

APPENDIX D
EASTERN FRESNO COUNTY PILOT PROJECT

Disadvantaged Community Pilot Project
Eastern Fresno County Sub-Region
City of Orange Cove Water Supply Project

FINAL
JUNE 2013

Prepared for:

Kings Basin IRWM Authority

Prepared by:



**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

TABLE OF CONTENTS

1	Introduction	5
1.1	Development of the Project Scope.....	7
2	Orange Cove Water System	9
2.1	Project Alternatives	12
2.1.1	Alternative 1: Expand Existing Raw Water Storage Capacity	14
2.1.2	Alternative 2: Groundwater Well and Possible Interconnection to an Adjacent Public Water System.....	18
3	Next Steps and Feasibility Study.....	21
3.1	Feasibility Study.....	21
4	Potential Funding Sources	23
5	Bibliography/References	26

LIST OF FIGURES

	<u>Page</u>
Figure 1-1: Kings Basin IRWM Sub-Region Map	6
Figure 1-2: Eastern Fresno County Sub-Region Map	7
Figure 2-1: City of Orange Cove Map.....	10
Figure 2-2: Water Supply Alternative No. 1	16

LIST OF TABLES

	<u>Page</u>
Table 2-1: Surface Water Treatment Historic Production	13
Table 2-2: Well Production Estimate	13
Table 2-3: Storage Capacity – One Month	14
Table 2-4: Alternative No. 1 Cost Estimate	17
Table 2-5: Alternative No. 1 Advantages and Disadvantages	17
Table 2-6: Alternative No. 2 Cost Estimate	19
Table 2-7: Alternative No. 2 Advantages and Disadvantages	19

**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

APPENDIX

A.....City of Orange Cove IRWM Grant Pre-Application
B.....Engineer’s Opinion of Probable Construction Cost Alternative No. 1
C.....Engineer’s Opinion of Probable Construction Cost Alternative No. 2
D..... Potential Project Matrix

**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

ABBREVIATIONS

CSA.....	County Service Area
CDPH.....	California Department of Public Health
CSD.....	Community Service District
CVP.....	Central Valley Project
DAC.....	Disadvantaged Community
FKC.....	Friant Kern Canal
IRWM.....	Integrated Regional Water Management
IRWGM.....	Integrated Regional Water Management Group
MHI.....	Median Household Income
OCID.....	Orange Cove Irrigation District
USBR.....	United States Bureau of Reclamation

SECTION ONE

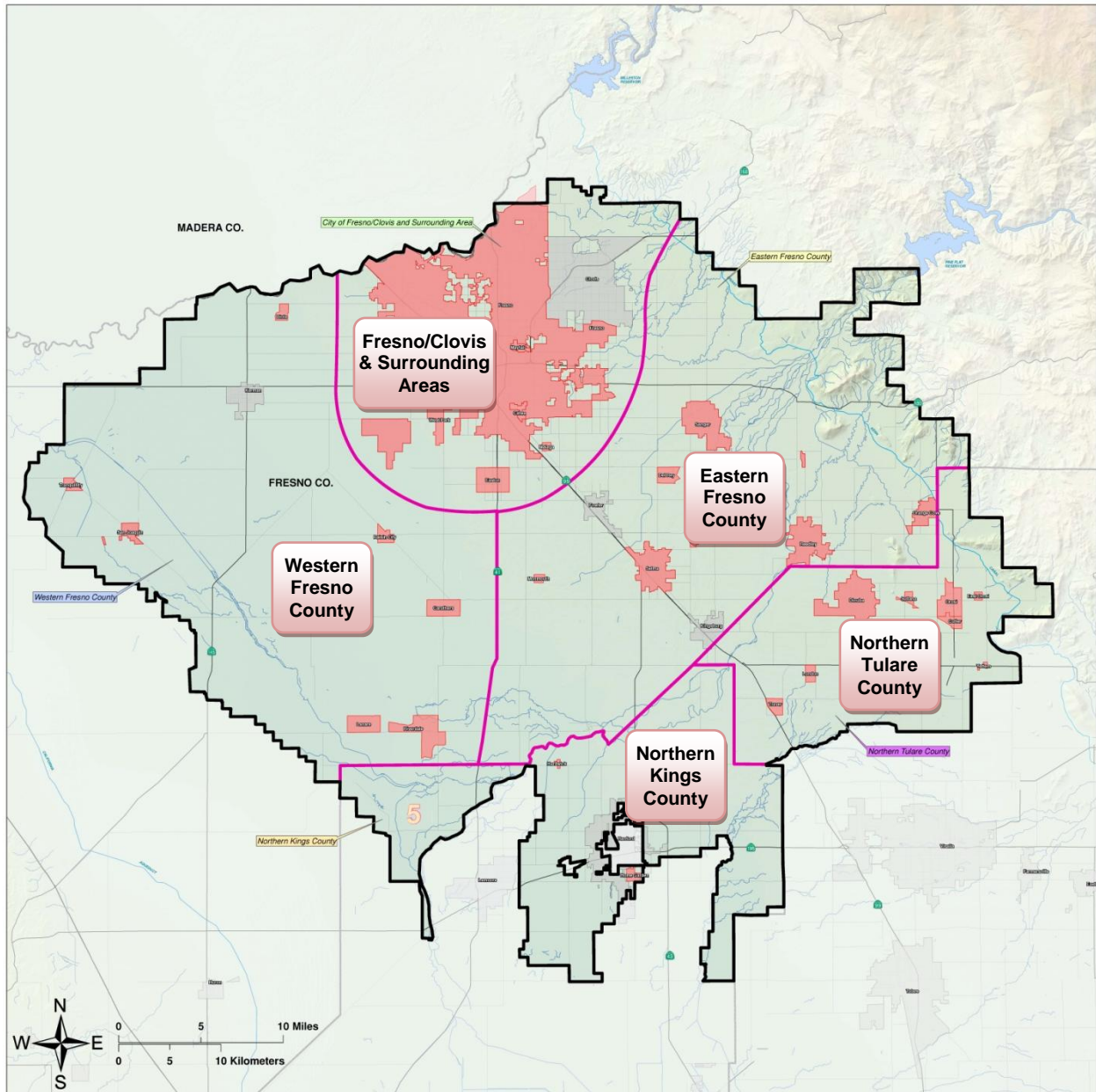
1 INTRODUCTION

The Kings Basin Integrated Regional Water Management (IRWM) Authority (Authority) received a grant from the State of California, Department of Water Resources, to develop a pilot project or series of projects within the IRWM boundary focusing on water, wastewater or storm water problems and issues faced by Disadvantaged Communities (DACs). A DAC is defined as a community with a Median Household Income (MHI) of less than 80% of the statewide MHI.

The Kings IRWM boundary extends over the majority of Fresno County plus portions of northern Tulare and Kings Counties and contains nearly 100 DACs. In an effort to develop pilot projects that would address common problems and benefit multiple DACs, the IRWM region was divided into five sub-regions: Northern Tulare County, Fresno/Clovis and Surrounding Areas, Western Fresno County, Eastern Fresno County and Northern Kings County (See Figure 1-1).

DISADVANTAGED COMMUNITY PILOT PROJECT SECTION ONE EASTERN FRESNO COUNTY SUB-REGION

Figure 1-1: Kings Basin IRWM Sub-Region Map

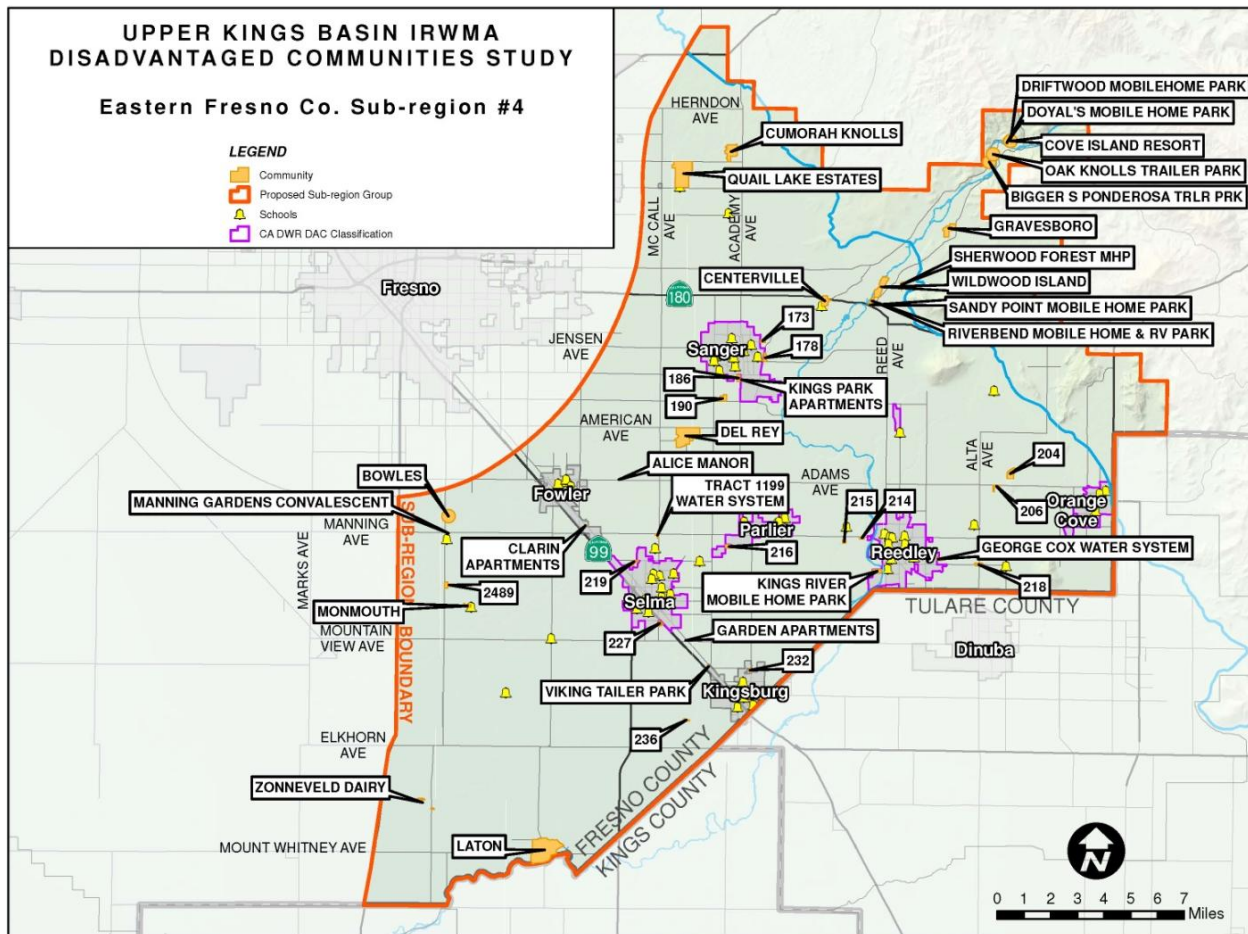


DISADVANTAGED COMMUNITY PILOT PROJECT EASTERN FRESNO COUNTY SUB-REGION

SECTION ONE

The Eastern Fresno County Sub-Region has numerous DACs (See Figure 1-2). Outreach was performed to agencies within the Sub-Region in an effort to educate them about Integrated Regional Management Planning and to seek their participation to help identify potential pilot projects for the Sub-Region. The outreach efforts included mailing printed or emailing invitations to the local communities and posting of the meeting notices on Kings River Conservation District's (KRCDD) website (www.krcdd.org). Additionally, some agencies were contacted via phone, and information on the upcoming meetings and Subregion status was provided at the IRWM Advisory Committee meetings in September 2012, December 2012 and March 2013. Several agencies actively participated in the pilot project process: City of Selma, Fresno County, City of Orange Cove, City of Reedley (fourth meeting), Laton, Del Rey, several school districts, and residents from several communities.

Figure 1-2: Eastern Fresno County Sub-Region Map



1.1 Development of the Project Scope

Stakeholders such as community residents, board members, consultants (representing agencies), and school personnel from the communities came together through several sub-region meetings to discuss their regional concerns and problems with a goal of

**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

SECTION ONE

developing a pilot project to address their common issues and concerns regarding operations of their water, wastewater or storm drainage systems. Based on concepts presented at these sub-region meetings, several potential projects were identified and categorized in a matrix (See Appendix D).

Through consensus, the participating representatives determined the highest-priority issue for their communities is the lack of a reliable water source for the City of Orange Cove while the Friant-Kern Canal is off-line. Focusing on this issue, the group selected a pilot project to evaluate the possibility of expanding the existing Orange Cove surface water storage capacity and/or developing a regional solution using a groundwater well and interconnection pipelines.

The team was tasked with identifying viable options to increase the reliability of source water for the City of Orange Cove while the Friant-Kern Canal (FKC) is off-line and prepare a pre-application for planning funding through the Kings Basin Integrated Regional Water Management Group (IRWMA). The funding would be used to prepare a Feasibility Study to evaluate and select a viable solution for improving the source water supply. This pilot 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 water systems that could benefit from a regional water supply solution.

A Feasibility Study involves conducting a detailed engineered analysis of the most viable infrastructure options, evaluating governance alternatives, permitting, conducting a rate impact evaluation for the preferred alternative, and preparing recommendations for many other important aspects of the project. The purpose of a Feasibility Study is to investigate several alternative solutions to the described problem and provide and evaluate advantages and disadvantages of each alternative, identify a preferred project alternative, and depending on the level of funding, the preliminary engineering, environmental documentation and design work could be completed.

SECTION TWO

2 ORANGE COVE WATER SYSTEM

The City of Orange Cove (City) is located in Fresno County as shown in Figure 2-1. The City is located approximately 30 miles southeast of the City of Fresno. The community has a history of consistent growth and the new general plan projects growth to the year 2025. According to the 2003 General Plan, by the year 2025, the estimates forecast a low population of 14,316 (2.5% growth) and a high population of 23,208 persons (4.5% growth). According to the 2010 Census, the Median Household Income (MHI) is \$27,642¹.

The City's primary water supply is conveyed using the Friant-Kern Canal running along the eastside of the City. The City's retains surface water supply and conveyance contracts with the United States Bureau of Reclamation (USBR), the Friant Water Users Authority along with other Water or Irrigation Districts in the region. In totality, the City has access to 3,400 acre-feet per year, depending on annual water supply corrections established by USBR and contractual requirements. Upon delivery of the surface water, the City treats and distributes potable water throughout the community.

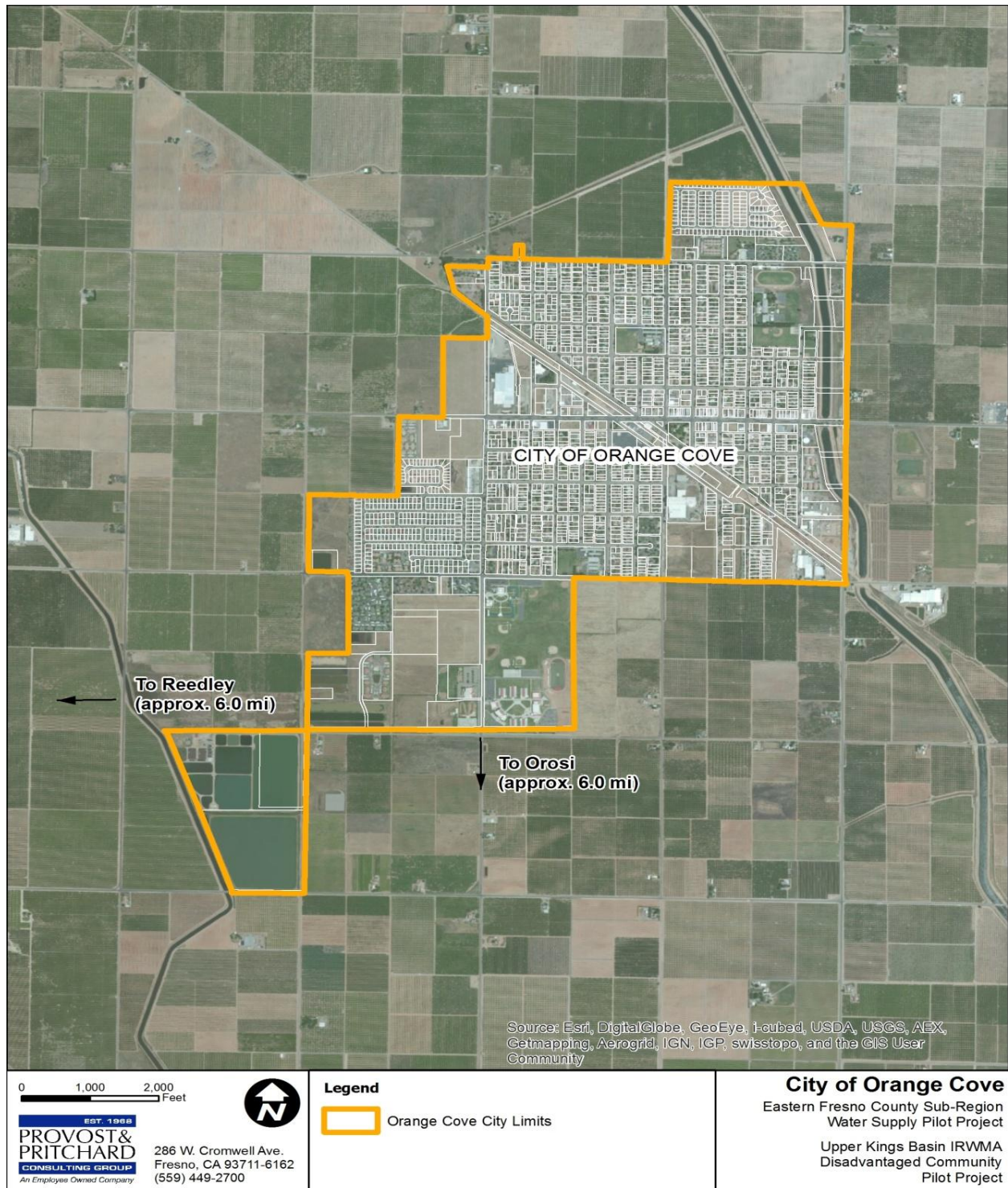
The eastside of Fresno County including the Orange Cove area has limited groundwater due to the shallow bedrock and the lack of alluvium soil characteristics. The limited groundwater has poor water quality including high concentrations of nitrates, organic compounds and other natural occurring minerals.

¹ 2007-2011 American Community Survey 5-Year Estimate; United State Census Bureau

SECTION TWO

DISADVANTAGED COMMUNITY PILOT PROJECT EASTERN FRESNO COUNTY SUB-REGION

Figure 2-1: City of Orange Cove Map



**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

SECTION TWO

The City currently relies solely on surface water delivered from the Friant-Kern Canal (FKC) to supply drinking water to the City.

The City has a surface water treatment plant located adjacent to the FKC and currently has the ability to store approximately a one month supply of surface water in three unlined earthen basins located approximately 0.25 miles east of the surface water treatment plant. The available existing surface water storage capacity is approximately 136 acre-feet (AF) and accounting for seepage losses this equates to roughly a month of accessible surface water supply. However, other losses such as backwash operations and evaporation are other characteristics that need to be evaluated.

The Friant Water Authority is responsible for the maintenance and operation of the FKC and normally dewater or drains the canal every three years to perform scheduled maintenance, typically during the month of November. During this regular maintenance period, the FKC is drained for approximately one month and the City relies on their existing surface water storage to supply water to their surface water treatment facility. Under ideal conditions, the current volume of storage is marginally sufficient to supply the City during these maintenance periods; the current storage system has no amount of redundancy nor does the City have a replacement water supply if the FKC is non-operational for more than a month or additional problems are encountered.

The Friant Water Authority has been trying to control an aquatic weed called Western Water Milfoil which is an invasive perennial aquatic plant that, over the past few years, has reduced FKC's conveyance capacity and is causing water delivery problems that have extended from Orange Cove into Kern County. In 2012/2013, FKC was taken off-line for an extended maintenance period of 4 months in an attempt to conduct Western Water Milfoil eradication operations.

During the summer of 2012, the City explored several options to secure a temporary water supply. Short-term temporary connections to the City of Reedley, Orosi Public Utility District (PUD), or the use of agricultural wells within the Orange Cove Irrigation District (OCID) were investigated. On November 7, 2012 the City adopted a proposed budget of \$600,000 to address the water supply emergency to undertake the task of securing a temporary water supply for the duration of FKC maintenance. After evaluating these options, the City was able to obtain an emergency water supply from the OCID. The existing OCID conveyance infrastructure was capable of transporting the well water close to the City's treatment facility, minimizing temporary above ground piping. Using temporary above ground piping, OCID was able to deliver water to the existing surface water storage basins. The water supplied from OCID exceeded the current maximum contaminant level (MCL) for nitrates and had to be treated prior to being delivered to the Orange Cove system. A temporary reverse osmosis treatment system was rented and utilized to treat the high nitrate levels. On December 28, 2012 the City made an application to the California Department of Public Health (CDPH) and was awarded a \$250,000 grant under the Proposition 84 Emergency Grant Fund Program to help fund the temporary nitrate treatment system.

SECTION TWO

2.1 Project Alternatives

During the 2012/2013 water supply emergency, Yamabe and Horn Engineering (City Engineer) recommended the City investigate viable long-term options. Two potential long-term water supply alternatives are:

- Expanding the raw water storage facility equivalent to one month of demand. This would provide the City a total of two months of water storage.
- The construction of a well to the west or south and possibly interconnect to an adjacent public water system.

This pilot project was prepared to provide additional technical detail for these alternatives. The following steps were used to further develop certain technical components of the three alternatives:

- Identify the duration and timing of potential FKC closures;
- Identify historic demands for this time period and estimate the water supply necessary for this same time period;
- Estimate the water supply need as storage capacity or well production;
- Identify advantages and disadvantages for each alternative; and
- Identify known limiting contractual, governance, or operational challenges.

To estimate the volume of water needed during the FKC shutdown it was necessary to obtain the historic production of the surface water treatment plant. On April 3, 2013 the City Engineer provided information about the water system operations, historic data and preliminary exhibits about the water system and the various solutions explored to acquire a temporary water supply. Based on the historic production data, estimates for each alternative were prepared, raw water storage volume for the surface water treatment plant and production requirements for a well.

**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

SECTION TWO

To calculate an estimated storage requirement and/or well production (supply), the possibility of an extended maintenance period could take place between the months of September through March. Table 2-1 provides historic monthly water production statistics for the surface water treatment plant.

Table 2-1: Surface Water Treatment Historic Production				
Month	2010		2011	
	Monthly Production (AF)	Average Daily Production (AF/Day)	Monthly Production (AF)	Average Daily Production (AF/Day)
January	97	3.13	57	1.84
February	83	2.96	87	3.11
March	107	3.45	94	3.03
September	189	6.30	184	6.13
October	135	4.35	129	4.16
November	145	4.83	103	3.43
December	92	2.97	93	3.00
Average	121.1	4.00	106.7	3.53

Using the data provided by the City Engineer, the average daily production for 2010 and 2011 ranges between 3.53 and 4 AF per day. To estimate the storage requirement or well production, the annual 2010 and 2011 average daily production values (4.00 AF/DAY and 3.53 AF/DAY) were averaged. The calculated value of 3.77 AF per day has been selected to establish the supply estimates.

Table 2-2: Well Production Estimate	
2010-2011 7 Month Average Surface Water Treatment Plant Production (AF/Day)	3.77
Equivalent Well Production (gpm) ¹	855 ²
¹ Multiply AF/Day by 226.67 to obtain gallons per minute ² Well production can decrease with an increase in reservoir storage.	

**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

SECTION TWO

As shown in Table 2-2, if a well were to be constructed as a supply source, the approximate production would need to be 855 gallons per minute (gpm). However, if the well production is less than 855 gpm, an on-site storage reservoir could be used to offset a well with reduced production.

Table 2-3: Storage Capacity – One Month		
2010-2011 7 Month Average Surface Water Treatment Plant Production (AF/Day)	a	3.77
Seepage Losses (Acre-Foot per Acre per Day)	b	0.21
New Storage Floor Area (Acres)	c	8.4
Storage Time (Days)	d	30
Storage Volume Requirement (AF)	$e = (a+(b*c))*d$	166

The estimated additional month of storage is approximately 166 AF.

Additional assumptions for the storage system include:

- Surface water storage losses due to evaporation during the winter months would be negligible.
- Expected fill-rate from rainfall has not been estimated.
- Monthly surface water treatment production and seepage losses based on data provided by the City Engineer.

The alternatives present the most logical alternatives relative to securing an additional water supply; ongoing operations costs, permitting, rates and interagency cooperation are all issues that will need to be evaluated in a future Feasibility Study that could impact the viability of the alternatives.

2.1.1 Alternative 1: Expand Existing Raw Water Storage Capacity

2.1.1.1 *Alternative Description*

This alternative 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 a month supply of water. This alternative includes the construction of a new, lined 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 a gravity fed 12-inch diameter raw water line that crosses the FKC along Park Boulevard. In order to send the stored raw water to the existing Surface Water Treatment plant, an existing lift station is used to pump the stored water through the same 12-inch diameter raw water line back across the Park Boulevard alignment.

SECTION TWO

The City Engineer is currently developing the design of a proposed filter backwash water disposal pond and future raw water storage basin. The concept and layout for Alternative 1 was based on the layout developed by the City Engineer.

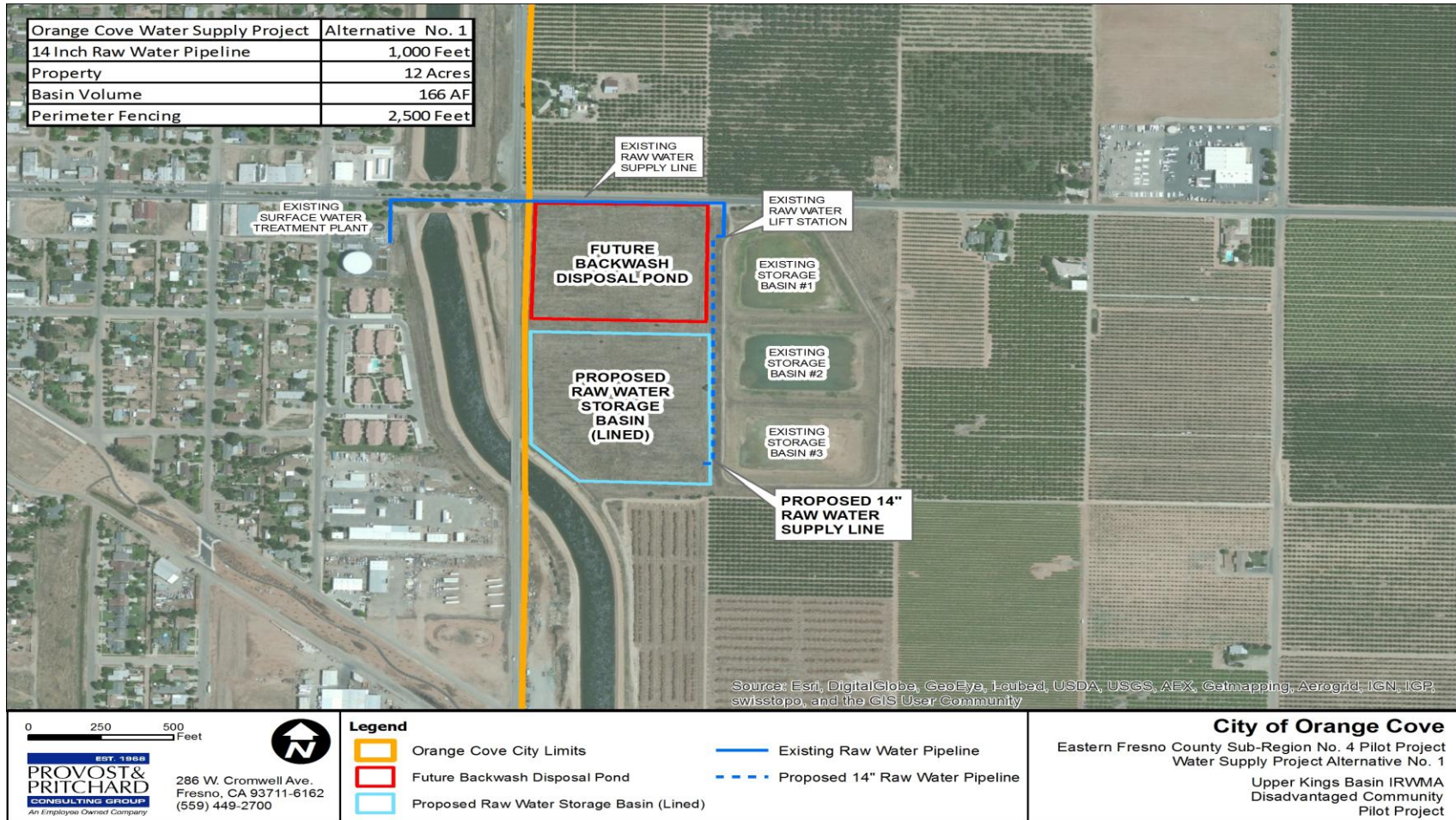
The new raw water storage basin would be lined, and deliver water to the existing lift station through a new 14-inch diameter raw water line. This alternative would include the following components:

- Approximately 166 AF capacity raw water storage basin access road, basin lining and fencing;
- Approximately 1,000 feet of 14-inch diameter raw water pipelines; and
- Modification of the existing raw water lift station.

The components listed above are based on preliminary, schematic level design. Quantities may change when more detailed engineering information is available and analyzed.

SECTION TWO

Figure 2-2: Water Supply Alternative No. 1



6/4/2013 : G:\Clients\Upper Kings Basin IRWMA - 2048\20481201-Upper Kings Basin DAC Study\GIS\Map\PilotProjects\Orange Cove\Orange Cove SWTP.mxd

**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

SECTION TWO

2.1.1.2 Cost Estimate

The preliminary engineer’s opinion of probable construction costs is located in Appendix B. As shown, it is estimated that Alternative 1 would cost approximately \$3,359,058. These costs will be modified and updated when additional engineering data is available and more detailed design is developed.

Table 2-4: Alternative No. 1 Cost Estimate	
Construction Cost	\$2,434,120
Construction Contingency (20%)	\$486,800
Engineering, Construction Management, etc (15%)	\$438,138
Total Preliminary Cost Estimate	\$3,359,058

Some key assumptions used to prepare the preliminary engineer’s opinion of probable cost for Alternative 1 include:

- 20 ft levee top width
- 3:1 inboard side slopes; 2:1 outboard side slopes
- 10 ft maximum levee height
- The storage basin will be lined to minimize water loss
- A contingency of 20 percent of the estimated construction costs was used due to the conceptual level of design

2.1.1.3 Alternative Advantages and Disadvantages

A preliminary list of advantages and disadvantages are provided in Table 2-5; this list is not exhaustive and additional advantages and disadvantages should be evaluated and detailed in a future Feasibility Study.

Table 2-5: Alternative No. 1 Advantages and Disadvantages	
Advantages	Disadvantages
Provides an additional surface water storage during FKC maintenance period equivalent to a month’s demand	The project will only provide a supply equivalent to an additional month of water demand for Orange Cove
Utilizes existing infrastructure and less infrastructure to maintain	Not an on-demand water supply for any emergency situation for Orange Cove
Reduced construction costs	Not a regional solution
Project ranking would be favorable due to Orange Cove being a DAC	Lower ranking alternative for grant funding
Continued use of surface water	
No interagency agreements would be required	

SECTION TWO

2.1.2 Alternative 2: Groundwater Well and Possible Interconnection to an Adjacent Public Water System

2.1.2.1 Alternative Description

This alternative includes the construction of a new water production well, water mains, storage tank, booster pumps and possible interconnection between the City of Orange Cove, and an adjacent public water system. The new water production well would be constructed at a central location between the participating water systems, which could serve either community. A well serving the City of Orange Cove could provide the water supply necessary during the FKC maintenance period. However, other public water systems in the area may also need an emergency supply, and may consider partnering with this project. Therefore, this alternative will include approximately 5.5 miles of interconnection pipeline if a partnering agency is identified in the future. The interconnection component is only to provide water agencies a basic level of information to initiate preliminary interconnection discussions.

A design functionality incorporated into this alternative is to provide an equal benefit (emergency supply of water) to multiple water agencies, although a partnering agency has not been identified. Orange Cove is located at a higher elevation than most other water systems in the area. The elevation difference and location of water systems will more than likely require the use of a water storage tank and booster pumps to deliver water efficiently to multiple water systems. This alternative would include the following components:

- Approximately 1.5 – 2 Acres of Property;
- Approximately 725-1,200 gpm well production;
- Assumed 29,000 feet (5.5 miles) of 12-inch diameter water main (exact length to be determined);
- Approximately 0.25 million gallon water storage tank (varies based on well production);
- Approximately 1 booster pump station.

The components listed above are based on preliminary, schematic level design. Quantities may change when more detailed engineering information is available and analyzed.

**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

SECTION TWO

2.1.2.2 Cost Estimate

The preliminary engineer’s opinion of probable construction costs is included in Appendix C. As shown, it is estimated that Alternative 2 would cost approximately \$6,803,400. These costs will be modified and updated when additional engineering data is available and more detailed design is developed.

Table 2-6: Alternative No. 2 Cost Estimate	
Construction Cost	\$4,930,000
Construction Contingency (20%)	\$986,000
Engineering, Construction Management, etc (15%)	\$887,400
Total Preliminary Cost Estimate	\$6,803,400

Some key assumptions used to prepare the preliminary engineer’s opinion of probable cost for Alternative 2 include:

- A test well would be constructed and data analyzed by a qualified geologist
- One booster pump station located at the tank site
- All pipelines would be constructed in existing right-of-way
- No costs have been included for the development of interagency agreements, governance changes, or service area changes
- A contingency of 20 percent of the estimated construction costs was used due to the conceptual level of design

2.1.2.3 Alternative Advantages and Disadvantages

Alternative 2 has several advantages and disadvantages. This evaluation has been prepared to provide the City and stakeholders with additional details to increase the understanding of potential solutions. A preliminary list of advantages and disadvantages are provided in Table 2-7; this list is not exhaustive and additional advantages and disadvantages should be evaluated and detailed in a future Feasibility Study.

Table 2-7: Alternative No. 2 Advantages and Disadvantages	
Advantages	Disadvantages
An emergency supply could be provided to multiple water systems	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 multiple water systems	Groundwater pumping mitigation may be required for permitting
High Ranking alternative for grant funding due to being a potential regional solution	Interagency operation and maintenance agreement would be necessary

**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

SECTION TWO

This alternative did not consider the delivery of treated surface water from Orange Cove to another water system. Prior to this being considered, there are significant contractual, permitting and legal issues that would require further investigation. For example, environmental documents, place of use requirements and the current contract between the City of Orange Cove and USBR do not allow for the delivery of treated surface water to another water system.

SECTION THREE

3 NEXT STEPS AND FEASIBILITY STUDY

The City should consider submitting the attached grant pre-application to the Kings Basin IRWMA to seek planning funding in-order to prepare a Feasibility Study. If possible, the City should discuss these water supply alternatives with adjacent water systems to evaluate if a neighboring water system is in need of an emergency water supply, and may consider becoming a partner. If there is a potential for a partner, the City should consider revising the attached grant pre-application to reflect the interested partner. This Pilot Project Report should be attached to the pre-application to show work completed on the project to date.

The Feasibility Study may evaluate the alternatives presented in this report and others in enough detail that a preferred alternative could be identified. Continued involvement in the Upper Kings IRWMA is encouraged, and below are a few tips that can help the City stay involved:

- The City should continue to educate themselves and become more familiar with Integrated Regional Management Planning. Information is available at the following website <http://www.krcd.org/water/ukbirwma/>. Agencies such as the Community Water Center (559-733-0219) and/or Self Help Enterprises (559-802-1681) can help provide information about the Upper Kings IRWMA.
- The State of California has a website that provides additional information <http://www.water.ca.gov/irwm/grants/index.cfm>.
- Attending the Upper Kings Board or Advisory Committee Meetings. The meetings are posted on the following website <http://www.krcd.org/water/ukbirwma/agenda.html>.
- Becoming an Interested Party or a Member could help provide access to funding. Call the Kings River Conservation District at (559) 237-5567 to obtain additional information about becoming a member or interested party.

3.1 Feasibility Study

The pilot project has identified a few key items the scope of the feasibility will need to include and address:

- The well and possible interconnection alternative needs to be designed with the understanding there would be no negative impact to the partnering water system.
- The interconnection to a water system outside of Fresno County will need to consider the impact of the Fresno County Groundwater Ordinance.
- Long-term operations costs will be needed to be incorporated into the alternative analysis.

SECTION THREE

- The range in cost for the Feasibility Study including Engineering and Design is estimated to be approximately \$350,000 to \$700,000 depending on the selected preferred alternative.

SECTION FOUR

4 POTENTIAL FUNDING SOURCES

Kings Basin IRWMA Proposition 84 funding

Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Act of 2006 (Public Resources Code Section 75001, et seq.), was passed by California voters in the November 2006 general election. Integrated Regional Water Management (IRWM) program from DWR has funding available under Proposition 84 for projects that address critical drinking water supply or water quality needs for Disadvantaged Communities. By placement of this proposed project on the Kings Basin Water Authority Project List, there is the potential that the Kings Basin Water Authority will apply for the 3rd and final round of Proposition 84 Implementation Grants on behalf of Orange Cove to the Department of Water Resources for at least the planning portion of this proposed project. Though the DWR program is termed an implementation grant, feasibility studies as outlined in this report would be eligible for a DAC such as Orange Cove.

The City can submit a universal pre-application to CDPH requesting placement of this specific proposed project on CDPH Drinking Water Program Project Priority Lists. Under the SDWSRF Program, CDPH may consider designating the water supply issue when the canal goes down as a “Water Outage” under Category “E”. If this occurs, there is the probability that the City will be offered the opportunity to submit a SDWSRF funding application for planning and later construction of a long term solution to the City’s fragile water reliability position it must encounter when the Friant-Kern Canal is not in operation.

The latest SDWSRF Project Priority List dated November 2012 includes three potential Orange Cove water projects which are:

Project	Project Number	Funding Category
Water Meters	1010023-002C	H
SWTP Exp & Storage	1010023-003	K
Supplemental GW Supply	1010023-001	M

The last of these proposed SDWSRF projects is the most similar to the new well and water system interconnection alternative. Unfortunately, CDPH funding availability does not extend down to categories “K” and “M”. At the time of the submission and rating and ranking of the Supplemental Groundwater Supply application, the severity of the consequences of a water outage may not have been considered and the possibility of

SECTION FOUR

DISADVANTAGED COMMUNITY PILOT PROJECT EASTERN FRESNO COUNTY SUB-REGION

multi-month Canal shut downs had not been considered. It is recommended that discussions take place between the City and CDPH to see if the concern over water outage when the Canal is down will be reason to elevate this proposed project to Category E. CDPH defines Category “E” projects as *“water systems with (1) water outages; (2) significant water quantity problems caused by source water capacity; or (3) water delivery capability that is insufficient to supply current demand”*.

- Under the Proposed Intended Use Plan Amendments to the SDWSRF Program, two program additions might benefit the proposed project:
 - Local Assistance Set-aside – Pre-Planning and Legal Entity Formation Assistance Program.
There may be a potential benefit to residents that live in the rural area along the potential pipeline route if their wells are contaminated since through this proposed program CDPH can make funding available to connect to “a nearby public water system”.

CDPH is responsible for portions of Proposition 84 Programs that deal with safe drinking water supplies, including emergency and urgent funding, infrastructure improvements, and groundwater quality. Orange Cove has already received a commitment of the maximum amount of Emergency Clean Water Grant funds under Section 75021 of the Prop 84 program. These funds were used to cover temporary nitrate treatment costs while the water from irrigation wells was used during the down time of the Friant-Kern Canal in the winter of 2012-13. There is the potential that the City could be considered for funding under Section 75022 of Prop 84 by CDPH if there is sufficient concern that the only alternate source of water when the canal is down are nitrate contaminated wells. It is recommended that discussions take place between the City and CDPH to see if the concern over the use of groundwater contaminated with nitrates when the canal is down will be reason to elevate this proposed project to Category F.

Other Potential Funding Sources:

- USDA Rural Utility Service Funding: The USDA Rural Utility Service provides funding for water system improvements. The availability of grant funding through this program is usually less than that of the previous State programs listed, resulting often in a higher percentage of loan. However, USDA is an important resource and may be used in conjunction with other funding to help cover construction costs.

**DISADVANTAGED COMMUNITY PILOT PROJECT
EASTERN FRESNO COUNTY SUB-REGION**

SECTION FOUR

- HUD Community Development Block Grant: The City of Orange Cove can apply to the State Department of Housing and Community Development for “Small Cities Program” Community Development Block Grant (CDBG) funding. This is a highly competitive program and in order to compete, the City would need to emphasize the critical affects the loss of water would have on the residents and/or businesses in the community. Pre-design Feasibility Study costs could be applied for through CDBG’s Planning and Technical Assistance Grant Program for a maximum of \$100,000. In addition, the maximum amount of funds from this grant program would not be enough to cover all construction costs; however, CDBG can be considered a potential supplemental source of project construction funding.

5 BIBLIOGRAPHY/REFERENCES

Various Design Layouts, Calculations, and Cost Estimates, April 2013, Yamabe & Horn Engineering Inc.

DAC Pilot Study Master Database, August 2013, Provost and Pritchard Consulting Group

City of Reedley 2000 Urban Water Management Plan, November 2001, Andrew Benelli

City of Orange Cove 2003 General Plan, City of Orange Cove

2007-2011 American Community Survey, April 2013, United States Census Bureau

APPENDIX A



PROJECT INFORMATION FORM

Project Review Process is described by Chapter 7 of the IRWMP
Form Revised 8-23-12

Project Name **City of Orange Cove Water System Feasibility Study**

Project Proponent(s) **City of Orange Cove**

Project Location The City of Orange Cove is situated in the southeast region of Fresno County, located approximately 30 miles southeast of Fresno and less than 20 miles east of Highway 99.

Project Description The project will fund a Feasibility Study to evaluate several different alternatives to provide an additional supply of water during the shut-down of the Friant Kern Canal. The two main alternatives to be evaluated involve expanding the surface water storage facilities to provide approximately 166 acre-feet of additional surface water storage supply and the construction of a new groundwater production well, storage reservoir, booster pump and possibly an interconnection pipeline to an adjacent water system. The 166 acre-ft of storage will provide approximately one-month supply of water. Once the Feasibility Study is complete, the project could proceed to construction.

Project Status

Project Status	Put X next to which stage best describes project status
Conceptual (no feasibility or study work initiated)	X
Planning (feasibility study and analysis work initiated)	X
Preliminary Design (feasibility study completed)	
Ready for Construction	

The Orange Cove water supply issue was the subject of a Pilot Study completed as part of the work associated with the Upper Kings Basin IRWM Disadvantaged Community (DAC) Pilot Study project. The summary of the DAC Pilot Project for the Orange Cove suggests that the next steps should include a feasibility study to identify a preferred alternative.

NOTE: Forms must be submitted in MS Word format to eosterling@krcd.org at least 12 business days prior to a regularly scheduled Advisory Committee meeting. Upcoming meeting dates, and a copy of the IRWMP can be viewed online at www.kingsbasinauthority.org



PROJECT INFORMATION FORM

Project Review Process is described by Chapter 7 of the IRWMP
Form Revised 8-23-12

Background

(75)

The Kings Basin Integrated Regional Water Management (IRWM) Authority (Authority) received a grant from the State of California, Department of Water Resources, to develop a pilot project or series of projects within the IRWM boundary focusing on water, wastewater or storm water problems and issues faced by Disadvantaged Communities (DACs). Through consensus, the participating representatives within the Eastern Fresno County Sub-Region, determined the highest-priority issue for their communities is the lack of reliable drinking water supply in the City of Orange Cove. Focusing on this issue, the group selected a pilot project to evaluate the possibility of expanding the existing Orange Cove's surface water storage capacity and/or the construction of a groundwater well, storage reservoir, booster pump and possibly the interconnection pipeline to an adjacent water system.

Orange Cove currently relies solely on surface water delivered from the Friant-Kern Canal (FKC) to supply drinking water to the City. Orange Cove has a surface water treatment plant located adjacent to the FKC and currently has the ability to store approximately a one month supply of surface water in three unlined earthen basins located approximately 0.25 miles east of the surface water treatment plant. The FKC is normally dewatered every three years to perform regular maintenance. During this regular maintenance period, the FKC is taken off-line for approximately one month and Orange Cove relies on their existing surface water storage to supply water to the City during this regular maintenance period. The 2012/2013 FKC maintenance period and dewatering schedule was significantly longer. The 2012/2013 maintenance lasted four months due to work on the canal to remove western water milfoil, an invasive aquatic plant.

Due to the prolonged maintenance period, Orange Cove was forced to obtain an emergency water supply from the Orange Cove Irrigation District (OCID). Using temporary above ground piping, OCID was able to deliver water to the existing surface water storage basins.

The needed planning funding would allow the City of Orange Cove to complete a full feasibility study or preliminary engineering report necessary to evaluate and select the best project alternative and prepare construction documents.



PROJECT INFORMATION FORM

Project Review Process is described by Chapter 7 of the IRWMP
Form Revised 8-23-12

Project Workplan (75-400)

The project includes preparation of a Feasibility Study to analyze the water supply alternatives and potential solutions for the City of Orange Cove. The tasks necessary to complete the project are as follows:

Administration: this task consists of the project administration related work including project status reporting, preparation of invoices, and other deliverables as required.

Study Preparation: this task consists of compiling and further analyzing the data, potential alternative and information obtained for the project. The Feasibility Study will rank the construction solution alternatives and recommend a preferred alternative.

If an alternative including a new well is selected, the following tasks will be part of the scope:

- **Hydrogeological and/or Geotechnical Investigation:** this task will include geotechnical or Hydrogeological investigations to determine a well site and preparation of a Hydrogeological or Geotechnical Report.
- **Test Well Construction:** this task consists of preparing documentation for drilling a test well, solicitation of bids, test well construction and test well report and summary of findings

If an alternative include the expansion of the existing raw water storage basins, the following tasks will be part of the scope:

- Phase 1 and geotechnical investigation
- Property appraisal and purchase
- Basin sizing analysis
- Topographic survey and project design
- **Project Construction Documents:** this task consists of preparing plans and specifications for construction of the basin

CEQA Compliance: this task will entail reviewing the selected alternative for CEQA exemptions, preparation of environmental documents, preparation of CEQA documents for construction project

Construction Document Preparation: this task will entail preparation of Plans, Specifications, Estimate and Environmental documents for the selected alternative and coordination with applicable state and local agencies.

Items to Proceed to Construction: this task will consist of determination of any easements or permits required to proceed with construction, preparation of easements or permits, as necessary.



PROJECT INFORMATION FORM

Project Review Process is described by Chapter 7 of the IRWMP
Form Revised 8-23-12

Regional Goals (75)

Put 'X' by one Primary Goal	Put 'X' by Secondary Goals that apply	No.	Goal
		RG1	Halt, and ultimately reverse, the current overdraft and provide for sustainable management of surface and groundwater
X		RG2	Increase the water supply reliability, enhance operational flexibility, and reduce system constraints
		RG3	Improve and protect water quality
		RG4	Provide additional flood protection
		RG5	Protect and enhance aquatic ecosystems and wildlife habitat.

The primary IRWMP Regional Goal that applies to this project is RG2. The water system project will increase the ability of the City of Orange Cove to store and supply water during the Friant-Kern Canal maintenance period. Orange Cove currently has the ability to store approximately one month of surface water supply and recently the FKC maintenance period lasted approximately four months. This project will improve the reliability of the water supply as well as enhance operational flexibility and reduce system constraints.

NOTE: Forms must be submitted in MS Word format to eosterling@krcd.org at least 12 business days prior to a regularly scheduled Advisory Committee meeting. Upcoming meeting dates, and a copy of the IRWMP can be viewed online at www.kingsbasinauthority.org



PROJECT INFORMATION FORM

Project Review Process is described by Chapter 7 of the IRWMP
Form Revised 8-23-12

Measurable Objectives (75)

Put 'X' by one Primary Goal	Put 'X' by Secondary Goals that apply	No.	Objective
		MO1	Increase amount of groundwater in storage with intent to eliminate the groundwater overdraft in 20 years
		MO2	Identify opportunities and Projects
X		MO3	Identify DAC priority needs and promote/support solutions to DAC water issues
		MO4	Increase average annual supply and reduce demand
		MO5	Increase dry year supply
		MO6	Increase regional conveyance capacity
		MO7	Compile baseline water quality data for ground & surface water
		MO8	Encourage Best Management Practices, policies & education that protect water quality
		MO9	Identify sources of water quality problems & promote/support solutions to improve water quality
	X	MO10	Increase surface storage
		MO11	Sustain the Kings River Fisheries Management Program
		MO12	Pursue opportunities to incorporate habitat benefits into projects
		MO13	Increase public awareness of IRWM Efforts
		MO14	Involve local water districts and land use agencies in generating and confirming the current and future water needs to ensure compatibility and consistency with land use and water supply plans.
		MO15	Comply with SBx7-7

The primary IRWMP Measurable Objective that applies to this project is MO3. The original pilot project was selected specifically to develop a viable solution for Disadvantage Communities facing water issues. The project will provide increased capacity and reliability of the water supply. These issues are critical to the disadvantaged residents within the City of Orange Cove.

The secondary IRWMP Measurable Objective that applies to this project is MO10. As discussed above, the project will increase the surface water storage capacity. Orange Cove currently depends solely on surface water and this project will increase the reliability of the City's water source.

The project performance of meeting the Objectives will be measured by tracking the total amount of water stored each year and comparing it the pre-project operations.

NOTE: Forms must be submitted in MS Word format to eosterling@krcd.org at least 12 business days prior to a regularly scheduled Advisory Committee meeting. Upcoming meeting dates, and a copy of the IRWMP can be viewed online at www.kingsbasinauthority.org



PROJECT INFORMATION FORM

Project Review Process is described by Chapter 7 of the IRWMP
Form Revised 8-23-12

Resource Management Strategies (50)

Category	Strategy	Put X by all that apply
Reduce water demand	Agricultural water use efficiency	
	Urban water use efficiency	
Improve operational efficiency and transfers	Conveyance - regional/local	
	Water transfers	
Increase water supply	Conjunctive management and groundwater storage	
	Precipitation enhancement	
	Recycled municipal water	
	Surface storage - regional/local	X
Improve water quality	Drinking water treatment and distribution	
	Groundwater remediation/Aquifer remediation	
	Matching quality to use	
	Pollution prevention	
	Salt and salinity management	
	Urban runoff management	
Improve flood management	Flood risk management	
Practice resource stewardship	Agricultural lands stewardship	
	Economic incentives (loans, grants & water pricing)	
	Ecosystem restoration	
	Forest management	
	Land use planning and management	
	Recharge area protection	
	Water-dependent recreation	
	Watershed management	
Other strategies	Crop idling for water transfers	
	Irrigated land retirement	
	Rainfed agriculture	
	Drought planning ¹	

The Resource Management Strategy that applies to this project is increased water supply through surface storage. The City of Orange Cove currently relies solely on surface water and has the ability to store approximately 1 month of water supply during the winter months. The project will increase the capacity and the ability of the City to deliver a reliable water source during the Friant-Kern Canal maintenance period.

DAC Water Needs

The project provides a benefit to a Disadvantaged Community by providing a reliable water supply through additional surface water storage or a new source.

Project Schedule

All tasks are expected to be completed within 18 months of receipt of funding.

Estimated Cost

Depending on the design alternative selected, the total project cost range is estimated between \$350,000 and \$700,000.

NOTE: Forms must be submitted in MS Word format to eosterling@krcd.org at least 12 business days prior to a regularly scheduled Advisory Committee meeting. Upcoming meeting dates, and a copy of the IRWMP can be viewed online at www.kingsbasinauthority.org

APPENDIX B

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

**UPPER KINGS BASIN DAC PILOT STUDY
 EASTERN FRESNO COUNTY PILOT PROJECT
 CITY OF ORANGE COVE WATER SUPPLY PROJECT
 Alternative 1 - Expand Existing Raw Water Storage Capacity**

PRELIMINARY

ITEM NO.	BID ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	SUBTOTAL
1	Mobilization	1	LS	\$60,000	\$60,000
2	Traffic Control	1	LS	\$10,000	\$10,000
3	Dust Control	1	LS	\$5,000	\$5,000
4	Worker Protection	1	LS	\$10,000	\$10,000
5	Prepare and Implement SWPPP	1	LS	\$10,000	\$10,000
6	Clearing and Grubbing	10	AC	\$1,000	\$10,000
7	Construct Basin Keyway	6,320	CY	\$6	\$37,920
8	Construct Storage Basin	100,000	CY	\$5	\$500,000
9	HDPE Lining	520,000	SF	\$2	\$1,040,000
10	F&I Class II Agg Base Levee Road Surface	1,040	TN	\$30	\$31,200
11	Construct Basin Inlet/Outlet Structure	1	EA	\$25,000	\$25,000
12	14" Raw Water Pipeline	1,000	LF	\$100	\$100,000
13	Construct Basin Staff Gage	2	EA	\$1,000	\$2,000
14	Modify Existing Pump Station	1	LS	\$25,000	\$25,000
15	F&I Perimeter Fence	2,500	LF	\$10	\$25,000
16	F&I Double 12' Drive Gate	2	EA	\$1,500	\$3,000
17	Purchase Site Property	12	EA	\$45,000	\$540,000
Contingency				20%	\$486,800
CONSTRUCTION SUBTOTAL (ITEMS 1 THROUGH 17)					\$2,920,920
Engineering, environmental, surveying, legal, admin., construction staking, construction management				15%	\$438,138
PRELIMINARY COST ESTIMATE:					\$3,359,058

APPENDIX C

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

PRELIMINARY

**UPPER KINGS BASIN DAC PILOT STUDY
 EASTERN FRESNO COUNTY PILOT PROJECT
 CITY OF ORANGE COVE WATER SUPPLY PROJECT
 Alternative 2 - Groundwater Well and Possible Water System Interconnection**

ITEM NO.	BID ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	SUBTOTAL
1	Mobilization	1	LS	\$250,000	\$250,000
2	Traffic Control	1	LS	\$40,000	\$40,000
3	Dust Control	1	LS	\$5,000	\$5,000
4	Worker Protection	1	LS	\$10,000	\$10,000
5	Prepare and Implement SWPPP	1	LS	\$10,000	\$10,000
6	12" Water Main	29,000	LF	\$80	\$2,320,000
7	Permanent Trench Resurfacing and Grind and Overlay	29,000	LF	\$30	\$870,000
8	Temporary Trench Resurfacing	29,000	LF	\$8	\$232,000
9	Bore and Jack Canal Crossings	4	EA	\$8,000	\$32,000
10	250,000 Gallon (Nominal) Bolted Steel Water Storage Tank, Foundation and Appurtenances	1	LS	\$280,000	\$280,000
11	Booster Pump, Controls and Appurtenances	1	LS	\$45,000	\$45,000
12	Purchase Well/Tank Site Property (Acres)	2	EA	\$65,000	\$130,000
13	Groundwater Test Well	1	LS	\$75,000	\$75,000
14	Well Site Clearing and Grubbing	1	LS	\$16,000	\$16,000
15	Well Site Grading	1	LS	\$30,000	\$30,000
16	Well Site Fencing	1	LS	\$15,000	\$15,000
17	Construct Well	1	LS	\$180,000	\$180,000
18	Well Pump and Motor	1	LS	\$60,000	\$60,000
19	Well Site Piping	1	LS	\$45,000	\$45,000
20	Well Site Control Structure and Chlorination Equipment	1	LS	\$40,000	\$40,000
21	Standby Generator & Appurtenances	1	LS	\$100,000	\$100,000
22	Well Site Electrical Service, Controls & Lighting	1	LS	\$70,000	\$70,000
23	Well Site MCC	1	LS	\$75,000	\$75,000
Contingency				20%	\$986,000
CONSTRUCTION SUBTOTAL (ITEMS 1 THROUGH 23)					\$5,916,000
Engineering, environmental, surveying, legal, admin., construction staking, construction management				15%	\$887,400
PRELIMINARY COST ESTIMATE:					\$6,803,400

APPENDIX D

COMMUNITY/ DISTRICT NAME	WHAT TYPE OF REGIONAL SOLUTIONS ARE AVAILABLE FOR THIS COMMUNITY?	WHO COULD THIS COMMUNITY CONNECT TO/COLLABORATE WITH?	BENEFITS	GOVERNANCE BARRIERS & OPPORTUNITIES TO BE ADDRESSED	TECHNICAL BARRIERS & OPPORTUNITIES TO BE ADDRESSES	PILOT PROJECT
DRINKING WATER OPPORTUNITIES: FULL CONSOLIDATION OR PHYSICAL CONNECTION						
City of Orange Cove	Physical Consolidation – Water System Supply and Interconnection	From an economic standpoint, agencies in close proximity decrease design complexity and overall costs 1. City of Parlier 2. City of Reedley 3. City of Orange Cove 4. Private Well owners within interconnection alignment	1. Improved water supply 2. Improved water quality 3. Increased water system reliability 4. Larger economies of scale	1. Some costs may increase due to improved service levels, water quality improvements and additional maintenance. 2. A cooperative agreement would need to be developed between partnering agencies. 3. Identification of a lead agency 4. Approval of an extraterritorial agreement would be required by LAFCO if connections to private well owners was allowed outside the existing service areas.	1. CEQA permitting 2. Impact to groundwater 3. Obtaining support from local Irrigation Districts 4. There may be some obstacles obtaining the County's support to locate pipeline within road right-of-way.	Prepare a preliminary grant application for Upper Kings IRWMA seeking funds for a feasibility study to evaluate a water system supply and interconnection project.
City of Orange Cove	Physical Consolidation – Water System Supply and Interconnection Include willing agencies in the Eastern Fresno Sub-Region to join the existing Regional Surface Water Supply and Treatment Project being undertaken by the Northern Tulare Communities, Tulare County and Alta Irrigation District.	From an economic standpoint agencies in-close proximity decrease design complexity and costs. Northern Tulare Communities, Tulare County and Alta Irrigation District	1. Improved water supply 2. Improved water quality 3. Increased water system reliability 4. Larger economies of scale	1. Some cost may increase due to improved services levels and water quality improvements. 2. A cooperative agreement would need to be developed between partnering agencies.	1. CEQA permitting 1. The cities of Reedley and Orange Cove are within the Alta Irrigation District Boundary. The City of Parlier is within Consolidated Irrigation District Boundary. 2. Ample surface water supply. 3. Timing of Project 4. Project Cost	Prepare a preliminary grant application for Upper Kings IRWMA seeking funds for a feasibility study to evaluate the possibility to include the City of Orange Cove and possibly other Eastern Fresno County willing agencies in the Northern Tulare regional surface water supply project with Alta Irrigation District.
DAC or Private Well Owners in the sub-region adjacent to a community with a public/community water system	Full Consolidation	Neighboring Cities, Community Service or Water Districts	1. Improved water supply 2. Improved water quality 3. Increased water system reliability 4. Larger economies of scale	1. Some cost may increase due to improved services levels and water quality improvements. 5. Approval of an extraterritorial agreement would be required by LAFCO if connections to private well owners or DACs was allowed outside the existing service areas.	1. Identifying viable projects in the sub-region.	Prepare a preliminary grant application for Upper Kings IRWMA seeking funds for a feasibility study to evaluate a water system supply and interconnection project.

COMMUNITY/ DISTRICT NAME	WHAT TYPE OF REGIONAL SOLUTIONS ARE AVAILABLE FOR THIS COMMUNITY?	WHO COULD THIS COMMUNITY CONNECT TO/COLLABORATE WITH?	BENEFITS	GOVERNANCE BARRIERS & OPPORTUNITIES TO BE ADDRESSED	TECHNICAL BARRIERS & OPPORTUNITIES TO BE ADDRESSES	PILOT PROJECT
WASTEWATER OPPORTUNITIES: FULL CONSOLIDATION OR PHYSICAL CONNECTION						
Selma- Kingsburg- Fowler County Sanitation District	Physical or Full Consolidation for the treatment of wastewater.	From an economic standpoint agencies in-close proximity decrease design complexity and costs. 1. City of Parlier 2. City of Reedley 3. City of Orange Cove	1. Larger economies of scale 2. Improved treatment operator experience 3. Potential for consolidation of treatment facilities 4. Improved regulatory compliance	1. Some cost may increase due to improved services levels and water quality improvements. 2. A cooperative agreement would need to be developed between partnering agencies. 3. LAFCO approval may be required to expand the service area for SKF County Sanitation District service area.	1. CEQA permitting 2. Costing of project and determining which agencies could be interconnected with the existing system and which systems would need to have standalone treatment facilities. 3. Existing topography – gravity and/or lifting of sewage for transmission to treatment facility.	Prepare a preliminary grant application for Upper Kings IRWMA seeking funds for a feasibility study to evaluate the possibility of treating wastewater by SKF County Sanitation District for the cities of Parlier, Reedley and Orange Cove.
FLOODING PROJECTS						
Laton CSD	Mitigate localized flooding	County of Fresno	1. Reduce damage to public and private infrastructure as a result of flooding.	1. Which agency would take the lead for the project, Laton CSD or the County of Fresno. 2. Which agency would conduct the maintenance and operations.	1. Based on the Master Plan's recommendations identify the priority project. 2. Discharge Permit	Prepare a preliminary grant application for Upper Kings IRWMA seeking funds for the implementation of master plan improvements to resolve flooding problems in and around Laton.

COMUNIDAD/NOMBRE DEL DISTRITO	¿QUÉ TIPOS DE SOLUCIONES REGIONALES ESTÁN DISPONIBLE PARA MI COMUNIDAD?	¿CON QUIÉN SE PUEDE CONECTAR ESTA COMUNIDAD O CON QUIEN PUEDE COLABORAR?	BENEFICIOS	BARRERA DE GOBERNANZA Y OPORTUNIDADES PARA SOLUCIONARLAS	BARRERAS TÉCNICAS Y OPORTUNIDADES PARA SOLUCIONARLAS	PROYECTOS PILOTOS
OPORTUNIDADES PARA EL AGUA POTABLE: CONSOLIDACIÓN COMPLETA O CONEXIÓN FÍSICA						
Cuidad de Orange Cove	Consolidación Física – Sistema de abastecimiento de Agua y interconexión	Desde un punto de vista económico, cuando se trabaja con agencias cercanas, hay una disminución en los costos y en la necesidad de un diseño complejo 1. Ciudad de Parlier 2. Ciudad de Reedley 3. Ciudad de Orange Cove 4. Dueños de pozos dentro de la alineación de interconexión	1. Mejor abastecimiento de agua 2. Mejorar la calidad de agua 3. Un sistema de agua más confiable 4. Economías de escala más grandes	1. Algunos costos pueden aumentar debido a las mejoras a los servicios y calidad del agua 2. Se necesita el desarrollo de un Acuerdo Cooperativo entre las agencias en asociación 3. Identificación de la agencia líder 4. La aprobación de un acuerdo extraterritorial sería requerido por LAFCO si las conexiones a los dueños de pozos son permitidas fuera de las áreas de servicio existentes.	1. Permisos con CEQA 2. Impacto de las aguas subterráneas 3. Obtener el apoyo de los Distritos de Riego locales 4. Puede haber algunos obstáculos al pedir el apoyo del Condado para localizar las tuberías en su área de la calle (right-a-way).	Preparar una aplicación preliminar para el IRWMA del Upper Kings para obtener fondos para un estudio de factibilidad y evaluar el proyecto de un sistema de abastecimiento de Agua e interconexión.
Cuidad de Orange Cove	Consolidación Física – Sistema de abastecimiento de Agua y interconexión. Incluir a las agencias interesadas de la sub-región del Este del Condado de Fresno a unirse al proyecto regional existente del Suministro y Tratamiento del Agua Superficie que se está llevando a cabo por las comunidades del norte del Condado de Tulare, con el Condado y con el Distrito de Irrigación de Alta.	Desde un punto de vista económico, cuando se trabaja con agencias cercanas, hay una disminución en los costos y en la necesidad de un diseño complejo Comunidades en el norte del Condado de Tulare, el Condado y el Distrito de Irrigación de Alta.	1. Mejor abastecimiento de agua 2. Mejorar la calidad de agua 3. Un sistema de agua más confiable 4. Economías de escala más grandes	1. Algunos costos pueden aumentar debido a las mejoras de servicios y calidad del agua 2. Se necesita el desarrollo de un Acuerdo Cooperativo entre las agencias palpitantes	1. Permisos con CEQA 2. Las ciudades de Reedley y Orange Cove están dentro de los límites del Distrito de Irrigación de Alta. La Ciudad de Parlier está dentro de límites del Distrito de Irrigación de Consolidado. 3. Abastecimiento amplio de agua de superficie 4. Tiempo del proyecto 5. Costo del proyecto	Preparar una aplicación preliminar para el IRWMA del Upper Kings para obtener fondos para un estudio de factibilidad y evaluar la posibilidad de incluir a la ciudad de Orange Cove y posiblemente otras agencias interesadas dentro de la sub-región del Este del Condado de Fresno en el proyecto regional del agua superficie del norte del Condado de Tulare con el Distrito de Irrigación de Alta.

COMUNIDAD/NOMBRE DEL DISTRITO	¿QUÉ TIPOS DE SOLUCIONES REGIONALES ESTÁN DISPONIBLE PARA MI COMUNIDAD?	¿CON QUIÉN SE PUEDE CONECTAR ESTA COMUNIDAD O CON QUIEN PUEDE COLABORAR?	BENEFICIOS	BARRERA DE GOBERNANZA Y OPORTUNIDADES PARA SOLUCIONARLAS	BARRERAS TÉCNICAS Y OPORTUNIDADES PARA SOLUCIONARLAS	PROYECTOS PILOTOS
DACs o los dueños de pozos en la sub-región – vecinos a una comunidad con un sistema de agua publico/de la comunidad	Consolidación Completa	Ciudades vecinas, Servicios Comunitarios o Distritos de Agua	<ol style="list-style-type: none"> 1. Mejor abastecimiento de agua 2. Mejorar la calidad de agua 3. Un sistema de agua más confiable 4. Economías de escala más grandes 	<ol style="list-style-type: none"> 1. Algunos costos pueden aumentar debido a las mejoras a los servicios y calidad del agua. 2. La aprobación de un acuerdo extraterritorial sería requerido por LAFCO si las conexiones a los dueños de pozos son permitidas fuera de las áreas de servicio existentes. 	<ol style="list-style-type: none"> 1. La identificación de proyectos viables en la subregión. 	Preparar una aplicación preliminar para el IRWMA del Upper Kings para obtener fondos para un estudio de factibilidad y evaluar un proyecto de un sistema de abastecimiento de Agua e interconexión.
OPORTUNIDADES PARA LAS AGUAS RESIDUALES: CONSOLIDACIÓN COMPLETA O CONEXIÓN FÍSICA						
Selma- Kingsburg- Fowler County Sanitation District	Consolidación física o complete par el tratamiento de las Aguas Residuales	Desde un punto de vista económico, cuando se trabaja con agencias cercanas, hay una disminución en los costos y en la necesidad de un diseño complejo <ol style="list-style-type: none"> 1. Ciudad de Reedley 2. Ciudad de Parlier 3. Ciudad de Orange Cove 	<ol style="list-style-type: none"> 1. Economías de escala más grande 2. Mejor experiencia de tratamiento de operación 3. Una posible Consolidación de la plantas de tratamiento 4. Mejor cumplimiento con las normas regulatorias 	<ol style="list-style-type: none"> 1. Algunos costos pueden aumentar debido a las mejoras de servicios y calidad del agua. 2. Se necesita el desarrollo de un Acuerdo Cooperativo entre las agencias palpitantes 3. La aprobación de LAFCO puede ser necesaria para ampliar el área de servicio del distrito de SKF County Sanitation District. 	<ol style="list-style-type: none"> 1. Permisos de CEQA 2. Costos del proyecto y determinado cuales agencias pueden ser interconectadas al sistema existente y cuales sistemas van a necesitar plantas de tratamiento independientes. 3. Topografía existente - la gravedad y / o de elevación de aguas residuales para su transmisión al centro de tratamiento. 	Preparar una aplicación preliminar para el IRWMA del Upper Kings para obtener fondos para un estudio de factibilidad y evaluar la posibilidad de que el SKF County Sanitation District trate las aguas residuales de las ciudades de Parlier, Reedley and Orange Cove.
PROYECTOS DE INUNDACIÓN						
Laton CSD	Mitigar inundaciones localizadas	Condado de Fresno	<ol style="list-style-type: none"> 1. Reducir los daños a la infraestructura pública y privada como resultado de las inundaciones. 	<ol style="list-style-type: none"> 1. Cual agencia se encargaría del proyecto, el CSD de Laton o el Condado 2. Cual agencia se encargaría de llevar a cabo las operaciones de mantenimiento. 	<ol style="list-style-type: none"> 1. Basándose en las recomendaciones del Plan Maestro identificar el proyecto prioritario. 2. Permiso de descarga 	Preparar una aplicación preliminar para el IRWMA del Upper Kings para obtener fondos para la implementación de las mejoras del plan maestro para resolver problemas de inundaciones en los alrededores de Laton.