No	1
Mayfair				Yes								1
New Horizons MHP	GW	NON	1	No					No	No	No	1
Shady Lakes MHP	GW	DAC	1	No					No		Yes	1
Sunnyside Convalescent Hospital	GW	SDAC	2	No					No		Yes	1
The Willows	GW	DAC		Yes								1
Watertek-Metropolitan	GW	SDAC	1	No					No		Yes	1
152		SDAC		No								0
168		SDAC		No								0
180		SDAC		No								0
197		SDAC		No								0
Alhambra 1 MHP	GW	SDAC		No								0

Water System Characteristics					Wastewater Characteristics			Water Quality (2008-2010)				
Community Name	Water Type	DAC Status[1]	Active Sources	Flood Risk (FEMA or DWR)	Potentially Has Exceedance Of Permitted Flow	Potentially Has Excessive Infiltration	WW Violations[2]	Total Coliform	Arsenic	DBCP	Nitrate (>1/2 MCL)	Total Yes Count
Belmont Manor	GW	NON	2	No						No	No	0
Beran Way	GW	DAC		No								0
Calwa		DAC		No								0
Centennial Apartments	GW	DAC		No								0
Clover MHP	GW	SDAC		No								0
Country View Alzheimer Center	GW	DAC	2	No							No	0
Easton Estates Water Company	GW	DAC	2	No					No	No	No	0
Golden State Trailer Park	GW	SDAC		No								0
Hacienda	GW	SDAC	2	No								0
Herndon Water Company	GW	NON	2	No					No	No	No	0
Monte Verdi	GW	NON	2	No	Yes	No	>30					1
Old Fig Garden		DAC		No								0
Parkland A.G.	GW	SDAC		No								0
Pinedale PUD	GW		5	No					No		No	0
Shady Acre Trailer Park	GW	SDAC		No								0
Sierra MHP	GW	NON		No								0
Sunnyside		NON		No								0
Sunset West MHP	GW	DAC	2	No					No		Yes	0
Tarpey Village		NON		No								0
Three Palms MHP	GW	DAC	2	No							Yes	0
Todd's Trailer Court	GW	SDAC		No								0
West McKinley WS	GW	NON		No								0
Westbrook MHP	GW	NON		No								0
William Hopkins WS	GW	DAC		No								0

NOTE:
Blank=no data provided, Green = Not Area of Concern, Yellow = Moderate Severity, Red = High Severity
[1]DAC = Disadvantaged Community; SDAC = Severely Disadvantaged Community; NON = Non-DAC/SDAC
[2] No. of violations in last three Fiscal Years, 0=green, 1-30 = yellow, 31 or more = red

Figure 1-3: SR2 Fresno/Clovis and Surrounding Areas Water Issues



1.6.7.3 Subregion 3: Western Fresno County

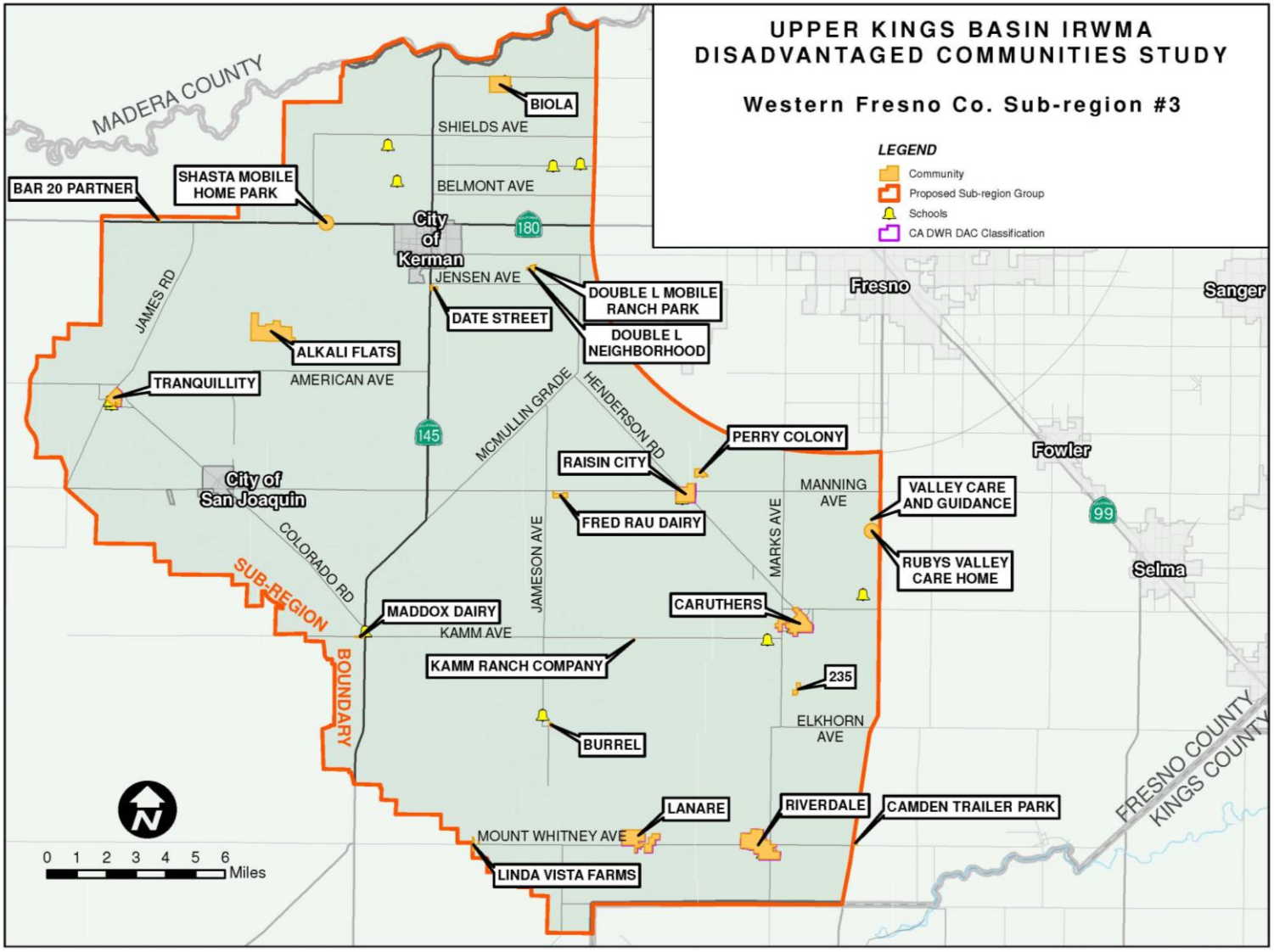
The primary issues of concern in the Western Fresno County Subregion are lack of source redundancy, flood risks and drinking water quality. Of the communities listed in **Table 1-8**, 15 have at least one issue that is noted as severe, six have more than one.

Table 1-8: SR3 Western Fresno County Water Issues

Water System Characteristics					Wastewater Characteristics			Water Quality					
Community Name	Water Type[1]	DAC Status	Active Sources	Flood Risk (FEMA Or DWR)	Potentially Has Exceedance Of Permitted Flow	Potentially Has Excessive Infiltration	WW Violations[2]	Nitrate Exceedance Of MCL or 1/2 MCL	Total Coliform Rule MCL Violation	Arsenic Exceedance	Fluoride Exceedance	Uranium Exceedance	Total 'Severe' Issues
235		DAC		No									0
Alkali Flats		DAC		No									0
Bar 20 Partner	GW	SDAC	1	Yes				No		No			2
Biola CSD	GW	SDAC	2	No	Yes	Yes	Yes	No		No			1
Burrel	GW	DAC		No									0
Camden Trailer Park	GW	SDAC	2	Yes	No	No	No	No		Yes			2
Caruthers CSD	GW	DAC	4	No	No	No	No	No		Yes			1
Date Street	GW	SDAC		No									0
Double L Mobile Ranch Park	GW	SDAC	2	No				No	Yes	No		No	1
Double L Neighborhood		SDAC		No									0
Rau Dairy, Fred	GW	SDAC	1	No				No		Yes			2
Kamm Ranch Company	GW	SDAC	1	No									1
Lanare CSD	GW	DAC	2	Yes				No		Yes			2
Linda Vista Farms	GW	SDAC	2	Yes				No	Yes	No		Yes	3
Maddox Dairy	GW	SDAC	1	No									1
Perry Colony	GW	DAC		No								Yes	1
Raisin City	GW	SDAC	1	No									1
Riverdale PUD	GW	DAC	3	Yes	Yes	No	Yes	No		Yes	Yes		3
Ruby's Valley Care	GW	DAC	1	No									1
Shasta MHP		SDAC		No									0
Tranquillity ID/PUD	GW	DAC	2	Yes	No	Yes	Yes	No		Yes		No	3

NOTE:
Blank=no data provided, Green = Not Area of Concern, Yellow = Moderate Severity, Red = High Severity
[1]DAC = Disadvantaged Community; SDAC = Severely Disadvantaged Community; NON = Non-DAC/SDAC
[2] No. of violations in last three Fiscal Years, 0=green, 1-30 = yellow, 31 or more = red

Figure 1-4: SR3 Western Fresno County Water Issues



1.6.7.4 Subregion 4: Eastern Fresno County

The primary issues of concern in the Eastern Fresno County Subregion are lack of source redundancy, flood risks and drinking water quality. Of the communities listed in **Table 1-9**, 24 have at least one issue that is noted as severe, eleven have more than one.

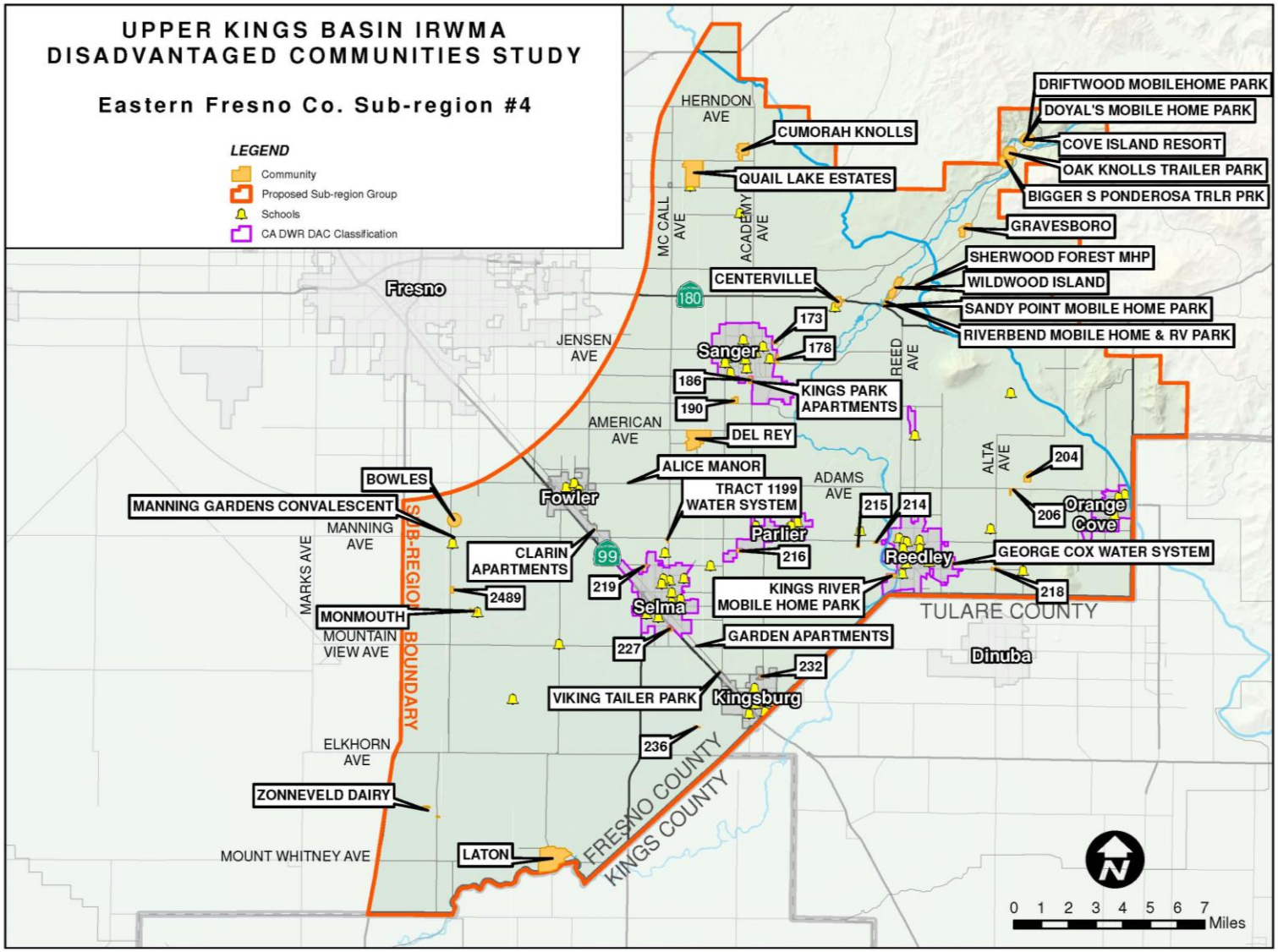
Table 1-9: SR4 Eastern Fresno County Water Issues

Water System Characteristics					Wastewater Characteristics			Water Quality			
Community Name	Water Type	DAC Status[1]	Active Sources	Flood Risk (FEMA or DWR)	Potentially has Exceedance of Permitted Flow	Potentially has Excessive Infiltration	WW Violation[2]	Total Coliform MCL Violation	Arsenic Exceedance	>22.5 mg/L Nitrate	Total 'Severe' Issues
Del Rey	GW	DAC	5	No	No	Yes	Yes			No	2
Laton	GW	NON	3	Yes	No	Yes	No		No	No	2
George Cox Water System	GW	DAC	1	No				Yes	No	No	2
Viking Trailer Park		DAC	1	No					No	Yes	1
Kings Park Apartments	GW	SDAC	1	No						Yes	1
Zonneveld Dairy	GW	SDAC	2	Yes				Yes	Yes	No	3
Doyal's MHP	GW	SDAC	1	Yes					No	No	2
Clarin Apartments	GW	SDAC		No							0
Alice Manor	GW	NON	1	No					No	Yes	1
Garden Apartments	GW	NON	1	No						No	1
Sandy Point MHP	GW	NON	1	Yes	No	Yes	Yes	Yes	No	No	5
Sherwood Forest MHP	GW	NON	1	Yes	No	Yes	No		No	No	2
Kings River MHP	GW	NON		Yes							1
Manning Gardens Convalescent	GW	NON	1	No					No	Yes	1
Tract 1199 Water System	GW	NON	1	No						No	1
Riverbend MHP	GW	NON	1	Yes						No	2
Cumorah Knolls	GW	NON	2	Yes					No	Yes	1
Quail Lake Estates	GW	NON		Yes	No	No	Yes				1
Wildwood Island	GW	NON	2	Yes				Yes	No	No	2
Bigger S Ponderosa Trailer Park		NON	2	Yes						Yes	1
Cove Island Resort		NON	1	Yes						No	2
Driftwood MHP		NON	1	Yes						No	2
Oak Knolls Trailer Park		NON	4	Yes						No	1
206		DAC		No							0
173		DAC		No							0
190		DAC		No							0
178		DAC		No							0

Water System Characteristics					Wastewater Characteristics			Water Quality			
Community Name	Water Type	DAC Status[1]	Active Sources	Flood Risk (FEMA or DWR)	Potentially has Exceedance of Permitted Flow	Potentially has Excessive Infiltration	WW Violation[2]	Total Coliform MCL Violation	Arsenic Exceedance	>22.5 mg/L Nitrate	Total 'Severe' Issues
236		DAC		No							0
219		DAC		No							0
2489		DAC		No							0
215		DAC		No							0
214		DAC		No							0
218		DAC		No							0
Monmouth		DAC		No							0
204		SDAC		No							0
186		SDAC		No							0
Centerville		SDAC		No							0
227		SDAC		No							0
216		SDAC		No							0
Gravesboro		SDAC		Yes							1
232		NON		No							0
Bowles		NON		No							0

NOTE:
Blank=no data provided, Green = Not Area of Concern, Yellow = Moderate Severity, Red = High Severity
[1]DAC = Disadvantaged Community; SDAC = Severely Disadvantaged Community; NON = Non-DAC/SDAC
[2] No. of violations in last three Fiscal Years, 0=green, 1-30 = yellow, 31 or more = red

Figure 1-5: SR4 Eastern Fresno County



1.6.7.5 Subregion 5: Northern Kings County

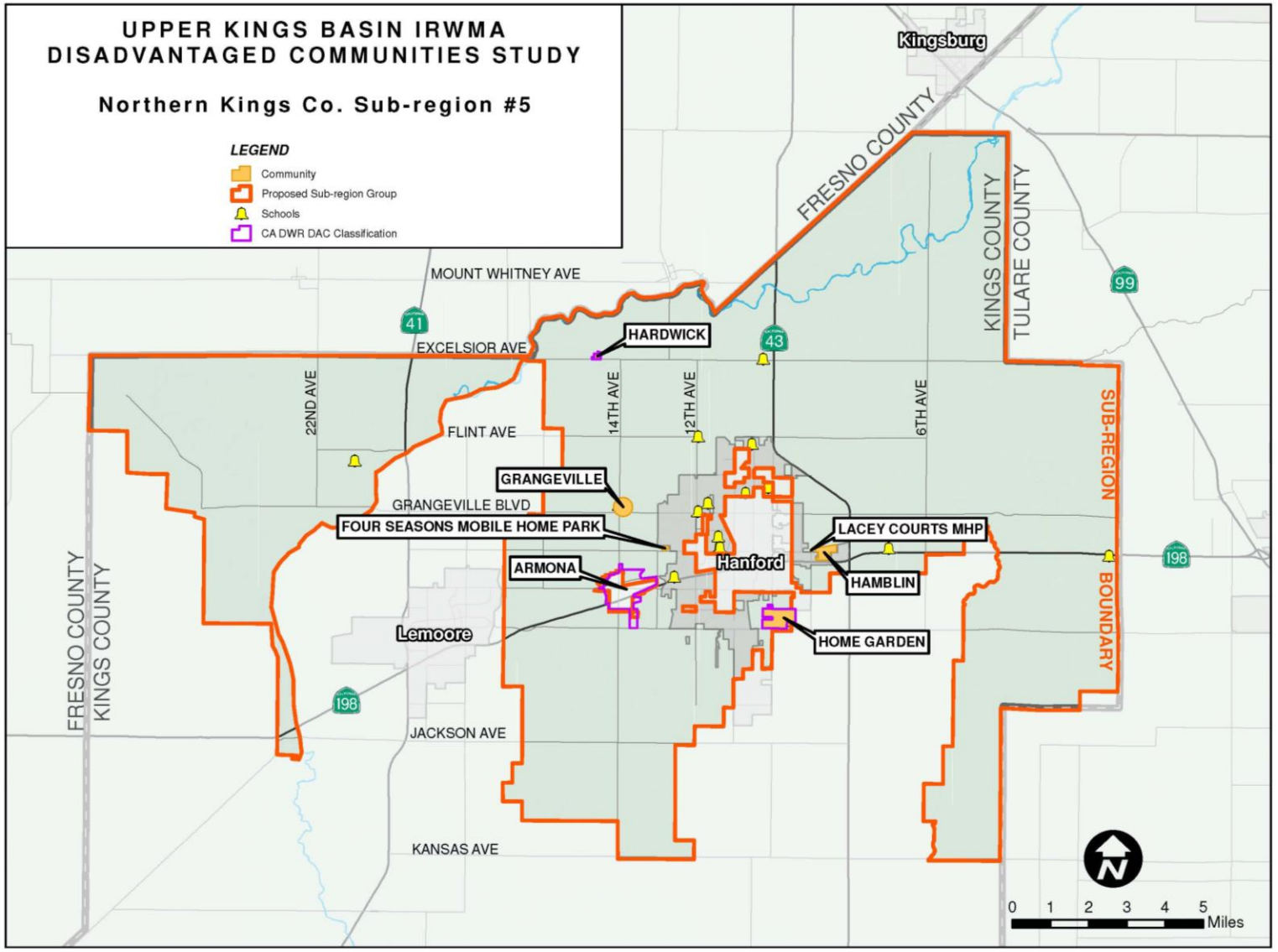
The primary issues of concern in the Eastern Fresno County Subregion are lack of source redundancy, flood risks and drinking water quality. Of the communities listed in **Table 1-10**, four have at least one issue that is noted as severe, one has more than one.

Table 1-10: SR5 Northern Kings County Water Issues

Community Characteristics			Flood Risk (FEMA or DWR)	Active Sources Count	Wastewater Violations			Water Quality 2008-2010		Total 'Severe' Issues
Community Name	Source Water	DAC Status[1]			Potentially has Exceedance of Permitted Flow	Potentially has Excessive Infiltration	WW Violation[2]	Total Coliform MCL Violation	Arsenic or Uranium MCL Exceedance	
Armona CSD	GW	DAC	No	2	No	Yes	No		Yes	1
Home Garden CSD	GW	SDAC	No	3					Yes	1
Lacey Courts MHP	GW	DAC	No	1					Yes	2
Four Seasons MHP	GW	NON	No	1					No	1
Hardwick WC	GW	SDAC	No	1					Yes	2
Hamblin		DAC	No							0
Grangeville		NON	No							0

NOTE:
Blank=no data provided, Green = Not Area of Concern, Yellow = Moderate Severity, Red = High Severity
[1]DAC = Disadvantaged Community; SDAC = Severely Disadvantaged Community; NON = Non-DAC/SDAC
[2] No. of violations in last three Fiscal Years, 0=green, 1-30 = yellow, 31 or more = red

Figure 1-6: SR5 Northern Kings County



1.6.8 Existing DAC and IRWMG Relationship

The Kings Basin IRWMG has had some level of relationship with DACs in the Kings Basin Region since its inception. Immediately prior to beginning the KBDAC Study, several large DACs were official IRWMG Members including cities of Fresno, Dinuba, Kerman, Parlier, and Reedley and the Raisin City Water District. Additionally, several smaller DACs were official Interested Parties of the IRWMG including Bakman Water Company, Biola CSD, City of San Joaquin, Cutler Public Utility District (PUD), East Orosi CSD, Hardwick Water Company, London CSD, Orosi PUD, Riverdale PUD and Sultana CSD.

One benefit of being a Member or Interested Party of the IRWMG is that communities are eligible to submit project information sheets to the IRWMG to have their project(s) included on the IRWM Project List. Of the above listed communities, several had submitted projects for the project list prior to the initiation of the KBDAC Study. Those communities include East Orosi CSD, Biola CSD, City of Fresno, Sultana CSD, Raisin City Water District, Bakman Water Company, Hardwick Water Company, London CSD, City of Reedley and City of Dinuba.

2 WORK PERFORMED

2.1 Summary of Methodologies/Activities Performed

The Study included several activities including:

1) Data gathering;
2) Research;
3) Subregion determination;
4) Outreach;
5) Community meetings;
6) Pilot Project selection;
7) Pilot Project report; and,
8) Final stakeholder meetings.

The first two tasks were performed nearly simultaneously, as the first task of determining the Subregions was partially dependant on the data collection and research. During this period, information from the TLB Study was incorporated and coordinated with the TLB Project Team. Concurrently, the Project Team was reviewing data and having discussions on the most appropriate method to bifurcate the Kings Basin Region into Subregions; as discussed previously, the Subregions were selected based on geographic proximity of the DACs. Once the majority of the data and background information was gathered, the Project Team compiled the data into one overall database. The data and background information gathered included stakeholder names and contact details, community populations and MHIs, state-identified lists of DACs within the Kings Basin Region, water-related issue statistics, and source/capacity data for the systems.

Once the Subregions were determined and data compiled, the extensive outreach efforts began, with the result of identifying stakeholders, gathering additional data on them, inviting them to be involved in the Study and initiating community meetings. As discussed in the following sections, the Study included three initial meetings and one final meeting within each Subregion.

Following the first three meetings, the Pilot Project Report was prepared for each Subregion, which entailed additional data collection and analysis. The Pilot Project Reports were primarily prepared by the technical and engineering portions of the Project Team but were vetted by the entire Project Team prior to being finalized. Once finalized, the reports were presented and distributed to the community stakeholders at the final meetings.

2.2 Outreach and Data Collection

Outreach to nearly 200 entities was conducted in various forms including telephone calls, emails, site visits, presentations at governing board meetings, and mailed and hand-delivered notices. Initial identification of and available contact information for these communities was derived from DWR, CDPH and TLB DAC Study listings. When necessary, additional research, through the internet and phone calls, was conducted to update contact information.

Outreach efforts invited and encouraged participation in the DAC stakeholder process, and gathered information about water, wastewater and storm water needs and issues the communities might have. This collection of data was helpful particularly in describing the breadth of needs and in categorizing the types of needs in each community. For those communities which did not participate in the stakeholder process, this one-on-one information gathering was the only way that data could be collected.

When successful, outreach and data collection within the five Subregions resulted in updated contact information, updated information regarding existing water-related issues within many Kings Basin DACs, preliminary suggestions on how those issues might be addressed, the establishment or development of working relationships amongst neighboring DACs, and a increased comprehensive understanding of challenges communities within the Kings Basin IRWMP boundaries face regarding water-related issues within their primarily rural communities.

2.2.1 Community Outreach

Drawing upon years of experience working with San Joaquin Valley DACs, Self-Help Enterprises (SHE) and Community Water Center (CWC) developed individualized outreach plans for the various types of DACs within the Kings Basin Region. Additionally, Provost & Pritchard (P&P), and California Rural Legal Assistance (CRLA) used their relationships to contact and engage key stakeholders. Communities targeted for outreach included the following characteristics:

1) Communities served by public water systems with a governing board, such as PUDs, CSDs, and municipalities;
2) Communities served by a privately-owned public water systems and septic systems including Mobile Home Parks, Convalescent Homes, Small Farms and Dairies, and schools with their own systems;
3) Communities without a public water system such as clusters of homes served by individual private wells and septic systems.

Materials were developed specifically for the outreach process, including a KBDAC Study factsheet, meeting invitations and fliers for each of the four meetings held per Subregion and intentional plan that allowed the Project Team to effectively prioritize outreach efforts based on the type of DAC and stakeholder, previous relationships, key talking points, and strategies to respond to various concerns among community contacts.

Where a relationship already existed, personal contact was made to the greatest extent possible. In some cases these contacts were made with elected representatives of water boards or governing agencies. In other cases, contact was made with known community members that had previously been involved in their community's water-related issues. In some cases, the Project Team conducted outreach by attending board meetings of city councils, special districts such as CSDs and PUDs, as well as school districts.

Throughout the Study, communication with identified and interested communities, along with encouragement to participate in the KBDAC Study, was maintained via emails, frequent mailings of hard copy invitations, and follow-up and reminder phone calls.

Contact with some community representatives was productive and those representatives participated in the process in a meaningful way. Where members of the Project Team already had relationships with a community member (whether this person was a board member, staff member or interested community

resident), it was much easier to engage that person in the pilot process. Where no previous relationships existed, the Project Team found it difficult to make meaningful contacts to the majority of communities on the initial contact list.

Having already worked in rural DAC communities, the Project Team understood how a community representative might react to such a "cold" contact. It is difficult to entice a community representative, often a volunteer, to utilize personal time for issues that are not perceived to be an immediate priority for them. There must be a motivation for that person to reprioritize their personal life and not only take an interest in, but devote personal time to, the Pilot Project process. People usually get involved if they are currently affected by a problem and see participation as a way to resolve that problem, or at least to vent about it. As was verified by the Study, involvement is most likely if the community representative can see the significance of his/her personal involvement, and that continued involvement will produce real progress towards a valid solution. It takes time and effort to foster such support and engagement.

2.2.2 Data Gathering

A number of steps were made to collect data. Research was done using historical documents. Local Agency Formation Committee (LAFCO) Municipal Service Reviews (MSRs) were reviewed for Fresno, Kings and Tulare county agencies. Water needs and issues reported by community representatives were entered into a database. Water company and district representatives including board members and staff was collected and entered into the database. The same was conducted for county operated facilities; county public works staff was consulted and data was assembled. In some cases consulting engineers that served communities were queried regarding local water and wastewater issues. In a few cases contract operators were contacted to determine DAC needs. Anecdotal evidence sometimes provided information on local storm drain/flooding events; some occurring more frequently than had been made apparent in 100 and 500-year flood plain maps.

2.2.3 Information Known Prior to KBDAC Study

The amount of information known about DAC water-related problems prior to the KBDAC Study was not universally understood or well documented within the membership of KBWA. This lack of knowledge has included not only the physical need for improved water and wastewater treatment infrastructure, but less-tangible issues such as DAC deficiencies in regional management, water system management, available time for IRWM efforts, and lack of funding to address any of these water-related issues.

Prior to the KBDAC Study, the KBWA did not have detailed information about the DACs or an understanding of their operational challenges.

1) The KBWA had firm knowledge that there are a large number of DACs and SDACs within the Kings Basin; however several pieces of information regarding specifics associated with the DACs/SDACs were unknown, including:
    a) Exact number of DACs/SDACs within the Kings Basin and contact information;
    b) What DAC/SDAC water-related conditions or needs might be;
    c) What resources are required to address those needs;
    d) What barriers and challenges are being faced to access available resources; and,
    e) How the IRWMG can assist with those needs and aid DACs in accessing available resources;

2) DAC water systems face decreasing abilities to provide safe and sufficient drinking water supplies often due to increasingly stringent drinking water standards, increasing groundwater contamination levels, declining groundwater levels, and aging infrastructure;

3) DACs have limited capacity to effectively manage or govern small water system, provide required and sufficient technical services and be cost effective with small customers bases;

4) There was a general unawareness of water-related needs associated with schools, mobile home parks or very small residential water systems;

5) There was an overall awareness of DAC issues with wastewater and stormwater, but an unawareness of details of wastewater and storm water issues that could guide IRWMG policies and practices;

6) There was an overall awareness of many challenges and barriers to addressing DAC problems, but details of how the IRWMG can aid the DACs to address their problem was limited;

7) The KBWA had firm knowledge that Feasibility Studies are an integral step in approaching a DAC water management project; however, often overlooking the prohibitively difficult challenges of applying for and administering funding to conduct a Feasibility Study;

8) There was a general awareness of some DAC water systems' inclusion on the California Department of Public Health (CDPH) priority list, but details of actual positioning for funding or assistance was unknown;

9) There was a partial awareness of available funding sources for DACs, but lack of knowledge on how those funding sources function or how effective they are in assisting DACs; and,

10) The KBWA had overall good awareness that they must work cooperatively with DACs towards regional solutions to manage the water resources in the Kings Basin Region and that outreach and education are critical to this effort, but limited knowledge in how to actually accomplish these cooperative efforts or engage the DACs in the IRWM process.

DWR and KBWA recognized additional outreach and information was needed about the DACs in the Kings Basin Region.

2.2.4 Information Gained From KBDAC Study

To complement the existing data sets that relied on secondary data (see above sections), the Project Team conducted outreach to all entities in the 5 Subregions and attempted to obtain water, wastewater and storm water information from each entity at the Subregion meeting and/or by gathering information about their needs during outreach efforts. In addition to updating DAC/SDAC contact information, the following survey questions were asked of each contacted person:

1) What type of issues currently exist with respect to Water System Needs?

2) What type of issue currently exists with respect to Sewer System Needs?

3) What type of issues currently exist with respect to Storm Water and Drainage Needs?

4) Do you currently have any Flooding Problems?

In addition to assisting DAC's/SDAC's identify any current Water/Sewer/Storm Water/Drainage; and Flooding Problem Needs; the Outreach Team assisted DAC's/SDAC's identify possible "solutions and identify possible funding sources" with which to possibly address their respective problem(s).

The next step was to gather all existing contact information available on the over 100 disadvantaged communities located within the IRWMP boundary. Once the outreach effort began it became evident that much of the contact information for each DAC was outdated or incorrect. This was attributed to the following reasons:

1) Election of new Board members due to term limit expiration;
2) Contact resignations or relocations;
3) New management or ownership of mobile home parks and other small agencies;
4) New administration of schools or school operation managers;
5) The entity no longer exist; or
6) Data entry error in entering the contact information.

Contact information, current at the time of the outreach, was updated and recorded. To start, CDPH contact lists were compiled. Then, through a combination of calls to individual systems, county agencies and CDPH regional offices and internet research, the contact information was updated.

2.2.4.1 Contact Challenges

The Outreach Project Team used emails, phone calls and site visits attempting to make contact with all entities. This task was complicated by inaccurate or insufficient contact information as well as the challenge of unsolicited contact (cold calls) regarding the intent of the Study. As part of the outreach effort, Special Districts, such as Community Service Districts (CSD), Public Utility Districts (PUD) and small water companies already more capable and willing to discuss water-related problems were more likely to engage in the Study. Larger government agencies, such as incorporated cities, were willing to talk about their water-related problems, but generally lacked motivation to participate in the Subregional meetings. Connecting with other entities, such as schools, mobile home parks, and communities served by private wells was the most challenging.

Mobile Home Parks tended to either embrace the idea of funding and technical assistance or were completely unresponsive and unwilling to answer phone calls or emails. Private well communities do not have one point of contact, so connecting with them was limited. The most advantageous method of connecting with private well communities was through the local schools where an element of trust had already been established.

Connecting to some schools and school districts was also difficult. Individual rural schools with their own operations staff were frequently the most willing to share their water related problem. In several of these cases, the Outreach Team spoke directly with the school principal. Mid-size and larger school districts with several schools listed as DACs were the most difficult to connect with, often resulting in no contact at all. As can be seen in **Appendix G** approximately half of the schools were willing to discuss their water-related problems, but the other half did not respond despite multiple contact attempts.

2.2.4.2 Water-Related Needs

Based on feedback from the outreach conducted, special districts, municipalities, schools with their own water system and small water companies, reported the following water-related needs:

1) Insufficient or degrading infrastructure;
2) Inability to provide potable drinking water that meets the drinking water standards, i.e. not above the Maximum Contaminant Levels (MCL);
3) Lack of technical and managerial skills;
4) Insufficient revenue to hire appropriately skilled and licensed operators;
5) Limited awareness of available funding resources
6) Limited awareness of available funding sources or knowledge on how to access them;
7) Lack of Economies of scale to address problems; and,
8) Some flood or storm drainage problems.

Specifically, mobile home parks, convalescent homes, farm and dairy housing clusters, also noted the following water needs and challenges:

1) Lack of revenue, assistance and/or funding sources to upgrade existing infrastructure, drill new wells or connect to a local larger entity such as a nearby city or town in order to provide potable drinking water that meets drinking water standards. The expense of connecting to a larger entity is often unrealistic considering the isolated locations of many of the farms and dairies. The likelihood of locating wells that produce water that meets drinking water standards has become increasingly difficult in these areas;
2) Farms and dairies sometimes lamented that if they were not able to correct their water-related issue in an affordable manner they might need to consider closing the reduced-cost housing they currently offer to their workers. One farm manager reported, “We already take a loss on the housing; but housing is something we like to provide for our workers;”
3) Many of these entities rely on septic tank systems. Some were very eager to replace those and connect to a sewer system. Others interviewed reported no problems at this time;
4) Lack of physical space on their property to drill a new well or dig a new septic system. “We’re running out of room”, was said by one convalescent home plant manager;
5) Locating potable water sources that do not require expensive treatment in areas with high arsenic contamination is an often insurmountable challenge for these very small, usually privately owned, communities;
6) While the outreach did not determine how many of these particular types of entities were designated DAC or SDAC, the Outreach Project Team estimates that possible as many as 90% of these small, residential communities are inhabited by people who would meet the SDAC MHI;
7) With the exception of MHPs located within or adjacent to city boundaries, these small communities face additional challenges to respond to water and wastewater problems because of their rural locations. They are often too isolated to physically connect to larger systems;

8) Most of these entities are privately owned eliminating many grant funding sources available to public systems; however loan funding is often still available;

9) Most of those interviewed had little to no knowledge about funding sources;

10) Most of those interviewed had little to no knowledge about how to access technical assistance other than to contract for technical support, which many reported they do;

11) Of the entities contacted, about half desired help in dealing with drinking water and/or wastewater problems, about a quarter were not interested in learning more, and the remainder did not respond to contact efforts;

12) One convalescent home located just outside the City of Fresno's water services area reported desiring to connect with the City, but previous attempts had met significant resistance by surrounding residents, so connection had not occurred;

13) Approximately 10% of the MHPs reported some storm drainage and/or winter season flooding problems. With the exception of MHPs located within city or flood control district limits, none had storm drainage infrastructure. Rural MHPs usually have unpaved road ways, contributing to the challenge of flooding during the winter seasons; and,

14) Within the Fresno/Clovis Metropolitan Area Subregion, approximately half of the MHPs and convalescent hospitals listed reported being served by city water and sewer when interviewed, allowing the Project Team to update the data for these entities.

Performing outreach to the school systems was approached slightly differently and garnered additional data. It was learned that schools face their own unique set of water-related problems.

1) Over 60 schools were listed on the Outreach List.
    a) Three were determined to be home-schools located in private homes;
    b) Nearly half did not respond to contact efforts. These were predominantly schools belonging to larger school districts whose water/wastewater systems are run by District plant managers as opposed to local site managers at smaller schools districts;
    c) Nearly a third of schools that did respond are somewhat isolated in very rural areas. The others are within or near larger community boundaries; and,
    d) Three are known to be located within residential housing areas with private wells and/or septic systems.
2) The more isolated, rural schools varied in water quality; those with water quality problems primarily have nitrate or arsenic levels above MCL.
3) Most schools with their own wells reported contracting for technical assistance for operations and monitoring.
4) Many of the schools on private wells would welcome the opportunity of connecting to a larger water system to eliminate their responsibility for water management.
5) Most rural schools were on private septic systems.
6) Some schools are too geographically isolated to connect to another water system or wastewater system.

7) Most schools have a greater capacity to seek funding sources than entities such as privately owned MHP, farms, convalescent homes for two reasons: 1) schools qualify for financial assistance both as public agencies and because they serve children and 2) school administration are familiar with the process of seeking and utilizing grant funds.

8) All schools reported being challenged with having enough time to seek and administer grants and spend the amount of time it would take to install infrastructure. The rural school districts that include only one or two schools would have to do this entirely within their own already overextended staff. Rural schools that belong to larger school districts expressed strong interest in their District management pursuing connections for water and/or wastewater.

9) Orange Center Elementary School reported significant flooding of the parking lot where the buses pick up and drop off elementary age students during the winter season. The school uses private well (with water currently meeting drinking water standards), a septic system and no storm drainage system. It is surrounded by a SDAC residential area with several nearby neighborhoods on private wells and septic systems. School buses are unable to travel on some of the roads in these neighborhoods because of poor road conditions which flood annually. This area, located approximately half a mile south of the City of Fresno water and wastewater service area, is included in the Fresno/Clovis Subregion.

2.2.4.3 Community Relationships

Outreach to all the entities in the Subregion re-emphasized how important development of trusting relationships is to identifying and addressing water-related needs within DACs. Where there was no previous relationship to draw upon, it was difficult to engage DACs/SDACs.

This was especially true of privately-owned MHPs. Often the MHP Managers would not respond to questions at all and would defer to the off-site owner who rarely returned telephone calls. However, once trust was established most owners became more receptive and welcomed an offer of providing technical assistance.

For example, at the El Monte Village Mobile Home Park, which lies within the Northern Tulare County Sub-Region, the Park Manager was initially non-cooperative and hesitant to divulge any information regarding the trailer park. However, they did agree to take contact information and forward it to the owner. Fortunately, once a rapport was established with the owner, communication channels were opened to the Project Team allowing dialog and outreach. This successful outreach led to the preparation and submittal of a grant application to CDPH on behalf of the MHP.

Additionally, as discussed throughout this report, existing relationships accounted for the successful engagement of different or new stakeholders at the various Subregion meetings.

2.2.4.4 Financial Resources

During the outreach process, DACs were provided introductory information about various funding sources that may be available to them. Most of the DACs contacted indicated that they had no knowledge of upcoming funding cycles. During contact with DACs and SDACs it was learned that support staff does not always forward important time-sensitive information and/or state correspondence such as Statements of Intent (SOI) or Notice of Intent (NOI) to the proper Board member or responsible party for review and response. Small community DACs, such as rural CSDs, are almost exclusively run by

volunteer Boards and sometimes volunteer staff. This can further hamper communication, knowledge and understanding of potential funding sources.

Outreach to DACs also re-emphasized the significance of third-party contractors assisting DACs in completing applications, preparing all required documents, managing the funding process and post-award grant administration. Water system owners that are primarily businesses, such as farms who have staff experienced with government processes and large budgets, tended to prefer to either contract for support services or manage the process themselves. Some school districts also reported they had managed the grant processes themselves. However, smaller school districts, Special Districts, such as, CSDs and PUDs, and privately owned water systems such as those within MHPs simply do not have the ability to prepare funding applications nor do they have the financial resources available to hire a consultant to do it for them. This pattern of sufficient or limited capacity was very evident during outreach conversations.

Another reason for the inability to access funding at the local DAC entity level is the complexity of understanding as to what are fundable projects or improvements. Often the dialogue stops at funding eligibility for one funding agency and no support or reference is provided to the DAC for other funding options.

Through the course of the KBDAC Study, other state funding agency representatives attended the meetings and they learned more about the IRWMP process and the challenges facing DACs in the Kings Basin Region from a new perspective. Now, rather than simply denying funds because the agency's funding is unable to cover a particular project component, the representative may be able to direct the DAC to the IRWM program or other funding sources. Additionally, many times the representatives were able to provide additional information and/or insight into a particular DAC water system's issues and challenges. Participation of the representatives in KBDAC Study has led to relationships developing locally.

2.2.4.5 DAC Participation and Engagement in IRWMPs

A significant impediment to DACs' participation and engagement in the IRWMP process is two-fold. The first difficulty stems from English and Spanish-based speakers. Frequently within the Kings Basin Region the Boards or managers of DACs are primarily Spanish-speaking, which leads to frustration when they are attempting to fully comprehend and participate in the IRWMG meetings and trainings. The second component, often equally prohibitive, is the level of technical discussion that further complicates the ability to understand and engage.

Another observation noted in the Outreach process was the general feeling that most DAC members are unlikely to attend an IRWMP meeting without any outreach or encouragement from an IRWMG Member or a third party such as Self Help Enterprises (SHE), Community Water Center (CWC) or California Rural Legal Assistance, Inc. (CRLA).

The purpose of Outreach was not only to gain information about DAC challenges and water-related problems, but also to inform DACs/SDACs of the mission and goal of IRWMG and make them aware of upcoming IRWMG stakeholder meetings in their Subregion. All entities were encouraged to participate in Subregion meetings. Attendance results of these meetings are discussed in Section 2.

What was learned from the Outreach efforts in regards to participation in the IRWMP process is that DAC services are often managed by either community volunteers or by paid staff with very limited hours. Typically, only one person represents an entire community or school in trainings or meetings

about their system(s). To motivate this person to attend a meeting, he/she needs to recognize the benefit of what will be gained from the time invested. Many DAC leaders are already over-committed just maintaining their own community services. Committing time to regional activities does not immediately seem significant to them.

2.3 Facilitated Planning and Technical Assistance

The KBDAC Study used an approach that fostered stakeholder development and self-selection to identify a Pilot Project for each Subregion. This approach was used to avoid the development of Pilot Projects purely on technical merit, risking the possibility of the stakeholders dismissing the concept. This approach entailed presentation of data and background information to the communities within each Subregion, allowing them to select a potential Pilot Project they believed to be their highest local priority. The consultants involved in the KBDAC Study facilitated this process through several community meetings but made every effort to allow the communities to select the Pilot Project for their Subregion.

Once the Pilot Project was selected, through a process of data collection and analysis, a Pilot Project report was prepared. The Pilot Project reports analyzed varying items depending on the type of project selected, ranging from alternative presentation to the feasibility of inter-agency service sharing. Extensive details of the particulars of each Pilot Project are presented in Section 2.

At the culmination of the Pilot Project Report, the report was presented to the Subregion in a final community meeting and copies were distributed to the stakeholders.

The initial step to facilitate planning in the Subregions was to hold a series of meetings. The plan for each meeting is illustrated in Table 2-1.

Table 2-1: Community Meeting Plan

Meeting	Purpose	Primary Objectives
First	Kick-off for the Subregion, introducing the participants to the Project Team, nearby community members, the Kings Basin IRWMP and the KBDAC Study.	1) Provide an overview of the goals and objectives of the KBDAC Study 2) Provide an introduction to IRWRMPs, regional water management, regional solutions models and case studies 3) Provide an opportunity for participants to discuss their known drinking water challenges and those of their neighbors 4) To identify if there was interest in goal setting and continued engagement in the KBDAC Study
Second	Discuss local water-related problems and solutions and to develop a list of potential Pilot Projects.	1) Provide a summary of the KBDAC Study's goals and objectives, and summary of past meetings 2) Provide an overview of the types of water problems existing in the Subregion 3) Assist the Subregion in prioritizing water issues and identifying regional projects and potential partners for collaboration 4) Develop a list of potential pilots
Third	An opportunity for the Project Team to present a summary of potential projects, listing their possible benefits or disadvantages in an effort to aid the community members in selecting a Pilot Project for their Subregion Intended to be a facilitated meeting where the community members would identify their priority issues and select an associated Pilot Project.	1) Help the Subregion identify the top priority water issue in order to develop a targeted solution 2) Select a regional solution and Pilot Project that could help advance or solve the identified water issue of priority
Fourth	Present the Pilot Project to the Subregion	1) Summarize general interests and purpose of Pilot Project 2) Present findings of the Pilot Project 3) Discuss opportunities to continue to advance solutions in the Subregion beyond the Pilot Project 4) Conduct the Study Evaluation

This was the basic framework outlined at the beginning of the KBDAC Study, but as the process progressed modifications were made within each Subregion to more appropriately match the conditions and circumstances encountered therein. The following subsections discuss each Subregions approach and results specifically.

2.3.1 Northern Tulare County

The Northern Tulare County Subregion is located north of Visalia and borders with the southeast side of Fresno County and northeastern side of Kings County. The Subregion is made up of twenty unincorporated communities and one city. For years, the Subregion has struggled with: 1) Pervasive nitrate contamination of drinking water; 2) Lack of economies of scale to address district challenges; and 3) Lack of financial capacity.

Prior to the commencement of the KBDAC Study, Self-Help Enterprises and Community Water Center had already established relationships with boards and staff of the London CSD, Sultana CSD, East Orosi CSD, Cutler PUD and the Orosi PUD. The fact that Alta Irrigation District (which encompasses all of this Subregion) had already engaged the community members to discuss the concept of a regional surface water treatment plant to serve part of that area made it easier to engage the communities in this study.

2.3.1.1 Descriptions of Meetings and Process

A total of four, two-hour bilingual meetings were successfully facilitated[4] in this Subregion in an effort to educate residents in Integrated Regional Management Planning and introduce the concept of regional solutions. Participants were asked to help identify Pilot Projects that could solve or advance water solutions for the Subregion. Several water systems actively participated in the Pilot Project process: Orosi PUD, Cutler PUD, Sultana CSD, East Orosi CSD, Monson, the Cutler-Orosi Joint Unified School District, as well as representatives from Yettem and Seville. Stakeholders such as community residents, board members, consultants (representing water systems), elected officials, Irrigation District staff, and legislative field representatives were specifically engaged in this effort.

Meeting One:

Meeting one, the 'kick off meeting', was held in the City of Dinuba at the local Memorial Building. It was well attended by community residents, special district board members, and representatives from the City of Dinuba and Alta Irrigation District. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint presentation and factsheets were used to:

1) Introduce regional water management systems;
2) Define consolidation options;
3) Summarize data concerning the makeup of the Subregion and its drinking water, wastewater and storm water issues;
4) Present shared challenges in the Subregion; and,
5) Introduce local examples of facilities collaboration[5].

[4] Bilingual meetings were successfully facilitated by conducting simultaneous translation using transmitters during PowerPoint presentation sessions, translating meeting documents and by providing oral translations during breakout group sessions

[5] The Cutler-Orosi Wastewater Joint Powers Authority addresses wastewater treatment and disposal issues for multiple communities

Following the presentation, the group then discussed the benefits, challenges, fears and risks associated with regional collaboration. Participants were invited to explore the need for additional information and to identify who else should be part of the discussion.

At the end of the meeting, seven of the nine of the participants voted to continue to engage in the effort, and future meeting times and locations were identified. Participants asked the Project Team to present examples of successful regional collaboration projects and case studies capturing costs vs. benefits at future meetings.

Meeting Two:

Based on participant feedback, Meeting Two was held at the Cutler-Orosi Unified School District Board Room in Orosi. This meeting was attended by nineteen participants, including, water board members, community residents, school personnel and a legislative field representative. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint presentation was used to:

1) Review goals and objectives of the KBDAC Study;
2) Summarize key points from the previous meeting;
3) Explore the Herndon Water Company, a full consolidation model;
4) Explore New Mexico Lower Rio Grande Public Water Works Authority, a full consolidation model achieved through the creation of a new water authority; and,
5) Provide an overview of regional solutions and its benefits.

Following the presentation, the group broke into two facilitated breakout groups. Participants were given 45 minutes to identify common water issues in the Subregion and determine which issues could be solved with a solution that involves more than one community. Both Project Teams were asked to determine the two highest-priority water issues and report back to the group. Participants identified top priorities for the Subregion as: 1) Water quality; and 2) Lack of economies of scale. Flooding concerns for the Seville and Yettem area were also discussed.

Participants noted that a number of past studies have been conducted and could be beneficial to the development of regional solutions. The most controversial and noted study was a previous consolidation study that allegedly evaluated the consolidation among the Cutler PUD, Orosi PUD and possibly some of the adjacent water systems and concluded that consolidation of systems would not be beneficial. They then asked the Project Team to secure past studies and identify any opportunities to build off of them.

Meeting Three:

The Subregion continued to meet at the Cutler-Orosi School District Board Room in Orosi. This meeting was attended by 17 participants from Cutler, Orosi, East Orosi, Monson, Yettem, Sultana, Seville, Tulare County and Alta Irrigation District. The primary objectives of the meeting are summarized in **Table 2-1**.

The Project Team developed and presented a Pilot Matrix (See **Appendix H**) to:

1) Present an overview of previous studies[6];
2) Discuss topics evaluated in the studies;
3) Summarize key findings and recommendations;
4) Identify opportunities to build off of previous findings; and,
5) Present relevant staff recommendations.

A PowerPoint presentation and hard copies of the Pilot Matrix were used to discuss past studies, findings, and potential next steps. The Project Team summarized main points in the "Pilot Matrix" and discussed how the tool would be used in the break-out group session.

Following the presentation, the group broke into two facilitated breakout groups. Participants were given an hour to use the Pilot Matrix to:

1) Gain a better understanding of opportunities available to individual communities;
2) Identify options to pursue;
3) Identify potential partners;
4) Identify specific resources available through the Study; and,
5) Rank options.

At the end of the meeting, participants determined the two highest-priority issues to be: 1) Lack of reliable and safe drinking water; and 2) Inefficiencies inherent in operating individual water systems for small communities.

Focusing on these issues, the group selected a Pilot Project, a Shared Services Study, to evaluate the feasibility of shared professional services, including legal, engineering, accounting, and/or operators. By pooling costs and funding for services, the Pilot Project would attempt to identify opportunities to maximize efficiency and reduce costs. In this situation, the DACs could benefit from operating jointly with one or more other DACs. Each DAC would then only be responsible for a portion of staff salaries, operating costs, consultant costs, etc. By consolidating with other nearby DACs, they could potentially hire more skilled staff and solve a portion of the TMF capacity deficiencies.

Meeting Four:

The final meeting was held in at the Cutler-Orosi Unified School District Wildcat Room in Orosi. This meeting was the least-well attended of the four. A total of four participants from Sultana, Cutler and Seville were present. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint presentation was used to:

1) Review objectives of the KBDAC Study;
2) Summarize efforts undertaken as part of the KBDAC Study;

[6] Included in the matrix were the Surface Water Supply Study (Alta); the Cutler Orosi Incorporation Study; and Municipal Service Reviews for the Cutler PUD, Orosi PUD, East Orosi CSD and the Sultana CSD

3) Discuss general interests of the Subregion;
4) Review the purpose and benefits of IRWMPs;
5) Review the purpose of Pilot Project;
6) Discuss funding opportunities for the Tulare Lake Basin; and,
7) Determine next steps and of the purpose of the Pilot Project.

The Project Team then used a special PowerPoint to communicate the findings of the report Economies of Scale Pilot Project. An hour was allocated to this part of the meeting and participants were given the opportunity to ask questions and get clarification from the lead engineer. The Project Team then transitioned back to the introductory and guiding PowerPoint to discuss next steps to continue advancing solutions in the Subregion using the Pilot Project. Participants were also provided information on how to become a Member or Interested Party of the Kings Basin Water Authority. The meeting concluded with an evaluation session.

2.3.1.2 Constraints Encountered

Some of the constraints in this Subregion included:

1) Obtaining access to past studies and financial information;
2) Support for specific types of regional solutions by stakeholders representing larger water districts;
3) Conducting the Pilot Project, a Shared Services Study, that was originally selected by the Subregion was not possible due to data needs, scope and budget and time constraints; and,
4) Attendance/engagement at the final meeting.

The Project Team also faced challenges securing detailed financial information needed for each of the districts in order to conduct a full shared services analysis. There were reports of a past consolidation study, but no copy of the report was ever received. While information such as budgets, expenditures, and staffing characteristics was made available, it was difficult to accurately extract water system data that would allow a commensurate (apples to apples) evaluation. The Study scope was adjusted to identify an evaluation tool that could provide a commensurate evaluation. Due to the lack of detailed information to conduct a shared services study the Pilot Project was modified to evaluate water system efficiencies based on the number of connections. The Pilot Project focused on identifying trends of improved efficiencies based on the economies of scale.

There was resistance to and lack of support for full consolidation concepts and projects from some of the stakeholders representing larger water districts. The KBDAC Study was not able to fully address the level of resistance. The KBDAC Study did however, provide the opportunity to disseminate information about this concept, provide specific case studies, and facilitate discussion between users, elected officials and consultants in order to better understand perceived benefits and challenges. The Pilot Project also began to identify some concrete benefits for the larger water districts and provided a roadmap of potential next steps to help generate interest and/or conduct the analysis needed to fully evaluate the idea of consolidation.

Finally, despite having good engagement and interest throughout the process, the Subregion had a low attendance at the fourth and final meeting. Some of the stakeholders were unable to attend due to

health problems or other commitments; others may not have received notification of the meeting. Participants who were present at the final meeting agreed to share the results with other stakeholders by using upcoming community planning efforts, including community discussions and meetings. CWC also offered to support the group.

2.3.2 Fresno/Clovis and Surrounding Areas

The Fresno Clovis and Surrounding Areas Subregion is located in the center of Fresno County. Approximately fifty communities are located within the Subregion, including the City of Fresno and City of Clovis. This Subregion has struggled with Nitrate, DBCP and Total Coliform challenges. The Subregion also includes a number of communities with private well owners. Approximately 7 of the communities are not permitted as a Public Water System.

2.3.2.1 Descriptions of Meetings and Process

A total of six meetings were held in this Subregion, due to initial difficulties gaining participation by DAC members. Most were not the Study's traditional facilitated community meeting and only one of the meetings required Spanish simultaneous translation.

This Subregion held two separate kick-off meetings. The agenda for the third meeting covered the information planned for both the typical second and third meetings. Additionally, there were actually three meetings dealing with the Pilot Project, including a meeting with a community pilot committee and a surveyor training.

Stakeholders, including board members, community residents, property owners, school representatives and business owners from Easton, Orange Center School and surrounding areas, along with representatives from the County of Fresno and CDPH, actively engaged in this process.

Meeting One:

The Project Team attempted twice to kick off planning efforts and begin engagement of the DACs by holding two kick-off meetings in the City of Fresno. The first was held at the Dell Web Room in the City of Fresno. Unfortunately, despite extensive outreach efforts, planning, and willingness to attend, no one attended the first meeting. Recognizing the downtown location might have hindered DAC participation, a second meeting was held the Fresno Farm Bureau, also in the City of Fresno but with easier accessibility and parking. Two DACs, Easton and Malaga, were represented at this meeting. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint presentation and factsheets were used to:

1) Provide an overview of the KBDAC Study's goals and objectives;
2) Introduce regional water management systems;
3) Define consolidation models;

4) Highlight specific case study examples[7]; and,

5) Summarize data concerning the makeup of the Subregion and its drinking water, wastewater and storm water issues.

Following the presentation, participants were given a seven-question handout and asked to discuss the benefits, challenges, fears, and risks associated with regional collaboration. Participants were invited to explore the need for additional information and to identify who else should be part of the discussion.

Managerial consolidation between Malaga and the County of Fresno was discussed; upon learning that Malaga was in need of a wastewater operator, Fresno County offered to work with them. Both DAC participants showed interest in the KBDAC Study and committed to attend a future meeting.

At the end of the meeting, the Project Team and participants discussed outreach challenges for the Subregion including meeting location and large make-up of the Subregion. The Project Team identified the Easton and surrounding areas as the priority area of focus and discussed new outreach strategies and meeting locations.

The Project Team then held individual meetings with stakeholders from Easton, the Orange Center School and several other local schools to gather information about their priority water issues, potential regional projects and potential partners. This was done to gather the information necessary to develop a Pilot Matrix for the Subregion.

Meeting Two/Three:

Following the advice from participants at the second Meeting One and after meeting with key representatives from Easton, Orange Center School and other local schools, the Project Team facilitated a meeting in Easton that was designed to meet the primary objectives of the planned meetings two and three, as summarized in **Table 2-1**.

The Project Team held a roundtable discussion with the various participants to:

1) Provide a summary of the KBDAC Study's goals and objectives;

2) Summarize key points from kick off and individual meetings with local stakeholders of the Subregion, including a summary of the highest priority water needs identified;

3) Discuss the purpose of the Pilot Matrix; and,

4) Provide an overview of the solutions identified in the Pilot Matrix.

The Project Team used two tools to facilitate the selection of a regional solution and Pilot Project that could help advance or solve the identified water issue of priority. The first was a "Characteristics Map", that showed the varying types of water issues identified from existing secondary data for DACs in each Subregion. This map was especially useful to community members because they were able to see the community's water need, the water needs of their neighbors and how close they were in proximity to other communities. The second was a Pilot matrix that listed regional solutions available to solve the

[7] The Project Team invited the County of Fresno to lead the "Regional Collaboration: what it means and how it can help" section of the presentation because they had the ability to provide specific local case studies to explain management consolidation, physical consolidation and consolidation with a private company and to discuss the advantages and disadvantages with private and public DAC entities.

Subregion's common water issues, potential partners, some of the potential benefits, barriers and additional data, studies, pilots or questions needed in order to move forward. This tool was especial useful to Project Team because it allowed the engineers to list the various pilot analysis available to advance each of the identified water issue. Ultimately, it provided the Subregion participants a menu of options.

Participants were asked to use the Pilot Matrix to:

1) Gain a better understanding of opportunities available to individual communities;
2) Identify options to pursue;
3) Identify potential partners;
4) Identify specific resources available through the KBDAC Study; and,
5) Rank options.

Ultimately, the Subregion identified drinking water in the Easton, Orange Center School and surrounding area as the top water issue of this Subregion. Specifically, the Subregion DAC participants recognized a lack of residents' knowledge regarding private well water quality combined with a lack of knowledge or interest in other options to supply drinking water as the most relevant barrier that needed to be addressed before future discussions and continued efforts could advance in this area. Therefore, a Household Survey for Easton, Orange Center School neighborhoods and Surrounding Rural Areas was selected as their Pilot Project. The survey was selected with the purpose of obtaining a better understanding of the community residents' perspectives on their drinking water and interest in implementing different options to supply water and potential next steps.

The community pilot committee worked with the Project Team to develop the survey tool, sampling proposal, and to assist in recruiting surveyors and conducting survey interviews. The Project Team was asked to develop a draft survey tool, a sampling proposal and to hold a meeting with the community pilot committee to finalize.

Meeting with Community Pilot Committee:

Following the selection of the Pilot Project, the Project Team worked on developing the draft survey tool, a surveyor training and other survey tools necessary, including bilingual scripts and consent forms. The Project Team also contracted with the Alliance for Community Research and Development, LLC from UC Merced, as the consultant responsible for recruiting and managing surveyors and writing a Pilot Report.

A meeting with the community pilot committee was held to:

1) Present the draft survey and obtain feedback;
2) Present sampling plan proposal and obtain feedback; and,
3) Discuss Pilot Project timeline and next steps.

Following the review of the draft survey questions, the Subregion ultimately agreed on a survey that would determine private well owners' understanding of drinking water quality and their desire or willingness to respond to water contamination if their water is contaminated, including joint solutions.

Surveyor Training:

The Project Team held a surveyor training for the Easton and Orange Center area volunteers, California State University, Fresno interns and UC Merced student surveyors.

A PowerPoint was used to:

1) Provide a Pilot Project overview & Goals;
2) Provide an overview of Communities to be surveyed; and,
3) Conduct a Surveying 101 training
    a) Survey background;
    b) Ensuring success;
    c) Being a "smart" surveyor; and
    d) The do's/don'ts of surveying

Following the presentation, hired and volunteer surveyors were paired and asked to conduct a practice exercise by surveying each other.

The Project Teams were then asked to review their survey questions and provide feedback on the questions, length of survey and challenges with surveying or documenting answers. UC Merced was then invited to discuss sampling plan, timeline, supplies and next steps.

Meeting Four:

The primary objectives of the meeting are summarized in **Table 2-1**, previously.

PowerPoint presentations were used to:

1) Review the goals and objectives of the KBDAC Study;
2) Summarize key points from past meeting and process;
3) Review the purpose of Pilot Project;
4) Discuss findings of the Pilot Project; and,
5) Determine next steps.

A special PowerPoint was used to communicate the pilot results. Specifics included:

1) An overview of the survey study objectives;
2) An overview of the survey development;
3) An overview of the survey implementation;
4) An overview of things to consider when interpreting results;
5) Specific survey results; and,
6) A summary of the survey results.

Following UC Merced's presentation and a question and answer session, the Project Team transitioned back to the first PowerPoint and discussed next steps for the Subregion. Next steps included opportunities to use the pilot, potential funding opportunities and ways to engage in the IRWM process.

At the end of the meeting, the Subregion decided to hold a future community meeting to discuss the survey results and get consensus on next steps.

2.3.2.2 Constraints Encountered

1) Initial meeting locations were not conducive to community participation, as they were held in Fresno and not within the local communities. This constraint was addressed by moving meeting locations to Easton following the Project Team's re-evaluation of the outreach strategy and overall approach in this Subregion.

2) Engagement was difficult to achieve in the beginning. As noted above, the Project Team tried holding two kick off meetings in order to begin planning efforts and initiate engagement of the DACs in the KBDAC Study efforts. This constraint was addressed by: a) revaluating outreach strategies; b) reducing the scope of outreach to key DACS, where there was an increased chance of success; and c) by allowing a neutral Project Team member to conduct the individual meetings and; d) scheduling a meeting on a date the DAC stakeholders had approved. Targeted DACs included: Easton, Orange Center School neighborhoods and a few local surrounding schools. Given CWC's outreach and facilitation skills, CWC lead the outreach efforts and held abbreviated over the phone and/or in-person kick off meetings with the key identified stakeholders to get a sense of their water issues of priority and ideas of potential Pilot Projects to allow the Project Team to develop a pilot matrix.

3) The final meeting in this Subregion was challenging. Residents had received a flier prepared by a member of the public reporting Meeting Four was being held to inform the community of the intent to connect to the City of Fresno. While the information circulated was incorrect and misrepresented the Pilot Project, the meeting was well attended. This topic is especially controversial due to a long standing resistance in the community against connecting to the City of Fresno. Ultimately, the Project Team was able to overcome this constraint by using its facilitation skills, being transparent about the process, by providing information and by reassuring the participants that no decisions had been made.

4) This Subregion struggled to gain community interest during the kick-off phase and therefore did not receive much information about IRWMPs and the KBWA. However, it is important to emphasize that Easton had recently joined the KBWA as an Interested Party and therefore had begun to learn about the IRWM process. Furthermore the Pilot Project selected has the potential to help Easton to become more fully engaged in the IRWM process and to participate in future IRWM funding efforts because the survey results clearly identify the types of projects the Easton public would support. The Pilot Project has also increased the Easton area's chances to obtain CDPH funding to advance solutions in the area.

2.3.3 Western Fresno County

The Western Fresno Subregion encompasses the western area of the Kings Basin and includes 20 communities west of the City of Fresno in the Fresno County. The Subregion has consistently struggled with 1) drinking water challenges due to arsenic, uranium, bacteria, and fluoride, and 2) wastewater challenges.

2.3.3.1 Descriptions of Meetings and Process

A total of four, two-hour bilingual facilitated[8] community meetings were successfully held in the Subregion in an effort to educate them about Integrated Regional Management Planning, regional solutions and to seek their participation to help identify Pilot Projects that could solve or advance water solutions for the Subregion. Two additional meetings were held in this Subregion between Lanare residents, other stakeholders of the Subregion and the Riverdale PUD for the purposes of helping advance the Pilot Project analysis. Representatives from several water systems, communities, school districts, cities and residents actively participated in the Pilot Project process including Biola, Caruthers, Raisin City, Raisin City Elementary School, Perry Colony, Riverdale, Lanare, Burrel Elementary School and the City of San Joaquin. Other stakeholders included representatives from CDPH, CRLA, San Joaquin Valley (SJV) Rural Development Center and legislative offices.

Meeting One:

An initial Meeting One was held in Caruthers and was well attended by community residents, Board members and consultants, representing water systems, from the Lanare, Riverdale and Caruthers communities. A second Meeting One was held in Kerman in an attempt to engage stakeholders from San Joaquin, Raisin City, Biola and surrounding areas. Unfortunately this meeting was not well attended. Biola was the only DAC represented at the meeting. The second Meeting One provided the same information as the first Meeting One in Caruthers. At the end of the meeting, the Biola representative expressed interest in moving forward and agreed to travel to Raisin City for future meetings. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint presentation and factsheets were used to:

1) Provide an overview of the KBDAC Study's goals and objectives;
2) Introduce regional water management systems;
3) Define consolidation models;
4) Highlight specific case study examples[9]; and,
5) Summarize data concerning the makeup of the Subregion and its drinking water, wastewater and storm water issues.

Following the presentation, participants were given a seven-question handout and asked to participate in a group discussion to discuss the benefits, challenges, fears, and risks associated with regional collaboration. Participants were invited to explore the need for additional information and to identify who else should be part of the discussion.

[8] Bilingual meetings were successfully facilitated by conducting simultaneous translation using transmitters during PowerPoint presentation sessions, translating meeting documents and by providing oral translations during breakout group sessions

[9] The Project Team invited the County of Fresno to lead the "Regional Collaboration: what it means and how it can help" section of presentation because they had the ability to provide specific local case studies to explain, management consolidation, physical consolidation, consolidation with a private company and discussed the pros and cons with private and public entities. The Project Team also discussed the New Mexico Lower Rio Grande case study. These various case study examples, helped addressed some of the perceived concerns by the participants about consolidation and collaboration with others.

At the end of the meeting, all participants agreed to continue engagement in the KBDAC Study process. Raisin City was proposed as the central meeting location for the Subregion.

Meeting Two:

This meeting was well attended by various stakeholders from the following communities: Lanare, Burrell, City of San Joaquin and Biola. Furthermore, the local California Department of Public Health representative for the area and a legislative representative from Assembly member Perea's office were also present. The primary objectives of the meeting are summarized in **Table 2-1**.

The Project Team used a PowerPoint presentation to:

1) Provide a summary of the KBDAC Study's goals and objectives;
2) Summarize key points from past meetings; and,
3) Discuss current efforts within the Subregion.

Following the presentation, participants separated into two facilitated break-out groups to identify common water issues in the Subregion and determine which issues could be solved with a solution that involves more than one community. Both Project Teams were asked to determine the two highest priority water issues and report back to the group.

Participants identified top priorities for the Subregion as: 1) water; and 2) wastewater. Participants also noted interest in Managerial or Operational Collaboration and the need for a Regional Water Metered Conservation Rate. Participants also discussed the possibility of staying independent but then realized full consolidation might be maximum potential.

At the end of the meeting, participants identified a number of collaborative possibilities, including extending water and sewer services to the areas on private wells and on individual septic systems, collaboration between Raisin City and Caruthers, and collaboration between Lanare and Riverdale. Participants asked the Project Team to identify potential Pilot Projects that could solve the top water priorities identified at the meeting and that could be funded as part of the KBDAC Study.

Meeting Three:

Meeting Three was held in Raisin City and was attended by residents and school officials from Lanare, Raisin City, San Joaquin and Biola; others in attendance included representatives from CDPH, CRLA, and SJV Rural Development Center. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint presentation was used to:

1) Summarize key points from previous meetings, including the identified common water issues and potential Pilot Projects;
2) Discuss the purpose of the Pilot Matrix;
3) Provide an overview of the solutions identified in the Pilot Matrix; and,
4) Provide an overview of the tools, (Pilot Matrix and Characteristics Maps) available to select a Pilot Project.

The Project Team used two tools to facilitate the selection of a regional solution and Pilot Project that could help advance or solve the identified water issue of priority. The first was a "Characteristics Map", that showed the varying types of water issues identified from existing secondary data for DACs in each

Subregion. This map was especially useful to community members because they were able to see the community's water need, the water needs of their neighbors and how close they were in proximity to other communities. The second was a Pilot matrix that listed regional solutions available to solve the Subregion's common water issues, potential partners, some of the potential benefits, barriers and additional data, studies, pilots or questions needed in order to move forward. This tool was especial useful to Project Team because it allowed the engineers to list the various pilot analysis available to advance each of the identified water issue. Ultimately, it provided the Subregion participants a menu of options.

Following the presentation, the group broke into two facilitated breakout groups and was given an hour to use the Pilot Matrix and characteristics map to:

1) Gain a better understanding of opportunities available to individual communities;
2) Identify options to pursue;
3) Identify potential partners;
4) Identify specific resources available through the KBDAC Study; and,
5) Rank options.

At the end of the meeting, despite strong interests in their own community concerns, Subregion participants selected a preliminary Feasibility Study to evaluate consolidation of sewer services between Lanare and Riverdale. Participants selected the pilot because of: 1) the severity of the wastewater problem in Lanare; 2) the opportunity to pursue a regional solution by fostering collaboration between Lanare and the Riverdale PUD and; 3) the opportunity to pursue funding for a Feasibility Study for evaluating and developing a preferred alternative through this effort.

As a follow up, the Project Team was asked to attend the Riverdale board meeting to inform them of the Pilot Project selected by the Subregion and to encourage them to provide the information needed to ensure the study can be successful.

Board meetings between Lanare, Subregion participants and the Riverdale PUD

The Project Team, Lanare residents and other Subregion participants, CRLA, and SJV Rural Development Center, then attended two Riverdale PUD board meetings, in an effort to inform the Riverdale PUD about the Pilot Project selected and its purpose, and seek consent to share information needed for the Pilot Project. In the end, Riverdale PUD agreed to share information between engineers, only for purposes of the Pilot Project.

Meeting Four

Meeting Four was held in Raisin City and was attended by residents from Lanare, and Raisin City. Others in attendance included, representatives from CDPH, CRLA, and SJV Rural Development Center. The primary objectives of the meeting are summarized in **Table 2-1**.PowerPoint presentations were used to:

1) Review the goals and objectives of the KBDAC Study;
2) Summarize key points from past meeting and process;
3) Review the purpose and benefits of IRWMPs;
4) Review the purpose of Pilot Project;

5) Discuss finding of the Pilot Project; and,
6) Determine next steps.

A special PowerPoint was used to communicate the findings of the Technical Report and Preliminary Grant Application for a Feasibility Study concerning the possible sewer interconnection between Lanare CSD and Riverdale PUD. An hour was allocated to this part of the meeting and participants were given the opportunity to ask questions and get clarification from the lead engineer.

PowerPoint specifics included:

1) Overview of the Pilot Project selected and its purpose;
2) Purpose of a feasibility study;
3) What is needed to generate a successful preliminary grant application;
4) Steps taken to complete Pilot Project;
5) A Summary of the topics included in the Preliminary Technical Report;
    a) Problem;
    b) Alternatives/Solutions;
    c) Advantages and Disadvantages of alternatives;
    d) Estimated costs of each alternative;
    e) Items to be evaluated.
6) Project Team recommendations on what is needed for a successful Pilot Project;
7) Potential funding opportunities to advance the pilot; and,
8) Opportunities to continue advancing solutions
    a) Using the pilot
    b) Continued engagement in the IRWM process

Participants were provided information on how to become a Member or Interested Party of the KBWA. The meeting concluded with an evaluation session.

2.3.3.2 Constraints Encountered

This Subregion is large, with diverse needs and a large geographic area. The Project Team struggled to find a central meeting location to increase engagement chances. The Project Team met with the County of Fresno and with CRLA to get suggestions on where to hold the meeting and was advised to hold two kick off meetings, in Kerman and Caruthers. The initial meeting in Caruthers was well attended but the meeting in Kerman was not. After reconsideration, all remaining meetings were in Raisin City based on input from kick off meeting attendees.

2.3.4 Eastern Fresno County

The Eastern Fresno Subregion encompasses the east-central area of Kings Basin and includes 41 communities east of the City Fresno, within Fresno County. For years, the Subregion has struggled with

1) drinking water challenges due to arsenic, total coliform and some nitrate issues and 2) wastewater challenges and source water vulnerabilities.

2.3.4.1 Descriptions of Meetings and Process

A total of four, two-hour facilitated community meetings were successfully held in the Subregion in an effort to educate DAC stakeholders about Integrated Regional Management Planning, regional solutions and to seek their participation to help identify Pilot Projects that could solve or advance water solutions for the Subregion.

Several stakeholders from the City of Selma, County of Fresno, City of Orange Cove, Laton, Del Rey and CDPH actively participated in this process. Additionally, stakeholders, such as City staff, City officials and community residents from the City of Reedley also participated during the final fourth meeting of the Subregion.

Meeting One:

Meeting one was held in Parlier and was attended by stakeholders from Laton, the County of Fresno and Del Rey. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint presentation and factsheets were used to:

1) Provide an overview of the KBDAC Study's goals and objectives;
2) Introduce regional water management systems; and,
3) Define consolidation models[10].

Following the presentation, participants were asked the two questions: 1) what are the water needs in your community; and 2) are you aware of other water needs within the area, in an effort to document their water issues and known water issues of their neighbors.

The group then discussed the benefits, challenges, fears and risks associated with regional collaboration. Participants were invited to explore the need for additional information and to identify who else should be part of the discussion.

At the end of the meeting, all participants agreed to continue engagement in the KBDAC Study process.

Meeting Two:

This meeting was held in Parlier and was attended by stakeholders from Laton, Del Rey, Selma, and CDPH and by a legislative field representative from Assembly member Perea's office. The primary objectives of the meeting are summarized in **Table 2-1**.

The Project Team used a PowerPoint presentation to:

[10] The Project Team invited the County of Fresno to lead the "Regional Collaboration: what it means and how it can help" section of presentation because they had the ability to provide specific local case studies to explain management consolidation, physical consolidation, consolidation with a private company and discussed the pros and cons with private and public entities. The Project Team also discussed the New Mexico Lower Rio Grande case study. These various case study examples, helped addressed some of the perceived concerns by the participants about consolidation and collaboration with others.

1) Provide a summary of the KBDAC Study's goals and objectives;
2) Summarize key points from past meetings; and,
3) Provide an overview of the types of water problems existing in the Subregion.

Following the presentation, the group was given a "characteristics map," that showed the varying types of water issues identified from existing secondary data for DACs in each Subregion, a seven question handout and given 50 minutes to identify the common water issues in the Subregion and determine which water issues could be solved with a solution that involves more than one community. The group was then asked to determine the two highest priority water issues and report back to the Project Team.

Participants identified top water priorities for the Subregion as: 1) water quality; 2) source vulnerability; and 3) flooding challenges. Specifically, participants noted that the Subregion has a lot of small systems in the areas near cities and areas with shallower, private wells may have water quality issues (e.g. DBCP), the lack of a redundant source of drinking water for the City of Orange Cove and flooding concerns for Laton.

At the end of the meeting, participants asked the Project Team to identify potential Pilot Projects that could solve the top water priorities identified at the meeting and that could be funded as part of the KBDAC Study.

Meeting Three:

Meeting Three was held at the Reedley Community Center in the City of Reedley and was attended by the City of Orange Cove, City of Selma, AECOM (on behalf of Del Rey Community Service District) and CDPH. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint presentation was used to:

1) Summarize key points from past meetings, including the identified water issues of priority and potential Pilot Projects;
2) Discuss the purpose of the Pilot Matrix;
3) Provide an overview of the solutions identified in the Pilot Matrix; and,
4) Provide an overview of the tools, (Pilot Matrix and Characteristics Maps) available to select a Pilot Project.

The Project Team used two tools to facilitate the selection of a regional solution and Pilot Project that could help advance or solve the identified water issue of priority. The first was a "Characteristics Map", that showed the varying types of water issues identified from existing secondary data for DACs in each Subregion. This map was especially useful to community members because they were able to see the community's water need, the water needs of their neighbors and how close they were in proximity to other communities. The second was a Pilot matrix that listed regional solutions available to solve the Subregion's common water issues, potential partners, some of the potential benefits, barriers and additional data, studies, pilots or questions needed in order to move forward. This tool was especial useful to Project Team because it allowed the engineers to list the various pilot analysis available to advance each of the identified water issue. Ultimately, it provided the Subregion participants a menu of options.

Following the presentation, participants were asked to use the pilot matrix to:

1) Gain a better understanding of opportunities available to individual communities;
2) Identify options to pursue;
3) Identify potential partners;
4) Identify specific resources available through the KBDAC Study; and,
5) Rank options.

At the end of the meeting, participants decided to aid the City of Orange Cove in securing funding to conduct a Feasibility Study to address its water supply needs. Specifically, the Project Team was asked to prepare a KBWA IRWMP Preliminary Grant Application for a Feasibility Study regarding the lack of a reliable water supply for the City of Orange Cove during the time every three years when Friant Kern Canal is off-line for planned maintenance.

Meeting Four:

Meeting Four was held at the Reedley Community Center in the City of Reedley and was attended by the Cities of Orange Cove and Reedley. The primary objectives of the meeting are summarized in **Table 2-1**.

The Project Team began the meeting by providing a summary of the goals and objectives of the KBDAC Study, an overview on IRWMPs their purpose and benefits, how the Pilot Project was selected and outreach limitations.

A PowerPoint was then used to:

1) Discuss the Pilot Project Selected and Its Purpose;
2) Purpose of a Feasibility Study;
3) What is Needed to Generate a Successful Preliminary Grant Application;
4) Steps Taken to Complete Pilot Project;
5) Provide a Summary of the topics included in the Preliminary Technical Report
    a) Problem
    b) Alternatives/Solutions
    c) Advantages and Disadvantages of Alternatives
    d) Costs to conduct a Feasibility Study
    e) Items to be evaluated
    f) Project Team recommendations on what is needed for a successful Pilot Project
6) Potential funding opportunities; and,
7) Discuss opportunities to continue advancing solutions
    a) Using the Pilot Project
    b) Continued engagement in the IRWM process

Subregion participants spent almost the entire two hours discussing the findings of the Preliminary Technical Report and potential funding sources. Special attention was given to one alternative, which identified the City of Reedley as a potential partner for the City of Orange Cove; this alternative was not acceptable to the City of Reedley.

The Project Team then concluded the meeting by discussing next steps to continue advancing solutions in the Subregion using the Pilot Project, including how the pilot can be used, current efforts and funding sources.

2.3.4.2 Constraints Encountered

The Project Team learned at the fourth meeting that representatives from the City of Reedley were not supportive of an alternative which named the City of Reedley as a potential consolidation partner in Pilot Project Report. Various stakeholders and even the local Reedley Exponent newspaper voiced concerns about the alternative and lack of targeted outreach efforts prior to making the option public.

An important lesson can be learned from the negative reaction of representatives of the City of Reedley compared to how successful the process went in the Western Fresno Subregion. In the Western Fresno Subregion, the Project Team had previous knowledge of past history between Lanare and Riverdale; therefore, time and resources were committed to meet directly with the Riverdale PUD to inform them of the selected Pilot Project and to seek their support for the high level analysis needed and to share information for the pilot analysis.

Conversely, in the Eastern Fresno County Subregion, despite earlier contact regarding an emergency temporary intertie between the Reedley and Orange Cove water systems, the idea of a long-term intertie had not been discussed specifically with City of Reedley representatives and the Project Team was not aware of the sensitive relationship between the two cities. Based on this concern by the City of Reedley the Pilot Project alternative was modified. However, additional outreach prior to Meeting Four could have mitigated the presentation of an unrealistic alternative.

2.3.5 Northern Kings County

The Northern Kings Subregion encompasses the south-central area of the Kings Basin, is located in the northern part of Kings County, and includes the City of Hanford and seven additional communities. For years, the Subregion has struggled with 1) drinking water challenges due to arsenic, and 2) with DACs that are in “white areas” that are not covered by any IRWMP and do not have the resources or political support to create an IRWM on their own.

2.3.5.1 Descriptions of Meetings and Process

A total of four, two-hour facilitated community meetings were successfully held in the Subregion in an effort to educate them about Integrated Regional Management Planning, regional solutions and to seek their participation to help identify Pilot Projects that could solve or advance water solutions for the Subregion.

Meeting One:

Meeting one was held in Hanford and was attended by stakeholders from Armona, Stratford and the City of Hanford[11]. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint was used to:

1) Provide an overview of the KBDAC Study's goals and objectives;
2) Introduce regional water management systems; and,
3) Define consolidation models[12].

Following the presentation, participants were asked the following questions: 1) what are the water needs in your community; and 2) are you aware of other water needs within the area, in an effort to document their water issues and known water issues of their neighbors.

Thereafter, the group discussed the benefits, challenges, fears and risks associated with regional collaboration. Participants were invited to explore the need for additional information and to identify who else should be part of the discussion. At this meeting the City of Hanford representative discussed four water consolidation projects with that the City was involved with. These areas included the Four Seasons and Lacey Courts MHPs, community of Hamblin and Kit Carson Elementary School. A good take away from this information was that the consolidations were agreed to after it was determined that they were in compliance with city policies to provide service , when necessary, in the City's Sphere of Influence, provided there was no subsidy by the City. Funding for these various projects came from CDPH which allowed the City to develop additional water capacity to meet the additional water demand created by serving these areas. It made much more sense to drill one larger well for the whole area, than separate wells (with potential arsenic treatment plants) in each area.

At the end of the meeting, participants from Armona and Stratford showed interest in continued engagement as part of the KBDAC Study. Representatives from Armona and Stratford asked if they could be included in this effort despite the fact that they were not within the Kings Basin boundary and noted their strong interest in becoming part of an IRWMP. As next steps, the Project Team was tasked with identifying who would be eligible to be part of this effort and how the Project Team would respond to interest by communities outside of the KBWA boundary limits.

Meeting Two

Meeting two was held in Hanford and was attended by various stakeholders from Armona, City of Hanford, Stratford and Home Garden. The primary objectives of the meeting are summarized in **Table 2-1**.

[11] None of these communities are located within the KBWA IRWMP Boundary.

[12] The Project Team invited the County of Fresno to lead the "Regional Collaboration: what it means and how it can help" section of presentation because they had the ability to provide specific local case studies to explain management consolidation, physical consolidation, consolidation with a private company and discussed the pros and cons with private and public entities. The Project Team also discussed the New Mexico Lower Rio Grande case study. These various case study examples, helped addressed some of the perceived concerns by the participants about consolidation and collaboration with others.

The Project Team used a PowerPoint presentation to:

1) Provide a summary of the KBDAC Study's goals and objectives;
2) Summary of past meetings; and,
3) Provide an overview of the types of water problems existing in the Subregion.

Following the presentation, the group was handed a "characteristics map," that showed the varying types of water issues identified from existing secondary data for DACs in each Subregion, a seven question handout and given 50 minutes to identify the common water issues in the Subregion and determine which water issues could be solved with a solution that involves more than one community. The group was then asked to determine the highest priority water issues and report back to the Project Team.

Participants identified top water priorities for the Subregion as: 1) drinking water (water quality and water supply); 2) wastewater (treatment options and need for facility expansions); 3) lack of economies of scale to hire and maintain certified operators; and 4) IRWMA membership.

As next steps, the Project Team was asked to refine the list of potential projects ideas and to develop a list of Pilot Projects that could be funded as part of the KBDAC Study.

Meeting Three

Meeting three was held in the City of Hanford and was attended by stakeholders from Armona and Home Garden. The primary objectives of the meeting are summarized in **Table 2-1**.

A PowerPoint presentation was used to:

1) Provide a summary of key points from past meetings, including the identified water issues of priority and potential Pilot Projects;
2) Discuss the purpose of the Pilot Matrix;
3) Provide an overview of the solutions identified in the Pilot Matrix; and,
4) Provide an overview of the tools, (Pilot Matrix and Characteristics Maps) available to select a Pilot Project.

The Project Team used two tools to facilitate the selection of a regional solution and Pilot Project that could help advance or solve the identified water issue of priority. The first was a "Characteristics Map", that showed the varying types of water issues identified from existing secondary data for DACs in each Subregion. This map was especially useful to community members because they were able to see the community's water need, the water needs of their neighbors and how close they were in proximity to other communities. The second was a Pilot matrix that listed regional solutions available to solve the Subregion's common water issues, potential partners, some of the potential benefits, barriers and additional data, studies, pilots or questions needed in order to move forward. This tool was especial useful to Project Team because it allowed the engineers to list the various pilot analysis available to advance each of the identified water issue. Ultimately, it provided the Subregion participants a menu of options.

Following the presentation, participants were asked to use the Pilot Matrix to:

1) Gain a better understanding of opportunities available to individual communities;

2) Identify options to pursue;
3) Identify potential partners;
4) Identify specific resources available through the KBDAC Study; and,
5) Rank options.

At the end of the meeting, participants selected a Pilot Project with two components: 1) prepare a KBWA IRWMP application to join as an Interested Party for Armona CSD and 2) Investigate alternatives for improved treatment process and waste removal options from the Home Garden CSD Arsenic Water Treatment Facility. These projects were proposed with the intent of fostering involvement of Armona CSD in IRWM process and aiding the Home Garden CSD in lowering operating costs for their Arsenic Treatment Facility.

Meeting Four

Meeting four was held in Hanford and was attended by Armona. The primary objectives of the meeting are summarized in **Table 2-1**.

The Project Team began the meeting by summarizing the objectives of the KBDAC Study, an overview on IRWMPs their purpose and benefits.

The Project Team then used a PowerPoint to communicate the findings of the Armona IRWM membership and the Home Garden Water Treatment Systems Evaluation Pilot Project.

PowerPoint specifics included:

1) Discuss the Pilot Project Selected and Its Purpose;
2) Pilot Project Benefits;
3) Steps Taken to Complete Pilot Project;
4) Armona Pilot Project;
5) Home Garden Pilot Project;
    a) Treatment options
    b) Alternatives/Solutions
    c) Advantages and Disadvantages of Alternatives
    d) Costs to conduct a Feasibility Study
    e) Items to be evaluated
    f) Project Team recommendations on what is needed for a successful Pilot Project
6) Potential funding opportunities; and,
7) Discuss opportunities to continue advancing solutions
    a) Using the pilot
    b) Continued engagement in the IRWM process

During this part of the meeting, participants were given the opportunity to ask questions and get clarification from the lead engineer. The Project Team then discussed next steps to continue advancing

solutions in the Subregion using the Pilot Project, including how the pilot can be used, current efforts and funding sources. To conclude the meeting, the participant was interviewed as part of the Study evaluation.

2.3.5.2 Constraints Encountered

In the Northern Kings County Subregion, one of the constraints the Project Team faced was getting input from those communities that are actually within the IRWMP boundaries. Little participation came from those Kings County communities in the IRWMP, though towards the end of the process, Home Garden became involved. At the first two meetings, the majority of community representation came from Kings County communities outside of the Kings or any other IRWMP boundaries; Armona and Stratford. This participation highlighted not only the water-related needs of these communities, but the conundrum in which they and other communities find themselves is that they are not within the boundaries of any IRWMP.

A related constraint that the Project Team faced in this Subregion was postponing the facilitated process to get a formal response from DWR and the UK IRWMA on how to move forward with this Subregion.

2.4 Pilot Projects

2.4.1 Northern Tulare County

2.4.1.1 Pilot Description

At the culmination of the third meeting in the Subregion, the stakeholders determined the highest-priority issues for their communities are the lack of reliable and safe drinking water and the inefficiencies inherent in operating individual water systems for their small communities. Focusing on these issues, the group selected a Pilot Project (Shared Services Study) to evaluate the possibility of sharing services such as legal, engineering, accounting, and/or operators. By pooling cost and funding for these services, the Pilot Project would attempt to identify efficiencies and possibly opportunities for reduced costs. After collecting water system specific information such as budgets, expenditures, and staffing characteristics, it was difficult to accurately extract water system data that would allow a commensurate (apples to apples) evaluation. Therefore, metrics that are more common and accurately maintained were identified to help evaluate cost distribution for the water systems. The number of water connections and water rates were selected to be the basis for water system comparisons. Using these metrics along with two industry benchmarks, developed by the American Water Works Association[13] (*AWWA 2011*) and CDPH[14], equitable metrics were identified allowing water system comparisons with a higher degree of correlation.

By comparing water systems using these common characteristics and industry standards, some general conclusions about the distribution of costs and/or the economies of scale were developed. Therefore, the goal of the Pilot Project was revised to identify, if possible, a trend of improved cost distribution, and when or at what point could this trend transform into a noticeable economy of scale.

[13] The average water rate charged for in Tulare County for water services according (*AWWA 2011*)
[14] CDPH considers 1.5% of the Median Household Income as the affordability level for a water rate

The Economy of Scale Analysis attempted to identify the point or a range at which water systems can capitalize on economies of scale through collaboration. The end goal of the analysis is to provide the water systems with a 'range of initial efficiencies' so they can plan for potential collaborations; allowing the water systems the ability to continue or improve services with the most efficient approach. Such an analysis provides many pieces of information and conclusions; however, it is a high-level trend evaluation and should not be substituted for other analyses or studies necessary for consolidation.

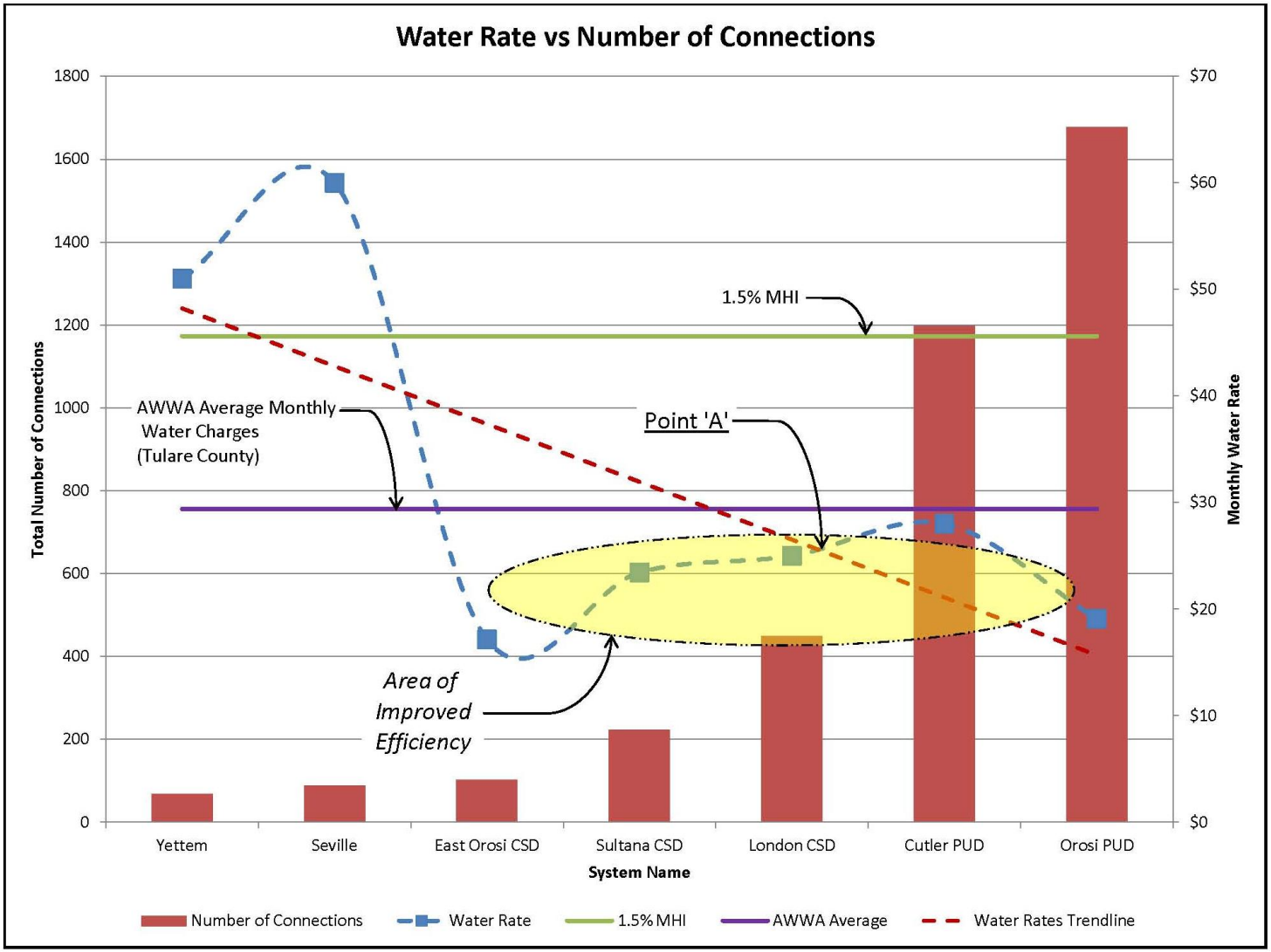
The first task undertaken as part of the Pilot Project was development of a baseline, where data for a large group of communities in the area was compiled and evaluated to see what trends exist on a macro scale. Observations from the baseline analysis include: rates for the majority of water systems in the area are below 1.5% MHI and the Tulare County Water Rate Average; water rates for communities with less than 600 connections vary greatly, and a trendline of the water rates versus number of connections show as the number of connections increase, the water rates tend to decrease.

The second task undertaken was to perform the same baseline analysis on the participating communities of Yettem, Seville, East Orosi CSD, Sultana CSD, London CSD, Cutler PUD and Orosi PUD. **Figure 2-1** shows the results of this analysis. Potential observations identifying emerging efficiencies include:

1) The Water Rate Trend Line for the seven Participating Agencies reflects the trend that as the number of connections increase water rates decrease;
2) The Water Rate Line begins to normalize (reduction in amplitude of water rate variance) between 400 and 750 connections (Area of Improved Efficiency); and
3) Once beyond Yettem and Seville, The Water Rate Trend Line intersects the Water Rate Line at approximately 600 connections (Point A).

Based on the observations described above, as a water system approaches or if a potential consolidation approached 600 connections, system efficiencies could begin to emerge and could continue to increase with the number of connections as a result of capitalizing on economies of scale. Water systems with more than this number of connections could already have some level of efficiency established within their systems, but they can still see increased efficiency as a result of collaboration.

Figure 2-1: Northern Tulare Pilot Project – Monthly Water Rates vs. Number of Connections



Through a similar analysis, the legal and engineering fees paid by the agencies were compiled and graphed. The costs for legal and engineering showed the same downward trend per connection as connections increased for a water system; however, based on the lack of a history of data (only a single year of data was provided), and significant onetime costs, specific economies of scale were not as discernible. See **Appendix A** for further details.

2.4.1.2 Successes and Milestones

The primary successes achieved in this Subregion can easily be divided into two main types, relationship improvement among communities involved and a specific Pilot Project development. Prior to beginning this Study, many of the communities in the area were wary of one another or did not conduct inter-agency meetings or discussions. Through the Study process positive and informative discussions were facilitated between seven communities. This facilitation could lead to the communities selecting the Shared Services study, which was modified to the Economy of Scale Analysis, which is the first step for them to consolidate some level of their operations. The discussion also aided in illustrating the existence of real benefits from consolidation between small DACs.

While the Pilot Project Report prepared for the Subregion is a milestone, it is also considered a success due to a previous experience indicating the benefits of consolidation were not as obvious. The success in providing this report is that now the stakeholders have a tangible document to reference as they embark upon their next steps toward finding a better way to operate their systems.

The major milestones in this Subregion include providing a Pilot Project Report, education about the IRWM process, opening channels of communication, and providing the stakeholders a roadmap towards moving into better system management and operation in the future.

2.4.1.3 Challenges Encountered

Within the Northern Tulare County Subregion, three main challenges were noted. The first challenge was engaging stakeholders and keeping them engaged. Despite the extensive and lengthy relationships in the area with portions of the Project Team, maintaining stakeholder involvement was difficult. The second challenge was the difficulty in obtaining data necessary for the analysis. Most of the time the data was not available due to incomplete record keeping on behalf of the community, not because the communities were unwilling to provide the data. The third challenge was the inability to provide the exact type of project the stakeholders requested. The stakeholders identified the need for a true Shared Services analysis; however, with the limited data available and timing/budgetary constraints it was not possible to deliver the requested Pilot Project. The stakeholders were still receptive to the analysis provided.

2.4.2 Fresno/Clovis and Surrounding Areas

2.4.2.1 Pilot Description

Through the challenging initiation of a Pilot Project selection in this Subregion, the participants in the community of Easton and nearby surrounding areas persevered and identified the history of misinformation and lack of information surrounding the drinking water issues in the area as their priority concern. Focusing on this issue, the communities elected to conduct a community survey designed to gauge the level of understanding of drinking water-related issues and the desire of the community members to pursue a Feasibility Study investigating a community water system.

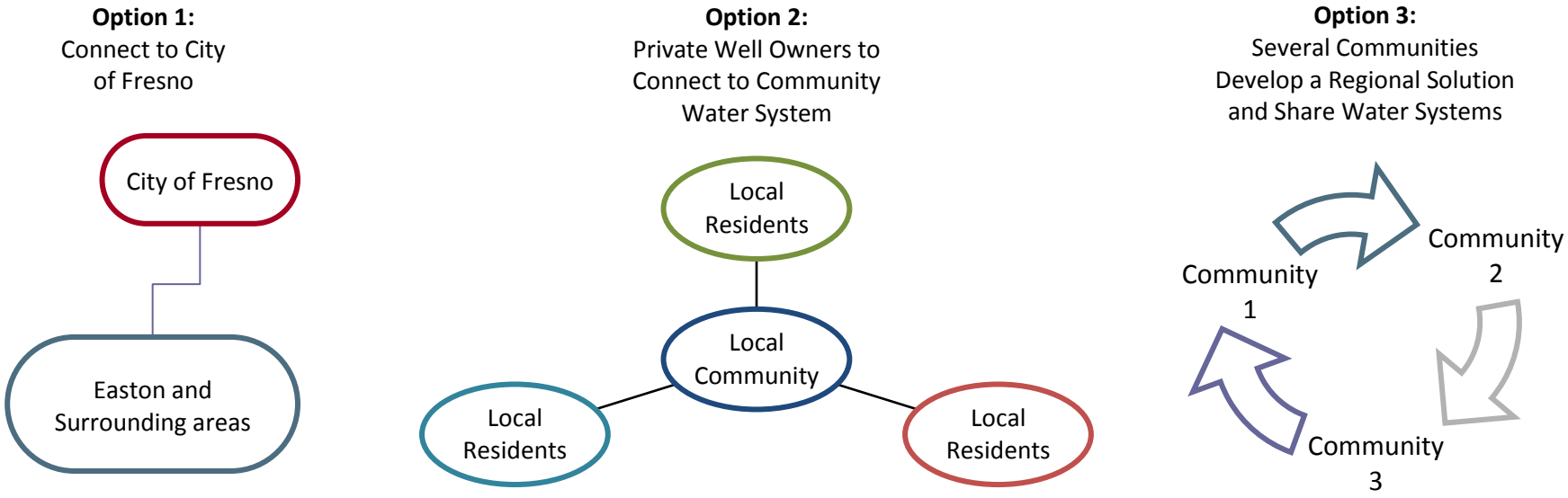
The Project Team designed and prepared a community survey to be utilized in this Pilot Project effort. In conjunction with the preparation of a survey tool, through a community meeting, the Easton, Orange Center, and rural residences surrounding Easton were divided proportionally to allow the surveys to be sampled uniformly across the area. Once the survey tool and area maps were complete, the Project Team contracted with the Alliance for Community Research and Development (ACRD) to conduct the surveys, manage the data compilation and analysis and summarize the findings.

ACRD is a "community-based research firm that facilitates measurement and evaluation projects for Central Valley organizations in partnership with universities and community colleges" (ACRD 2013). A goal of surveying 20% of the households in the sample area was established and community members and students from University of California, Merced (UC Merced) and California State University, Fresno (CSUF) were selected to conduct the survey, with a total of 16 surveyors being overseen by a senior-level researcher. The surveys were conducted during February and March 2013.

The surveyors contacted 240 houses and completed 142 surveys, of which 17% were conducted in Spanish. Additionally, 18 businesses were surveyed. Six residence surveys were not included due to missing data; the final total number of surveys was 136 households and 18 businesses. Compilation of data from these surveys highlighted several demographics in the area. The survey population was 52% Latino, 43% White/European descent, 89% English-speaking, 66% long-time residents (more than 15 years); 87% reside in single-family residences; 71% are homeowners; nearly 100% utilize a private well for domestic use; and 73% own their own well (not shared with another residence or business).

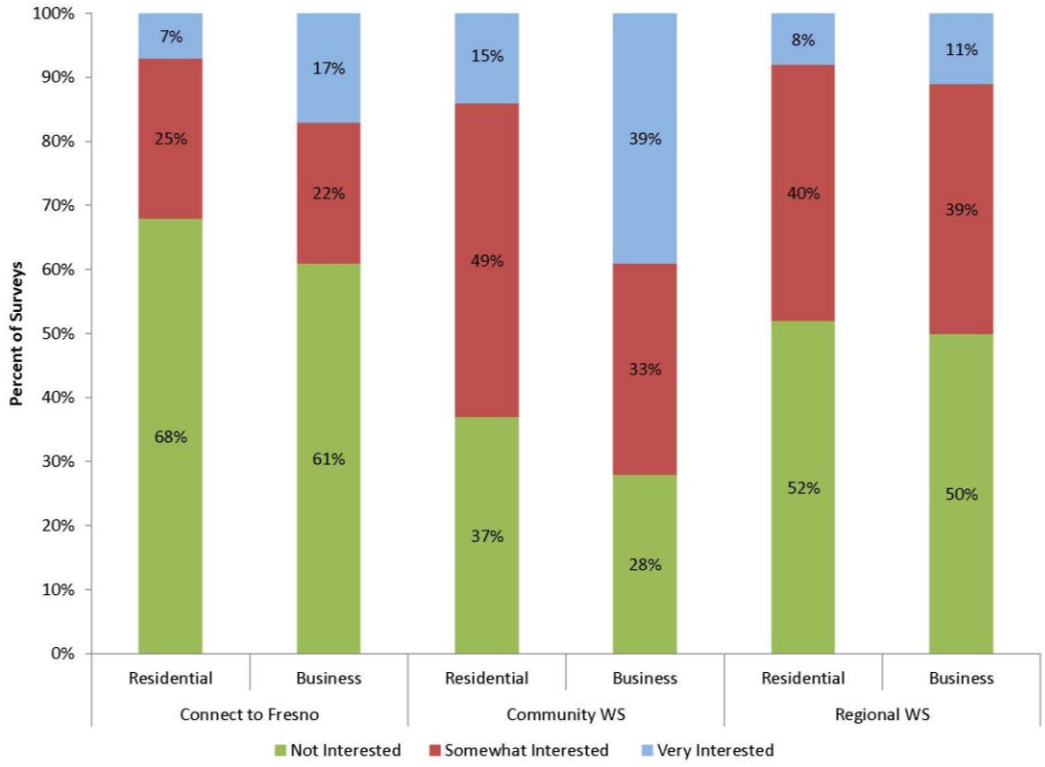
Setting the stage of the survey, the participants were asked to rank several community water system options. The options presented to the participants are shown in **Figure 2-2**.

Figure 2-2: Fresno/Clovis Pilot Project – Community Water System Options



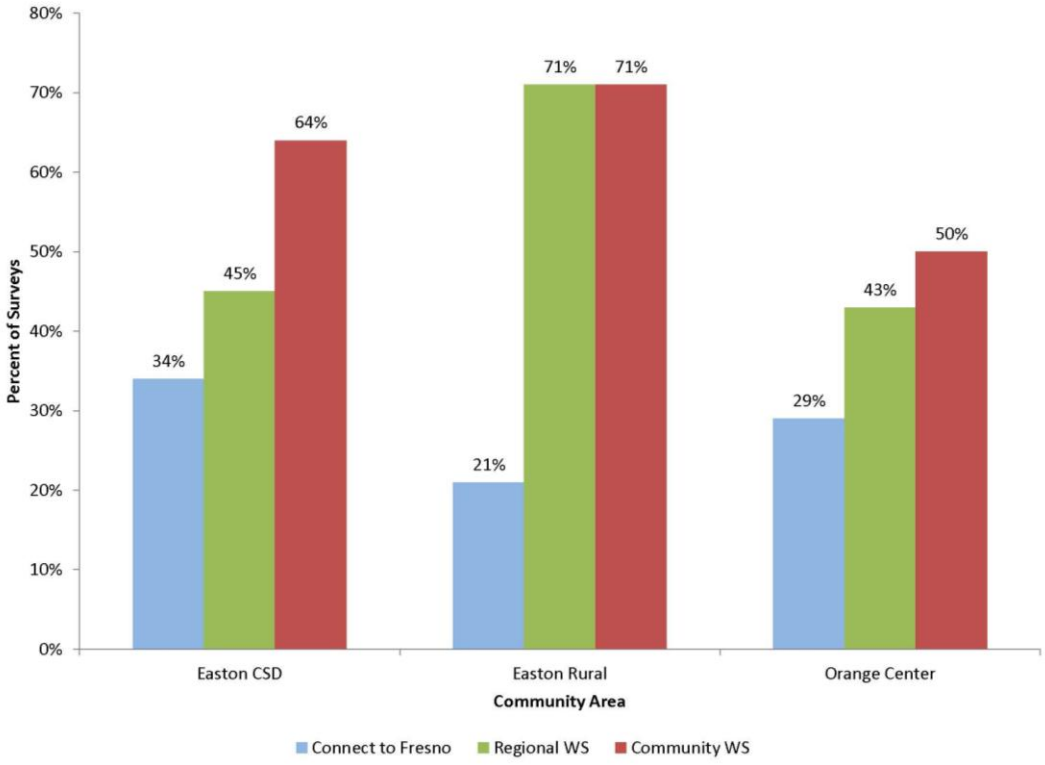
Of the surveys conducted, the majority favored a local community water system (Option 2), while connecting to the City of Fresno (Option 1) was universally the least favored option. The actual distributions are shown in **Figure 2-3**.

Figure 2-3: Fresno/Clovis Pilot Project – Water System Option Preference by Type



The results, when viewed by subarea varied slightly; Easton and Orange Center showed a preference for a local community water system with 64% and 50%, respectively, of those surveyed expressing interest in that option. The rural properties around Easton were equally open to a local community water system or a regional solution. All three communities were similar in their disfavor of connecting to the City of Fresno (see **Figure 2-4**). The survey also compared opinions of renters versus owner-occupied residences and showed that renters are generally more interested in a water system solution but both groups continued to show a lack of interest in connecting with the City of Fresno.

Figure 2-4: Fresno/Clovis Pilot Project – Water System Option Preference by Area



The survey participants were asked which water system option they would be interested in based on concern for water quality and knowledge of well contamination. Based on the results of those questions, residents with concern over water quality were more open to any water system and preferred a local community system (See **Figure 2-5**). It was also learned from these questions that approximately 56% of participants are concerned about their water quality while only 36% know or believe their well water is contaminated (see **Figure 2-6**).

Figure 2-5: Fresno/Clovis Pilot Project – Water System Option Preference Based on Water Quality Concern

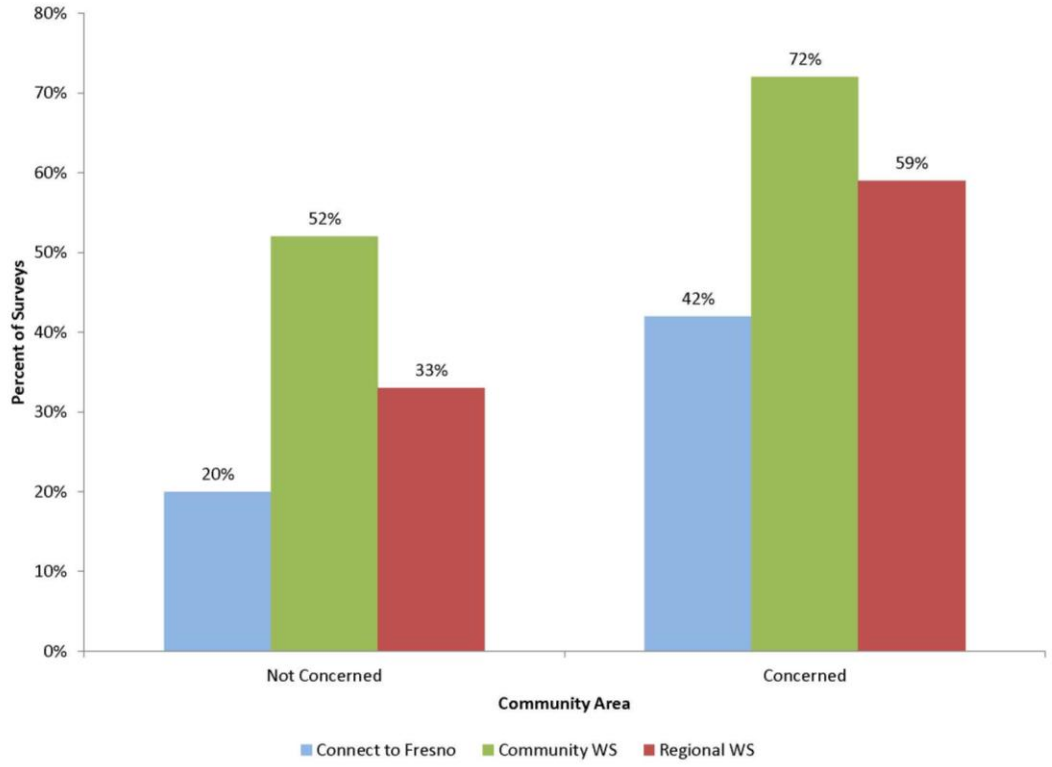
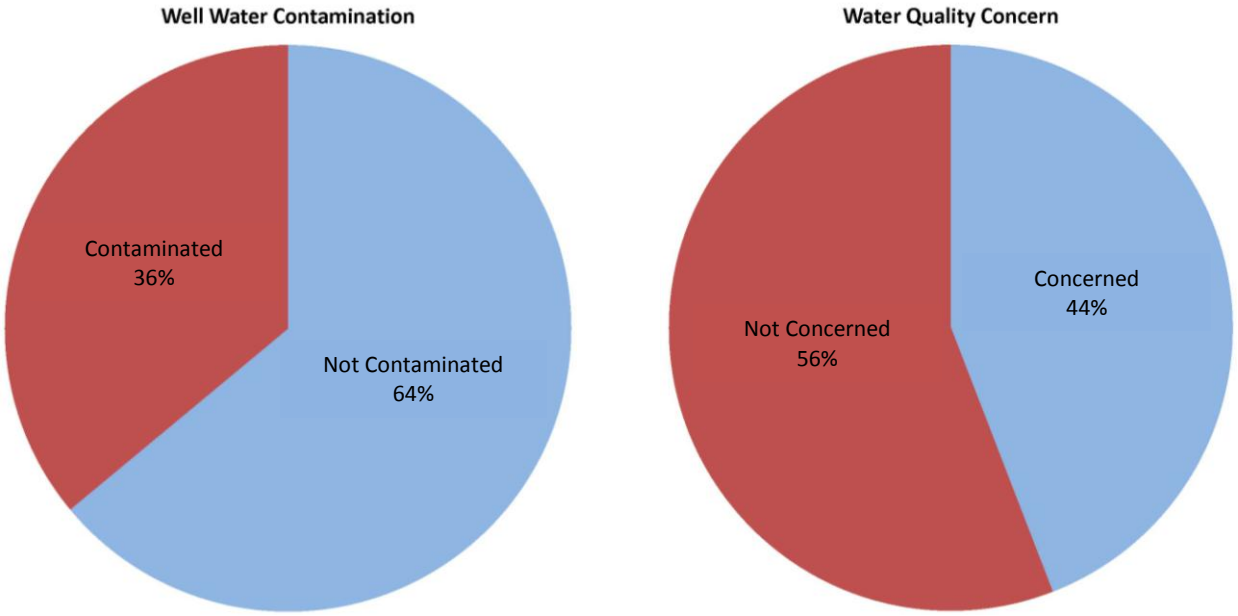


Figure 2-6: Fresno/Clovis Pilot Project – Water Quality and Contamination



In an effort to understand the reasoning behind the participants' dislike for the various water system options, they were asked to select a reason out of eleven previously-prepared options. The number one objection to each consolidation options was "Don't want to be taken over by another entity". The top reasons are summarized in **Table 2-1**.

Table 2-2: Fresno/Clovis Pilot Project – Top Reasons Against Water System Options

Option 1: Connect to Fresno	Option 2: Local Community Water System	Option 3: Regional Water System
Don't want to be taken over by another entity	Don't want to be taken over by another entity	Don't want to be taken over by another entity
I'm happy with my private well	I'm happy with my private well	I'm happy with my private well
Too expensive	Too expensive	Too expensive
Don't want chlorine in my water	Right now I don't pay a bill	My water is good
Don't want meters; I use as much as I want.		

Once the general opinion regarding a community system was established, the participants were asked their thoughts on retaining their private wells. Of the participant surveyed, 65% would choose to keep their well over any other solution with local community water system, regional water system and connection to the City of Fresno garnering 19%, 10% and 7% preference, respectively. When asked why they prefer to keep their wells, over half responded 'no monthly water bill' and the remaining half split between no meters, no government involvement, taste/quality, clean water and good water pressure.

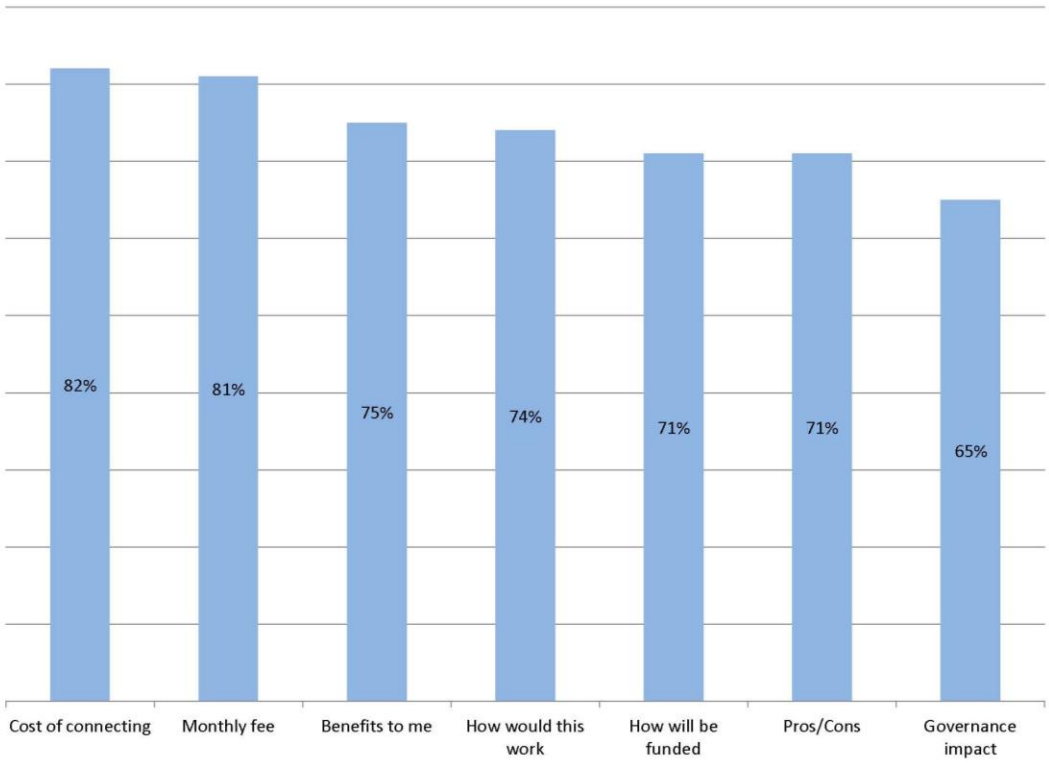
Finally, the participants were asked to select a reason in favor of their preferred water option, either keeping their well or choosing a community water system option. The responses were very consistent, similar to those responses describing why participants were against a community water system option.

Table 2-3: Fresno/Clovis Pilot Project – Top Reasons In Favor of Water System Options

Option 1: Connect to Fresno	Option 2: Local Community Water System	Option 3: Regional Water System	Keep Private Well
Want reliable water supply	Want reliable water supply	Want reliable water supply	Want reliable water supply
Want reliable water quality	Want reliable water quality	Want reliable water quality	Want reliable water quality
Interested in sharing cost of water provisions	This option is a more sustainable option	Interested in sharing cost of water provisions	This option is a more sustainable option

The survey was intended to capture participants' preferences, anticipating more education would be required to aid community members in further discussions and decisions. The participants provided the following suggestions for information they feel would be beneficial to move forward.

Figure 2-7: Fresno/Clovis Pilot Project – Additional Information Needs



The community survey of Easton and its immediately surrounding area indicates that most people are

comfortable with using a private well but a substantial number (nearly 40%) are interested in examining other options. Residents are concerned about water quality and contamination and about a sustainable and affordable water system. Help with testing the water quality of their private wells and more information about costs and benefits of options other than a private well would be valuable to residents as they explore their water system options. See **Appendix B** for further details.

2.4.2.2 Successes and Milestones

The successes achieved in this Subregion consist mainly of obtaining a clearer picture of what the residents know, where further education needs to occur, what myths need to be dispelled and what the local opinions and current political climate are regarding the future of water supply for the area. Prior to the survey, there was a substantial amount of misinformation being conveyed and a general perception that the only option for the community was connection the City of Fresno. Through this process the Project Team has made steps toward correcting much of the misinformation and has shown the residents that there are several options, including keeping their private wells.

The major milestones include conducting a community survey, providing the data and conclusions of the survey to the stakeholders for their future use and facilitating positive discussions between community members both locally and regionally. Consequently, the ECSD is pursuing DWR Facilitation Services to aid and guide community discussions prompted by this survey. Additionally, Easton CSD's role as an Interested Party of the IRWM has become even more valuable to the CSD as a result of this Study.

2.4.2.3 Challenges Encountered

In the Fresno/Clovis and Surrounding Areas Subregion, several challenges were encountered through the Pilot Project process. These challenges included connecting with stakeholders, utilizing effective communication methods for the area, community misperception of the purpose of the Pilot Project, and locating an appropriate meeting location for the targeted participants.

The initial efforts to connect with local stakeholders and get them engaged was unsuccessful; the Project Team held two kick-off meetings; neither were attended by any stakeholders.

This Subregion has a diverse cross section of DACs, ranging from large urban areas to mobile home parks to very small unincorporated areas. The types of communication used in other Subregions were not effective in this area and the approach had to be modified as the Project Team was working through the process.

The stakeholders in the Subregion had a general misconception that all regional solutions would entail connection to the City of Fresno or, the City of Clovis. The majority of communities do not want to be subsumed by the big city and are, therefore, skeptical about talk of a potential regional collaborative solution.

Finally, locating an appropriate meeting location was difficult. Initially, the meetings were held in the City of Fresno; however, with the general distrust of Fresno by the smaller communities, the Project Team determined that holding the meetings within the DACs is more effective even though Fresno is a more central location.

An additional challenge encountered in this Subregion was the use of a research subconsultant to conduct the community survey. Scoping the survey objectives and questions was initially difficult and resulted in a survey that was somewhat more extensive than necessary for this Study; however, it provided very good information for the community.

2.4.3 Western Fresno County

2.4.3.1 Pilot Description

At the completion of the third meeting, the stakeholders determined the highest-priority issue for their communities is the lack of a wastewater collection and treatment system for the community of Lanare. The Subregion selected this Pilot Project because the severity of the wastewater problem in Lanare; there is a potential regional solution through collaboration with the Riverdale PUD. A clear solution would be to pursue funding for a Feasibility Study designed to evaluate and develop a preferred alternative. The goal of the Pilot Project is to conduct the preliminary engineering and technical analysis so a grant application can be prepared to fund a Feasibility Study.

The Pilot Project will identify viable options to transition the existing developed properties within the Lanare CSD from private septic systems to a community wastewater collection and treatment system, and prepare the pre-application for planning funding through the Kings Basin Integrated Regional Water Management Group (IRWMG).

Riverdale PUD is a key partner in this Pilot Project. The Pilot Project has been focused to help provide technical data and information needed to foster discussions between the Lanare CSD and Riverdale PUD. If an alternative involving the interconnection of the Districts is deemed viable, the Districts will need to discuss operational and governance structure and responsibilities.

On January 8, 2013 the project manager attended the board meeting and introduced the Lanare CSD sewer Pilot Project to the Riverdale PUD Board of Directors. The purpose of attending the board meeting was to inform the board of the Pilot Project and seek support to share information about Riverdale's wastewater collection and treatment system. This discussion led to the project manager requesting an item to be placed on the board's agenda to seek their approval to share information about their wastewater collection and treatment system. The project manager returned on February 5, 2013 and the board approved the sharing of information for the Pilot Project.

The community of Lanare, a census-designated place (CDP) in Fresno County, is located about 24 miles south-southwest of the City of Fresno, and approximately 3.5 miles west of the community of Riverdale. The community formed a CSD in 1971 to operate and manage their water system, which serves approximately 150 connections. Several of these are outside of the District boundary.

The community of Lanare currently relies on individual septic systems for wastewater treatment. There have been several reported septic system failures and possible sewage overflows, creating a potential public health concern. A secondary concern is groundwater quality. Groundwater is the sole source of water supply for Lanare and other nearby communities, and is therefore a critical resource to protect.

Based upon an anticipated 135 connections in Lanare and the existing wastewater production characteristics of Riverdale PUD, Lanare would need 0.053 million gallons per day (MGD) of treatment capacity. This could be achieved either by expanding Riverdale PUD's WWTF's capacity or building a standalone WWTF.

The construction of a Lanare wastewater collection system would include the construction of gravity sewer mains, force mains, manholes, and lift stations, and proper abandonment of the existing onsite septic systems within the Lanare CSD. In total, the Pilot Project presents three different alternatives for consideration, as shown in **Figure 2-8** and **Table 2-3**.

The three options present the most logical alternatives for construction of wastewater collection and treatment system infrastructure; ongoing operations costs, permitting, rates and interagency cooperation are all issues that will need to be evaluated in a future Feasibility Study.

Table 2-4: Western Fresno County Pilot Project – Collection and Treatment Options

Alternative No.	Collection System Solution	Treatment Solution
Alternative 1	Lanare Collection System	Interconnection with Riverdale PUD at WWTF
Alternative 2	Lanare Collection System Connects to Riverdale's Collection System near Mt. Whitney and Valentine Avenues	Wastewater Treatment Conducted at Riverdale PUD at WWTF
Alternative 3	Lanare Collection System	Wastewater Treatment Plant Constructed in or near Lanare CSD

The treatment of wastewater was evaluated using two alternatives: treatment at Riverdale PUD's WWTF (Alternatives 1 and 2) or the construction of a new WWTF within the Lanare CSD (Alternative 3).

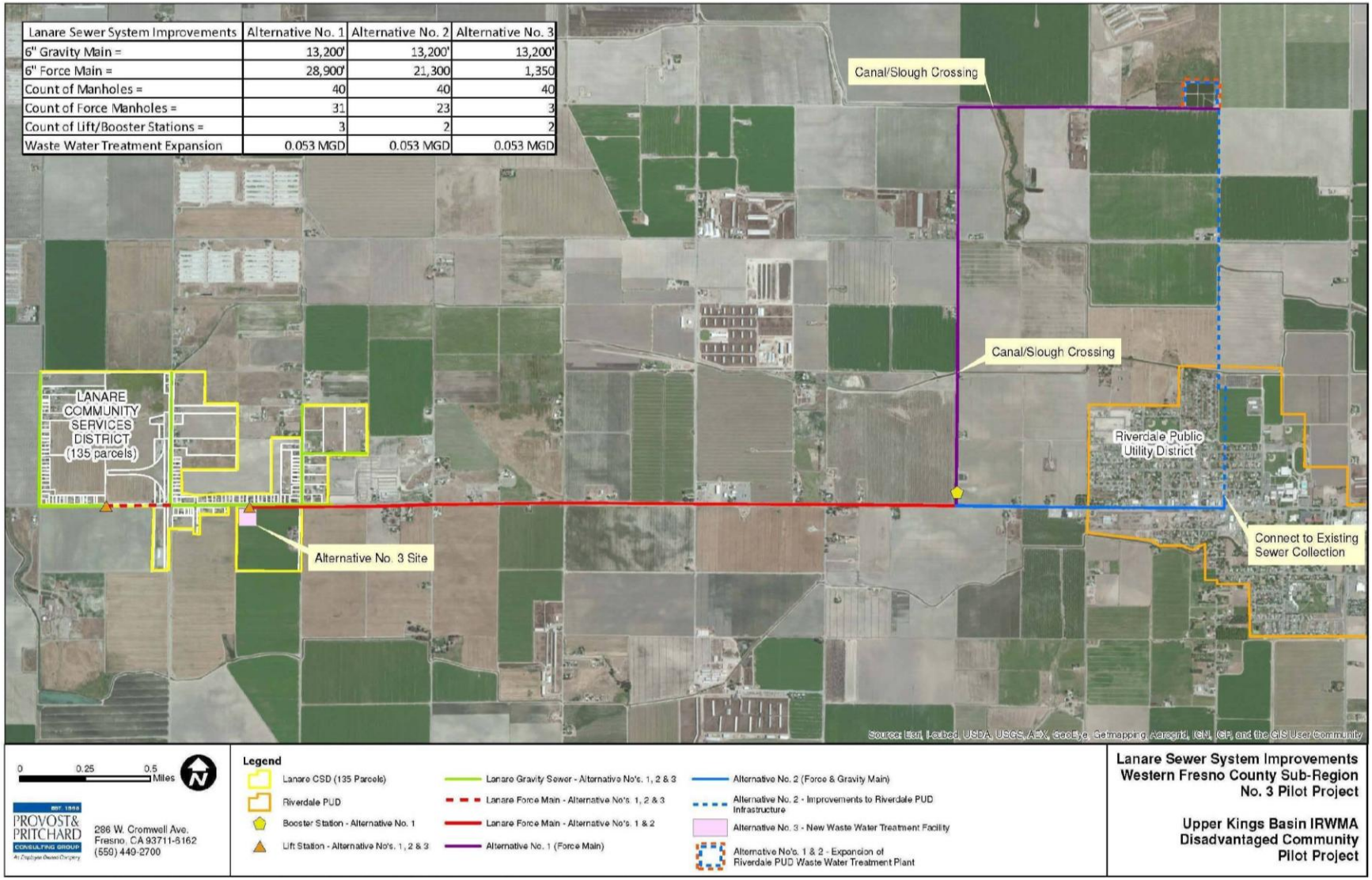
Alternative 1 would involve constructing a sewer collection system in Lanare and treating wastewater at expanded Riverdale PUD Wastewater Treatment Facility (WWTF). This alternative includes the construction of gravity sewer mains, force mains, manholes, lift stations, necessary upgrades to the existing Riverdale WWTF and some level of consolidation with Riverdale PUD. This alternative would also include sewer service connection and proper abandonment of the existing onsite septic systems within Lanare.

Alternative 2 is nearly identical to Alternative 1; however, rather than connecting the new collection system directly at the WWTF, Alternative 2 proposes to connect to the existing Riverdale PUD collection system near the intersection of Mt. Whitney and Valentine Avenues. This alternative would have involved less new pipe construction but would require replacement of some existing facilities within Riverdale PUD's system.

Alternative 3 would involve constructing a wastewater collection and treatment system within Lanare CSD boundaries. This alternative includes the construction of gravity sewer mains, manholes, and a new WWTF to accommodate current flows from Lanare. This alternative would also include sewer service connections and proper abandonment of the existing onsite septic systems within Lanare.

The Pilot Project is not selecting or recommending a preferred alternative, only presenting viable alternatives. However, the District's agreement on operations and governance can impact the alternatives and the type of infrastructure needed. Therefore, early discussions and consensus about operations, maintenance and governance are encouraged between the Districts.

Figure 2-8: Western Fresno County Pilot Project – Project Alternatives



Preliminary opinions of probable costs (OPC) were prepared for each alternative. These costs include construction, a contingency (20%) and consulting services (15%). The OPC are based upon the preliminary alternatives and will need to be revised during the Feasibility Study. It is noted that the cost estimate associated with Alternative 3 does not include the extensive O&M costs.

Table 2-5: Western Fresno County Pilot Project – Alternative Cost Estimate

Alternative	Cost
Alternative 1	$9,035,587
Alternative 2	$8,089,146
Alternative 3	$6,946,207

The advantages of Alternatives 1 and 2 are fairly similar including providing Lanare with a wastewater collection system, reducing public health concerns, reducing potential nitrate contamination risks, expanding Riverdale PUD's WWTF, capitalizing on economies of scale, and offering a potential higher ranking project due to regional collaboration. The disadvantages of the first two alternatives include extensive lengths of force main, potential changes to governance structure of both agencies, high capital cost of construction and potentially onerous sewer rates for the residents of Lanare. Alternative 3 has somewhat different advantages including less pipe construction, ease of future expansion and reduced construction costs. The disadvantages of Alternative 3 include Lanare owning and operating their own WWTF, no capitalization on economies of scale, not a regional solution, requires additional permitting and ongoing O&M costs. See **Appendix C** for further details.

2.4.3.2 Successes and Milestones

The primary success achieved in this Subregion is facilitation of communication and collaboration between communities, especially between DACs and non-DACs. Prior to beginning the KBDAC Study, communication between Lanare and Riverdale was strained. Through this Study those communication channels have been opened and the communities are, at least tentatively, willing to work together. Additionally, the collaboration between all communities in the Subregion was impressive. Despite each community having individual concerns, they unanimously came together in favor of supporting a solution to Lanare's wastewater problem.

The milestones for this Pilot Project include providing Lanare with a technical report to be used in conjunction with a pre-application for funding of a Feasibility Study through the Kings Basin IRWMP and conducting favorable discussions between Lanare and Riverdale.

Additionally, DACs from this Subregion have also begun to re-engage in the IRWMP process. Three representatives from Biola CSD were present at the workshop where the KBWA described the project list form and help proponents understand how to fill it out so they can get their projects on the list by the September deadline. City of San Joaquin has also been very engaged and supportive of the KBDAC Study efforts and in addressing the needs of DACs. Specifically, a representative of the City of San Joaquin has been part of the DAC project workgroup efforts, seeking to develop an DAC challenges inventory list and recommendations to solve the agreed upon challenges and solutions. Discussions among Fresno County and the community of Biola regarding the sharing of water and wastewater operators took place during our Subregion meetings, which may lead to sharing of operators.

2.4.3.3 Challenges Encountered

The challenges encountered in this Subregion include the potential lack of perceived benefit to stakeholders leading to some communities dropping out of the process prematurely. Also, the Subregion is geographically large with diverse water issues, along with a poor initial perception of the Study due to a past attempt to use legislation as a tool for consolidation. Some initial participants were unable to see the potential benefits to their communities and did not continue participation. This was due, in part, to the diverse water issues within the Subregion, which meant regional collaboration options were not apparent for many of the participating communities. One important thing to note is that communities were supportive of selecting the Lanare-Riverdale Pilot Project, as discussed further in Section 3.

2.4.4 Eastern Fresno County

2.4.4.1 Pilot Description

At the third meeting in the Subregion, the stakeholders determined the highest-priority issue for their communities is the lack of a reliable water source for the City of Orange Cove during the Friant-Kern Canal maintenance period. The City's primary water supply is conveyed using the Friant-Kern Canal running along the eastside of the City. The City has a long-term surface water supply and conveyance contract with the United States Bureau of Reclamation (USBR), and the Friant Water Authority. Upon delivery of the surface water, the City treats and distributes potable water throughout the community.

The Friant Water Authority is responsible for the maintenance and operation of the Friant-Kern Canal (FKC) and normally dewaters or drains the canal for one month every three years to perform scheduled maintenance, typically during the month of November. During this regular maintenance period the City relies on their existing surface water storage to supply water to their surface water treatment facility. The Friant Water Authority has been trying to control an aquatic weed called Western Water Milfoil, an invasive perennial aquatic plant that, over the past few years, has reduced FKC's conveyance capacity and is causing water delivery problems which have extended from Orange Cove into Kern County. In 2012/2013, the FKC was taken off-line for an extended maintenance period of 4 months in an attempt to eradicate the Western Water Milfoil. During that time Orange Cove contracted with Orange Cove Irrigation District (OCID) for emergency water supplies and lease a temporary nitrate removal system due to high nitrate concentration in the water received from OCID.

The Project Team was tasked with identifying viable options to improve the reliability of source water for the City of Orange Cove while the FKC is off-line and prepare a pre-application for planning funding through the IRWMG. The planning grant funding would be used to prepare a Feasibility Study to evaluate and select a viable solution for improving the reliability of source water supply. Two potential solutions the Pilot Project evaluated are the possibility of expanding the existing Orange Cove raw water storage capacity and/or creating a regional solution by drilling a groundwater well and possibly interconnecting to an adjacent water system.

The Pilot Project and KBDAC Study will provide a high level technical evaluation of some of the most viable alternatives and allow Orange Cove to consider beginning outreach and initiate discussions with key stakeholders, including those in their community and the surrounding communities that could benefit from an improved water supply.

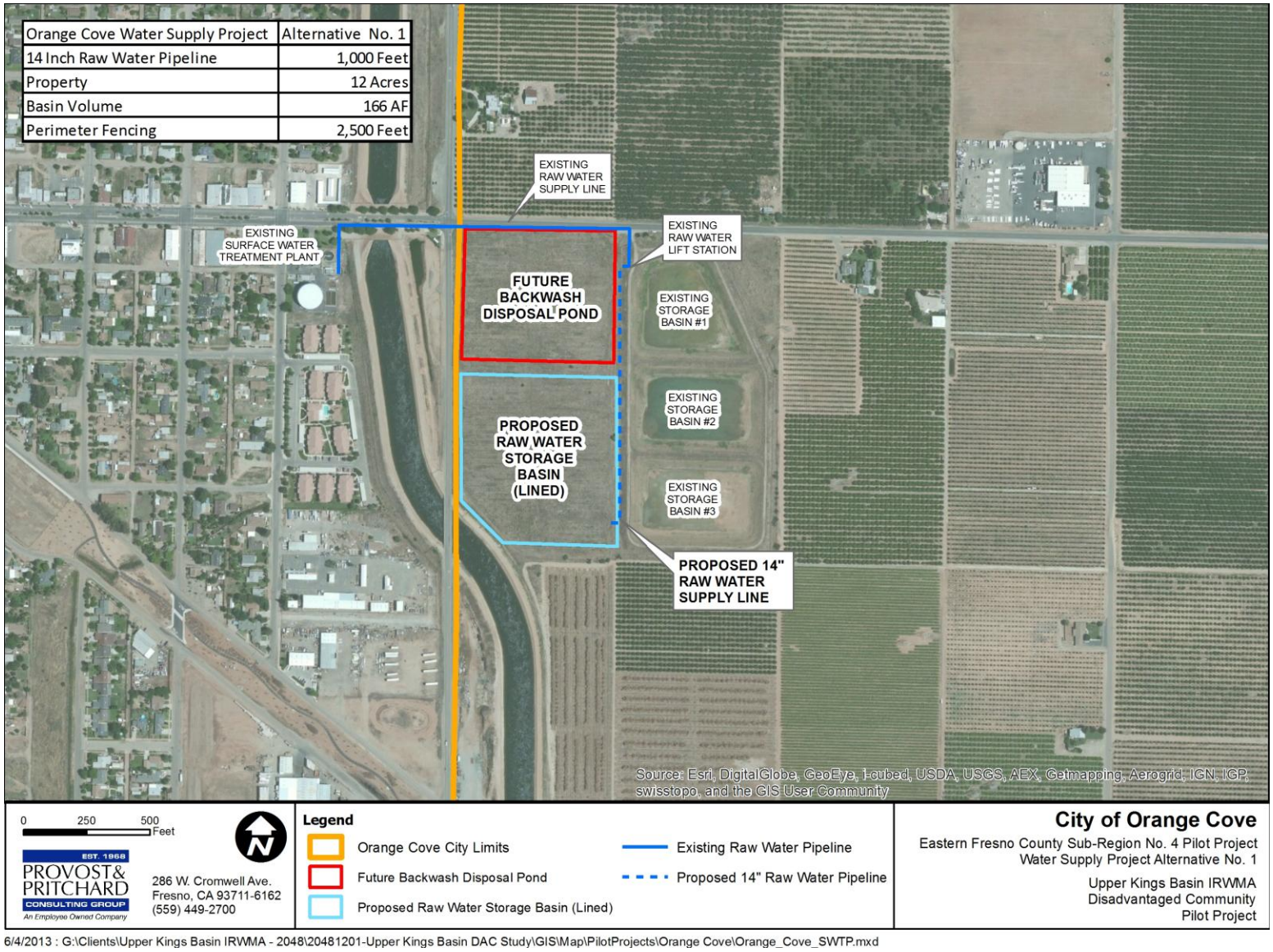
The City has a surface water treatment plant located adjacent to the FKC and currently has the ability to store approximately one average month of raw surface water in three unlined earthen basins located approximately 0.25 miles east of the surface water treatment plant.

The Pilot Project considered and analyzed two main alternatives, to increase the surface water storage capacity of Orange Cove and to identify a regional consolidation option for the City.

Alternative 1 (see **Figure 2-9**) would involve the expansion of the City of Orange Cove's existing raw water storage capacity. The City currently has three small raw water storage basins that provide an average month supply of water. The studied alternative includes the construction of a new surface water storage basin located immediately west of the existing surface water storage basins. The basin would utilize the existing raw water supply line and raw water supply lift station. The existing raw water basins are filled through gravity fed 12-inch diameter raw water lines that cross the FKC along Park Boulevard. In order to send the stored raw water to the existing Surface Water Treatment plant, a lift station is used to pump the stored water through the same 12-inch diameter raw water line back across the Park Boulevard alignment to the treatment plant. This means that no water can be stored when water is being taken to the plant for treatment, reducing overall system capacity.

Alternative 2 includes the construction of a new groundwater production well, a water storage tank, and booster pumps and possible interconnecting pipelines to an adjacent water system. The new location of a groundwater production well is uncertain and would require a hydrogeologist investigation. A new distribution system would deliver water from a new storage tank to the City of Orange Cove and possibly to an adjacent water system. Due to the elevation difference between adjacent water systems in this area, a water storage tank and booster pumps would be required to deliver water efficiently, which would be separated into two or more pressure zones.

Figure 2-9: Eastern Fresno County Pilot Project –Alternative 1



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A preliminary opinion of probable cost was prepared for Alternatives 1 and 2, totaling $3,359,058 and $6,803,400, respectively, including construction cost, a contingency (20%) and consulting services (15%). Due to the high variability of the project components for Alternative 2 and sensitive political relationships in the area, general assumptions were made but an interagency collaboration was not identified (See **Appendix D** for further details).

Advantages and disadvantages were also prepared for the alternatives, as shown in **Tables 2-6 and 2-7**.

Table 2-6: Eastern Fresno County Pilot Project – Alternative 1 (Expand Surface Water Storage) Advantages and Disadvantages

Advantages	Disadvantages
Provides an additional quantity of surface water storage during FKC maintenance periods	Not a Regional solution providing an additional water supply for Orange Cove and a partnering community
Utilizes existing infrastructure and less infrastructure to maintain	Lower ranking alternative for grant funding due to not solving a regional problem
Reduced construction costs	
Project ranking would be favorable due to Orange Cove being a DAC	
Continued use of surface water (no impact to groundwater)	
No interagency agreements would be required	

Table 2-7: Eastern Fresno County Pilot Project – Alternative 2 (New Well and Interagency Connection) Advantages and Disadvantages

Advantages	Disadvantages
Regional solution providing an additional water supply for participating communities	Water aesthetics transitioning to groundwater for Orange Cove customers
Reliable on-demand water supply (groundwater) during FKC maintenance period	High capital costs for construction including land acquisition
On-demand water supply for any emergency situation for participating communities	Groundwater pumping mitigation will be required for permitting
High Ranking alternative for grant funding due to being a Regional Solution	Interagency operation and maintenance agreement would be necessary

The Pilot Project did not select an alternative, but merely suggested two possible alternatives to be included in the alternative analysis and selection that would be included in a Feasibility Study. See **Appendix D** for further details.

2.4.4.2 Successes and Milestones

The primary successes achieved in this Subregion include investigating solutions for a critical water supply issue in Orange Cove and gaining a greater understanding of the inter-agency relationships in the area. Prior to the KBDAC Study, the community of Orange Cove was on tenuous footing regarding their water supply during periods of maintenance on the Friant-Kern Canal. This process has provided them

with several options to explore further in the quest to find a permanent, sustainable solution for the problem.

The milestones for this Pilot Project include providing Orange Cove with a technical report to be used in conjunction with a pre-application for funding of a Feasibility Study through the Kings Basin IRWMP.

2.4.4.3 Challenges Encountered

The three main challenges identified in this Subregion include poor and inconsistent stakeholder turnout, lack of communication to all affected parties, and lack of detailed knowledge of the political climate between the stakeholders. The stakeholders were difficult to engage and, once they were engaged initially, maintaining the level of engagement was difficult. Attendance at the community meetings was inconsistent due to meeting scheduling challenges and lack of continued interest.

A challenge that surfaced near the end of the KBDAC Study was a perceived lack of communication to all affected parties, specifically the City of Reedley. The Pilot Project presentation initially identified potential communities that could benefit from the collaboration; it was brought to the attention of the Project Team that all communities identified had not been thoroughly informed of the specific Pilot Project that was being prepared.

Finally, the lack of having an understanding of the political climate between the stakeholders created some challenges. However, adjustments were made to modify the Pilot Project based on concerns from the stakeholders.

2.4.5 Northern Kings County

2.4.5.1 Pilot Description

At the third meeting in the Subregion, the stakeholders determined the two highest-priority issues for their communities are the exclusion of Armona CSD from the Kings Basin IRWMP boundary and the high cost of waste removal for Home Garden CSD's water treatment facility.

The Project Team was tasked with identifying viable options to improve the economics of removing arsenic laden waste from Home Garden CSD and aiding Armona CSD in joining the KBWA.

Home Garden CSD and Armona CSD rely entirely on groundwater for their water supply and are required to treat for arsenic. Armona CSD is working with the California Department of Public Health on a grant-funded arsenic treatment project. The Home Garden CSD already has an arsenic treatment plant in operation.

The Pilot Project has two main components, one benefitting the Armona CSD and one benefitting the Home Garden CSD.

The Home Garden CSD has a coagulation-filtration pressure filter arsenic treatment system manufactured by Layne Christensen, providing arsenic removal on one well. The pre-treatment arsenic concentration is 20 parts per billion (ppb); against the MCL of 10ppb. The community's second well has an arsenic concentration of 30 ppb and can be sent to the treatment system, but is used to provide backwash water instead. The filters are backwashed every three to four days, producing approximately 55,000 gallons of filtrate, which is then allowed to settle for a day. The solids are then pumped into a collection bin which acts as a dewatering vessel. The solids are hauled offsite for disposal approximately every six months; there are typically 30 cubic yards of waste with arsenic concentrations above the hazardous waste limit (5mg/l). The cost of this disposal is between $6,800 and $12,000 annually.

There are two main alternatives available to reduce waste disposal cost, Process Modifications and Sludge Disposal Alternatives. The Process Modifications options, cost estimates and advantages and disadvantages are presented in **Table 2-7**.

Table 2-8: Northern Kings County Pilot Project – Process Modifications

Process Change Option	Cost Estimate	Advantages	Disadvantages
Modify chemical feed locations	$5,000	Optimizes chemical reaction time before the filters.	May have little impact on amount of sludge produced.
Backwash more frequently	$1,000	Keeps the filter bed cleaner and will ensure a longer media life.	More water will be used for backwashing. Volume of sludge will likely not change.
Automate chemical feed systems	$10,000	Ensures chemicals will be dosed optimally at all times.	May have little impact on amount of sludge produced.

Modify chemical feed locations: All three chemicals are fed at a single point a few feet before the pressure filters. This is not ideal and may not provide enough time for the chemicals to react completely. With properly located feed points, chemical feed rates may be lowered which would result in slightly less sludge production.

Backwash more frequently: Currently the filters are backwashed strictly based on pressure differential. These longer filter run times may result in less effective backwashing, bridging of the media and/or production of mud balls. Backwashing the filters at least once per day during peak periods should prolong the life of the filter media.

Automate chemical feed systems: The chemical feed rates are set manually by the operator. As flow rates through the treatment system fluctuate, the operator must change the pump feed rates. This may result in overfeeding or underfeeding the chemicals. The chemical feed rates can be automated with some additional probes and programming of the control system.

The Sludge Disposal options, advantages and disadvantages are presented in **Table 2-8**.

Table 2-9: Northern Kings County Pilot Project – Disposal Options

Disposal Option	Advantages	Disadvantages
Discharge backwash to sewer system	Potentially the lowest cost alternative. No sludge handling would be required.	May be difficult to convince wastewater treatment plant operations to accept sludge containing arsenic. Monthly fees for sewer connection.
Off-Site - Dewater sludge off-site by partnering with another local agency	By partnering with another local water or wastewater treatment agency that has a dewatering system, it may be more cost effective than the current sludge disposal process.	It may be difficult to find a willing partnering agency. There would still be some transportation costs.
On-site – Mechanical Dewatering (Press System)	Sludge volume and weight would be reduced decreasing disposal costs and frequency.	Capital and operation costs would be required to operate the dewatering press. Also, additional space would be required to locate the press near the solids settling tank.
On-Site Dewatering – Solar or Enhanced Drying	Sludge volume and weight would be significantly reduced decreasing disposal costs and frequency.	The process would require the most capital costs for construction. Operation and maintenance costs would increase but would be similar to the mechanical dewatering. This process requires a significant amount of space and access by equipment to remove dried sludge.

Discharge to wastewater treatment plant: The sludge currently hauled off site every six months is hazardous due to the accumulation of arsenic after each backwash. There is the possibility that the sludge accumulated on the bottom of the backwash reclaim tank could be discharged to the sewer system. Further discussions would be needed with the wastewater treatment plant to evaluate this alternative.

Haul to a Partnering Agency: There are several other local agencies that are required to dispose of solids from their arsenic treatment systems. There may be benefits if Home Garden could enter into an agreement with a partnering agency to consolidate the solids and reduce transportation and disposal costs.

Dewater Home Garden sludge – In order to decrease the volume of sludge hauled off site, Home Garden could further dewater the sludge using several methods. Among these are belt or centrifugal press, solar drying.

The second portion of the Pilot Project was to aid Armona CSD in becoming an Interested Party of the KBWA. This portion has two segments: preparing an application to join the IRWMG as an Interested Party and adjusting the KBWA IRWMP boundary limits to include Armona.

The application to join the IRWMG has been prepared, in draft form, on behalf of Armona. Once Armona reviews and make any necessary edits to the application and accompanying statement, they will be able to print it on their letterhead and submit it to the IRWMG.

Upon receipt of the request to join, the IRWMG can initiate the process to adjust the IRWMP boundary to include Armona. Preliminary discussions have been had with staff of the IRWMG and indicate the boundary adjustment should not be a problem as Armona is a 'surrounded exclusion', meaning the Kings Basin IRWM boundary surrounds the community completely (See **Figure 1-7**). The process could have been more difficult if the community was a distance from the existing boundary. See **Appendix E** for further details.

2.4.5.2 Successes and Milestones

The successes in the Subregion include providing Home Garden with technically and operationally valid options to aid in the reduction of their waste disposal costs. This will help the community become more sustainable. The second major success achieved was facilitating Armona to become more involved in the IRWMG and for the IRWMP boundary change to be initiated so Armona can be included.

The milestones include providing a technical report to Home Garden regarding their waste disposal, preparing an Interested Party application and support letter for Armona CSD to join the IRWMG, and engaging the IRWM in adjusting their boundary to include Armona.

2.4.5.3 Challenges Encountered

The primary challenges encountered in this Subregion include initial participation only by stakeholders outside of the IRWMP boundary and clarification of whether DWR would allow development of a Pilot Project for a community outside of that boundary. Due to the shape and size of this Subregion, the majority of respondents to the outreach efforts actually lie outside of the IRWMP boundary. The initial challenges centered on whether it was possible to extend help to the communities. Gaining clarification from DWR showed that proximity to the boundary was important, which is why Armona CSD was included in the Pilot Project.

3 EVALUATION OF THE STUDY: OUTCOMES, RESULTS, BENEFITS AND COSTS

3.1 Background and Introduction to the Evaluation

The KBDAC Study offered a unique opportunity to engage disadvantaged communities in the process of water resource planning and provide technical, educational and collaborative opportunities to address priority water issues in the Kings Basin (the Basin). As one of the first pilot studies in the state to seek to address the needs of DACs in IRWMP planning, this experimental pilot offered a unique learning opportunity for both the IRWMG and the state as a whole. With its comprehensive model that included outreach, water issue identification, Subregion community meetings and Pilot Project development, an evaluation of the overall study can allow us to ask: 1) How well did the project do in meeting its goals?, 2) What went well?, 3) What was challenging, 4) What can we learn from this process?, and 5) What are the next steps in continuing this work? To answer these questions in a rigorous and robust way, a multi-component evaluation tool was utilized.

3.2 Objectives of Evaluation

In order to evaluate the successes, challenges and lessons learned of the KBDAC Study, a comprehensive evaluation was conducted. In particular, the goal of the evaluation was to assess the degree to which the KBDAC Study objectives, as outlined in the grant report, were met. As mentioned above (see Section 1), the overall objectives of the Study were three-fold:

1) Comprehensive inventory of all DACs and their related water needs is developed, and outreach to these DACs is conducted. DACs contact information is incorporated into the inventory and the KBWA IRWMP mailing lists.
2) Engage and integrate DACs effectively into the KBWA IRWMP by developing Subregion groups to conduct IRWMP planning to address priority needs within the KBWA IRWMP.
3) Develop conceptual [pilot] project descriptions and cost estimates to include in the KBWA IRWMP master project list and facilitate partnerships with DACs and other IRWMP Members and Interested Parties.

To achieve these objectives, early on in implementation of the Study the Project Team further refined them. In particular, for each objective, the Project Team developed specific goals. For the remainder of this evaluation section, the following nomenclature is used to identify the main objective and its specific goals (e.g. 1-a refers to Objective 1, specific goal a). Below is a list of those specific goals in relation to the three overall objectives.

Overall Study Objective 1: Comprehensive inventory of all DACs and their related water needs is developed, and outreach to these DACs is conducted; DACs contact information is incorporated into the inventory and KBWA IRWMP mailing lists.

a) Document the water needs of DACs in the Kings Basin in a comprehensive inventory, including updated contact information; and,
b) Obtain participation of DACs in the Kings Basin.

Study Objective 2: Engage and integrate DACs effectively into the KBWA IRWMP by developing Subregion groups to conduct IRWMP planning to address priority needs within the KBWA IRWMP.

a) Local stakeholders learn about IRWMPs and regional collaboration and planning;

b) Barriers to regional collaboration are identified and deconstructed through information and in practice; and,

c) Stakeholders in the Subregion identify where they can collaborate together on a shared water need.

Study Objective 3: Develop conceptual [pilot] project descriptions and cost estimates to include in the KBWA IRWMP master project list and facilitate partnerships with DACs and other IRWMP Members and Interested Parties.

a) Project Team develops Subregion-specific Pilots Projects that address local needs, advance regional solutions and promote collaboration;

b) Development of Pilot Projects leads to assessment of next steps and funding sources for those pilots, and identification of needs for pilots that were not developed;

c) The project identifies, develops and empowers new or existing leaders[15]; and,

d) The project increases participation of DACs and their voices in the IRWMP process.

3.3 Methodology

Data for the evaluation was collected and analyzed in four main ways. First, data on participant outreach and participation at meetings[16] was analyzed. Second, an end-of-Study Survey Evaluation tool was developed and administered at each Subregion's fourth meeting[17], with the exception of the Eastern Fresno Subregion[18]. At the fourth meeting, participants had the option of declining participation in the evaluation, filling the survey out on their own, or having a Project Team member administer the survey verbally[19]. In total, 17 active participants, defined as those that attended meeting 4 and at least one other meeting, completed a survey at the fourth meeting[20]. Results connected to survey evaluations are based on this total number. Third, interviews with one or two additional key participants from each Subregion were conducted to gain greater insight into participant perspectives[21]. These interviews included individuals from the local community, as well as agency and local government

[15] Note: while this is not an explicit project goal, in order to integrate DACs, the Project Team felt it important to track this component.
[16] Note that in this tabulation, Project Team members are not included in the count of participants.
[17] At the time of this report, Northern Kings data had not yet been incorporated.
[18] Survey was not administered because participants either left early and/or political climate did not allow for it.
[19] There is potential for survey measurement bias in both methods used. This topic is not explored greatly in this report.
[20] Additional phone surveys of participants that did not attend the fourth meting are currently underway, but will likely not be incorporated into this version of the Report, given time limitations.
[21] At the time of Report, interviews with participants from Western Fresno and Eastern Fresno had not yet been conducted.

representatives[22]. While these surveys serve as representative of key active participants, they are not meant to be exhaustive of all participants; rather they are meant to serve as a sample of key informant interviews. Finally, a debriefing meeting with the Project Team was conducted to discuss successes, challenges and next steps, in relation to the Study goals. In preparation for this meeting, Project Team members completed a written in-depth survey which was used to shape the discussion and serve as a source of further evaluation data.

Together, these four specific evaluation methods form the Evaluation Tool. Each method was then used to measure or assess specific metrics that ultimately allow for Study evaluation. **Table 3-1** indicates the specific metric or information used to assess the goal, and the method used to measure it.

[22] To preserve anonymity, the agency name and names of individuals are not included in this report.

Table 3-1: Evaluation Methods Used in Relation to Study Objectives and Specific Goals

Objective	Specific Goal	Specific Metric/Information to Measure	Evaluation Method Used to Measure Metric
#1: Obtain participation of DACs in the Kings Basin	Document the water needs of DACs in the Kings Basin in a comprehensive inventory	N/A	This goal is described in detail in above Sections 1 and 2. No formal evaluation was developed. Though the following evaluation tools are used to inform a discussion of the objective. Project Team focus group debrief on this topic Key informant interviews address this topic
	Obtain participation of DACs in the Kings Basin	Number of entities/individuals to whom the Project Team outreached to Number of individuals that attended each of the four meetings Number of communities represented at fourth meetings	Tabulation of original outreach list Tabulation of participation Project Team focus group debrief Key informant interviews
#2 Engage and integrate DACs effectively into the KBWA IRWMP by developing Subregion groups to conduct IRWMP planning to address priority needs within the KBWA IRWMP.	Local stakeholders learn about IRWMPs and regional collaboration and planning	Show priority needs within the Kings Basin by Subregion Knowledge of IRWMPs before and after meeting Knowledge of funding sources before and after meeting Understanding of water issues in region	Description of information from meetings Survey questions that assess participant views on these three components Project Team focus group debrief Key informant interviews
	Barriers to regional collaboration are identified and deconstructed through information and in practice	What the Pilot Projects accomplished in terms of barriers and collaboration Understanding of benefits regional and shared solutions Interest in collaboration Trust in neighboring communities Trust in local agencies	Description of exercise to capture barriers conducted at meeting Description of the pilot and what it aimed to foster in terms of collaboration Survey questions that assess participant views on these four components Project Team focus group debrief Key informant interviews

Objective	Specific Goal	Specific Metric/Information to Measure	Evaluation Method Used to Measure Metric
#2 Cont'd	Stakeholders in the Subregion identify where they can collaborate together on a shared water need	Description of Pilot Project Views on barriers to collaboration	Survey questions that assess participant views on barriers Pilot Project description Project Team focus group debrief Key informant interviews
#3 Develop conceptual [pilot] project descriptions and cost estimates to include in the KBWA IRWMP master project list and facilitate partnerships with DACs and other IRWMP Members and Interested Parties.	Project Team develops Subregion specific Pilots Projects that address local needs, advance regional solutions and promotes collaboration.	Re-iterate description of Pilot Project---how many communities it benefits/involved? How does pilot match with top priorities in the region? Was pilot top choice? Extent to which pilot addressed water concerns Extent to which pilot identified shared solutions Overall satisfaction with pilot	Reiterate Pilot Project description & reference pilot description from previous sections Survey questions assessing participant views on pilot. Project Team focus group debrief Key informant interviews
	Development of Pilot Projects leads to assessment of next steps and funding sources for those Pilot Projects, and for needs for which Pilot Projects were not developed	Description of other Pilot Projects listed for future assessment, not selected Description of next steps laid out by Project Team at fourth meeting What would participants need to continue this Pilot Project Interest in continuing Pilot Project	Note of other Pilot Projects in matrix Description of next steps at fourth meeting Survey questions assessing Pilot Project. Project Team focus group debrief Key informant interviews
	The Study identifies, develops and empowers new or existing leaders	Comparison of forums attended before and after Study	Survey question Project Team focus group debrief Key informant interviews
	The Study increases participation of DACs and their voices in the IRWMP process	Assessment of impact of Study on DAC needs	Survey questions Project Team focus group debrief Key informant interviews

3.4 Evaluation of Study Objectives in Relation to Specific Goals

The following section includes a comprehensive assessment of how the Study did in implementing each objective, and the related goals. At the end of each Objective, a "Summary, Lessons Learned and Next Steps" section briefly summarizes key points that the reader can take away for evaluation and future application purposes.

3.4.1 Objective 1: Obtain participation of DACs in the Kings Basin

3.4.1.1 Goal 1-b: Document the water needs of DACs in the Kings Basin in a comprehensive inventory

Previous sections of this report describe the inventory that was developed of DAC water issues and needs. One methodology that worked particularly well in this effort was building on existing databases developed by the TLB study. In interviews, participants noted the benefit of being able to "see themselves as a region" in a map (the result of processing water inventory data into a visual summary). As one interviewee said, "People were able to see not just the water issue in their community, but how the [Subregion and Kings Basin] Region looks as a whole, and how a group of communities might have several common problems." In this sense, the processing of data into visual maps helped jump-start the idea of "regional thinking." In addition to this important inventory, additional water needs were identified at Meetings 1 & 2 (See **Appendix G**). As a means of complementing the information generated at these meetings, the survey evaluation asked participants to note how important different water issues were in their Subregion.

This process of creating an inventory was not without challenges, however. A significant amount of time was invested in confirming contact information for DACs. In many cases, unpaid interns helped with this effort, and represent an in-kind resource that was unaccounted for in the Study. Even with a starting point of contacts, it was time-consuming to confirm contact information for water systems. And in many cases systems were no longer active, or were private well owner communities with only a geographic location, and no contact name. This should be taken into account for future efforts.

3.4.1.2 Goal 1-a: Obtain participation of DACs in the Kings Basin

In total, the Project Team originally reached out to 321 individuals, covering 198 entities, which could include water systems, government agencies, and schools. Of these, a total of 108 unique participants, hailing from at least 34 communities[23], participated in the KBDAC Study. **Table 3-2** indicates the numbers of participants from each community, by Subregion. The Project Team saw that Northern Kings had the lowest number of participants (n=10), followed by Western Fresno (n=17), Eastern Fresno (n=18), Northern Tulare (n=27) and Fresno/Clovis (n=41). While the numbers for Fresno/Clovis seem particularly high, the main reason for this is that a large number of people attended the fourth meeting, though they had not been participants in the Pilot Project previously[24]. That Northern Kings had the lowest number can be largely explained by the fact that given the IRWMP boundaries, many of Meeting 1 participants did not return.

[23] 51 participants did not indicate their community. At least 34 (for Fresno/Clovis) are probably from Easton, though they did not note this.
[24] Approximately 28 from Fresno/Clovis were new attendees.

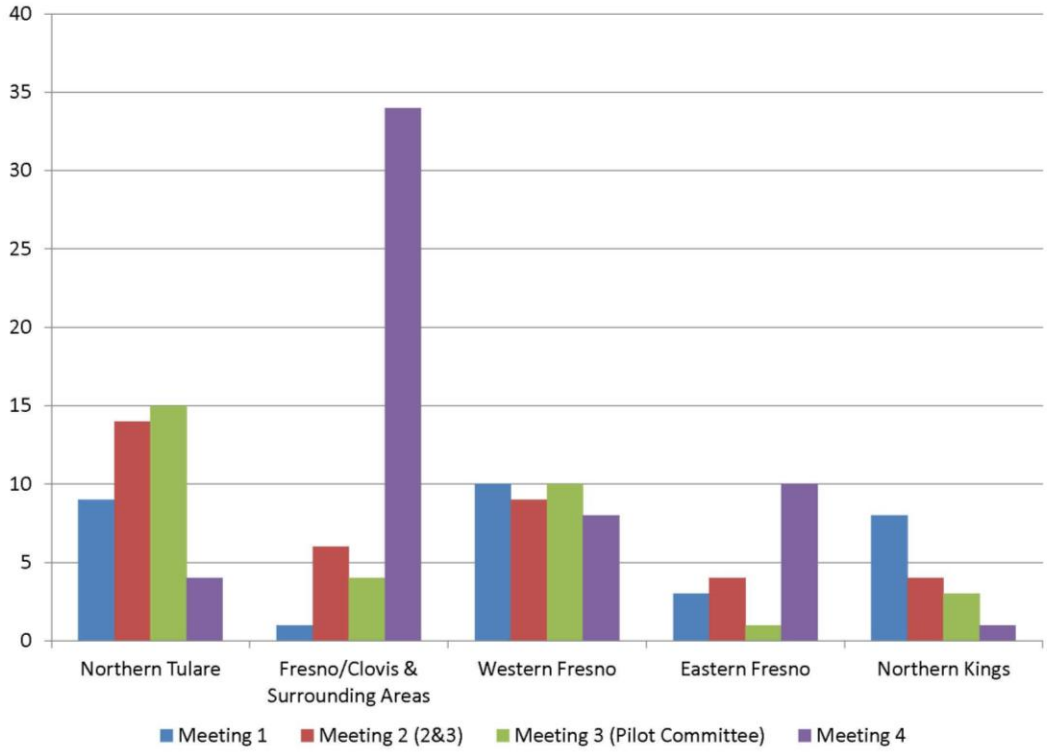
Table 3-2: Number of Participants by Community and Subregion

Subregion	Community	Participants
Eastern Fresno	Del Rey	1
	Fresno	1
	Laton	1
	Selma	1
	Shafter	1
	Unknown	13
	Total	**18**
Northern Tulare	Cutler	1
	Cutler Orosi	1
	Dinuba	2
	Dinuba/Orosi	1
	Earlimart	1
	East Orosi	1
	Monson	1
	Orosi	7
	Sacramento	2
	Seville	2
	Sultana	2
	Unknown	4
	Visalia	2
	Total	**27**

Subregion	Community	Participants
Fresno/ Clovis	Easton	5
	Orange Center	1
	Unknown	34
	Washington Colony	1
	Total	**41**
Northern Kings	Armona	5
	Hanford	2
	Home Garden	2
	Stratford PUD	1
	Total	**10**
Western Fresno	Biola	1
	City of San Joaquin	1
	Delano	1
	Fresno	1
	Lanare	3
	Raisin City	3
	Riverdale	3
	Unknown	4
	Total	**17**

Figure 3-1 summarizes more general trends in terms of participation by meeting. First, Western Fresno had a fairly consistent rate of participation. Northern Kings had a steadily declining rate of participation from Meeting 1 to Meeting 4. Northern Tulare had growing number of participants, but a large drop off at Meeting 4. Fresno Clovis and Eastern Fresno had a general increase in the first few meetings, followed by a huge increase in participation at the fourth meeting. The Subregion with the poorest overall participation was Eastern Fresno.

Figure 3-1: Count of Participants by Meeting Number and Subregion



Compared to the original outreach numbers for each Subregion, in many ways the Project Team felt that participation was lower than ideal (though 30% is not necessarily bad for a first outreach attempt). Two things are important to keep in mind: 1) why outreach was hard, and 2) what *was* successful from the outreach. The low turnout both at initial meetings and even in continued participation was explained by the Project Team in two ways. As one Project Team member noted in the focus group, "it was hard to sell a concept (i.e. regional water collaboration) that is so new." One interviewee expanded on this, "Regional planning isn't always an easy concept to access for people. A specific project is more helpful. How do you get DACs excited about the endeavor of planning?" Furthermore, many of the schools, mobile home parks and nursing homes showed little interest, perhaps because they could not connect to the topic as easily as could a representative from a water system. In addition, structural barriers were present for many of the contacted entities. Project Team members involved in outreach noted that finding the right person to talk to at a school was difficult, as was getting the topic on the school board's agenda. Finally, the methods of communication were challenging. Not all entities use email. Where they did not, the Project Team had to place individual telephone calls, send written invitations or make site visits; reaching decision-makers in this way was not always certain. Thus, there are several reasons that help explain why outreach was challenging.

Despite this, it was also recognized that for a first-time pilot, participation was reasonable, and those participants that did engage ended up participating with enthusiasm. Successful elements of outreach built on previous relationships that Project Team members/organizations had. For example, Easton residents turned out because one of the Project Team members is a local Easton leader. In Northern Tulare, Community Water Center and SHE had strong relational ties.

3.4.1.3 Summary, Lessons Learned, Next Steps

The lessons learned and related next steps associated with this objective are summarized as follows:

- Relying on secondary datasets is a useful first-step in identifying water needs in the Subregion, but it is important to complement with stakeholder input at meetings. Visual maps helped establish the concept of regional thinking;
- Considerable time is needed to develop an up-to-date contact list;
- Continual volunteer participation in meetings is difficult to sustain, and a strategy is needed to maintain strong participation;
- Future efforts would benefit from a strategic communication strategy for different types of outreach to different entities, which can be used in the beginning and throughout the Study;
- A method of keeping participants informed is important to develop in order to maintain good participation levels; and,
- Building on existing networks of relationships is critical for getting participation.

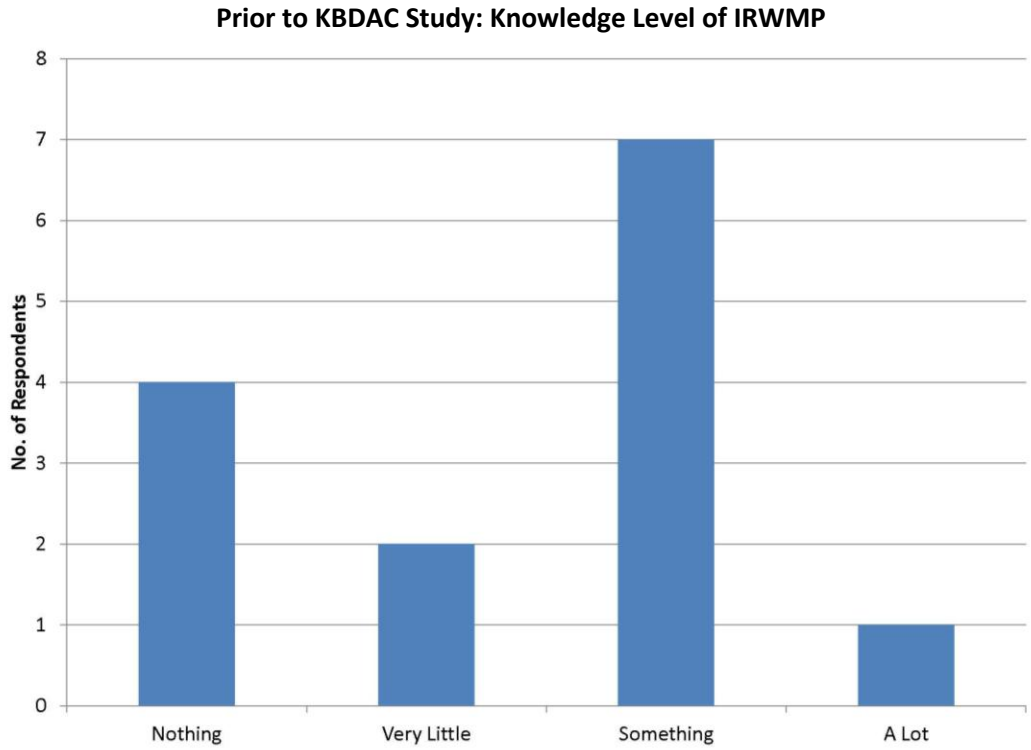
3.4.2 Objective 2: Engage and integrate DACs effectively into the KBWA IRWMP by developing Subregion groups to conduct IRWMP planning to address priority needs within the KBWA IRWMP.

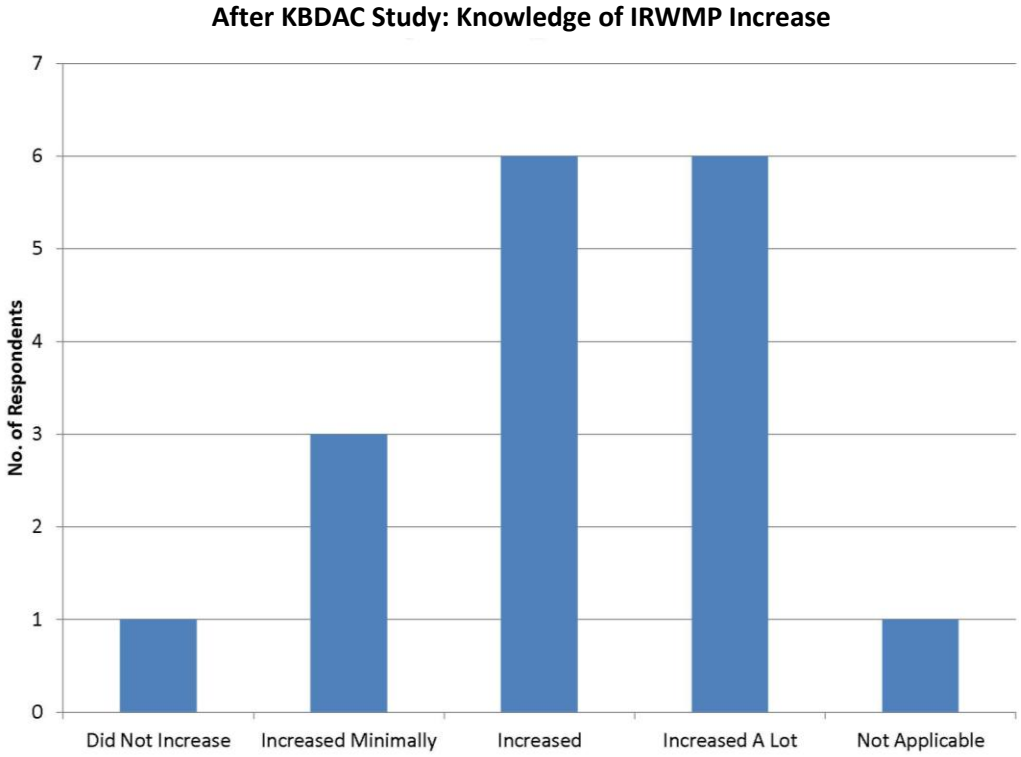
In order to meet Objective 2, the Kings Basin was divided into the five Subregions described above. As described in Section 2, participants in each Subregion indicated and prioritized their water needs. In addition to these two objective components, the Project Team can evaluate the three specific goals associated with this objective.

3.4.2.1 Goal 2-a: Local stakeholders learn about IRWMPs, regional collaboration and planning

As noted in **Tables 3-3 and 3-4**, evaluating goal 2-a includes assessing learning about IRWMPs as well as about funding and collaboration. As discussed in Section 2, at Meetings 1 and 2 participants learned broadly about IRWMPs, regional collaboration and planning. Survey results among the 17 participants that attended the fourth meeting indicated that while the majority of respondents felt they knew something about IRWMPs (n=7), an almost equal number knew very little or nothing at all before starting the Study (**Figure 3-2**). In contrast, by the end of the Study, 12 participants felt that that their knowledge had increased or increased a lot.

Figure 3-2: Count of Participants Past and Present Knowledge of IRWMPs



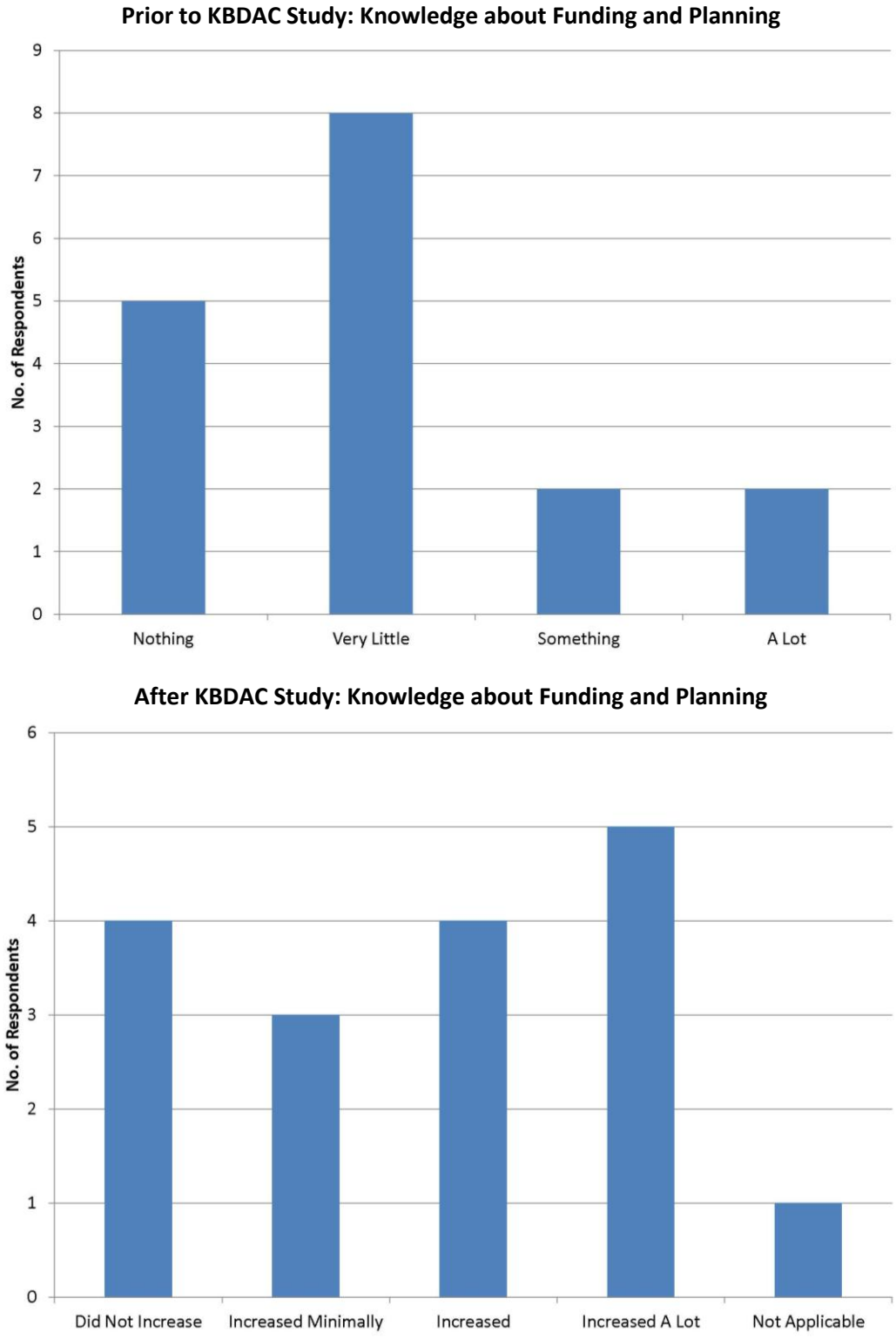


The way each individual respondent's understanding changed, from beginning of the Study to the end is summarized in **Table 3-3**. Most significantly, the Project Team saw that seven of those that said they knew nothing in the beginning felt their knowledge increased at least minimally from beginning to end of the Study. A majority of respondents (n=13) knew either nothing or very little about funding or planning prior to the Study (**Figure 3-3**). By the end of the Study, however, 12 participants felt their understanding of these issues increased, at least minimally (**Figure 3-3**). Finally, by the end of the Study, 16 participants felt their understanding of water issues in the Kings Basin Region had increased.

Table 3-3: Comparison of Knowledge of IRWMPs Before and After KBDAC Study

Prior to Study: Understanding of IRWMPS Was	By end of Study: How much Understanding of IRWMPS Changed:					
	Did not Increase	Increased minimally	Increased	Increased a lot	N/A	Total
Nothing	0	3	2	2	1	8
Very little	0	0	2	1	0	3
Something	0	0	1	2	0	3
A lot	1	0	1	1	0	3
Total	**1**	**3**	**6**	**6**	**1**	**17**

Figure 3-3: Funding Knowledge Prior to KBDAC Study and Increased Due to KBDAC Study



3.4.2.2 ***Goals 2-b and 2-c:*** *Barriers to regional collaboration are identified and deconstructed through information and in practice and Stakeholders in the Subregion identify where they can collaborate together on a shared water need.*

As mentioned previously, one goal of the pilot development was to show participants through practice how regional collaboration can take place (Goal 2-b), and where they can collaborate together (Goal 2-c). Thus, in order to assess how well barriers to regional collaboration were identified and deconstructed, this section begins with a brief description where each Pilot Project succeeded and struggled in this respect. This section then summarizes some key information on participant's satisfaction with the Pilot Projects themselves, and draws on interviews and focus group feedback. Goals 2b and 2c are considered together, since they are very interrelated.

Overall, the Northern Tulare and Western Fresno Pilot Projects were particularly successful in modeling a "regional" or "shared" solutions approach by involving more than one entity and bringing more than one community together. Project Team members noted that it was particularly powerful to witness that although multiple Western Fresno communities attended Meeting 3, the group as a whole was supportive of voting for the Lanare-Riverdale Pilot Project. In addition, seeing how a community such as Riverdale, with little to gain for itself, was open to the idea of exploring collaborative solutions with the community of Lanare was quite powerful[25].

While there were local politics and resistance to navigate in the Easton-focused pilot, overall Project Team members and interviewees found the pilot in the Fresno/Clovis Subregion to be successful in promoting regional collaboration. As one Project Team member noted, the Pilot Project helped generate momentum around thinking about a drinking water solution for the area, and it brought local schools (from Easton and Orange Center) and community members to the table to explore this topic. What's more, the very process of training local volunteers in survey implementation was seen as a way of generating more local interest in working on a shared solution, as well as an education and capacity-building tool.

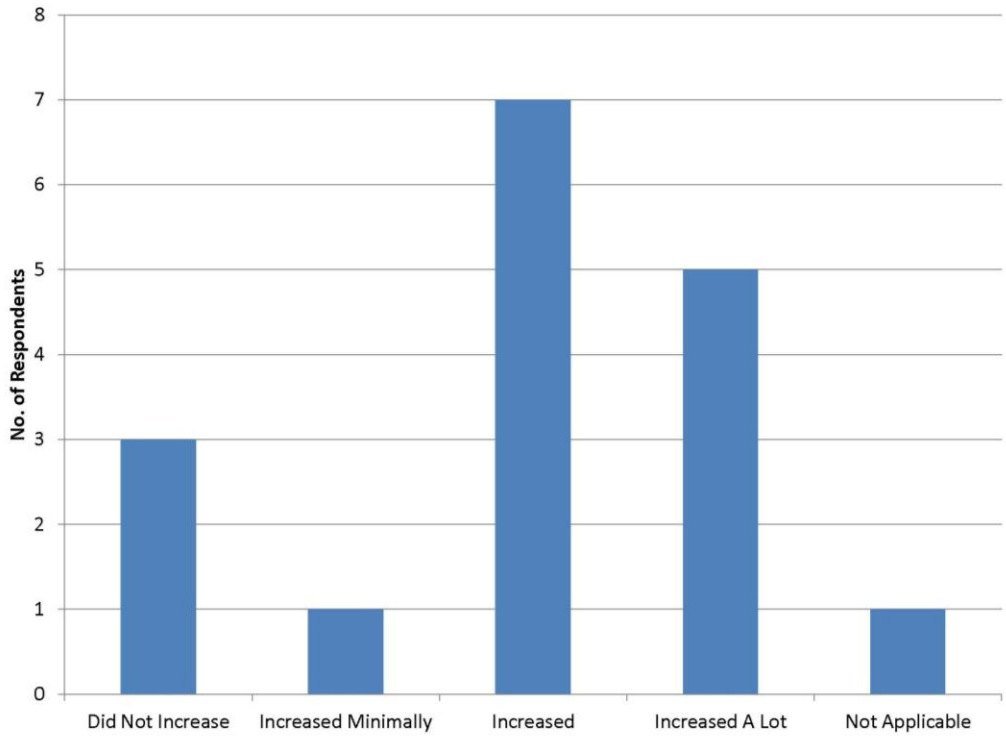
The Northern Kings Subregion, by nature of the two Pilot Projects selected, did not end up focusing on regional solutions. However, as one key participant noted, "I became aware of what regional or shared solutions can look like. While communities in my area are very far apart (geographically), maybe we could come together to discuss ways we're each working on local solutions." In this sense, the participant's awareness and desire to think regional shows through.

Finally, while the Eastern Fresno Pilot Project was meant to highlight a series of shared solutions for the City of Orange Cove, given relational dynamics discussed below and low participation rates, it was harder to deconstruct barriers to consolidation in practice.

Survey results generally indicate that participants' understanding and interest in shared solutions increased from beginning of the Study to the end. For example, **Figure 3-4** indicates that 12 of the 17 people surveyed found their understanding of the benefits of shared solutions increased.

[25] The relationship between Provost & Pritchard Consulting Group and the Riverdale PUD was important to initiating the conversations that led to this Pilot Project.

Figure 3-4: Increased Knowledge of Benefits of Shared Solutions Due to Study



A majority of participants (12 of the 17 participants) also felt their interest in collaborating with neighbors increased or increased a lot, as a result of participating in the KBDAC Study (see **Table 3-4**).

Table 3-4: Interest in Collaborating with Neighbors After KBDAC Study

How much did interest in collaborating with neighbors change?	Western Fresno	Northern Tulare	Fresno/Clovis	Total
Decreased a lot	0	0	2	2
Stayed the same	0	2	1	3
Increased	3	1	5	9
Increased a lot	2	1	0	3
Total	**5**	**4**	**8**	**17**

Notably, even in the Fresno/Clovis Subregion, where the dynamics were tense at Meeting four, five of the eight participants from that Subregion felt their interest level had increased, though two felt their interest decreased a lot[26]. **Table 3-5** shows a similar trend, where 12 participants also felt that their interest in working with neighbors on water issues increased or increased a lot.

Table 3-5: Interest in Working on Water Issues with Neighbors

How much did interest in Collaboration with Neighboring Communities on Water Issues change?	Western Fresno	Northern Tulare	Fresno/ Clovis	Total
Decreased a lot	0	0	2	2
Stayed the same	0	2	1	3
Increased	3	1	5	9
Increased a lot	2	1	0	3

While interest in collaboration may have generally increased, the Study seemed to have less impact on people's trust, both in neighboring communities, and in local agencies or government. Seven participants felt their trust in neighboring communities increased or increased a lot, while six said it stayed the same. However, this trust level increased even less when it came to thinking about local agencies or government; only five participants said this trust increased (See **Table 3-6**). See also Figures 3-5 and 3-6.

Table 3-6: Change in Trust of Neighboring Communities and/or Local Government

	Amount of Change	Western Fresno	Northern Tulare	Fresno/Clovis	Total
Trust in neighboring communities	Decreased a lot	0	0	2	2
	Decreased	0	0	1	1
	Stayed the same	0	2	4	6
	Increased	3	1	1	5
	Increased a lot	2	0	0	2
	Don't know	0	1	0	1
Trust in Government/Local Agencies	Decreased a lot	0	0	2	2
	Decreased	0	0	1	1
	Stayed the same	2	3	3	8
	Increased	2	1	1	4
	Increased a lot	0	0	1	1
	Don't know	1	0	0	1

[26] These two participants consistently rated the project and their interest in the pilot or shared solutions as negative.

Figure 3-5: Trust of Neighboring Communities

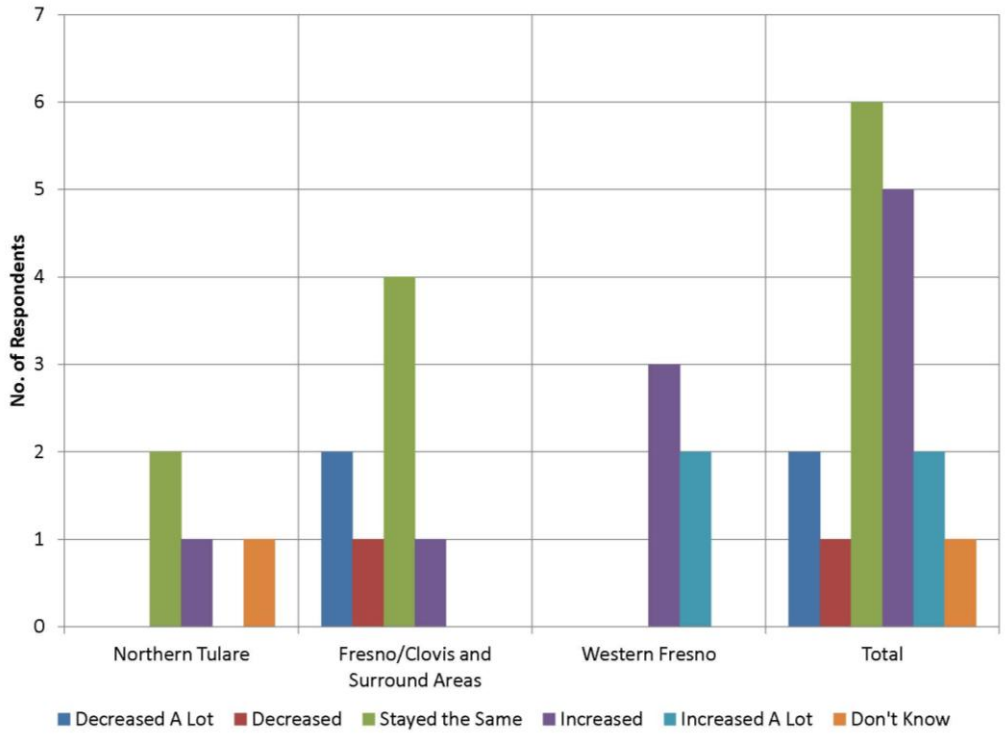
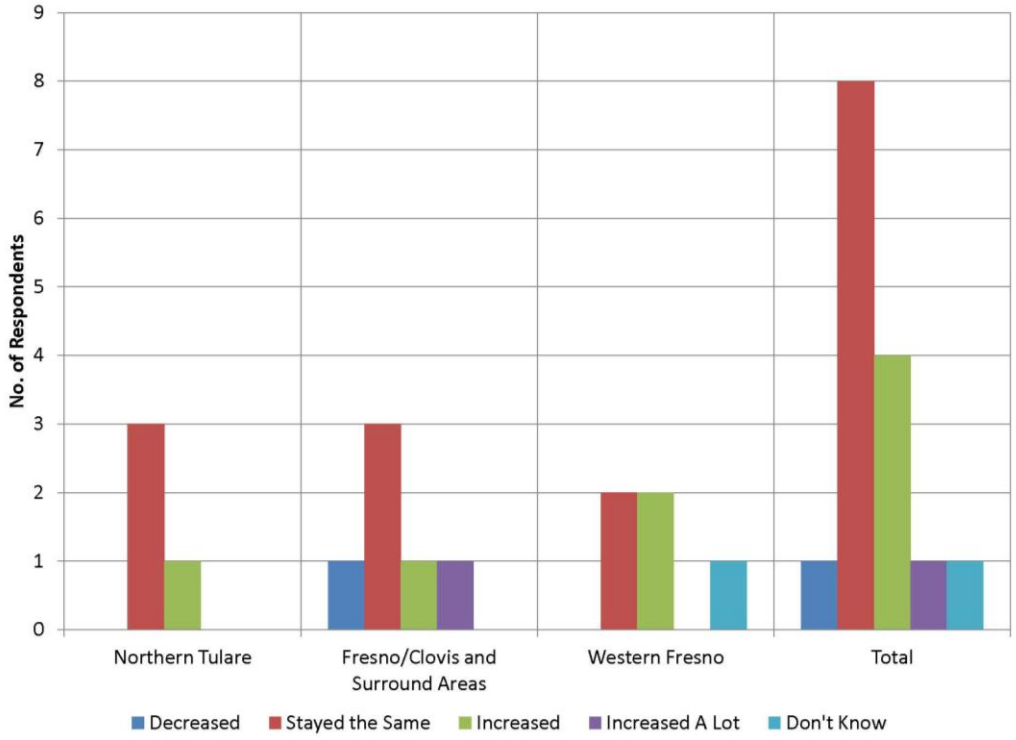


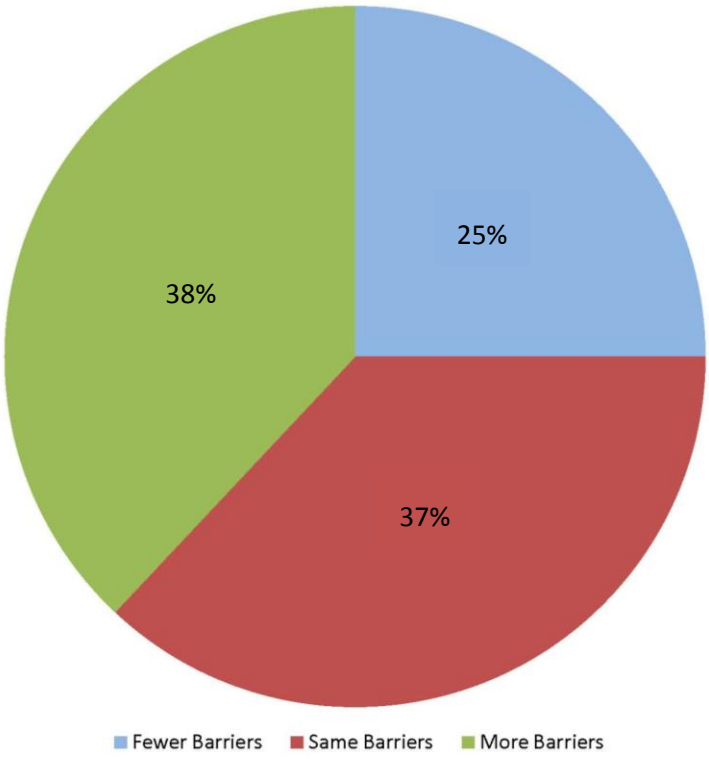
Figure 3-6: Trust of Local Government/Local Agencies



Neither did people's views of the barriers to consolidation or shared solutions completely change. In terms of views on collaboration, roughly equal proportions of respondents felt that there were more, fewer or the same amount of barriers to collaborating on water issues since participating in the Study (Figure 3-7). This seems to indicate that while interest in collaboration may have increased amongst most participants, this does not mean people's perceptions of the barriers entailed necessarily decreased.

Despite the fact that community members didn't necessarily increase their trust in local government or agencies, agency and local government representatives felt they learned a lot from the process and developed important relationships with community leaders that will help them better support the on-the-ground work. These same agency individuals also noted that they were more aware now of what a regional process can look like. Project Team members also felt that using local case examples of collaboration had an impact on making people more open, in general to these ideas.

Figure 3-7: Views on Collaborating with Neighboring Communities at Study End



3.4.2.3 Summary, Lessons Learned, Next Steps

1) Overall, what the Project Team can learn from implementing this objective is that a majority of participants gained increased awareness and understanding of collaboration and shared solutions. However, this did not necessarily translate to increased levels of trust, especially not in neighboring communities or local agencies/government. This can be potentially explained by the fact that this was a first-step towards a longer-term process of developing concrete solutions and building trust in the process. In addition, that the trust in local government or

agencies changed the least is not altogether surprising, since the focus of the meetings was community-to-community connections.

2) The learning and interest in supporting collaboration by agency and local government representatives should not, however, be discounted, and is an important success of the Study, as agencies/government can play an important role in facilitating regional solutions.
3) Having a concrete Pilot Project to work towards seems to build an experience-based understanding and appreciation for shared solutions.
4) Using local case examples helped exemplify to individuals that regional solutions are possible, and aren't something that happens "far away".

3.4.3 Objective 3: Develop conceptual [pilot] project descriptions and cost estimates to include in the KBWA IRWMP master project list and facilitate partnerships with DACs and other IRWMG Members and Interested Parties.

3.4.3.1 Goal 3-a: Project Team develops Subregion specific Pilots Projects that address local needs, advance regional solutions and promotes collaboration.

While previous sections already discussed some positive impacts of the Pilot Projects, in evaluating goal 3-a it is useful to see the number of communities involved (see **Table 3-7**) and the key water issue addressed. Thirteen of the 16 respondents said that the Pilot Project was their top choice of a project, two respondents said it was not, one did not know, and one did not answer. The two for whom the pilot was not their first choice did not indicate what their choice would have been; both these respondents were from the Fresno/Clovis Subregion.

Table 3-7: Pilot Project Statistics

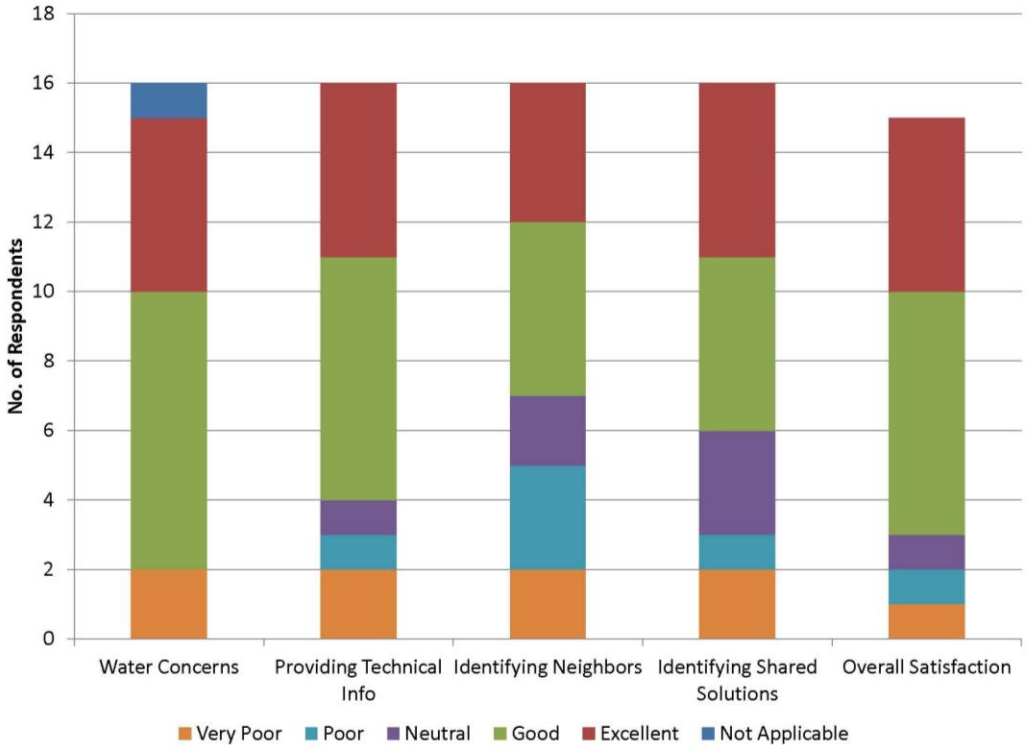
Subregion	Community Names	Number of Communities Part of Pilot Project	Key Water Issue Addressed
Northern Tulare County	Cutler, East Orosi, London, Orosi, Seville, Sultana and Yettem	7	Drinking Water
Fresno/Clovis & Surrounding Areas	Easton, Orange Center School and surrounding rural areas near Easton including nearby schools	~3	Drinking Water
Western Fresno County	Lanare CSD	1	Wastewater
Eastern Fresno County	City of Orange Cove	1	Drinking Water
Northern Kings County	Armona and Home Garden	2	Drinking Water

Whether addressing water concerns or identifying shared solutions, the majority of respondents found the KBDAC Study to be either excellent or good at addressing the noted water concerns (**Figure 3-8**). Not surprisingly, given the results indicated in the previous section, the factor for which respondents

were the least satisfied was in how well the Pilot Project addressed new neighbors with which to work on water issues. Similarly, the next fewest number of "positive" responses was for identifying shared solutions. Even so, overall satisfaction levels were high: 12 respondents thought that overall the Pilot Project was good or excellent. It should be noted that the same two people consistently rated the Pilot Project as "very poor" were both from Fresno/Clovis Subregion.

While the Project Team also found the Pilot Projects to also be successful, a few specific key successes and challenges should be noted. First, Project Team members felt satisfied that in such a short amount of time, they were able to produce a concrete deliverable to the community. Due to this short amount of time, and limited budget, there was some frustration that the Northern Tulare pilot could not do full shared-services analysis, and instead had to deal with the reality of data and resource limitations that caused the Project Team to focus on an economies of scale analysis alone. Several Project Team members also noted that the scope of the Pilot Projects was limited by the skill sets on the Project Team. The Easton Pilot Project (Subregion 2) benefitted from having a researcher on the Project Team. The other Pilot Projects benefitted from an engineering approach. However, there were potentially useful legal and financial analyses that were not conducted because those skill sets were not represented. One interviewee agreed with this noting that for the Riverdale-Lanare Pilot Project (Subregion 3), an institutional and legal analysis (i.e. Prop 218 analysis) was missing from the Pilot Project.

Figure 3-8: KBDAC Study Met Local Needs

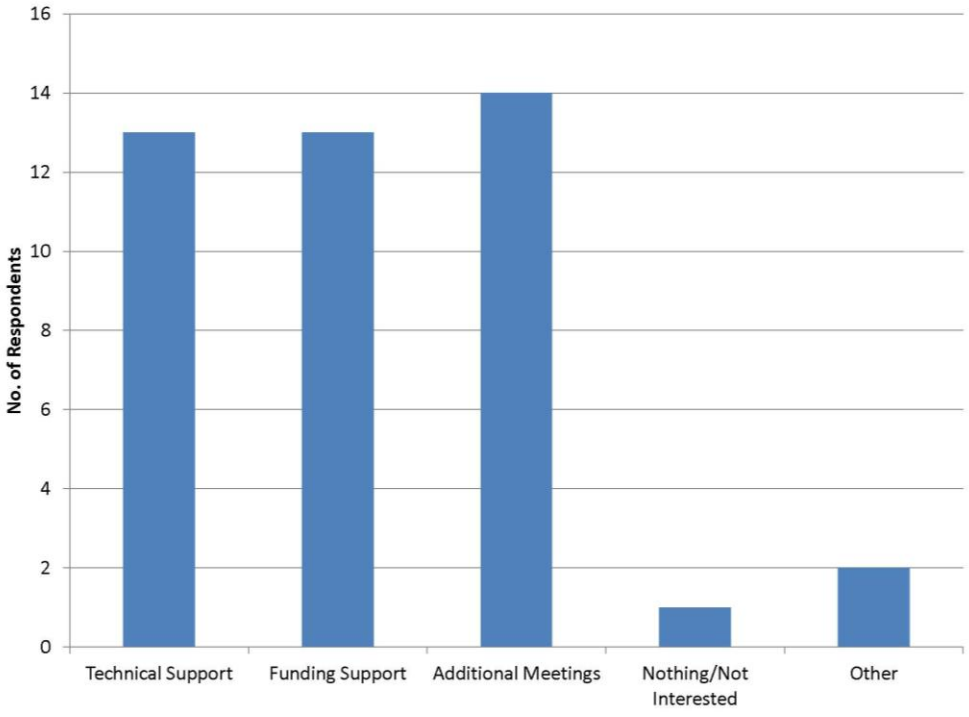


3.4.3.2 Goal 3-b: Development of Pilot Projects leads to assessment of next steps and funding sources for those Pilot Projects and, for needs for which Pilot Projects were not developed, description of other Pilot Projects listed for future assessment.

As successful as the Pilot Projects may have been in terms of a deliverable for the KBDAC Study, it is equally as important to consider the role of the Pilot Projects in leading to an assessment of next steps and funding sources. As noted in the Meeting Description above, at Meeting 4, participants were presented with a set of next steps related to each pilot, and potential funding sources. Similarly, the pilot matrices developed for Meeting 3 serve to capture the list of "water needs" for each Subregion, even if these other Pilot Projects were not selected. As a whole, this information can serve as a basis from which to continue pursuing work in each Subregion. Interviewees noted that they felt their Subregion's Pilot Project was helpful in planting seeds and developing momentum for next steps.

In addition to sharing next steps and funding sources for each Subregion, however, it is important to consider participant's interest in continuing to work on the Pilot Project selected, and what additional resources participants felt they needed in order to do so. As one interviewee noted, "What can we do from here on? What are the nest steps? Can we get help to do something similar? How can we present results at a more general meeting" This series of questions underscores the importance that the Pilot Projects were only a first-step in generating interest and momentum, and that DACs need further support in continuing to push the work forward. This is corroborated by survey results. Thirteen participants said they would need more technical or funding support (**Figure 3-9**). Fourteen said they would need additional meetings. One person said they didn't need anything. Of the two respondents that noted "other", one said he/she would want to fight the pilot, the other said he/she would want mediation between Lanare and Riverdale. Of the 12 participants that answered the question regarding whether they would want the Pilot Project to continue, six were very interested, and five were interested. Only one was not at all interested (data not shown in table).

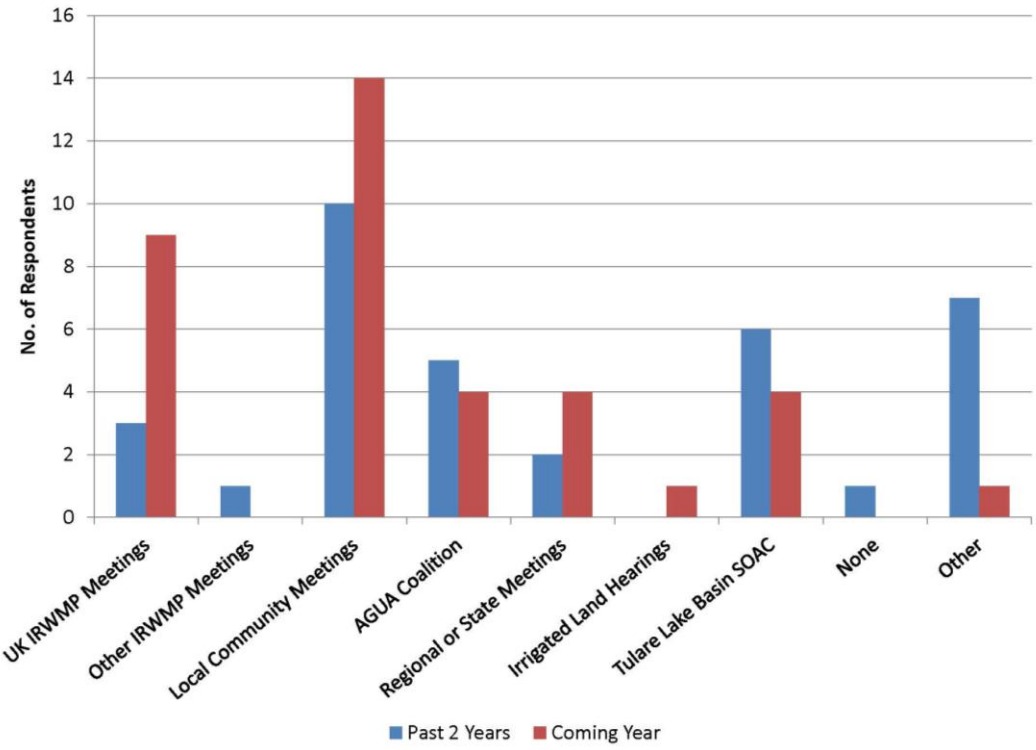
Figure 3-9: What is Needed to Continue Pilot Project



3.4.3.3 Goal 3-c: The Study identifies, develops and empowers new or existing leaders

Beyond the immediate impact of the Study, it is also important to consider the seeds that KBDAC Study may have sewn for future involvement and participation in water issues. As shown in **Figure 3-10**, compared to participation levels for the past two years, more people are interested in attending Kings and local water meetings in their communities. The desire to participate in la Asociación de Gente Unida por el Agua (AGUA) meetings went down for one person, as did for two people in the SOAC (though that process will be wrapping up in the coming year, which may explain that answer).

Figure 3-10: Participation in Water Meetings: Past vs. Future



3.4.3.4 Goal 3-d: The Study increases participation of DACs and their voices in the IRWMP process

Finally, but perhaps most importantly, is the need to consider how the Study impacted DACs and helped, or didn't integrate them into the IRWMP process. As shown in **Figure 3-11** most participants felt the KBDAC Study had an impact or high impact on making agencies aware of their local needs, representing DAC needs in regional settings and addressing the needs of DACs. Figure 3-12 shows that most participants were satisfied or very satisfied with how the KBDAC Study addressed DAC needs.

Agency representatives and the Project Team reiterated these same sentiments. One Project Team member noted how his/her awareness of what DACs need increased, and how originally he/she wasn't even sure if DACs had an interest in working on water solutions. Project Team members also noted that they felt that now that the UK IRWMP has had more of an opportunity to learn about DAC needs, this will increase their voice, and their ability to exercise their voice. Project Team members also noted how there is more learning and awareness among disadvantaged communities. Another interviewee noted the impact for the KBWA, "This information will serve as a road map. It will also now be in board member's minds." This same interviewee noted, "I like that DACs are getting heard…I like that they're

getting heard at the IRWMP level. The small communities can't investigate all the "what ifs" [of water solutions]. The KBDAC Study was able to summarize information that communities otherwise couldn't analyze. Now district boards can read results and summaries."

Figure 3-11: Impacts of KBDAC Study

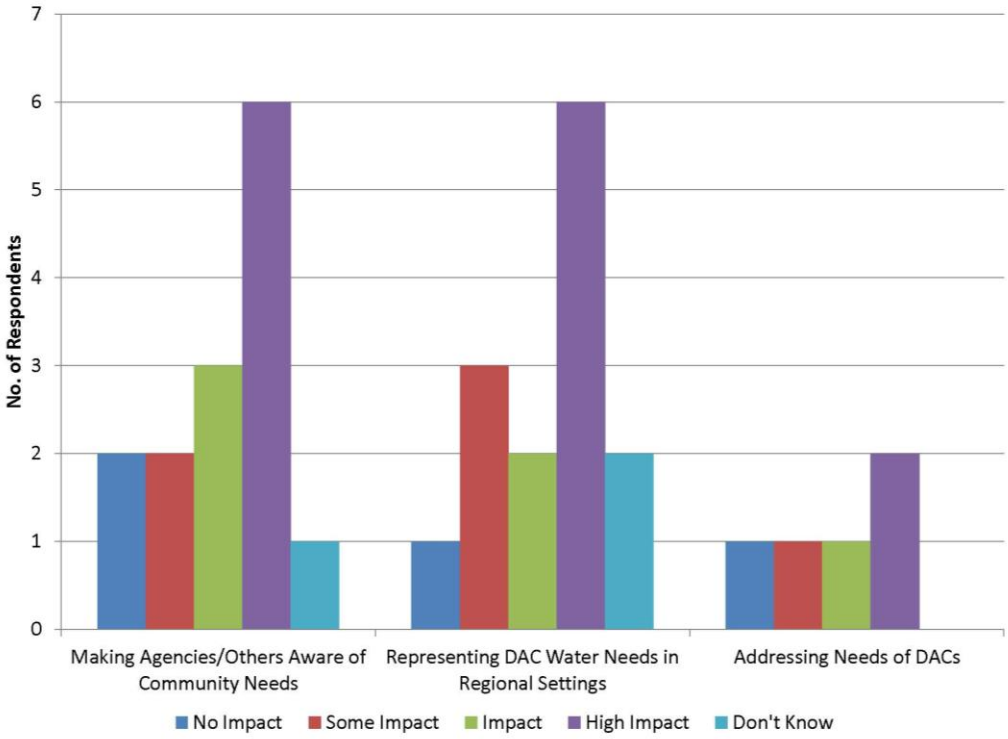
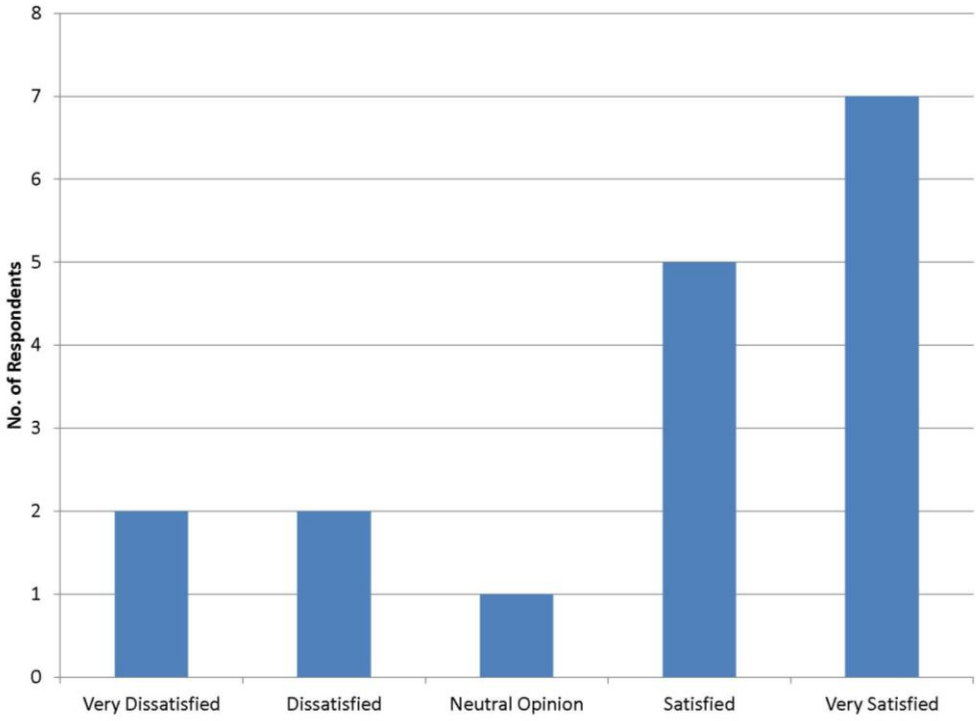


Figure 3-12: Satisfaction with How KBDAC Study Addressed DAC Needs



3.4.3.5 Summary, Lessons Learned, Next Steps

1) Overall the Pilot Projects were seen as successful by participants;
2) DACs, agency representatives and Project Team members saw how the process helped increase DAC participation, and will eventually help increase their voice in the IRWMP process; and,
3) As a next step, the Project Team and interviewees stated that this momentum should not be lost.

3.5 Evaluation Summary and Conclusions

An evaluation of the KBDAC Study provides a unique opportunity to assess how the Pilot Project did, and also consider lessons learned for future efforts. From the previous sections the Project Team saw that overall, the Study goals were well met, though key challenges and lessons learned can be uncovered within the process of meeting each goal. In terms of outreach, the Study was successful in getting a key group of individuals and agencies to participate, even if continual participation was hard to maintain. In the future, different strategies for reaching out to different entities should be implemented, and specific outreach materials will be helpful to draw on.

The data and inventory developed was a time-consuming effort, but allowed for useful regional maps to be developed that visually showed what common needs communities have. This forms a useful foundation for communities to see themselves in the context of the Kings Basin Region, and for the KBWA, IRWMG and local water boards to use this information as a repository of data. Of course, means of updating this data and incorporating local information must be built into the process of future/continued database development.

The Pilot Projects were a useful way of modeling regional solutions on the ground, and provided communities with learning opportunities about IRWMPs, funding sources and working with neighbors. More work needs to be done to continue the momentum started, and to continue to build trust between communities, and between communities and agencies (even though agencies felt they had already started to build relationships that will help them support the work established by the pilots).

Overall, this Study was very successful in increasing the participation of DACs, and moving forward the process of having DAC voices heard in IRWM planning processes. Important additional resources are necessary to continue moving this work forward, including specific on-the-ground technical support for communities, funding for the pilots developed, continuing spaces for communities to come together, and helping DACs sit at planning tables.

4 SUSTAINABILITY

4.1 Continued DAC Involvement

Continued DAC involvement really centers on two main categories: 1) DAC involvement, engagement and assistance beyond the scope of the KBDAC Study and 2) how the Pilot Projects will help achieve sustainable solutions once implemented.

4.1.1 DAC Involvement, Engagement, and Assistance

The KBDAC Study has created a momentum around regional solutions and IRWMP engagement amongst DACs that has not been seen before in the Kings Basin Region. That momentum includes education, highlighting regional solutions, showing the DACs how the IRWM process can actually help them and giving them real tangible solutions and tools to use going forward.

To maintain this momentum, the DAC stakeholders and IRWM Members will need to work together and help ensure the DACs are being regularly engaged and have meaningful opportunities to engage with the IRWMP planning, funding and governance processes. Developing, building and nurturing personal relationships between DAC and non-DAC stakeholders will be an important part of continuing their engagement. In addition, keeping the DACs informed of meetings, funding opportunities and other relevant information will be helpful in encouraging their participation. Suggestions for next steps and considerations are discussed more fully in Section 5. Following through with the next steps and considerations will go a long way towards helping DACs stay involved, engaged and assisted.

One other very important aspect to maintaining DAC involvement is for those that are working with DACs to recognize that, while the government defines a DAC based purely on the income of the community, the reality is that DACs are as varied in characteristics as people. Those involved in outreach to and education of DAC members will need to take into account such characteristics as 'community identity', social makeup, cultural characteristics and educational levels. For example, the type of outreach that works for a grouping of rural farm-based communities that are very near one another and share very similar water challenges will almost certainly not work for a mobile home park on the fringe of a large city with a history of short-term residents. The local community members working with DAC members should be aware of these differences and make efforts to account for them in their outreach and education efforts.

4.1.2 Pilot Projects Achieving Sustainable Solutions

In all cases, the Pilot Projects that were prepared included discussions of alternatives that should be sustainable to the communities involved; however, more analysis of the alternatives is required prior to determining the best solution and analyzing the alternatives sustainability will be part of the future studies. Additionally, the Pilot Projects that were chosen each have regional collaboration as one of their goals, which will help to ensure DACs, especially small DACs, will be able to maintain and continue operation of the solutions once implemented.

Each Pilot Project Report provided a next steps section and a funding sources section (see Appendices L through P). These two steps are the roadmap for the communities to follow to ensure the work completed with the KBDAC Study will lead to sustainable solutions for the communities.

4.2 Summary of Costs Incurred and Disposition of Funds

As stated previously, the KBDAC Study was funded by a $500,000 grant from the Department of Water Resources. The Study was divided into five phases:

Task 1: DAC Subregion Groups Determination

Provost & Pritchard (P&P) with support from CWC, prepared the GIS and database analysis, CWC lead the creation of maps and materials to support sub-group selection with P&P technical involvement;

Self Help Enterprises (SHE) and Community Water Center (CWC) provided support with review of data, identification of key gaps in data, and development of evaluation metrics/criteria, as well as review of application of criteria and draft materials.

Deliverables for this Task include:

- Subregion identification including GIS, mapping and supporting data information
- Meeting minutes and summary of final selection of subgroups and any other recommendations by the DAC workgroup

Task 2: DAC Data Gathering & Outreach

SHE took the lead on this sub-task. SHE may subcontract with an outside consultant for implementation for part of this task, including conducting one or more surveys.

Deliverable for this Task:

- Data from each interview, phone call or meeting will be summarized and documented for inclusion in later Study reporting.

Task 3: Facilitated Sub-Group Planning & Technical Assistance

CWC was the lead in helping facilitate the development of an action plan for next steps to implement each Pilot Project/process, including identification of potential funding sources.

CWC managed a DAC stakeholder contact list and ensure DAC contact information is integrated into the email and mailing list for KBWA.

P&P supported identifying next steps.

SHE supported identifying next steps and potential funding sources.

Deliverable for this Task:

- Meeting minutes from each meeting. A summary of administrative and projects developed, along with the implementation plan for each Subregion.

Task 4: Study Reporting

P&P lead drafting of the progress and Study reports.

CWC lead preparation of the lessons learned (including evaluation) and tools used for stakeholder facilitation and outreach sections of the reports.

SHE will assist with preparation of data gathering, outreach and technical assistance (i.e. identification of potential funding and project development) sections of the reports.

Deliverables for this Task:

- Progress Reports, Draft Report, Final Report

Task 5: Grant Administration Support

The Kings Basin Water Authority (KBWA) reviewed, and submitted progress reports to DWR. The KBWA conducted periodic reviews of Study progress and participated at key milestone functions to ensure completion of the Study objectives. With the assistance from the Consultant Project Teams the KBWA staff prepared and processed reimbursement requests and general Study financial oversight.

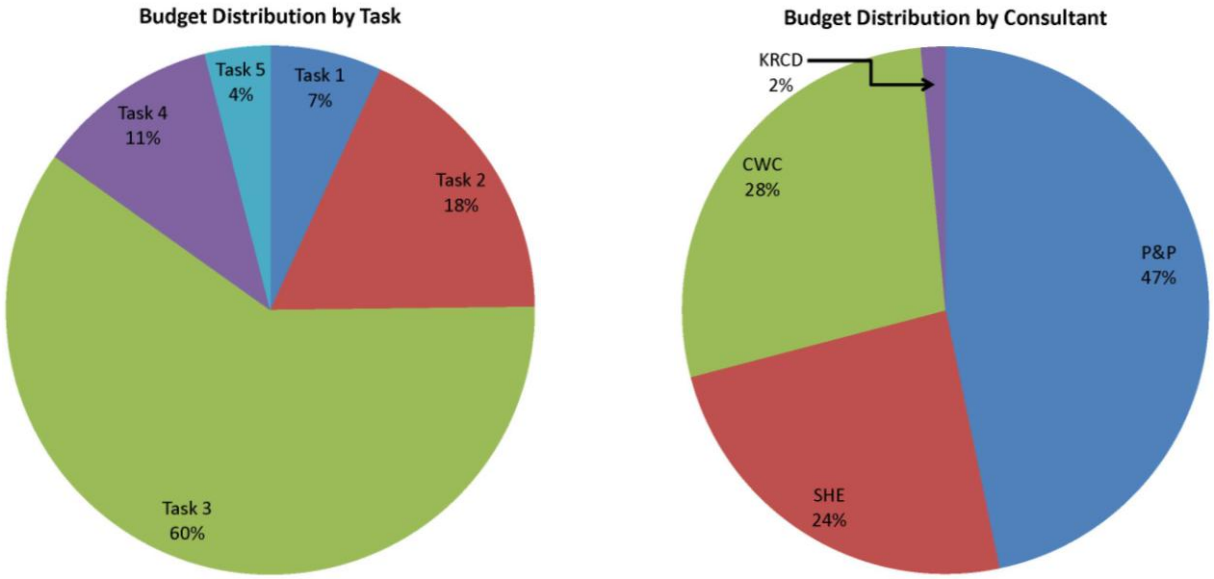
At time of grant agreement execution, budgets were set for each task (Original) and provided within Exhibit B of the Grant Agreement (see **Appendix F**). As the Study progressed, it was determined that additional funds were desired in Task 1 and 2, primarily Task 2 and budget was moved from Task 3 to accommodate this change. The reason for reallocation of budget between tasks was to allow additional Outreach and Data collection and facilitate additional discussions regarding selecting the Subregions. The Original and Revised Budget numbers are included in **Table 4-1**.

Table 4-1: Study Budget

Task	Original	% of Total	Revised	% of Total	Change
Task 1: DAC Subregion Groups Determination	$30,000	6%	$34,310	7%	$4,310
Task 2: DAC Data Gathering & Outreach	$79,729	16%	$89,729	18%	$10,000
Task 3: Facilitated Sub-Group Planning & Technical Assistance	$314,505	63%	$300,195	60%	$14,310
Task 4: Study Reporting	$55,766	11%	$55,766	11%	$0
Task 5: Grant Administration Support	$20,000	4%	$20,000	4%	$0
Totals	**$500,000**		**$500,000**		

The general split of the grant monies amongst Tasks 1 through 5 was 7%, 18%, 60%, 11% and 4%, respectively, as shown in **Figure 4-1** (using the Revised budget). Additionally, the split of the grant monies between Project Team members was 47%, 28%, 24% and 2% between P&P, CWC, SHE and KRCD, respectively.

Figure 4-1: Disposition of Funds



4.3 Cost Effectiveness

The Study was comprised of five tasks, as discussed above. Final invoicing is not complete for Tasks 3-5, but based on projections at the time of this report preparation, it appears there will be budget remaining in Task 3, while Task 2 and 4 will be billed at or near their budgets. It is difficult to predict the scope of work and level of effort needed for outreach. However it seems the Project Team may have been able to conduct more community meetings and education or completed additional Pilot Projects in the Subregions. However, this could also indicate that more budget should have been devoted to Task 2 for additional outreach and data collection. As discussed previously, information shortages lead to reduced pilot effectiveness (mainly in Northern Tulare County) and additional outreach would have been helpful in all Subregions, but specifically in Eastern Fresno County and Fresno/Clovis and Surrounding Areas. Future Pilot Studies should consider a larger percentage of their budget being dedicated to Task 2 efforts.

4.4 Funding Opportunities

The long term ability of DACs to resolve critical drinking water, sanitary sewage and flooding issues is contingent on the availability of sustainable funding sources to finance the capital improvements needed. Currently, there are a number of State and Federal funding sources that DACs may compete for to address water and wastewater issues. However, there are limitations on the capacity of these sources to fund all or even a portion of the needs. Such limitations include the amount of funding available, the eligibility of various project components and the timeliness in which funding programs can solve the problems. Often times, multiple sources of funding are needed to cover all aspects of a project. In addition, the lack of predevelopment funding can be a difficult hurdle. Changes to some

existing funding programs are recommended and some new programs are also recommended to better serve DACs.

The IRWM Program has been funded through past statewide water bonds including Propositions 50 and 84. There is the likelihood that the next water bond that goes to California's voters for consideration, whenever that might be, will include additional monies to support IRWM funding that would include DAC projects. Though the IRWM program can play a significant role for DACs, the majority of funding will be needed from other programs even if future bond funding for the IRWM program occurs. In addition, it should be noted that support in technical applications and the application process is critical to provide to DACs. The following is a summary of those pertinent funding sources available including the IRWMP program.

1) Kings Basin IRWMP Proposition 84 and potential future Water Bond funding. Proposition 84 targets DAC projects that address critical drinking water supply or water quality needs. Placement of a proposed project on the KBWA Project List means there is the potential that the KBWA will apply for Bond funding from the Department of Water Resources [www.water.ca.gov/irwm/grants]

    a) Planning and Feasibility Study funding can cover planning, environmental and design work necessary to make a project shovel ready (DAC Projects only).

    b) Implementation funding can be used to cover design (if not already covered under planning) and construction costs. Eligible construction costs can cover work both in the public right-of-way and on-site costs related to the overall DAC project.

    c) DWR Facilitation Services Grants are intended to assist IRWM groups in addressing "pivotal IRWM issues". This source of funds may cover the costs of facilitating conversations between various stakeholders and DACs in the Kings Basin IRWMP group. Current funding for the DWR Facilitation Services Grants ends in June 2014.

2) California Department of Public Health (CDPH)
[www.cdph.ca.gov/certlic/drinkingwater/pages/DWPFunding.aspx]

    CDPH administers the most funds that are available to resolve water quality issues in the state. DACs can submit a universal pre-application to CDPH requesting placement of a specific proposed project on CDPH Drinking Water Program Project Priority Lists. The pre-application period normally lasts for at least two months and usually occurs each summer. The current cycle opened May 3, 2013 and will end July 8, 2013. This means projects will likely be placed on the Safe Drinking Water State Revolving Fund (SDWSRF) Program Priority List with a slim potential of being placed on the Proposition 50 and/or 84 Priority Lists.

    a) The SDWSRF is comprised of EPA and State funds administered by CDPH which provides funding to correct public water system deficiencies based upon a prioritized funding approach that addresses the systems' problems that pose public health risks, systems with needs for funding to comply with requirements of the Safe Drinking Water Act, and systems most in need on a per household affordability basis. This is the largest source of project funding available through CDPH.

        [http://www.cdph.ca.gov/services/funding/Pages/SRF.aspx]

    b) CDPH Proposition 84 Programs

Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Act of 2006 (Public Resources Code §75001, et seq.), was passed by California voters in the November 2006 general election. CDPH is responsible for the portions of the Act that deal with safe drinking water supplies, including emergency and urgent funding, infrastructure improvements, and groundwater quality.

[http://www.cdph.ca.gov/services/funding/Pages/Prop84.aspx].

The following are CDPH programs funded through Proposition 84:

i) Emergency Clean Water Grant funds under §75021 of the Prop 84 program can fund emergency projects that resolve an immediate health hazard including water outages. This program can now also fund interim drinking water solutions, while CDPH funding is being processed for long term solutions.

[http://www.cdph.ca.gov/services/funding/Documents/Prop84/Prop84emergencycriteriarevision12-21-2012-%20FINAL.pdf]

ii) Small Community Infrastructure Grants for Chemical Contamination under §75022 of the Prop 84 program can fund small community drinking water system infrastructure improvements to meet safe drinking water standards. Priority is given to projects that address chemical and nitrate contaminants, other health hazards and by whether the community is disadvantaged or severely disadvantaged. Higher priority is also given to consolidation projects that resolve health hazards. The program can fund Feasibility Studies and construction grants.

[http://www.cdph.ca.gov/services/funding/Documents/Prop84/P84Sec75022criteriaforinfrastructure-10-20-2010.pdf]

c) The Small Water Systems Program Plan (SWSPP): In 2012, CDPH announced plans to concentrate funding and other resources on 177 specific small public water systems in need of meeting drinking water standards. Most of the water systems are in Disadvantaged Communities. This program outlines specific actions that CDPH intends to take that will incrementally reduce the number of small systems not meeting the State's water quality standards. CDPH staff has set a goal of bringing 63 of the 177 identified small systems into compliance by the end of 2014.

[http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Smallwatersystems.aspx]

CDPH has created a Program Plan list in an effort to track these 63 systems through the process of bringing them into compliance. **Table 4-2** shows the communities on the Program Plan list that are found within the KBWA boundary. The table details the system's name, primary contaminant of concern for the system, population and service numbers, as well as type of goal. In the Kings Basin IRWM, the following community water systems (<1,000 service connections and >15 service connections) are included on Program Plan list.

Table 4-2: Program Plan – Community Water Systems, Kings Basin IRWM Area

County	System Name	Contaminant	Population Served	Services	Identified Funding Program[1]
Fresno	Camden Trailer Park	Arsenic	75	25	P84 / SDWSRF
Fresno	Caruthers CSD	Arsenic	2,103	678	P84
Fresno	Double L Mobile Ranch Park	Uranium	80	37	
Tulare	East Orosi CSD	Nitrate	700	106	P84
Tulare	El Monte Village MHP	Nitrate	100	49	P84/SDWSRF
Kings	Four Seasons MHP	DBCP/ Nitrate	350	88	P84
Tulare	Gleanings For The Hungry	Nitrate	31	12	
Kings	Hamblin Mutual Water Company	Arsenic	80	39	P84
Kings	Hardwick Water Company	Uranium	40	16	P84
Fresno	Lanare CSD	Arsenic	660	172	P84
Fresno	Riverdale PUD	Arsenic	2,416	949	P84
Tulare	Seville	Nitrate	400	77	P84
Fresno	Tranquillity Irrigation District	Arsenic	800	342	P84
Tulare	Yettem	Nitrate	350	64	P84
Fresno	Zonneveld Dairy	Arsenic	139	19	P84

Notes:
[1] *P84 indicates Proposition 84; SDWSRF indicates Safe Drinking Water State Revolving Fund*

d) Under the State Fiscal Year 2012-13 Proposed Intended Use Plan Amendments to the SDWSRF Program, two program additions might benefit communities with drinking water issues:

i) Local Assistance Set-aside – Pre-Planning and Legal Entity Formation Assistance Program

There may be a potential benefit to residents that live in rural areas served by contaminated private water wells where no public water system exists. Under this newly proposed program, funding could cover efforts to serve owners of private wells and neighboring "state small" and other public water systems investigate the formation of a new water system or consolidation.

ii) Consolidation Promotion Incentives

There can be a benefit to larger systems in proximity to small DACs that rank high on the SDWSRF Project Priority List. Under this proposed incentive program, if a larger system wants to consolidate with a neighboring high ranking small DAC, that larger system's project(s) that might be ineligible for funding on the current SDWSRF Project Priority List could be elevated to the same priority as the DAC system.

3) State Water Resource Control Board (SWRCB)

The SWRCB's Division of Financial Assistance (Division) funds wastewater projects that serve DACs. The Clean Water State Revolving Fund (CWSRF) can provide loan and principal forgiveness (grant) funding for planning, design and construction of wastewater infrastructure

to serve disadvantaged communities. The Small Community Wastewater Grant Program (when funds are available) can provide grants of up to $2,000,000 to cover planning, design and construction of wastewater infrastructure to serve disadvantaged communities. In general, a DAC must bring its sewer rates to at least 1.5% of the MHI for the community before grants can be issued.

[http://www.swrcb.ca.gov/water_issues/programs/grants_loans/]

4) HUD Community Development Block Grant (CDBG)

DACs can compete for CDBG funds to resolve water, wastewater and storm drain/flooding issues. The HUD CDBG program is broken into two primary components. Cities and counties with larger population centers such as Fresno County receive an annual formula-driven allotment of CDBG funds which is considered an entitlement. Smaller cities and counties including Kings and Tulare counties compete on an annual basis for CDBG discretionary "small cities program" funds administered by the State Department of Housing and Community Development [http://hcd.ca.gov/fa/cdbg/index.html].

Under the entitlement program in Fresno County, communities compete for funding at the County level. An advisory committee makes recommendations to the Fresno County Board of Supervisors which makes the decisions on CDBG funding provided the proposed project meets HUD criteria. In the unincorporated portions of Kings and Tulare Counties, the local Board of Supervisors selects projects to compete for funding at the state level.

CDBG funding is one of the few sources available to cover project-related work on private property. Such work may include sewer and water connections and abandonment of old water wells and septic tanks. In Fresno County, this on-site work is normally administered through the Housing Assistance Rehabilitation (HARP) Program. Through HARP, individual property owners that qualify as low-income can apply for loans secured by a deed of trust to complete necessary on-site project related work. Tulare County's on-site project related work has usually been in the form of small grants to income eligible families.

Some Fresno County small cities such as Orange Cove, Parlier and San Joaquin have opted out of Fresno County's entitlement program because there is the potential that a larger amount of funding could be secured through the competitive process through the Small Cities Program. On the flip side, the jurisdiction may receive no CDBG funding in an annual funding cycle if their application does not compete well. This is a highly competitive program and in order to compete, the City would need to emphasize health and/or safety issues related to water, wastewater or storm water needs that would be resolved by the proposed project. To be competitive, the community would also need to have a very high percentage of low income households.

Under the discretionary small cities program, pre-design Feasibility Study costs can be applied for through CDBG's Planning and Technical Assistance grants for a maximum of $50,000.

5) USDA Rural Utilities Service

a) USDA Rural Utilities Service (RUS) has been the largest funding source for rural water and wastewater system improvements over the years. RUS funding is often quicker to secure than State funding but there is usually less grant available and the community normally

takes on a higher percentage of loan. In recent years, RUS's loan interest rate has been lowered to rates competitive with State-operated SRF programs.

[http://www.rurdev.usda.gov/UWEP_HomePage.html]

b) RUS funding usually covers a broader definition of eligible project costs than many State operated programs. This simplifies the process when USDA is the sole source of project funding. When USDA funding complements other funding sources, USDA can often finance costs ineligible in other programs such as land purchase and contingencies (not eligible in SWRCB programs for example) or replacement of a water distribution system (often times ineligible in CDPH programs). In "unusual cases" (RUS Instruction 1780) USDA water and wastewater program funds can be used to fund water and sewer service connections on private property and the abandonment of old private wells and on-site septic systems.

c) Individual loan applications may be submitted by income eligible property owners that reside on their property to USDA's 504 housing rehabilitation program. This program can cover the costs of water and sewer service connections and/or the abandonment of old water wells or on-site septic systems, though funding is often limited.

[http://www.usda-rural-development-directmortgage.com/504_repair_loan_and_grant.htm]

6) California Financing Coordinating Committee

The California Financing Coordinating Committee (CFCC) was formed in 1998 and is made up of seven funding agencies: five state and two federal. CFCC members facilitate and expedite the completion of various types of infrastructure projects by helping customers combine the resources of different agencies. Project information is shared between members so additional resources can be identified. The CFCC consists of representatives from the State Water Resources Control Board, California Department of Public Health, Department of Housing and Community Development, Department of Water Resources, California Infrastructure and Economic Development Bank, US Department of Agriculture and the US Department of Interior Bureau of Reclamation.

[www.cfcc.ca.gov]

5 CONCLUSION, NEXT STEPS AND RECOMMENDATIONS

The KBDAC Study provided facilitated engagement for DACs with and improved awareness of the IRWM process, along with practical solutions for common problems through the Pilot Projects. The process allowed those involved to learn more about their communities, regional solutions, IRWMPs, inter-agency relationships, types of collaboration and, most importantly, how they can leverage internal community resources and outside support to develop community-driven solutions that are widely supported.

The KBDAC Study provided technical information, potential solutions and assistance to the entire Kings Basin Region but specifically to 12 individual communities. Two communities have plans to join the IRWM as Interested Parties, two have pre-applications to submit to the IRMW for inclusion on the master project list and four more have a technical report to attach to a funding pre-application to show progress has already been made on the project.

The KBDAC Study successfully inventoried the DACs in the Kings Basin Region and established contact information for the majority of them. This list will, of course, continue to change and require maintenance.

In an effort to continue the momentum established with this Study and maintain a positive relationship between the DACs and the IRWMG, there are several suggested 'Next Steps' and 'Considerations' that have been developed.

5.1 Next Steps

The next steps detailed below are regarded as items the KBWA should consider undertaking to validate the efforts the KBDAC Study has taken toward including DACs in the IRWMP process.

1) Compile and Store KBDAC Study Data

   An extensive amount of data was researched and complied through the efforts of the KBDAC Study. This information is included as an appendix to this report and should be saved for future use by KBWA.

2) Distribute Final Report to Entire Kings Basin Region

   All Subregions received a copy of their individual Pilot Project Report (included in the Appendices); however, distributing a copy of this Final Report would be beneficial in illustrating the big picture of the KBDAC Study. A copy of this Final Report could be made available electronically through KBWA's website (www.kingsbasinauthority.org).

3) Inclusion of DAC Contacts in KBWA Mailing List

   The contact information compiled through the efforts of the KBDAC Study should be included in the mailing list of the KBWA Members and Interested Parties to aid in keeping the DACs apprised of KBWA activities. Ideally, these contacts would receive notices for KBWA meetings, meeting minutes, invitations to submit projects for the project list, and information on funding opportunities. The mailing of information to some DACs may be a more appropriate means of communication.

The following Next Steps for each Subregion have been identified. The water and sewer agencies, community members, cities, counties, DACs, school districts, and other agencies need to continue their

involvement with the KBWA and continue furthering solutions to their community water-related problems by:

1) Continuing to educate themselves and become more familiar with the Integrated Regional Water Management Planning process;
2) Attending the KBWA Board or Advisory Committee Meetings;
3) Becoming an Interested Party or a Member of the IRWMG could help provide access to funding and improve participation of DACs, making them engaged stakeholders in the Kings Basin Region; and,
4) Considering the other projects provided each Subregion's Pilot Matrix (see **Appendix H**) and pursuing solutions to those projects, as funding opportunities become available.

5.1.1 Northern Tulare County Subregion

This Subregion has a strong interest in finding ways to help agencies consolidate. Water systems that are considering some form of consolidation may need to seek funding to conduct a Feasibility Study to evaluate consolidation alternatives with accuracy and detail. A few items water systems may need to consider when preparing the scope of work for a feasibility involving consolidation are:

1) The need to conduct a Community Survey of the customers and elected officials to understand their interest and sentiments;
2) Share data on budget, finances etc across communities for a full shared services study to take place;
3) The need to prepare a TMF Assessment of all communities;
4) Retain legal counsel to evaluate the available forms of governance and how a different form of governance may change the responsibilities of an agency;
5) Retain an accounting professional to evaluate the financial health of the agency and the feasibility of consolidating finances, if applicable;
6) Consider initiating consolidation by developing a shared services agreement for professional services (legal, engineering, accounting) to test the process and political will prior to seeking a consolidation Feasibility Study; and,
7) Include funding and possibly consultant support for the feasibility study process to conduct public education and outreach.

5.1.2 Fresno/Clovis and Surrounding Areas Subregion

This Subregion has a strong community interest in exploring additional information and possible regional collaboration in the future. A few items the community may need to consider when preparing the scope or work future for efforts are:

1) Include funding and possibly consultant support to conduct public education and outreach, so that the community can continue to build on the survey effort; and,
2) Conduct several focused outreach and educational meetings with the community prior to enlisting the aid of any outside organizations

5.1.3 Western Fresno County

As an initial next step, Lanare CSD could pursue correspondence with the Riverdale PUD to discuss investigating sewer collections and treatment options. Interagency support is needed prior to applying for funding. Once interagency support is achieved the agencies should consider submitting the prepared grant pre-application to fund a Feasibility Study through the IRWMG or other funding source (see Section 4) that would evaluate consolidation alternatives in enough detail that a preferred alternative could be identified. The Pilot Project Report should be attached to the pre-application to show work completed on the project to date. A commitment letter or a memorandum of understanding that identifies the basis for agreement between the Districts on key aspects of the project such as governance, minimum infrastructure requirements, operations and maintenance would need to be attached to the grant pre-application.

5.1.4 Eastern Fresno County Subregion

The City of Orange Cove should validate the Pilot Project surface water storage assumptions and evaluate areas that have the potential to produce groundwater as an alternative solution and an initial next step. City should consider making any revisions to the grant pre-application, if needed and submit it to the KBWA to apply for planning funding to prepare a Feasibility Study. The Pilot Project Report should be attached to the pre-application to show work completed on the project to date. The Feasibility Study would evaluate water supply alternatives in enough detail that a preferred alternative could be identified. As a part of the planning scope, a commitment letter or Memorandum of Understanding (MOU) could be prepared if there are participating water agencies.

5.1.5 Northern Kings County Subregion

Home Garden CSD could consider the suggestions identified in the Pilot Project Report to help decrease their waste disposal costs. If funding is needed to implement any suggestion, refer to Section 4 for funding sources and utilize the information prepared within the KBDAC Study to aid in the preparation of a grant pre-application.

Armona CSD could consider submitting the Interested Party application to the Kings Basin IRWMA to begin the process of adjusting the IRWMP boundary and officially including Armona in the IRWMG. Once the application is received, KBWA could consider initiating discussions and other steps required to adjust the IRWM boundary to include Armona CSD. This step will allow Armona to potentially apply for funding through the IRWM application process.

5.2 DWR Recommendations

The following recommendations were prepared in response to data collected, participant discussion or comment, and observations made through the Study including the surveys discussed in Section 3. The recommendations are provided to DWR for consideration in aiding other IRWMs and the state in ways to continue engagement of DACs in the IRWM process and fostering collaborative efforts in finding solutions for DAC water-related issues throughout all IRWMs in the state.

Explore employing a state-sponsored Regional DAC Coordinator for each IRWM region.

As discussed above, DACs and DAC members often lack information or awareness of IRWMs and potential associated opportunities. The communities are often represented by one person, typically a

volunteer, who are unable or unlikely to attend IRMWG meetings without outreach or encouragement from the IRWM Members or local NGOs.

A DAC coordinator could lead the building and nurturing of personal relationships between DAC and non-DAC stakeholders, including other IRWM Members. The DAC coordinator could be responsible for keeping DACs informed of the IRWM process, aid IRWM Members in promoting an understanding and maintaining an awareness of DAC needs to IRWM governing boards and stakeholder groups, facilitating communication among various stakeholders, and representing the needs of DACs at the IRWM process. A DAC Coordinator could provide assistance that is culturally and linguistically appropriate, by developing educational and outreach material, coordinating and facilitating educational workshops.

Currently, the Tulare Lake Basin has access to a Regional Watershed Coordinator that engages in all of the local IRWMs within the watershed boundary, with the purpose of developing and promoting integrated natural resource management strategies in the Tulare Lake Basin watershed.

Encourage IRWM Regions to utilize local non-government organizations (NGOs) or community-based organizations (CBOs) to aid in Outreach and updating contact information of local DACs.

As learned during the outreach process, DACs and DAC members are often not informed or are not aware of their IRWM region and their importance and opportunities and often rely on the technical assistance of organizations and NGOs to obtain information about the funding sources and opportunities/efforts to address their water needs. NGOs such as SHE, CWC, CRLA and others that have existing relationships and access to DACs could help aid the outreach efforts of the local IRWMs by supporting the distribution of outreach materials, encouraging DACs to participate and providing the local IRWM regions contact information for the local DACs.

Consider providing technical and/or financial support for DACs to prepare funding application materials potentially including preparation costs, one-on-one discussions between DACs and DWR on best approach to prepare a competitive application, and provide funding to IRWMs to prepare and distribute Outreach/Educational Materials to DACs.

DACs face extensive challenges in the competitive IRWM process and often lack the resources to develop and prepare project proposals that meet DWR standards. Often, when technical assistance is provided, either through technical assistance providers or other consultants, the assistance is limited because the available technical assistance providers lack: a) resources to help develop IRWM project applications for DACs and; b) access to the engineering support needed to develop the application. Local IRWMGs have not historically had the resources to conduct outreach or develop educational materials for DACs.

Technical Assistance providers could assist DACs in preparing applications and aid in obtaining engineering support, as needed, similar to the CPDH Technical Assistance (TA) model. DWR could also be a resource to DACs by assisting them in developing their applications; this assistance could include offering training and providing guidance to the TA providers and consultants assisting DACs. Local IRWMs could also be a resource to local DACs and TA providers if funding were made available to support the development of educational materials and their distribution.

Consider accounting for various DAC characteristics (as discussed above) when reviewing and scoring DAC-prepared funding applications.

As discussed above, DACs are presently classified in one large group based on income. This approach groups all kinds of DACs together and, often, the same approach to working with them is used, which is not always appropriate. A very small, rural DAC will have very different abilities and approaches to

preparing a funding application than a large municipal DAC that may be able to hire a consultant to assist them in the application and technical data preparation. If DWR were to utilize a ranking matrix or other method by which to account for various DAC characteristics, it could possibly account for these variances when the communities are competing for funding. Efforts could be made to provide the most assistance to those smaller lower income DACs that have the least capabilities to help them participate on a more level playing field.

Some DACs are served partially or completely by private wells. Consider incorporating scope to inventory DACs using private wells in future DAC studies and consider developing a process to provide support and information on available funding sources to communities of private well owners.

There are a number of DACs that are served by private wells that may have poor water quality or are at risk because of existing contamination and increasing regulatory requirements. Residents who receive water from a community water system are notified of contamination of their water supply, owners of private domestic water wells are not usually aware of any contaminants that their family may be drinking. The KBDAC Study was able to identify a number of communities served by private wells in the Western Fresno, Eastern Fresno, Northern Tulare and Fresno Clovis and Surrounding Areas but was unable to fully engage or assist these communities because the assistance they required was beyond the scope of this study.

If funding sources are available to assist these communities, DWR should consider articulating how the current funding sources can help DACs served by individual private wells and or develop a process to aid and provide support to communities of private well owners. Minimal assistance could include the inventorying of private well communities as part of the scope for all future DAC Studies to ensure the needs of these communities have been documented. A further step would be locating resources to sample private wells for suspected contaminants in the area. This information when made available to well owners, may influence their desires to take steps to resolve any potential water quality issues.

CDPH is currently introducing a new assistance program called Pre-Planning and Legal Entity Formation that is designed to assist communities of private well owners, including schools and businesses to consolidate with small water systems and other existing public water systems. DWR could consider developing a similar assistance model or one that could complement the CDPH assistance program.

Continue to promote and fund regional solutions between DACs, non-DACs and IRWMG Members.

As discussed previously, DACs often are unable to benefit from economies of scale. The KBDAC Study has created momentum for regional solutions and demonstrated that regional solutions can be successfully promoted if funding is made available to fund the process needed to promote and develop regional solutions.

This momentum should be continued by funding the process necessary to continue the promotion and development of shared solutions among DACs, non DACs and with IRWM Members. The process should include, outreach, education, facilitation and technical assistance, including pre planning analysis and application development.

5.3 KBWA Recommendations

Through the process of developing recommendations for DWR, several specific recommendations were developed that would be applicable from a local standpoint, also. The following items are presented to the KBWA for consideration as the IRWMG continues to develop methods to engage and incorporate DACs into the IRWM process within the Kings Basin.

Attempt to use mail, phone or in-person outreach to DACs as much as possible; email should be utilized as a last option.

As learned through the outreach process, many DAC members and representatives do not have access to internet or email. The KBDAC Study has concluded that DACs can be better reached by mail, phone or through in-person outreach and that email outreach should be utilized as a last option.

Consider utilizing local non-government organizations (NGOs) or community-based organizations (CBOs) to aid in Outreach and updating contact information of local DACs.

As discussed in Section 5.2.1, utilization of NGOs or CBOs by the Kings Basin IRWMG could offer a more effective type of assistance than employing other consultants or types of outreach.

Consider organizing pre-application and grant application workshops or one-on-one training opportunities for DACs.

DACs face extensive challenges in the competitive IRWM process and often lack the resources to develop and prepare project proposals that meet DWR standards and expectations. Educational workshops on application development and one-on-one training sessions could be beneficial to DACs.

Consider preparing and distributing Outreach and Education materials as funding from DWR is made available.

Little information is available to educate DACs on the IRWM process and the information available has not been tailored to a DAC audience nor has it been translated into Spanish. The Kings Basin IRWMG could consider developing and regularly distributing outreach materials that are culturally and linguistically appropriate as outreach funding is made available from DWR.

Continue to maintain awareness of potential funding sources for communities of private well owners and communicate information to IRWMG Members and Stakeholders.

If funding is made available from the State for use in relation to private well owners, the IRWMG could consider tracking the funding and making the information available to the DACs in the Kings Basin Region.

Continue to educate and promote regional solutions between DACs, non-DACs and IRWMG Members, including physical and TMF consolidations.

The KBDAC study has created momentum for regional solutions and demonstrated that regional solutions can be successfully promoted if funding is made available for the process. The IRWMG could reinforce the concept of regional solutions by promoting them among DACs, non DACs and with its membership and by scoring favorably projects that seek to develop or implement regional solutions, including Technical and Managerial types of consolidations.

Consider approving Interested Party applications submitted by DACs as a result of this Pilot Study.

This study has included an extensive effort reaching out to, educating and encouraging DACs to participate in the IRWM process. One major milestone achieved has been for several DACs to elect to join the IRWMG as Interested Parties. If Interested Party status is approved, this will encourage DACs to continue their involvement and become more aware of IRWM goals and opportunities. By approving Interested Party status, the IRWMG is validating the efforts of those communities and inviting them to become part of the regional discussions and solutions.

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APPENDIX

KINGS BASIN

Water Authority